

ATTACHMENT 1

LOW RISK CHECKLIST¹

| | | |
|--|-----|--|
| 1. Is the value of the procurement less than \$80,000 (GST inclusive)? | No | The procurement is above the relevant threshold and you should carry out a detailed risk assessment. |
| Yes | | |
| 2. Is the procurement activity likely to be subject to public sensitivity or high level media scrutiny? | Yes | You should carry out a detailed risk assessment. |
| No | | |
| 3. Do the products or services require development or independent research or assessment? | Yes | You should carry out a detailed risk assessment. |
| No | | |
| 4. After conducting market research has it been established that there are adequate suppliers to provide the products or services? | No | You should carry out a detailed risk assessment and consider the likelihood that the product or service required may not represent value for money due to a lack of competition and fewer alternatives available, or the likelihood that there may be delays in delivery of the products or services due to limited availability of suppliers. |
| Yes | | |
| 5. Is the contract likely to require any non-standard terms or conditions beyond those applying to standard purchase orders? e.g. ClauseBank contract terms. | Yes | This procurement is not likely to be considered low risk, and you should carry out a detailed risk assessment. |
| No | | |
| This procurement activity <i>could</i> be considered low risk. Low risks can generally be accepted and managed by routine procedures. | | <p>DCON Number: TBC</p> <p>TITLE: Procurement of a literature review on violent video games via Panel SON3385995</p> |

This procurement is considered low risk as it passes the test above.

Signed:

Date:

¹ This process is intended to be used as a guide only, and there are other risks which may be associated with the procurement activity, including unforeseen delays. Therefore, you should still consider these risks, and determine their likelihood and consequences.



Australian Government

Department of Communications and the Arts

M I N U T E

File/IMS Reference: PAD/19/111712

Aaron O'Neill

Assistant Secretary

Classification Branch

Procurement Plan Approval

Procurement of a literature review on violent video games via The Department of Social Services Research and Evaluation Panel SON3385995

Purpose

To provide you with information to enable you to make a decision whether to grant approval to approach the market in support of the planned procurement process for the requirement identified above.

Background

The Government has tasked the Department with commissioning a literature review on the impacts of violent computer games from an Australian perspective. The review will inform decisions as to the need for original research on the link between violent games and violent behaviour and attitudes to be conducted specific to Australia.

s47C - deliberative processes



Our review of Austender has identified The Department of Social Services Research and Evaluation Panel (SON3385995), which is open to the Department, as an appropriate means of procuring the required services. The panel includes several providers who would be desirable to approach to submit an RFQ for this project.

Consultant's/Service Contractor's Role

The successful tenderer from the panel would be commissioned to conduct a review of academic literature from the last 10 years focussing on the following objectives:

- Source, collate and synthesise relevant research conducted in Australia on any link between violent video games and aggression, and violent games and attitudes to women.
- Source, collate and synthesise research conducted in Australia and internationally focussing on the impacts of *extremely* violent games.

- Source, collate and synthesise relevant international research that compares findings across multiple countries and interrogates the role of cultural, political or other differences between countries in relation to the impacts of violent video games on attitudes and behaviour.
- Form recommendations as to the generalisability of findings on the behavioural and attitudinal impacts of violent (and extremely violent) games between comparable countries and the utility of research conducted in other countries for policy makers in Australia.

Total Cost

The expected total cost of the process will be no more than \$60,000 (GST inclusive).

Expected Outcomes

It is expected that the procurement will result in a high quality literature review conducted by a suitably qualified research provider, such as those included on the proposed panel.

Procurement Process

Based on our research into the capabilities of providers on panel SON3385995, we propose to request quotations from the following candidates, who all have experience in the conduct of literature reviews for government:

- Behavioural insights (behaviour)
- Garner Willisson P/L (mental health and population health)
- Urbis (family violence and mental health)
- Inca Consulting (mental health)
- Australian Institute of Family Studies (child and adolescent development, family violence, gambling impacts)
- Griffith University (includes the Violence Research and Prevention Program)
- La Trobe University (includes the Reducing Violence Against Women and Children Research Program)
- Monash university (includes the Gender and Family Violence Prevention Centre)
- Australian National University (Social Research Centre) (violence against women)
- University of NSW (includes the Social Policy Research Centre and School of Media and Communications)
- Queensland University of Technology (includes the Digital Media Research Centre)
- University of Canberra (includes the News and Media Research Centre)

Please note that given the limited timeframe for conduct of the literature review, we anticipate that a proportion of the above candidates will not submit a quotation, and therefore propose a wide selection to ensure we receive multiple quotations.

Quotations received will be evaluated according to the following criteria which are also set out in the RFQ:

| No. | Criterion | Comments |
|-----|------------------------------------|--|
| 1 | Proposed service delivery solution | Quotation demonstrates a thorough understanding of the Department's requirements and addresses any risks to delivery of the project. |
| 2 | Capability | Quotation provides sound evidence of demonstrated previous experience and expertise in comparable areas. |
| 3 | Capacity | <ul style="list-style-type: none"> • Availability of the Tenderer's personnel with relevant qualifications and experience • Ability to draw on additional expertise (including skills, experience and qualifications) on an as required basis • Ability to meet the timeframes specified. |
| 4 | Compliance | The extent to which the Tender complies with the provisions of the RFT and the Draft Agreement and the assessed level of risk relating to the negotiation of an agreement acceptable to the Department. |
| 5 | Tendered fees and costs | Extent to which price and pricing structure/fees represent value for money to the Department. |

Following the evaluation process, as delegate you will be provided with a second minute (Commitment and Arrangement, as per s23 under the PGPA Act) to approve the commitment of expenditure reflected in the successful quotation and appointment of the selected tenderer.

According to the terms of the panel, a work order specific to the panel will be issued to the successful tenderer which will act as a contract. The Classification Branch will manage this contract.

Timeline

It is planned to approach the market on Thursday 5 September with the final submission of responses by Thursday 12 September.

Risk Assessment

A risk assessment has been undertaken and it has been determined that the activity represents a low level of risk. A copy of the risk assessment is attached.

The procurement is considered low value and low risk and will be undertaken using standard Commonwealth Purchase Order terms and conditions to safeguard the Commonwealth commensurate with the level of risk and value of the procurement.

Legal Requirements

Decisions to spend public money and to enter into agreements are subject to the statutory requirements of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act). Commitment Approval (including Forward Commitment Authorisation if applicable) will be sought once a supplier(s) has been identified as representing best value for money, prior to entering into an appropriate arrangement.

Recommendation

Your approval is sought for the following:

To approach the market using selected providers from panel SON3385995, as described in this minute.

Signed.....

Proposing Officer.....

Branch/Division.....

/ /20

☐ **Approved**

☐ **Not Approved**

Delegate Signature..... Name:.....

Branch/Division..... Date: / /20



Australian Government
Department of Communications and the Arts

M I N U T E

Reference: DCON/19/91

To: **Aaron O'Neill, Assistant Secretary, Classification Branch**

Approval to Commit Relevant Money under s23(3) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act)

Purpose: To provide information to enable you to decide whether to approve expenditure of not more than \$65,092.50 (including GST) to engage a Contractor to conduct a literature review focussing on research into the impacts of violent computer games from an Australian perspective.

Consultation: The Office of the General Counsel.

Background: The Government has tasked the Department with commissioning a literature review on the impacts of violent computer games from an Australian perspective. The review will inform decisions as to the need for original research on the link between violent games and violent behaviour and attitudes to be conducted specific to Australia.

s47C - deliberative processes

The Department has sought a suitably qualified and experienced provider to conduct the literature review within the required timeframe. The successful tenderer will be commissioned to conduct a review of academic literature from the last 10 years focussing on the following objectives:

- Source, collate and synthesise relevant research conducted in Australia on any link between violent video games and aggression, and violent games and attitudes to women.
- Source, collate and synthesise research conducted in Australia and internationally focussing on the impacts of *extremely* violent games.
- Source, collate and synthesise relevant international research that compares findings across multiple countries and interrogates the role of cultural, political or other differences between countries in relation to the impacts of violent video games on attitudes and behaviour.
- Form recommendations as to the generalisability of findings on the behavioural and attitudinal impacts of violent (and extremely violent) games between comparable countries and the utility of research conducted in other countries for policy makers in Australia.

The Department submitted a request for quote to twelve members of the Department of Social Services Research and Evaluation Panel (SON3385995). Eight responses were received.

We have evaluated the responses and identified Behavioural Insights Australia as the best candidate.

Evaluation: A copy of the Evaluation Report for this procurement is at **Attachment A** of this Minute.

Contract value: The expected Contract value for the provision of the Services by Behavioural Insights Australia to the Department is \$65,092.50 (GST inclusive).

Contingent Liability: There is no contingent liability associated with this proposed contract.

Payment Milestones:

| Milestone | Payment % |
|--|-----------|
| Provision of research plan to Department | 20% |
| Provision of draft report to Department | 30% |
| Provision of final report to Department | 50% |

Timeline:

| Action | Date |
|--|-----------------------|
| Closing date for submissions | Monday 16 September |
| Evaluation of submissions complete | Thursday 19 September |
| Delegate approval of evaluation outcome | Friday 20 September |
| Notification of successful tenderer | Monday 23 September |
| Execution of contract (working order) | Thursday 26 September |
| Inception meeting | Tuesday 1 October |
| Provision of research plan to Department | Friday 4 October |
| Provision of draft report to Department | Friday 1 November |
| Provision of Departmental comments following review of draft | Friday 8 November |
| Provision of final report to Department | Friday 15 November |

Draft Agreement: A copy of the Official Order is at **Attachment B** of this Minute.

Risk Assessment: A risk assessment has been undertaken in relation to this procurement and that risk assessment has determined that this procurement represents a low level of risk.

Risk Mitigation: The procurement will access services from an existing panel. The panel arrangements include terms and conditions to safeguard the Commonwealth.

Funds availability: Departmental funds for the current financial year against Cost Centre 3202 are available for the current financial year's proposed commitment.

Legal Requirements: Decisions to commit relevant money and to enter into arrangements are subject to the requirements of the PGPA Act.

The Secretary has the following relevant powers:

- under subsection 23(1) of the PGPA Act to enter into any arrangement on behalf of the Commonwealth relating to the affairs of the Department and to vary and administer those arrangements; and
- under subsection 23(3) of the PGPA Act to approve a commitment of relevant money in relation to those arrangements.

The Secretary has a duty, under paragraph 15(1)(a) of the PGPA Act to promote the proper use and management of public resources (including relevant money) in relation to the exercise the Secretary's powers under section 23 of the PGPA Act. The Secretary also has a duty under section 21 of the PGPA Act to govern the Department in a way that is not inconsistent with the

policies of the Australian Government. “Proper” in the context of paragraph 15(1)(a) of the PGPA Act means that the use is efficient, effective, economical and ethical.

You have been delegated the Secretary’s powers:

- as Commitment Approver to commit relevant money under subsection 23(3) of the PGPA Act by Schedule 1 of the applicable *Secretary’s Instrument of Delegations (Spending and Arrangements Delegations)*; and
- as Arrangement Approver to enter into, vary or administer arrangements under subsection 23(1) of the PGPA Act Schedule 2 of the applicable *Secretary’s Instrument of Delegations (Spending and Arrangements Delegations)*; and
- provided that the exercise of the delegated powers are in accordance with all applicable requirements under the PGPA Act, the *Public Governance, Performance and Accountability Rule* (June 2014) (the PGPA Rule), the *Commonwealth Procurement Rules* (July 2014) (the CPRs), and the applicable Department’s *Accountable Authority Instructions*.

A commitment proposal and an arrangement should only be approved if the approver is satisfied (amongst other things) that the proposed commitment and the arrangement promotes the proper use and management of public resources (which includes relevant money).

Publishing Obligations: As the total contract value in this instance is for an amount of \$10,000 or more (inclusive of GST), it will need to be reported on AusTender within 42 calendar days of the commencement of the Contract as required by paragraphs 7.6, 7.16 and 7.17 of the CPRs.

Documentation: If you approve these recommendations, this Minute will represent the written record of your approval of:

- (a) the commitment of relevant money; and
- (b) the entering into an arrangement in this matter,

for the purposes of section 23 of the PGPA Act and rule 18 of the PGPA Rule.

In this case, approving the proposed expenditure of \$65,092.50 (GST inclusive) and approving the proposed arrangement to be entered into are in accordance with:

- (a) the PGPA Act;
- (b) the PGPA Rules;
- (c) the CPRs; and
- (d) the applicable *Secretary’s Instrument of Delegations (Spending and Arrangements Delegations)*. The proposed expenditure represents value for money and is not inconsistent with the policies of the Australian Government. As such, it promotes the proper use and management of the public resources (including relevant money) for which the Department is responsible.


Recommendations: Your approval is sought for the following:

- the proposed commitment of up to \$65,092.50 (GST inclusive), noting that, in giving such approval, you are exercising the Secretary’s approval power under subsection 23(3) of the PGPA Act, which has been delegated to you as a Proposal Approver under Schedule 1 of the applicable *Secretary’s Instrument of Delegation (Spending and Arrangements Delegations)*; and
- to enter into a Contract for the provision of content management services, by Behavioural Insights Australia to the Commonwealth of Australia as represented by the Department, for a period of 7 weeks, noting that, in giving such approval, you are

exercising the Secretary's approval power under subsection 23(1) of the PGPA Act which has been delegated to you as an Arrangement Approver under Schedule 2 of the applicable *Secretary's Instrument of Delegation (Spending and Arrangements Delegations)*.

Signed.....

Date: 23 September 2019

Proposing Officer: Samantha  Assistant Director, Classification Policy and Research

☐ **Approved**

☐ **Not Approved**

.....

Date:

Aaron O'Neill

Delegate

Assistant Secretary, Classification Branch

COMPANY NAME
ADDRESS
Attention: XXXXXX

Request for Quotation under the Deed of Standing Offer for Research Evaluation and Data (SON3385995) dated 1 January 2017 (the Deed)

The Department seeks a quotation from [insert name of Supplier] pursuant to clause 3.2 of the Deed.

The Department requires provision of the Services described below, within the timeframe and in accordance with the specifications detailed below.

If [insert name of Supplier] is able to provide the Services in accordance with the Department's requirements, please forward a quotation which details:

- a. the Services [insert name of Supplier] is able to provide;
- b. the fees to provide the Services (which must be based on the fee schedule specified in Schedule 3 of the Deed, unless more favourable rates are proposed);
- c. the names and roles of Personnel proposed to deliver the Services, including the part of the Services each person will undertake;
- d. any information the Supplier wishes to have designated as Additional Supplier Confidential Information in any subsequent Official Order for the Services (should [insert name of Supplier]'s quotation be accepted). Such a request will be dealt with in accordance with the clauses of the Deed;
- e. any Existing Material [insert name of Supplier] would utilise if engaged to provide the Services; and
- f. the name and contact details for [insert name of Supplier]'s contact officer for the purposes of this quotation.

Services required by the Department

The Department seeks quotations for the Services detailed at Attachment A. The timeframe for the provision of the Services is as follows:

| Action | Date |
|--|-----------------------|
| Closing date for submissions | Thursday 12 September |
| Notification of successful tenderer | Monday 23 September |
| Execution of contract (working order) | Thursday 26 September |
| Inception meeting | Tuesday 1 October |
| Provision of research plan to Department | Friday 4 October |
| Provision of draft report to Department | Friday 1 November |
| Provision of final report to Department | Friday 15 November |

Address and timeframe for lodgement of quotations

Please forward a quotation to the email address below:

policy@classification.gov.au

Responses are to be received by close of business Thursday 12 September.

Department Contact Officer

All queries in relation to this request for quotation should be directed to the following Department contact officer:

Name: Samantha s47F - personal p

Telephone: 02 9289 7117

Email address: Samantha. s47F - personal privacy [classification.gov.au](mailto:Samantha.classification.gov.au)

Yours sincerely,

Samantha s47F - personal p

Assistant Director, Policy and Research

Classification Branch

STATEMENT OF REQUIREMENT

A1 Background

Playing video games is a popular pastime for Australians. The Interactive Games and Entertainment Association (IGEA) reports that 2 out of 3 Australians play video games.¹

While most video games are not extremely violent (55 per cent of the games submitted to the Classification Board were G or PG in 2017-18), there exists an ongoing community concern that playing violent video games may normalise or encourage violent behaviour. Over time, technological advancements in games development have provided more realistic experiences for players, which can be positive and immersive in some cases, but can also make the experience of violence (such as real life warfare with guns or street violence) more impactful. In some games where the player's character can freely explore a world, the players character can commit acts of violence against both men and women characters should the player choose. Such content has contributed to community debate about the potential impact of games on real-life behaviour and attitudes, including violence towards women.

Over the last three decades, there has been considerable global research and case studies examined to further understand the possible effects of playing violent video games, in particular the extent to which these games cause aggressive behaviour or attitudes. Much of the research relating to the impacts of violent video games on behaviour and attitudes has been conducted in the United States and Europe.

The Department of Communications and the Arts (the Department) is seeking to commission a review of academic research literature on the effects of violent video games to identify if there are any gaps in this research from an Australian perspective. The research will also assess the extent to which findings from international research can be used to inform an understanding of the potential impact of such games in an Australian setting.

A2 Contract Services/outcomes required

The Department is seeking a suitably qualified research provider to conduct a review of academic literature, focusing on material from the last 10 years, to address the following requirements:

- Source, collate and synthesise relevant research conducted in Australia on any link between violent video games and aggression, and violent games and attitudes to women.
- Source, collate and synthesise research conducted in Australia and internationally focussing on the impacts of *extremely* violent games.
- Source, collate and synthesise relevant international research that compares findings across multiple countries and interrogates the role of cultural, political or other differences between countries in relation to the impacts of violent video games on attitudes and behaviour.
- Form recommendations as to the generalisability of findings on the behavioural and attitudinal impacts of violent (and extremely violent) games between comparable countries and the utility of research conducted in other countries for policy makers in Australia.

A research plan, detailing search criteria and sources to be used (such as online academic bibliographies) must be provided prior to submission of the draft literature review.

A high quality draft literature review report, complete with recommendations as specified and appropriate referencing, must be provided to the Department by Friday 1 November 2019.

All material to be reviewed is to be sourced by the research provider, and any costs incurred in procuring this material must be included in the costing given in this RFQ.

¹ <https://igea.net/wp-content/uploads/2019/07/DA20-Summary-Report.pdf>

A3 Timeframe for completion of the Contract Services

| Action | Date |
|--|-----------------------|
| Closing date for submissions | Thursday 12 September |
| Evaluation of submissions complete | Thursday 19 September |
| Delegate approval of evaluation outcome | Friday 20 September |
| Notification of successful tenderer | Monday 23 September |
| Execution of contract (working order) | Thursday 26 September |
| Inception meeting | Tuesday 1 October |
| Provision of research plan to Department | Friday 4 October |
| Provision of draft report to Department | Friday 1 November |
| Provision of Departmental comments following review of draft | Friday 8 November |
| Provision of final report to Department | Friday 15 November |

A4 Special skills/knowledge needed

The project requires a high level of expertise in the conduct of literature reviews that are of a publication standard in areas of enquiry related to those specified, such as studies of violence, violence against women, impacts of media content and consumption. It is expected that the successful tenderer will have the resources and skills to locate all relevant material for the review, critically and systematically analyse and synthesise the findings and be able to provide clear conclusions and recommendations that clearly stem from the findings.

A5 Applicable service levels and standards

Not applicable.

A6 Resources/materials to be provided by the department

No reference material will be provided by the Department for this review, however there is a literature review on the link between violent computer games and aggression commissioned by the then Office of Film and Literature Classification (OFLC) in 2010 which can be located on the Australian Classification website www.classification.gov.au.

A7 Reporting requirements

The supplier is to provide the following reports and documents to the Department:

- A research plan detailing search criteria and sources of literature to be used
- A high quality draft report complete with full referencing and recommendations
- A final report incorporating comments from the Department.

It is also anticipated that informal updates will be given throughout the project.

A8 Evaluation Criteria

Submitted quotations will be evaluated using the following standard criteria:

| No. | Criterion | Comments |
|-----|------------------------------------|--|
| 1 | Proposed service delivery solution | Quotation demonstrates a thorough understanding of the Department's requirements and addresses any risks to delivery of the project. |
| 2 | Capability | Quotation provides sound evidence of demonstrated previous experience and expertise in comparable areas. |
| 3 | Capacity | <ul style="list-style-type: none">• Availability of the Tenderer's personnel with relevant qualifications and experience• Ability to draw on additional expertise (including skills, experience and qualifications) on an as required basis• Ability to meet the timeframes specified. |
| 4 | Compliance | The extent to which the Tender complies with the provisions of the RFT and the Draft Agreement and the assessed level of risk relating to the negotiation of an agreement acceptable to the Department. |
| 5 | Tendered fees and costs | Extent to which price and pricing structure/fees represent value for money to the Department. |

References

Please provide a list of at least two (2) customers (other than the Department) to which you have provided services similar to those described in this RFQ within the last three (3) years. The evaluation process may involve discussions with the nominated referees.

A9 Fees, expenses and costs

The total budget available for this project is \$60,000 plus GST which will need to cover all expenses associated with delivery of the project. The Department proposes the following payment schedule.

| Milestone | Payment % |
|--|-----------|
| Execution of contract | 10% |
| Provision of research plan to Department | 10% |
| Provision of draft report to Department | 30% |
| Provision of final report to Department | 50% |

Evaluation summary for responses to RFQ DCON 19/91 23 September 2019

**Evaluation summary: Quotations against RFQ DCON 19/91:
Literature review on violent video games from an Australian perspective**

| | s47G - business information | | | Behavioural Insights | s47G - business information | | | |
|--|-----------------------------|-----------|-----------|---|-----------------------------|-------------|-------------|--|
| Fees (ex GST) (highest to lowest) (Not to be weighted) | \$59,546 | \$59,456 | \$59,450 | \$59,175 | \$59,100 | \$57,900 | \$52,800 | \$52,300 |
| Panel member 1 | | | | | | | | |
| Compliance (Not to be weighted) | Y | Y | Y | IP preference for 'broad licence' ¹ | Y | Y | Y | Potential conflict of interest. ² |
| Proposed solution ³ (35% weighting) | 80% | 50% | 80% | 80% | 60% | 80% | 50% | 70% |
| Capability (30% weighting) | 90% | 50% | 70% | 70% | 60% | 60% | 60% | 70% |
| Capacity (35% weighting) | 60% | 70% | 70% | 80% | 70% | 70% | 60% | 80% |
| Weighted total score⁴ | 76 | 57 | 74 | 77 | 63.5 | 70.5 | 56.5 | 73.5 |
| Rank by weighted total | 2 | 7 | 3 | 1 | 6 | 5 | 8 | 4 |
| Panel member 2 | | | | | | | | |
| Compliance (Not to be weighted) | Compliant | Compliant | Compliant | Y. Requests extra terms in work order. ⁵ | Compliant | Compliant | Compliant | Potential conflict of interest. |
| Proposed solution (35% weighting) | 80% | 70% | 80% | 75% | 70% | 70% | 30% | 60% |
| Capability (30% weighting) | 90% | 70% | 70% | 80% | 60% | 60% | 60% | 80% |
| Capacity (35% weighting) | 60% | 70% | 80% | 80% | 80% | 50% | 40% | 70% |
| Weighted total score | 76 | 70 | 77 | 78.25 | 70.5 | 60 | 42.5 | 69.5 |
| Rank by weighted total | 3 | 5 | 2 | 1 | 4 | 7 | 8 | 6 |

¹ This has since been clarified with the supplier who accepts Department will need full intellectual property rights in this instance (Model 1 in the Deed).

² Study team lead is s47G - business information who does ongoing work for s47G - business information.

³ See detailed criteria on p3.

⁴ Sum of scores for proposed solution, capability and capacity, with respective weights applied.

⁵ Refers to IP stipulation (see footnote 1) and patented data analysis framework developed by Behavioural Insights Australia prior to this procurement.

Mean weighted scores from panel members:

The weighted scores from the 2 panelists are shown below, with averages and rank by average score. It can be seen that Behavioural Insights Australia has the highest average, followed by **s47G - business information**.

| | s47G - business information | | | Behavioural Insights | s47G - business information | | | |
|-----------------------|------------------------------------|------|------|-----------------------------|------------------------------------|-------|------|------|
| Panel member 1 score | 76 | 57 | 74 | 77 | 63.5 | 70.5 | 56.5 | 73.5 |
| Panel member 2 score | 76 | 70 | 77 | 78.25 | 70.5 | 60 | 42.5 | 69.5 |
| Average | 76 | 63.5 | 75.5 | 77.63 | 67 | 65.25 | 49.5 | 71.5 |
| Rank by average score | 2 | 7 | 3 | 1 | 5 | 6 | 8 | 4 |

| | | | | | | | | |
|------|----------|----------|----------|----------|----------|----------|----------|----------|
| Fees | \$59,546 | \$59,456 | \$59,450 | \$59,175 | \$59,100 | \$57,900 | \$52,800 | \$52,300 |
|------|----------|----------|----------|----------|----------|----------|----------|----------|

Price comparison:

The 3 lead candidates are similarly priced, however Behavioural Insights Australia's quote \$59,175 was slightly lower than those provided by **s47G - business information**

Detailed evaluation criteria

Quotes were evaluated based on the following criteria which are contained in the Evaluation Matrix attached to the Department's Procurement Guide of July 2019.

1. Proposed Service Delivery Solution:

- *The suitability of the proposed solution*
- *Demonstrates a thorough understanding of the Department's requirements*
- *Strengths and weaknesses of the proposed solution*
- *Consider any gaps or risks in the proposal*
- *Other (if applicable)*

2. Capability:

- *Technical and management capabilities to provide the services*
- *Skills, experience and qualifications of proposed specified personnel and sub-contractors*
- *sound evidence of demonstrated previous experience and expertise in comparable areas.*
- *The Tenderer's proven ability to deliver similar supplies and services of the required scale and complexity within time-frames similar to those set out in the Statement of Requirement*
- *The proposed arrangements for the provision of technology, technical data and intellectual property (if applicable)*
- *Other (if applicable)*

3.Capacity:

- *Availability of the Tenderer's personnel with relevant qualifications and experience*
- *Ability to draw on additional expertise (including skills, experience and qualifications) on an as required basis*
- *Ability to meet the timeframes*
- *Other (if applicable)*

4.Compliance

- *The extent to which the Tenderer complies with the provisions of the RFT and the Draft Agreement, and the assessed level of risk relating to the negotiation of an agreement acceptable to the Department.*
- *Financial viability of Tenderer (if applicable)*
- *Potential for Conflict Of Interest (if applicable)*
- *Adherence to all standards of conduct as indicated by the relevant professional organization (if applicable)*

5. Tendered Fees and Costs:

Price and pricing structure/fees.

From: s47F - personal privacy [Samantha](#)
To: s47F - personal privacy [Shannon](#)
Subject: FW: Commitment and Arrangement Minute for Literature Review for your approval [DLM=For-Official-Use-Only]
Date: Tuesday, 24 September 2019 7:25:14 AM
Attachments: [image001.png](#)
[image001.png](#)

FYI ☺

For Official Use Only

From: O'Neill, Aaron <Aaron.O'Neill@communications.gov.au>
Sent: Monday, 23 September 2019 5:36 PM
To: s47F - personal privacy Samantha <Samantha.s47F - personal privacy@classification.gov.au>
Cc: s47F - personal privacy Barbara <Barbara.s47F - personal privacy@classification.gov.au>
Subject: Re: Commitment and Arrangement Minute for Literature Review for your approval [DLM=For-Official-Use-Only]

Evening Sam, this is approved.
 You are welcome to notify the successful applicant.
 My sincere thanks to yourself and Shannon with the work to date you have both put into this.

Aaron s47F - personal privacy
 Classification Branch
 (02) 6271 1467
s47F - personal privacy

Sent from my iPad

On 23 Sep 2019, at 2:50 pm, s47F - personal privacy Samantha <[s47F - personal privacy@classification.gov.au">Samantha.s47F - personal privacy@classification.gov.au](mailto:Samantha. wrote:

Hi Aaron. Please find attached the approval minute for procurement of the literature review for your approval. The minute confirms the successful tenderer and their fees.

I have also attached The Official Order (which will serve as a contract under the panel arrangement) and Summary report on the evaluation of tenders, which form attachments to the minute.

| | |
|---------------|---|
| Record Title | PPT09 - Approval Minute PGPA s23 (Commitment and Arrangement) - Violent Computer Games literature review.docx |
| Record Number | PAD/19/111631 |
| Record Title | Official Order DCON19-91.docx |
| Record Number | PAD/19/116083 |
| Record Title | Evaluation panel summary report.docx |

Record Number PAD/19/117763

Once approved we will notify the successful tenderer (in accordance with our timeline this should happen today).

Please let me know if you have any questions or would like any detail added to the attached.

Thanks

Sam



Samantha

s47F - personal

Assistant Director / Policy and Research / Classification Branch
Department of Communications and the Arts

Ext 8117

Samantha.s47F-personal@communications.gov.au

s47F - personal privacy

L6, 23-33 Mary Street, Surry Hills NSW 2010
Locked Bag 3 Haymarket NSW 1240

communications.gov.au / [@CommsAu](https://www.facebook.com/CommsAu)

arts.gov.au / [@artsculturegov](https://www.facebook.com/artsculturegov)

I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

For Official Use Only

<Evaluation panel summary report.docx>

<Official Order DCON19-91.docx>

<PPT09 - Approval Minute PGPA s23 (Commitment and Arrangement) -
Violent Computer Games literature review.docx>



Australian Government

Department of Social Services

DEED OF STANDING OFFER

Number:

60002773

Between:

COMMONWEALTH OF AUSTRALIA

represented by the Department of Social Services

ABN 36 342 015 855

and

ACN 613 066 541 PTY LTD trading as BEHAVIOURAL INSIGHTS
(AUSTRALIA)

ABN 16 613 066 541

for:

the provision of Services in relation to social policy research, evaluation
and programme review, investment in data and professional
development.

Table of Contents

| | | |
|---|-----------------------------------|----|
| 1 | INTERPRETATION | 1 |
| 2 | TERM OF DEED | 4 |
| 3 | FORMATION OF CONTRACTS | 4 |
| 4 | FEES | 7 |
| 5 | COMMUNICATION AND REPORTING | 7 |
| 6 | CONFIDENTIAL INFORMATION | 7 |
| 7 | DISCLOSURE BY SUPPLIER | 10 |
| 8 | CONFLICT OF INTEREST | 10 |
| 9 | INSURANCE | 11 |
| 10 | INDEMNITY | 11 |
| 11 | TERMINATION | 12 |
| 12 | GENERAL PROVISIONS | 14 |
| SCHEDULE 1 COMPLETION DATE, CONFIDENTIAL INFORMATION, INSURANCE AND ADDRESSES FOR NOTICES | | 17 |
| SCHEDULE 2 – SERVICES | | 19 |
| Part A - Social Policy Research Services Category | | 19 |
| Part B - Evaluation and Programme Review Services Category | | 20 |
| Part C - Investment in Data Services Category | | 20 |
| Part D - Professional Development Services Category | | 21 |
| SCHEDULE 3 – FEES | | 23 |
| SCHEDULE 4 – TERMS AND CONDITIONS OF CONTRACTS | | 31 |
| SCHEDULE 5 – OFFICIAL ORDER TEMPLATE - STATEMENT OF WORK | | 68 |
| Item A [Services and Subcontractors] | | 68 |
| Item B [Contract Material] | | 69 |
| Item C [Contract Commencement and Timeframe] | | 69 |
| Item D [Fees] | | 69 |
| Item E [Expenses and Costs] | | 70 |
| Item F [Invoices] | | 70 |
| Item G [Intellectual Property] | | 71 |
| Item H [Existing Material] | | 72 |
| Item I [Moral Rights] | | 72 |
| Item J [Use of Commonwealth Material] | | 72 |
| Item K [Facilities and Assistance] | | 72 |
| Item L [Confidential Information] | | 72 |

| | |
|--|-----------|
| Item M [Security Requirements]..... | 72 |
| Item N [Standards and Best Practice]..... | 73 |
| Item O [Specified Personnel] | 73 |
| Item P [Insurance] | 73 |
| Item Q [Contact Officers] | 73 |
| Item R [Customer and Addresses for Notices] | 74 |
| Item S [Publications]..... | 74 |
| Item T [Limited Liability] | 74 |
| Item U [Transfer of Information Outside Australia] | 75 |
| Item V [Cyber-Security] | 75 |
| SCHEDULE 6 - DEED POLL | 79 |

This Deed of Standing Offer is dated 29 March 2017

Parties

This Deed is made between and binds the following parties:

COMMONWEALTH OF AUSTRALIA (the **Commonwealth**) represented by and acting through the Department of Social Services ABN 36 342 015 855 (the **Department**)

AND

ACN 613 066 541 PTY LTD trading as BEHAVIOURAL INSIGHTS (AUSTRALIA) ABN 16 613 066 541 (the **Supplier**)

Context

This Deed is made in the following context:

- A The Department requires the provision of social policy research, evaluation, data investment and professional development (**Services**).
- B The Services have been divided into four Services Categories:
 - a. Social Policy Research Services Category;
 - b. Evaluation and Programme Review Services Category;
 - c. Investment in Data Services Category; and
 - d. Professional Development Services Category.
- C Some of the Services may fall into more than one Services Category.
- D The Department has established a Panel of suppliers to provide the Services. The Panel is divided into four sub-panels, one for each of the Services Categories.
- E The Supplier has been selected as a Panellist in respect of one or more sub-panels.
- F The Department may, from time to time, require the Supplier to provide certain Services under the Panel. Other Customers may also require the Supplier to provide Services under the Panel.
- G The Supplier has fully informed itself about the Services and its obligations as a Panellist and has submitted the tender entitled *Request for Tender for the provision of social policy research, evaluation, investment in data and professional development services through the Research, Evaluation and Data (READ) Panel* dated 13 July 2016 for the provision of certain Services on the terms set out in this Deed.
- H The Supplier has agreed that when a Contract is created under this Deed, the Supplier will, in accordance with this Deed, provide the Services specified in the Official Order applicable to that Contract.

Operative Provisions

In consideration of the mutual promises contained in this document, the parties to this Deed agree as follows:

1 INTERPRETATION

1.1 Definitions

In this Deed, unless the context otherwise indicates:

Additional Customer Confidential Information means information that is designated as being Additional Customer Confidential Information in an Official Order placed pursuant to this Deed;

Additional Supplier Confidential Information means information that is designated as being Additional Supplier Confidential Information in an Official Order placed pursuant to this Deed;

Agency means any Commonwealth entity (corporate and non-corporate), as that term is defined in the *Public Governance, Performance and Accountability Act 2013* (Cth);

Business Day means a weekday other than a public holiday in the Australian Capital Territory;

Commencement Date means the date on which this Deed is signed by the last party to do so;

Completion Date means the date specified in Schedule 1;

Conflict means a conflict of interest, risk of a conflict of interest, or an apparent conflict of interest arising through the Supplier (including its Personnel) or the Supplier's immediate family, relatives, business partners, associates, related bodies corporate or friends, engaging in any activity or obtaining any interest that is likely to or may appear to impair, interfere with or restrict the Supplier in providing the Services to the Customer diligently, fairly and independently;

Contract means a contract formed in accordance with clause 3 of this Deed;

Customer means:

- (a) the Department ; or
- (b) any other Agency that accesses the Panel,

as the context requires;

Customer Confidential Information means information that:

- (a) is described in Schedule 1 as being Customer Confidential Information;
- (b) the Customer identifies, by notice in writing after the Commencement Date, as confidential information for the purposes of this Deed; or
- (c) is protected information as defined in section 23(1) of the *Social Security Act 1991* (Cth), under Division 2 of Part 6 of *A New Tax System (Family Assistance) (Administration) Act 1999* (Cth), under the *Social Security (Administration) Act 1999* (Cth), under sections 16 and 16AA of the *Child Support (Registration and Collection) Act 1988* (Cth), under sections 150 and 150AA of the *Child Support (Assessment) Act 1989* (Cth), or other Commonwealth legislation; or
- (d) the Supplier knows, or ought to know, is confidential;

Deed means this deed of standing offer including the Schedules and any attachment(s);

Deed Poll means the Deed Poll at Schedule 6 to this Deed;

Department means the Commonwealth Department of Social Services, or any other department or Agency of the Commonwealth which is from time to time responsible for administering this Deed.

Milestone means an event or outcome which must be achieved by a date which is specified in a Contract as a Milestone;

Official Order means an Order for Services submitted by the Customer to the Supplier in accordance with clause 3.3 of the Deed and substantially in the form specified at Schedule 5;

Panel means the panel referred to in Paragraph D of the Context section of this Deed;

Panellist means a supplier who has been appointed to the Panel;

Personnel means a party's officers, employees, agents or professional advisers engaged in, or in relation to, the performance or management of this Deed or a Contract;

Schedule means a schedule to this Deed;

Services means the services described in Schedule 2;

Services Categories means the four (4) Services Categories described in Schedule 2;

Subcontractor means an entity engaged by the Supplier (directly or indirectly) to perform any part of the Services and, when the context permits, that entity's Personnel;

Supplier includes (where the context permits) the Personnel, volunteers and bailees of the Supplier;

Supplier Confidential Information means information that is described in Schedule 1 as Supplier Confidential Information; and

Term means the period for which the terms of this Deed will apply, as specified in clause 2.

1.2 Interpretation

1.2.1 Capitalised terms that are contained in this Deed but are not defined in clause 1.1 have the meanings given to them in Schedule 4.

1.2.2 In this Deed, unless the contrary intention appears:

- (a) words importing a gender include the other gender;
- (b) words in the singular include the plural and vice versa;
- (c) clause headings or words in bold format are for convenient reference only and have no effect in limiting or extending the language of provisions;
- (d) words importing a person include a partnership and a body whether corporate or otherwise;
- (e) a reference to dollars is a reference to Australian Dollars;
- (f) unless stated otherwise, a reference to legislation is to legislation of the Commonwealth, and includes any statutory modification, substitution or re-enactment of that legislation or legislative provision;
- (g) if any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (h) a reference to an Item is a reference to an item in a Schedule;

- (i) the Schedules and any attachments form part of this Deed; and
- (j) a reference to writing is a reference to any representation of words, figures or symbols, whether or not in a visible form.

1.2.3 In the event of any conflict or inconsistency between any part of:

- (a) the terms and conditions contained in the clauses of the Deed;
- (b) the Schedules;
- (c) the annexures, if any; or
- (d) documents incorporated by reference,
- (e) the terms specified in the Official Order if any,

then the material mentioned in any one of paragraphs (1.2.3(a) to 1.2.3(e)) has precedence over material mentioned in a subsequent paragraph, to the extent of any conflict or inconsistency.

1.3 Guidance on construction of this Deed

- 1.3.1 This Deed records the entire agreement between the parties in relation to its subject matter, and supersedes any negotiations and communications whether written or oral.
- 1.3.2 A variation of this Deed is binding only if agreed in writing and signed by authorised representatives of both parties.
- 1.3.3 Any reading down or severance of a particular provision does not affect the other provisions of this Deed.
- 1.3.4 A provision of this Deed will not be construed to the disadvantage of a party solely on the basis that it proposed that provision.

2 TERM OF DEED

2.1 Term of Deed

- 2.1.1 The Term of this Deed is from the Commencement Date until the Completion Date, unless terminated earlier or extended in accordance with clause 2.1.2.
- 2.1.2 The initial Term may be extended by the Department for two further period(s) of up to 12 months, by the Department giving notice to the Supplier. Such notice must be provided:
 - (a) at least 40 Business Days before the end of the current Term; or
 - (b) within another period agreed in writing between the parties,and if the Term is so extended, the Completion Date is the last date of the extended Term.
- 2.1.3 Any extension made in accordance with clause 2.1.2 takes effect from the end of the then current Term.

3 FORMATION OF CONTRACTS

3.1 Offer to provide Services

- 3.1.1 The Supplier irrevocably offers to provide the Services to the Customer, on the terms and conditions set out in this Deed.
- 3.1.2 Within 10 Business Days of the Commencement Date, the Supplier must provide the Department with a properly completed and executed Deed Poll in the form set out in Schedule 6 [Deed Poll] to this Deed. For the avoidance of doubt, any failure to provide a Deed Poll in compliance with this clause 3.1.2 does not affect the Supplier's offer under clause 3.1.1.
- 3.1.3 The Supplier acknowledges and agrees that it may only provide those Services under a Contract which are included in Schedule 2 [Services]. If the Supplier receives a request for quotation or an Official Order for services which are not within the scope of the Services included in Schedule 2, it must:
- (a) advise the relevant Customer that the requested services are not within the Services for which the Supplier is a Panellist;
 - (b) promptly notify the Department at the address in Item 4 of Schedule 1, sending a copy of the request for quotation or proposed Official Order and the Supplier's response; and
 - (c) not provide any quotation for the requested services or the requested services to the Customer (unless Schedule 2 is subsequently varied to include the requested Services).
- 3.1.4 If the Supplier fails to comply with clause 3.1.3, the Department may:
- (a) immediately terminate this Deed in accordance with clause 11.2 by giving written notice to the Supplier; or
 - (b) reduce the scope of this Deed (including by removing one or more Services Categories from Schedule 2 [Services]) in accordance with clause 11.1 of the Deed.
- 3.2 Quotations**
- 3.2.1 The Customer may, during the Term, issue a request for quotation for work.
- 3.2.2 The request for quotation will specify details of the Services required by the Customer, including:
- (a) the required Services;
 - (b) whether the Customer requires the Services to be performed by particular Personnel of the Supplier;
 - (c) the time frame for delivery of the Services; and
 - (d) any other specific requirements of the Customer in relation to the Official Order.
- 3.2.3 Upon receipt of a request for quotation the Supplier may, within the timeframe specified in the request for quotation, prepare and submit to the Customer a written quotation specifying:
- (a) the Services to be provided;
 - (b) the fees to provide the Services, which must be based on the fee schedule specified in Schedule 3 unless the Supplier is offering more favourable rates;

- (c) the names and roles of Personnel and Subcontractors proposed to deliver the Services, including the part of the Services each person will undertake; and
- (d) any information the Supplier wishes to have kept confidential. The Customer will consider such a request having regards to the Commonwealth's guidance on Confidentiality throughout the Procurement Cycle available at the Department of Finance website. If seeking to have information kept confidential, the Supplier must specify in its quotation:
 - (i) the specific information in relation to which confidentiality is sought;
 - (ii) reason(s) why the information is commercially sensitive;
 - (iii) why and how disclosure of the information would cause unreasonable detriment to the owner of the information or another party, and details on the unreasonable detriment that would be caused; and
 - (iv) whether the information was provided under an understanding it would remain confidential.

3.3 Placement of an Official Order

- 3.3.1 The Customer will submit its Official Orders substantially in the format set out in Schedule 5.
- 3.3.2 The Customer will specify in the Official Order the precise Services to be performed and other items listed in Schedule 5.

3.4 Contract

- 3.4.1 A Contract is formed between the Customer and the Supplier when:
 - (a) an Official Order is sent by the Customer to the Supplier in accordance with this Deed; and
 - (b) that Official Order is signed by both the Customer and the Supplier.
- 3.4.2 The terms and conditions of each Contract will be those set out in the Official Order and Schedule 4.

3.5 Customers other than the Department

- 3.5.1 If the Supplier receives a request for quotation or an Official Order from a Customer other than the Department, the Supplier must notify the Department of this (at the Department's address for notices specified in Item 4 of Schedule 1):
 - (a) for a request for quotation - within 10 Business Days of receiving the request for quotation; and
 - (b) for an Official Order - as soon as practicable after receipt, but within 10 Business Days of the Supplier signing the Official Order,

and must provide any further information about the request for quotation or Official Order as requested by the Department. For the avoidance of doubt, any failure to comply with this clause 3.5.1 does not affect the validity of a Contract.

3.6 Customer not bound to order from Supplier

- 3.6.1 The Customer:

- (a) is under no obligation to place any Official Order with the Supplier or to request any volume of Services from the Supplier; and
 - (b) may at any time purchase or acquire services the same as, or similar to, the Services from any other person on such terms and conditions as the Customer wishes.
- 3.6.2 The Customer may seek quotes, tenders or other forms of expressions of interest for services the same as, or similar to, the Services from one or more potential suppliers (including or not including the Supplier) prior to deciding to issue or not to issue an Official Order to the Supplier.

4 FEES

4.1 Calculation of fees

- 4.1.1 The fees due to the Supplier for performing the Services will be specified in the Official Order and will be calculated in accordance with the fee schedule in Schedule 3, unless otherwise agreed by the Customer and the Supplier.

5 COMMUNICATION AND REPORTING

5.1 Communications regarding Panel

5.1.1 The Supplier must:

- (a) direct all communication related to the Panel (including complaints) to the Department's address for notices in Item 4 of Schedule 1;
- (b) direct all communication related to a Contract to the Customer's Contact Officer specified in Item Q of the Official Order for that Contract; and
- (c) participate in annual surveys of Panellists on subjects related to the Panel and the procurement and supply of Services.

5.2 Reports

- 5.2.1 If requested by the Customer, from time to time, the Supplier must provide the Customer with a report or any other requested information regarding its performance under this Deed or a Contract.

6 CONFIDENTIAL INFORMATION

6.1 Interpretation

- 6.1.1 In this clause 6, 'Third Party Interest' means any legal or equitable right, interest, power or remedy in favour of any person other than the Customer or the Supplier in connection with the Deed or a Contract, including, without limitation, any right of possession, receivership, control or power of sale, and any mortgage, charge, security or other Interest.

6.2 Customer Confidential Information

- 6.2.1 Subject to clause 6.2.4, the Supplier must not, without the prior written consent of the Customer, disclose any Customer Confidential Information to a third party.
- 6.2.2 The Supplier must not transfer any of the Customer Confidential Information outside Australia or allow persons outside Australia to have access to that Material without

the prior written consent of the Customer. For clarity, if Item U [Transfer of Information Outside Australia] of an Official Order expressly permits the transfer of particular Customer Confidential Information outside Australia, or allows persons outside of Australia to have access to that Material, the Customer will be deemed to have given its prior written consent under this clause. The Customer may impose any conditions it considers appropriate when giving consent under this clause 6.2 and the Supplier must comply with these conditions.

6.2.3 The Supplier must, on request by the Customer at any time arrange for:

- (a) its Personnel;
- (b) Subcontractors; or
- (c) any person with a Third Party Interest,

to promptly give a written undertaking in a form acceptable to the Customer relating to the use and non-disclosure of the Customer Confidential Information.

6.2.4 The Supplier will not be taken to have breached its obligations under this clause 6.2 to the extent that the Customer Confidential Information is:

- (a) subject to clause 6.2.2, disclosed by the Supplier to its Personnel or Subcontractors solely in order to comply with obligations, or to exercise rights, under this Deed or a Contract;
- (b) subject to clause 6.2.2, disclosed by the Supplier to its internal management Personnel, solely to enable effective management or auditing of Deed or Contract-related activities;
- (c) authorised or required by law to be disclosed;
- (d) in the possession of the Supplier without restriction in relation to the disclosure before the date of receipt from the Customer; or
- (e) in the public domain otherwise than due to a breach of this clause 6.

6.2.5 Where the Supplier intends to disclose Customer Confidential Information to another person pursuant to clauses 6.2.4(a) to 6.2.4(c), it must (where reasonably practicable) notify the Customer of its intention to disclose the Customer Confidential Information prior to its disclosure, or as soon as possible thereafter if notification could not occur prior to disclosure for reasons beyond the Supplier's control.

6.2.6 Where the Supplier discloses Customer Confidential Information to another person pursuant to clauses 6.2.4(a) to 6.2.4(c), the Supplier must notify the receiving person that the information is confidential.

6.2.7 The Supplier must not disclose Customer Confidential Information in the circumstances referred to in clauses 6.2.4(a) and 6.2.4(b) unless the receiving person agrees to keep the information confidential.

6.3 Supplier Confidential Information

6.3.1 Subject to clause 6.3.2, the Customer must not, without the prior written consent of the Supplier, disclose any Supplier Confidential Information to a third party.

6.3.2 The Customer will not be taken to have breached its obligation under this clause 6.3 to the extent that the Supplier Confidential Information is:

- (a) disclosed by the Customer to its Personnel solely in order to comply with obligations, or to exercise rights, under this Deed or a Contract;

- (b) disclosed by the Customer to its internal management Personnel, solely to enable effective management or auditing of Deed or Contract-related activities;
- (c) disclosed by the Customer to the responsible Minister;
- (d) disclosed by the Customer, in response to a request by a House or a Committee of the Parliament of the Commonwealth of Australia;
- (e) shared by the Customer within the Customer's organisation;
- (f) shared by the Customer with another government agency, for the purpose of managing or accessing this Deed or where this serves the Commonwealth's legitimate interests;
- (g) disclosed to a Customer or potential Customer, for the purpose of allowing the Customer or potential Customer to consider acquiring, or for acquiring, Services from the Supplier, or for managing the provision of Services under a Contract;
- (h) authorised or required by law to be disclosed;
- (i) in the possession of the Customer without restriction in relation to the disclosure before the date of receipt by the Supplier; or
- (j) In the public domain otherwise than due to a breach of this clause 6.

6.4 Additional Confidential Information

- 6.4.1 The parties may specify that information is Additional Supplier Confidential Information or Additional Customer Confidential Information in an Official Order placed pursuant to this Deed. Such information will be dealt with in accordance with clause 6 of Schedule 4.
- 6.4.2 The parties agree that information will only be deemed to be Additional Supplier Confidential information if the Customer, in its discretion, determines that the information satisfies the criteria for confidentiality specified in the Commonwealth's guidance on Confidentiality throughout the Procurement Cycle, issued by the Department of Finance.

6.5 Period of confidentiality

- 6.5.1 The obligations under this clause 6 continue, notwithstanding the expiry or termination of this Deed:
 - (a) in relation to an item of information described in Schedule 1 – for the period set out in Schedule 1 in respect of that item;
 - (b) in relation to any item of information referred to in clause 6.4 – for the period agreed by the parties in writing in respect of that item; and
 - (c) in relation to any item of information that is protected information as defined in section 23(1) of the *Social Security Act 1991* (Cth), under Division 2 of Part 6 of *A New Tax System (Family Assistance) (Administration) Act 1999* (Cth), under the *Social Security (Administration) Act 1999* (Cth), under sections 16 and 16AA of the *Child Support (Registration and Collection) Act 1988* (Cth), under sections 150 and 150AA of the *Child Support (Assessment) Act 1989* (Cth), or other Commonwealth legislation – for as long as required or provided for by the legislation.

6.6 No reduction in privacy obligations

- 6.6.1 This clause 6 does not detract from any of the Supplier's obligations under the *Privacy Act 1988* (Cth), or under clause 7 of Schedule 4, in relation to the protection of Personal Information.

7 DISCLOSURE BY SUPPLIER

7.1 Disclosure by Supplier

- 7.1.1 The Supplier warrants that, as at the date of this Deed and having made all reasonable inquiries (including of its Personnel), it is not aware of any:
- (a) matter relating to the commercial, financial or legal capacity or status of the Supplier that has not been disclosed to the Department and may affect the ability of the Supplier to perform the Services;
 - (b) litigation, proceedings, judicial or administrative enquiry, investigation, claim or allegation, actual or threatened, and whether admitted or contested, by another person or body (including regulatory bodies such as the Australian Securities and Investments Commission, the Australian Competition and Consumer Commission, the Australian Stock Exchange or equivalent bodies), against or in any way involving the Supplier or any settlement in respect of any such matter;
 - (c) proven or alleged breach or default under any law, regulation, agreement, order or award binding on the Supplier; or
 - (d) criminal or other act or any other behaviour, conduct or activity of the Supplier which may:
 - (i) materially and adversely affect the Supplier's credit worthiness, integrity, character or reputation; or
 - (ii) attract or have attracted negative publicity or attention or generate public or media criticism either inside or outside of Australia,

and which was not disclosed to the Department prior to execution of this Deed.

- 7.1.2 The Supplier acknowledges that the Commonwealth in entering into this Deed is relying on the information or representations provided by the Supplier in the proposal and quotation or tender referred to in paragraph F of the Context section of this Deed.

8 CONFLICT OF INTEREST

8.1 Conflict of Interest

- 8.1.1 The Supplier warrants that, to the best of its knowledge and having made diligent enquiries, at the Commencement Date no Conflict exists or is likely to arise in the performance of the Services.
- 8.1.2 If, during the Term of this Deed (including in relation to a proposed Official Order), a Conflict arises or appears likely to arise, the Supplier agrees:
- (a) to notify the Customer immediately;
 - (b) to make full disclosure of all relevant information relating to the Conflict;

- (c) to propose steps to take for managing, resolving or otherwise dealing with the Conflict; and
 - (d) to take any steps the Customer reasonably requires, which may include those proposed by the Supplier pursuant to clause 8.1.2(c), to resolve or otherwise deal with the Conflict.
- 8.1.3 The Supplier must not, and must ensure that its Personnel do not, engage in any activity or obtain any interest during the course of this Deed that is likely to cause a Conflict, or restrict the Supplier in providing, the Services to the Customer fairly and independently.
- 8.1.4 If the Supplier fails to notify the Customer of a Conflict under this clause 8, or is unable or unwilling to resolve or deal with the Conflict as required, the Department may terminate this Deed pursuant to clause 11.2.

9 INSURANCE

9.1 Insurance

9.1.1 The Supplier must:

- (a) effect and maintain or cause to be effected and maintained the insurances specified in Item 3 of Schedule 1;
 - (b) comply with all requirements for insurance specified in Item 3 of Schedule 1; and
 - (c) on request by the Department or a Customer, provide a certificate of currency issued by the insurer, which demonstrates to the Customer's reasonable satisfaction that the Supplier holds the insurances as required by the Deed or any Contract.
- 9.1.2 For the avoidance of doubt, nothing in this clause 9 or Item 3 of Schedule 1 relieves the Supplier of its obligations under any other provisions of this Deed.

10 INDEMNITY

10.1 Indemnity

10.1.1 The Supplier indemnifies the Customer, its officers, employees and agents (those indemnified) from and against any:

- (a) loss or liability incurred by those indemnified;
- (b) loss of or damage to the property of those indemnified; or
- (c) loss or expense incurred by those indemnified in dealing with any claim against them, including legal costs and expenses on a solicitor / own client basis and the cost of time spent, resources used, or disbursements paid by those indemnified,

arising from:

- (d) any act or omission by the Supplier, its Personnel or Subcontractors, in connection with this Deed, where there was fault on the part of the person whose conduct gave rise to that liability, loss, damage, or expense; or
- (e) any breach by the Supplier or its Personnel, of obligations or warranties under this Deed.

- 10.1.2 The Supplier agrees that the Customer will be taken to be acting as agent or trustee for or on behalf of those indemnified from time to time.
- 10.1.3 The Supplier's liability to indemnify the Customer under this clause 10 will be reduced proportionately to the extent that any fault on the part of those indemnified contributed to the relevant loss, damage, expense or liability.
- 10.1.4 The right of the Customer to be indemnified under this clause 10 is in addition to, and not exclusive of, any other right, power or remedy provided by law, but the Commonwealth is not entitled to be compensated in excess of the amount of the relevant cost, loss, damage, expense or liability.
- 10.1.5 This clause 10 survives the expiration or earlier termination of this Deed.

11 TERMINATION

11.1 Termination for convenience

- 11.1.1 Without limiting any other rights or remedies that the Customer may have against the Supplier arising out of or in connection with this Deed or any Contract, the Department may, at any time by notice and at its sole discretion, terminate this Deed in whole or reduce the scope of this Deed without prejudice to the rights, liabilities, or obligations of either party accruing prior to the date of termination.
- 11.1.2 For the avoidance of doubt, termination or reduction of the scope of this Deed in accordance with clause 11.1.1 will not automatically terminate or reduce the scope of any Contract which was created in accordance with the Deed before the effective date of termination.
- 11.1.3 The Supplier acknowledges and agrees that because of the nature of the Deed as a standing offer to which clause 3.5 applies:
- (a) the Supplier will not unavoidably incur any costs as a result of the termination or reduction of the Deed; and
 - (b) as a result, no compensation or any other costs are payable by the Department or any Agency in relation to the termination of the Deed under this clause 11.1.

11.2 Termination for breach

- 11.2.1 Without limiting any other rights or remedies the Customer may have against the Supplier arising out of or in connection with this Deed or any Contract, the Department may immediately terminate this Deed by giving written notice to the Supplier of the termination, if:
- (a) the Department is satisfied that, prior to entering into this Deed, the Supplier engaged in misleading or deceptive conduct or omitted to provide information to the Department that:
 - (i) is material to the performance of this Deed; or
 - (ii) may have affected:
 - (A) the original decision to enter into this Deed;
 - (B) the terms and conditions of this Deed; or
 - (C) action taken by a Customer under this Deed, where that action was taken in reliance on the Supplier's representations, warranties or information provided;

- (b) the Supplier fails to fulfil, or is in breach of any of its obligations under this Deed or a Contract, and does not rectify the omission or breach within twenty (20) Business Days (or such other timeframe the Department determines is reasonable in the circumstances) of receiving a notice in writing from the Department requiring the Supplier to do so;
- (c) the Supplier is unable to pay all its debts as and when they become due;
- (d) the Supplier is an incorporated body and:
 - (i) it fails to comply with a statutory demand within the meaning of section 459F of the *Corporations Act 2001* (Cth);
 - (ii) proceedings are initiated to obtain an order for its winding up or any shareholder, member or director convenes a meeting to consider a resolution for its winding up;
 - (iii) it comes under one of the forms of external administration referred to in Chapter 5 of the *Corporations Act 2001* (Cth) or equivalent provisions in other legislation, or an order has been made to place it under external administration; or
 - (iv) notice is served on it or proceedings are taken to cancel its incorporation or registration or to dissolve it as a legal entity;
- (e) the Supplier is an individual and he or she becomes bankrupt or enters into a scheme of arrangement with creditors;
- (f) the Supplier ceases to carry on a business relevant to the performance of the Services; or
- (g) another provision of this Deed permits the Department to terminate.

11.2.2 For the avoidance of doubt, termination of this Deed in accordance with clause 11.2.1 will not automatically terminate any Contract which was created in accordance with the Deed before the effective date of termination.

11.3 After termination or reduction

11.3.1 On receipt of a notice of termination or reduction issued under this clause 11, the Supplier must:

- (a) for any current Contract, notify the Customer in writing of the termination or reduction in scope of the Deed, within 48 hours of receipt of the notice;
- (b) not provide any further responses to any request for quotation from any Customer (or, in the case of a notice of reduction, not provide any further responses in relation to Services that have been removed from the scope of the Deed);
- (c) not sign any further Official Orders or take any other action to create a Contract (or, in the case of a notice of reduction, not do so in respect of any Contract for Services that have been removed from the scope of the Deed);
- (d) take all available steps to minimise loss resulting from that termination or reduction and to protect Commonwealth Material and Contract Material; and
- (e) continue work on any current Contract (unless or until a notice to the contrary is received from the Customer under the Contract).

12 GENERAL PROVISIONS

12.1 Waiver

- 12.1.1 A failure or delay by a party to exercise any right or remedy it holds under this Deed or at law does not operate as a waiver of the right, unless such failure or delay is expressed in writing by the party to be a waiver of the right or remedy.
- 12.1.2 A single or partial exercise by a party of any right or remedy it holds under this Deed or at law does not prevent the party from exercising the right again or to the extent that it has not fully exercised the right.

12.2 Assignment and novation

- 12.2.1 The Supplier must consult the Department before entering negotiations with any other person regarding any arrangement that might require novation of this Deed. For the avoidance of doubt, the Department is under no obligation to consent to any novation of this Deed.
- 12.2.2 The Supplier cannot assign its obligations and agrees not to assign its rights under this Deed without the Department's prior written approval.

12.3 Notices

- 12.3.1 A party giving notice under this Deed must do so in writing, and that notice must be:
- (a) if given by the Supplier to the Department – addressed to the person specified in Schedule 1, or as otherwise notified by the Department; or
 - (b) if given by the Department to the Supplier – addressed to the person specified in Schedule 1, or as otherwise notified by the Supplier.
- 12.3.2 A notice is to be:
- (a) signed by the person giving the notice and delivered by hand; or
 - (b) signed by the person giving the notice and sent by pre-paid post; or
 - (c) transmitted electronically by the person giving the notice by electronic mail or facsimile transmission.
- 12.3.3 A notice is deemed to be effected:
- (a) if delivered by hand – upon delivery to the relevant address;
 - (b) if sent by pre-paid post – on the sixth Business Day after it is posted;
 - (c) if transmitted electronically – upon actual receipt by the addressee.

12.4 Governing law and jurisdiction

- 12.4.1 This Deed is to be construed in accordance with, and any matter related to it is to be governed by, the law of the Australian Capital Territory, and the parties submit to the jurisdiction of the courts of the Australian Capital Territory.

12.5 Survival

- 12.5.1 The following clauses of this Deed survive termination and expiry of this Deed and any Contract:
- (a) clause 4 (Fees);
 - (b) clause 6 (Confidential Information);
 - (c) clause 7 (Disclosure by Supplier);
 - (d) clause 9 (Insurance);

- (e) clause 10 (Indemnity);
- (f) any clauses that are expressed to or which by nature survive termination or expiry; and
- (g) all clauses that give effect to this clause 12.5 including definitions and interpretation.

12.6 Entire Agreement

- 12.6.1 This Deed and any Contract constitutes the entire agreement between the parties in connection with its subject matter and supersedes all previous agreements or understandings between the parties in connection with its subject matter.

Executed as a Deed

SIGNED, SEALED AND DELIVERED for and on behalf of THE COMMONWEALTH OF AUSTRALIA as represented by the Department of Social Services. by:

s47F - personal privacy

BRANCH MANAGER
[Insert Signatory's work title]

On:

29 MARCH 2017
[Insert date]

In the presence of:

s47F - personal privacy
[Insert name of Witness]

s47F - personal privacy

EXECUTIVE ASSISTANT
[Insert occupation Witness]

SIGNED, SEALED AND DELIVERED for and on behalf of ACN 613 066 541 PTY LTD trading as BEHAVIOURAL INSIGHTS (AUSTRALIA), ABN 16 813 066 541 acting by the following persons or, if the seal is affixed, witnessed by the following persons in accordance with s 127 of the Corporations Act 2001 (Cth):

s47F - personal privacy

On:

22/03/17
[Insert date]

And:

s47F - personal privacy
[Insert name of Director /
Company Secretary]

s47F - personal privacy

[Signature of Director / Company Secretary]

On:

22/03/17
[Insert date]

SCHEDULE 1 COMPLETION DATE, CONFIDENTIAL INFORMATION, INSURANCE AND ADDRESSES FOR NOTICES

1 COMPLETION DATE

The Completion Date for this Deed is 31 December 2019.

2 CONFIDENTIAL INFORMATION

Customer Confidential Information:

| DESCRIPTION | PERIOD OF CONFIDENTIALITY |
|--------------------|----------------------------------|
| N/A | N/A |

Supplier Confidential Information:

| DESCRIPTION | PERIOD OF CONFIDENTIALITY |
|--------------------|----------------------------------|
| N/A | N/A |

3 INSURANCE

- 3.1 The Supplier must effect and maintain, or cause to be effected and maintained, the following minimum levels of insurance:
- (a) professional indemnity insurance for an amount of not less than ten (10) million dollars each claim and in the aggregate for all claims with one right of reinstatement;
 - (b) public liability insurance for an amount of not less than ten (10) million dollars each and every occurrence;
 - (c) workers' compensation as required by law and, in jurisdictions which permit common law workers' compensation claims outside the statutory workers' compensation scheme, top-up workers' compensation insurance for fifty (50) million dollars per claim; and
 - (d) the additional insurances specified in an Official Order, if any.
- 3.2 The Supplier must maintain the insurances specified in this Item 3 for the later of:
- (a) so long as any obligations remain in connection with this Deed or a Contract; and
 - (b) seven (7) years after the Completion Date or Contract Completion Date (whichever is the later),
- unless Item P [Insurance] of the Official Order specifies that a particular insurance must be maintained for a different time, in which case the Supplier must comply with the requirement in Item P [Insurance] for that insurance.
- 3.3 The Supplier must, in relation to its professional indemnity insurance:
- (a) promptly notify the Customer if:
 - (i) the limit of the insurance policy is materially depleted during the Term of the Deed, by claims unrelated to a Contract;

- (ii) any material claims are made under the insurance policy; and
 - (iii) any claims are made under the insurance policy which could involve the Customer; and
 - (b) If directed to do so by the Customer, exercise the right of reinstatement, at its own cost.
- 3.4 If any insurance policy referred to in this Item 3 insures multiple insureds, that policy must provide that the acts, omissions or non-disclosures of one insured will not be imputed to any other insured for the purposes of determining rights to coverage. In the case of public liability insurance, the insurance policy must also provide that the insurer will insure the liability of one insured to another.

4 ADDRESSES FOR NOTICES

The Department's address for notices is:

Name or position of person Director Research Strategies
Postal Address GPO Box 9820 Canberra ACT 2601
Physical Address Cnr Athllon Drive & Soward Way Greenway ACT 2900
Email read@dss.gov.au

The Supplier's address for notices is:

Name or position of person s47F - personal privacy
Postal Address Macquarie House, Level 13, 167 Macquarie St,
Sydney NSW 2000
Physical Address As above
Email s47F - personal privacy@bi.team

A party may change their address for notices by notifying the other party in writing of the changed details.

SCHEDULE 2 – SERVICES

[Note: The Supplier must only provide Services to a Customer in respect of which it was selected as a Panellist to provide under the Deed, failure to do so may result in the Department terminating this Deed in accordance with clause 3.1.4 of this Deed.]

The Customer may require the Supplier to undertake the following Services:

Part A - Social Policy Research Services Category

- Design and/or review research proposals.
- Conduct quantitative research.
- Conduct qualitative research.
- Conduct applied, participatory and collaborative research.
- Manage research projects within time constraints.
- Provide technical advice, support or guidance on social policy research and methodology.
- Submit and disseminate research findings and analysis to the Department and other Commonwealth entities through reports and other forms of presentation.
- Subject to the conditions for use of Contract Material, publish and present research findings to a wide range of audiences.
- Provide and supervise research conducted by postgraduate students or junior staff of a Service Provider.
- Related services

Related Service

Apply behavioural approaches to research and literature reviews to identify solutions for specific issues. Support government entities to interpret academic research results from various disciplines and assist in the formulation of policy problems using a behavioural lens.

SPECIFIED PERSONNEL

| Name | Position |
|-------------------------|---|
| s47F - personal privacy | Managing Director, BIT Australia and Asia-Pacific |
| | Chief Scientist (UK) |
| | Principal Advisor |
| | Senior Advisor |
| | Senior Advisor |
| | Advisor |
| | Advisor |
| | Associate Advisor |
| | Associate Advisor |
| | Associate Advisor |

Part B - Evaluation and Programme Review Services Category

- Design and/or review evaluation frameworks and plans including programme logics and performance indicators and measures.
- Provide technical advice on programme and/or policy evaluation and/or reviews.
- Conduct formative evaluations= e.g. needs assessment, evaluability assessment, structured conceptualisation, implementation and process evaluations.
- Conduct summative evaluations – e.g. impact/outcomes evaluations, cost-effectiveness/cost-benefit analysis, meta-analysis.
- Manage evaluation projects within time and resource constraints.
- Report and/or present evaluation findings to the Department and other Commonwealth entities.
- Subject to conditions for use of Contract Material, publish and present evaluation outcomes to a wide range of audiences.
- Design and implement Randomised Controlled Trials (RCTs) to measure policy and programme impact.
- Related services

Related service

Apply behavioural approaches to evaluation and programme reviews to identify solutions for specific issues. Support government entities to interpret academic evaluation and programme reviews results from various disciplines and use these to assist in the formulation of policy problems using a behavioural lens.

SPECIFIED PERSONNEL

| Name | Position |
|-------------------------|---|
| s47F - personal privacy | Managing Director, BIT Australia and Asia-Pacific |
| | Chief Scientist (UK) |
| | Principal Advisor |
| | Senior Advisor |
| | Senior Advisor |
| | Advisor |
| | Advisor |
| | Associate Advisor |
| | Associate Advisor |
| | Associate Advisor |

Part C - Investment in Data Services Category

- Review or design survey instruments and procedures.
- Undertake analysis and interpretation of data.

- Report and/or present outcomes of data analysis to Government in forms that clearly present trends and patterns.
- Manage, process, analyse, report and visualise real-time data streams and/or meta data and/or big data.
- Related services

Related service

Managing, analysing and interpreting data and data systems to identify causal relationships.

SPECIFIED PERSONNEL

| Name | Position |
|-------------------------|---|
| s47F - personal privacy | Managing Director, BIT Australia and Asia-Pacific |
| | Chief Scientist (UK) |
| | Principal Advisor |
| | Senior Advisor |
| | Senior Advisor |
| | Advisor |
| | Advisor |
| | Associate Advisor |
| | Associate Advisor |
| | Associate Advisor |

Part D - Professional Development Services Category

- Developing training resources and/or delivering training on research design (including project proposal development) and research methodology (quantitative and/or qualitative with primary emphasis on statistical techniques).
- Developing training resources and/or delivering training on evaluation design (including programme logic) and evaluation methodology with primary emphasis on formative and summative evaluation.
- Developing training resources and/or delivering training on procurement, conduction and management of research and/or evaluation and/or data services.

SPECIFIED PERSONNEL

| Name | Position |
|-------------------------|---|
| s47F - personal privacy | Managing Director, BIT Australia and Asia-Pacific |
| | Chief Scientist (UK) |
| | Principal Advisor |
| | Senior Advisor |

| | |
|-------------------------|-------------------|
| s47F - personal privacy | Senior Advisor |
| | Advisor |
| | Advisor |
| | Associate Advisor |
| | Associate Advisor |
| | Associate Advisor |

SCHEDULE 3 – FEES

Fees

The fees to be paid by the Customer to the Supplier for the Services specified in a Contract will be calculated as set out below, and will be payable subject to the terms of the Contract (including any specified Milestones).

Service Categories: Social Policy Research Services Category, Evaluation and Programme Review Services Category, Investment in Data Services Category and Professional Development Services Category

STAFFING COSTS

| Personnel (by position) | Summary of skills for each level of personnel | Fees - hourly (GST exclusive) | Fees – daily rate 7.5 hours (GST exclusive) * | GST compon ent on daily rate | Cost - daily rate (GST inclusive) |
|-------------------------------|--|--|--|--|--|
| Associate Advisor | <p>Our Associate Advisors have an excellent academic record in economics, psychology, social sciences, statistics or a related disciplines. They will have strong conceptual, analytical skills and communication skills, with the ability to communicate complex problems clearly. They will also have excellent organisational skills; strong IT skills and excellent interpersonal skills. In many cases our associate advisors will have the ability to conduct inferential statistical analyses, including but not limited to linear and logistic regressions using statistical software packages (e.g. STATA, SPSS, R or SAS).</p> <p>We support them to develop specialist knowledge in various policy areas; staying up to date with the latest evidence from behavioural science and writing concise literature reviews; developing and suggesting workable, testable policy solutions; writing policy notes for senior government stakeholders and other clients; designing and implementing</p> | \$280 | \$2,100 | \$210 | \$2,310 |

| Personnel (by position) | Summary of skills for each level of personnel | Fees - hourly (GST exclusive) | Fees - daily rate 7.5 hours (GST exclusive) * | GST compon ent on daily rate | Cost - daily rate (GST inclusive) |
|-------------------------------|---|--|--|--|--|
| | RCTs and other research projects; and engaging with clients and attending client meetings in order to scope and progress work. | | | | |
| Advisor | <p>Advisors have all been assessed as having the skills listed for Associate Advisors. In addition, they will have also have at least two years' experience in a policy relevant field (e.g. government, academia, industry or for a consulting firm); a good understanding of the behavioural science literature and how it can be applied to help solve complex policy problems; a clear understanding of the strengths and weaknesses of different evaluation methodologies, including those that you are not an expert in; the ability to support the design and conduct of rigorous evaluations, including but not limited to randomised controlled trials; and the ability to conduct inferential statistical analyses, including but not limited to linear and logistic regressions using statistical software packages (e.g. STATA, SPSS, R or SAS).</p> <p>Most of our Advisors have a Master's degree in a relevant subject (economics, psychology or similar) and at least two to four years of relevant experience.</p> | \$345 | \$2,600 | \$260 | \$2,860 |

| Personnel (by position) | Summary of skills for each level of personnel | Fees - hourly (GST exclusive) | Fees -- daily rate 7.5 hours (GST exclusive) * | GST compon ent on daily rate | Cost - daily rate (GST Inclusive) |
|-------------------------------|---|--|---|--|--|
| Senior Advisor | <p>Senior Advisors have all been assessed as having the skills listed for Advisors and Associate Advisors. In addition, they will have: an excellent level of ability in Interacting regularly with senior government partners by delivering presentations, attending senior meetings, and facilitating workshops. They will be able to come up with new ideas for public policy by understanding the policy context; critically assessing academic research; and collaborating with partners, service users and team members. They will also have demonstrated ability in looking for opportunities for new projects; either when spotting opportunities to improve a current project or in developing a new one.</p> <p>They will have at least four years' experience in government, academia or consulting and will have experience managing at least one other person within the team.</p> | \$450 | \$3,400 | \$340 | \$3,740 |
| Principal Advisor | Principal Advisors have all been assessed as having the skills listed for Senior Advisors, Advisors and Associates. However, they are members of the BIT Senior Management Team and have many years' experience in the development, execution and evaluation of innovative public policy. They will have honed skills in the quality assurance and betterment of our work. They will have developed the | \$545 | \$4,100 | \$410 | \$4,510 |

| Personnel (by position) | Summary of skills for each level of personnel | Fees - hourly (GST exclusive) | Fees – daily rate 7.5 hours (GST exclusive) * | GST compon ent on daily rate | Cost - daily rate (GST inclusive) |
|-------------------------------|---|--|--|--|--|
| | <p>ability to identify gaps in projects and then find ways to fix them. They will have developed a keen sense of how public services could be improved.</p> <p>Our Principal Advisor in the Sydney office and most of our Principal Advisors in the global team have a strong statistical and mathematical skills, but in some cases they will rely on others in the team to conduct these analyses.</p> | | | | |
| Director (UK)** | <p>Directors have the same skills outlined for all of the positions above, but will oversee a much larger part of the organisation. They will either lead an office or oversee a cluster of work. They will have 6 years' experience in the Behavioural Insights Team and have developed a strong skillset in working with Government at the highest level. Their skills are in the oversight of projects, in building and managing teams and designing large work programmes for our partners.</p> | \$590 | \$4,450 | \$445 | \$4,895 |
| Chief Scientist (UK) | <p>s47F - personal privacy</p> | \$590 | \$4,450 | \$445 | \$4,895 |

| Personnel (by position) | Summary of skills for each level of personnel | Fees - hourly (GST exclusive) | Fees – daily rate 7.5 hours (GST exclusive) * | GST compon ent on daily rate | Cost - daily rate (GST inclusive) |
|--|--|--|--|--|--|
| | s47F - personal privacy | | | | |
| Managing Director, Australia and Asia- Pacific | s47F - personal privacy | \$640 | \$4,800 | \$480 | \$5,280 |
| Managing Director (UK)** | s47F - personal privacy | \$785 | \$5,900 | \$590 | \$6,490 |

| Personnel (by position) | Summary of skills for each level of personnel | Fees - hourly (GST exclusive) | Fees – daily rate 7.5 hours (GST exclusive) * | GST compon ent on daily rate | Cost - daily rate (GST inclusive) |
|-------------------------------|--|--|--|--|--|
| | s47F - personal privacy | | | | |
| Chief Executive (UK)** | | \$1,080 | \$8,100 | \$810 | \$8,910 |

| Personnel (by position) | Summary of skills for each level of personnel | Fees - hourly (GST exclusive) | Fees – daily rate 7.5 hours (GST exclusive) * | GST compon ent on daily rate | Cost - daily rate (GST inclusive) |
|-------------------------------|--|--|--|--|--|
| | s47F - personal privacy | | | | |

* Fees specified are inclusive of on-costs (incorporating workers' compensation, superannuation and leave entitlements).

** The Supplier has included these rates in case the Supplier feels the project would benefit from the expertise of the wider company, however the Supplier has not included these as Specified Personnel as their input would depend on the project and would be agreed on a case-by-case with the Customer.

PRICING ASSUMPTIONS AND DISCOUNTS

The table above details the standard government rates for Supplier's personnel. These rates apply regardless of which services are being performed.

As a social purpose company, the Supplier prioritises working with partners and on projects where there is strong potential to deliver real social impact and lasting change. In recognition of this, the Supplier offers discounted daily rates, for example a 20 per cent discount for call-off support and individual projects. If the Supplier was to form a major strategic partnership with a department (with an agreed minimum number of days support per year), the Supplier would consider increasing this discount further. Discounted rates would be applied on a case-by-case basis based on the potential for social impact.

The Supplier also explores other flexible ways to manage project costs, such as providing days of support at no charge. These decisions are also made on a case-by-case basis based on the potential for social impact and an understanding of any budgetary constraints.

Consumer Price Index (CPI)

If the initial Term of a Deed of Standing Offer is extended in accordance with clause 2.1.2 of the Deed, the fees set out in this Schedule 3 will be adjusted to reflect any increase in the Consumer Price Index, CPI (All Groups) weighted average of eight capital cities, rates published by the Australian Bureau of Statistics (CPI). These adjustments will take effect from:

- a. 1 January 2020, if the Department exercises a first option so that the Deed will be in force for any period between 1 January 2020 to 31 December 2020; and
- b. 1 January 2021, if the Department exercises a second option so that the Deed will be in force for any period between 1 January 2021 to 31 December 2021.

The Department will calculate each adjustment using any increase according to the CPI over the 12 months before the date of the adjustment, but using the CPI figure published for the September quarter immediately prior to the relevant adjustment date in its calculation (because the CPI published for the December quarter will not have been published in time to allow for an orderly calculation to be undertaken). The Department will notify Suppliers of any adjustment in fees, which will apply to all Contracts created after the adjustment date during the following 12 months.

Travel Costs

Travel will be reimbursed at economy class and travel expenses will be reimbursed in accordance the allowance payable to a Commonwealth public servant in the Customer at the non-SES level.

All travel must be approved by the Customer's Contact Officer specified in Item Q of the Official Order, prior to it being booked or undertaken. The Customer will not be liable to reimburse the Supplier for any travel expenses unless the Customer has agreed all proposed travel and accommodation arrangements in writing prior to those expenses being incurred.

Claims for reimbursable travel expenses will only be paid to the Supplier, and will not be paid directly to any Personnel or Subcontractor.

No fees will be paid or costs reimbursed to the Supplier under this Deed or any Contract except as expressly provided for in the relevant Official Order.

Expenses and Costs

The Customer will reimburse the Supplier for any approved additional expenses and costs, if specified in Item E of the Official Order. Approval must be obtained prior to seeking reimbursement, and the Supplier must provide substantiating information (ie. receipts) for all claims for payment.

Bank account details

Payment of fees will be effected by electronic funds transfer (EFT) to the following bank account of the Supplier:

s47F - personal privacy

SCHEDULE 4 – TERMS AND CONDITIONS OF CONTRACTS

Operative Provisions

The following terms and conditions apply when a Contract is created by the delivery of an Official Order to the Supplier by the Customer and its execution by the Supplier:

1 INTERPRETATION

1.1 Definitions

In this Contract, unless the context otherwise indicates:

Additional Customer Confidential Information means information that is designated as being Additional Customer Confidential Information in an Official Order;

Additional Supplier Confidential Information means information that is designated as being Additional Supplier Confidential Information in an Official Order;

Applicable WHS law means any applicable work health and safety law, including any corresponding WHS law (as defined in section 4 of the WHS Act and Regulation 6A of the *Work Health and Safety Regulations 2011*);

Business Continuity Plan means a plan referred to in clause 2.10 of this Schedule 4;

Business Day means a weekday other than a public holiday in the Australian Capital Territory;

Commonwealth Material means any Material:

- (a) provided by the Customer to the Supplier for the purposes of this Contract; or
- (b) copied or derived at any time from the Material referred to in paragraph 1.1(a);

Conflict means a conflict of interest, risk of a conflict of interest, or an apparent conflict of interest arising through the Supplier (including its Personnel) or the Supplier's immediate family, relatives, business partners, associates or friends, engaging in any activity or obtaining any interest that is likely to or may appear to impair, interfere with or restrict the Supplier in providing the Services to the Customer diligently, fairly and independently;

Contact Officer means a person specified (by name or position) in Item Q [Contact Officers] of the Official Order, or any substitute notified by a party from time to time;

Contract means this agreement formed in accordance with clause 3 of the Deed, including any attachment(s);

Contract Commencement Date means the date specified as such in Item C [Contract Commencement and Timeframe] of the Official Order;

Contract Completion Date means the date specified as such in Item C [Contract Commencement and Timeframe] of the Official Order, being the date by which all Services required under the Official Order are to be completed;

Contract Material means any Material:

- (a) created for the purposes of this Contract;

- (b) provided or required to be provided to the Customer as part of the Services; or
- (c) copied or derived at any time from the Material referred to in paragraphs 1.1(a) or 1.1(b)

but not including any internal working papers, or tools or methodologies used by the Supplier, where such Material is not provided, or required to be provided, to the Customer as part of the Services;

Contract Term has the meaning given to it in clause 2.1.1 of this Schedule 4.

Critical Services means Services identified in Item A [Services and Subcontractors] of the Official Order as being critical services, if any;

Customer means the Agency specified as such in the Official Order, or any other department or agency of the Commonwealth which is from time to time responsible for administering the Contract;

Deed means the deed of standing offer for services in relation to social policy research, evaluation, data investment and professional development, between the Supplier and the Department, under which Contracts may be created;

Existing Material means any Material in existence prior to the Contract Commencement Date, which is:

- (a) incorporated in;
- (b) supplied with, or as part of; or
- (c) required to be supplied with, or as part of,

the Contract Material, and includes Material identified as Existing Material in Item H [Existing Material] of the Official Order (if any) and Material notified to the Customer under clause 4.4 of this Schedule 4;

GST has the same meaning as it has in section 195-1 of the *A New Tax System (Goods and Services Tax) Act 1999* (Cth);

GST Act means the *A New Tax System (Goods and Services Tax) Act 1999* (Cth);

High Value Contract means a Contract where:

- (a) the Services will be delivered in Australia;
- (b) the value of the Services is \$7.5 million (GST inclusive) or more; and
- (c) more than half the value of the Contract is being spent in one or more of the following industry sectors:
 - (A) building, construction and maintenance services;
 - (B) transportation, storage and mail services;
 - (C) education and training services;
 - (D) industrial cleaning services;
 - (E) farming and fishing and forestry and wildlife contracting services;
 - (F) editorial and design and graphic and fine art services;
 - (G) travel and food and lodging and entertainment services; or
 - (H) politics and civic affairs services;

Information Security Manual or ISM means the Information Security Manual produced by the Australian Signals Directorate and available at <http://www.asd.gov.au/infosec/ism/> (or any replacement manual notified by the Department);

Instalment means an instalment of fees payable under clause 3 of this Schedule 4 in relation to part of the Services;

Intellectual Property includes:

- (a) all copyright (including rights in relation to phonograms and broadcasts);
- (b) all rights in relation to inventions (including patent rights), plant varieties, registered and unregistered trademarks (including service marks), registered designs and circuit layouts; and
- (c) all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields;

Interest means interest calculated at an interest rate equal to the general interest charge rate for a day pursuant to section 8AAD of the *Taxation Administration Act 1953* (Cth), calculated on a simple basis;

Material includes documents, equipment, software (including source code and object code), goods, information and data stored by any means, including all copies and extracts of the same;

Moral Rights mean the following rights of an author of copyright Material:

- (a) the right of attribution of authorship;
- (b) the right of integrity of authorship; and
- (c) the right not to have authorship falsely attributed,
- (d) as defined in the *Copyright Act 1968* (Cth);

Non-critical Services means Services identified in Item A [Services and Subcontractors] of the Official Order as being non-critical services, if any;

Official Order means an Order for Services submitted by the Customer to the Supplier in accordance with clause 3.3 of the Deed and substantially in the form specified at Schedule 5 of the Deed and which forms a Contract;

Personal Information has the same meaning as it has in section 6 of the *Privacy Act 1988* (Cth);

Personnel means a party's officers, employees, agents or professional advisers engaged in, or in relation to, the performance or management of this Contract;

Protective Security Policy Framework or PSPF means the Australian Government's Protective Security Policy Framework available at <https://www.protectivesecurity.gov.au> (or any replacement framework notified by the Department);

Security Classified Information means information which contains Personal Information or is classified by the Customer as 'Top Secret', 'Secret', 'Restricted', 'Protected', 'In-Confidence' or marked with a Dissemination Limiting Marker;

Services means the services described in Item A [Services and Subcontractors] of the Official Order and includes the provision to the Customer of the Material specified in Item B [Contract Material] of the Official Order;

Specified Personnel means the Personnel (including Subcontractors) if any, specified at Item O [Specified Personnel] of an Official Order as required to perform all or part of the work constituting the Services for that Official Order;

Subcontractor means a subcontractor engaged by the Supplier in accordance with clause 2.7 of this Schedule 4;

Supplier includes (where the context permits) the Personnel, volunteers and bailees of the Supplier;

Third Party Material means any Material created after the Contract Commencement Date, which is:

- (a) incorporated in;
- (b) supplied with, or as part of; or
- (c) required to be supplied with, or as part of,

the Contract Material, or which is otherwise supplied to the Customer in connection with a Contract, and for which a Third Party owns the Intellectual Property:

Third Party means an entity other than the Customer, the Supplier, a Subcontractor of the Supplier, or any related body corporate (as that term is defined in the *Corporations Act 2001* (Cth)) of the Supplier; and

WHS Act means the *Work Health and Safety Act 2011* (Cth).

1.2 Interpretation

1.2.1 In this Contract, unless the contrary intention appears:

- (a) words importing a gender include the other gender;
- (b) words in the singular include the plural and vice versa;
- (c) clause headings or words in bold format are for convenient reference only and have no effect in limiting or extending the language of provisions;
- (d) words importing a person include a partnership and a body whether corporate or otherwise;
- (e) a reference to dollars is a reference to Australian Dollars;
- (f) unless stated otherwise, a reference to legislation is to legislation of the Commonwealth, and includes any statutory modification, substitution or re-enactment of that legislation or legislative provision;
- (g) if any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;
- (h) a reference to an Item is a reference to an item in the Official Order, unless otherwise stated;
- (i) the Official Order and any attachments form part of the Contract.
- (j) a reference to writing is a reference to any representation of words, figures or symbols, whether or not in a visible form.

1.2.2 For each Contract, in the event of any conflict or inconsistency between any part of:

- (a) the terms and conditions contained in the clauses of the Contract (as set out in this Schedule 4);
- (b) the terms and conditions in the Official Order, if any,

- (c) the annexures to the Official Order, if any; or
- (d) documents incorporated by reference to the Official Order, if any;
- (e) then the material mentioned in any one of paragraphs (a) to (d) has precedence over material mentioned in a subsequent paragraph, to the extent of any conflict or inconsistency.

1.3 Guidance on construction of this Contract

- 1.3.1 This Contract records the entire agreement between the parties in relation to its subject matter, and supersedes any prior negotiations and communications whether written or oral.
- 1.3.2 A variation of this Contract is binding only if agreed in writing and signed by authorised representatives of both parties.
- 1.3.3 Any reading down or severance of a particular provision does not affect the other provisions of this Contract.
- 1.3.4 A failure or delay by a party to exercise any right or remedy it holds under this Contract or at law does not operate as a waiver of the right, unless such failure or delay is expressed in writing by the party to be a waiver of the right or remedy.
- 1.3.5 A single or partial exercise by a party of any right or remedy it holds under this Contract or at law does not prevent the party from exercising the right again, or to the extent that it has not fully exercised the right.
- 1.3.6 This Contract is to be construed in accordance with, and any matter related to it is to be governed by, the law of the Australian Capital Territory, and the parties submit to the jurisdiction of the courts of the Australian Capital Territory.
- 1.3.7 A provision of this Contract will not be construed to the disadvantage of a party solely on the basis that it proposed that provision.

1.4 Negation of employment, partnership and agency

- 1.4.1 The Supplier is not, by virtue of this Contract or for any purpose, an officer, employee, partner or agent of the Commonwealth, nor does the Supplier have any power or authority to bind or represent the Commonwealth.
- 1.4.2 The Supplier agrees not to:
 - (a) misrepresent its relationship with the Commonwealth; or
 - (b) engage in any misleading or deceptive conduct in relation to the Services.

2 PROVISION OF SERVICES

2.1 Commencement

- 2.1.1 The terms of this Contract apply on and from the Contract Commencement Date and, unless terminated earlier, expire on the Contract Completion Date (Contract Term).

2.2 Obligations of the Supplier

- 2.2.1 The Supplier must:
 - (a) perform the Services as specified in Item A [Services and Subcontractors] of the Official Order;
 - (b) provide to the Customer the Material specified in Item B [Contract Material] of the Official Order;

- (c) perform the Services to a high standard and adopt relevant best practice, including any Customer, Commonwealth or industry standards and guidelines specified in Item N [Standards and Best Practice] of the Official Order;
- (d) comply with the timeframe for the performance of the Services specified in Item C [Contract Commencement and Timeframe] of the Official Order; and
- (e) submit invoices, and any required supporting documents, in the manner specified in Item F [Invoices] of the Official Order.

2.3 Liaison with the Customer's Contact Officer

- 2.3.1 The Supplier must liaise and comply with the directions of the Customer's Contact Officer, as reasonably requested from time to time.

2.4 Meetings

- 2.4.1 The Supplier must attend meetings with the direction of the Customer's Contract Officer, as reasonably requested from time to time.

2.5 Conduct at Customer premises

- 2.5.1 The Supplier must, when using the Customer's premises or facilities, comply with all reasonable directions and the Customer's procedures relating to workplace harassment, occupational health (including the Customer's smoke free work place policy), section 13 of the *Public Service Act 1999* (Cth), the *Work Health and Safety Act 2011* (Cth), the Customer's Codes of Conduct, safety and security, including the Customer's Internet access and usage guidelines in effect at those premises or in regard to those facilities, as notified by the Customer or as might reasonably be inferred from the use to which the premises are being put. These obligations are in addition to those detailed at clause 8 of this Schedule 4.

2.6 Specified Personnel

- 2.6.1 The Supplier must ensure that the Specified Personnel perform the Services, or part thereof, in accordance with this Contract.
- 2.6.2 If Specified Personnel are unable or unwilling to perform the Services, or part thereof provided under clause 2.6.1 of this Schedule 4, the Supplier must notify the Customer immediately.
- 2.6.3 The Customer may, at its absolute discretion, request the Supplier to remove Personnel (including Specified Personnel) from undertaking the Services or any part of the Services.
- 2.6.4 If clause 2.6.2 or clause 2.6.3 of this Schedule 4 applies, the Supplier must provide replacement Personnel acceptable to the Customer at no additional cost and within five (5) Business Days unless a longer period has been agreed with the Customer in writing.
- 2.6.5 If the Supplier is unable or unwilling to provide acceptable replacement Personnel within the timeframe specified at clause 2.6.4 of this Schedule 4, then in addition to any other right the Customer has under clause 17.2 of this Schedule 4 or at law, the Customer may terminate this Contract under clause 17.2 of this Schedule 4 immediately by giving notice in writing.

2.7 Subcontracting

- 2.7.1 The Supplier may only subcontract the performance of any obligations under this Contract to a Subcontractor:

- (a) listed in Item A [Services and Subcontractors] of the Official Order; or
 - (b) for whom the Customer has given its prior written approval;
- provided the Subcontractor is compliant with their obligations (if applicable) under the *Workplace Gender Equality Act 2012* (Cth).
- 2.7.2 In giving its approval for the engagement of a Subcontractor pursuant to clause 2.7.1(b) of this Schedule 4, the Customer may impose any terms and conditions it thinks fit.
- 2.7.3 The Supplier agrees not to enter into any subcontract with another party unless the Supplier is satisfied that:
- (a) the arrangement in no way conflicts with or detracts from the rights and entitlements of the Customer under this Contract;
 - (b) such party is financially viable and has the relevant expertise necessary for the proper performance of the activity in question; and
 - (c) such party has all the appropriate types and amounts of insurance in order to perform its work in relation to this Contract.
- 2.7.4 The Supplier must ensure that any subcontract for the performance of any part of the Services is in writing and contains provisions equivalent to clauses 2.4, 2.6, 2.7, 2.11, 2.12, 4, 5, 7, 8, 9, 11, 12, 17 and 18 of this Schedule 4, and is responsible for ensuring that the Subcontractor complies with those terms.
- 2.7.5 The Supplier must, within five (5) Business Days of entering into a subcontract approved by the Customer in accordance with clause 2.7.1 of this Schedule 4, provide the Customer with written notice of the legal name of the Subcontractor and identifying details of the Subcontract.
- 2.7.6 The Supplier must obtain the express consent of the Subcontractor to the disclosure of the Subcontractor's identity (including their Personal Information if the Subcontractor is an individual) to the Customer. The consent obtained must extend to allow the Customer to use and disclose the Subcontractor's identity, the existence and nature of the subcontract for reporting purposes.
- 2.7.7 The Customer may revoke its approval of a Subcontractor by giving written notice to the Supplier. On receipt of the notice the Supplier must, at its own cost, promptly cease using that Subcontractor and arrange their replacement with Personnel or another Subcontractor acceptable to the Customer.
- 2.7.8 If the Supplier is unable or unwilling to cease using that Subcontractor and arrange an acceptable replacement Subcontractor as required by clause 2.7.7 of this Schedule 4, then in addition to any other right the Customer has under clause 17.2 of this Schedule 4 or at law, the Customer may terminate this Contract under clause 17.2 immediately by giving notice in writing.
- 2.7.9 If the Customer revokes its approval of a Subcontractor pursuant to clause 2.7.7 of this Schedule 4, the Supplier remains liable under this Contract for the past acts or omissions of that Subcontractor as if they were a current Subcontractor.
- 2.7.10 The Supplier agrees to promptly provide a copy of any subcontract to the Customer if so requested.
- 2.8 Responsibility of the Supplier**
- 2.8.1 The Supplier is fully responsible for the performance of the Services and for ensuring compliance with the requirements of this Contract, and will not be relieved of that responsibility because of any:

- (a) involvement by the Customer in the performance of the Services, unless such involvement materially impacts on the Supplier's ability to perform the Services in accordance with this Contract;
- (b) payment made to the Supplier on account of the Services;
- (c) subcontracting of the Services; or
- (d) acceptance by the Customer of replacement Personnel.

2.9 Human Research Ethics

- 2.9.1 If the Supplier undertakes research involving human subjects as part of the Services, the Supplier must comply with the ethics requirements in Item N [Standards and Best Practice] of the Official Order.

2.10 Business Continuity

- 2.10.1 If specified in Item A [Services and Subcontractors] of the Official Order, the Supplier must ensure that a Business Continuity Plan which complies with this clause 2.10 is provided to the Customer for approval within 10 Business Days of the Contract Commencement Date, and once approved, is implemented and maintained for the Contract Term.
- 2.10.2 If the Services are specified as being Critical Services in Item A [Services and Subcontractors] of the Official Order, the Supplier must ensure that the Business Continuity Plan is in accordance with the requirements below for Critical Services.
- 2.10.3 In the event that:
- (a) the Services are specified as being Non-critical Services in Item A [Services and Subcontractors] of the Official Order, or
 - (b) there is nothing specified in Item A [Services and Subcontractors] of the Official Order regarding a Business Continuity Plan,
 - (c) the Supplier must ensure that the Business Continuity Plan is in accordance with the requirements below for Non-critical Services.
- 2.10.4 The Supplier must review, update and obtain the Customer's approval of the Business Continuity Plan during the Contract Term every six (6) months from the Contract Commencement Date.
- 2.10.5 The Business Continuity Plan must be developed in accordance with and be consistent with the Standards Australia Handbook HB292-2006 *"A Practitioner's Guide to Business Continuity Management"*.
- 2.10.6 The Supplier must comply with, and must ensure that all Subcontractors comply with, the Supplier's risk management strategies and business continuity and risk management plans in the performance of the Services.
- 2.10.7 The Business Continuity Plan must contain:
- (a) If the Services, or part thereof, are Non-critical Services:
 - (i) strategies to provide for the ongoing provision of the Services to the Customer;
 - (ii) processes, resources and interdependencies required or desirable to ensure the ongoing provision of Services to the Customer;

- (iii) maximum acceptable outages for any business process, beyond which the Services would not be delivered to the Customer in accordance with the requirements of this Contract;
 - (iv) names and contact details, including out of hours contact details, for all Personnel whose expertise is required to enable provision of the Services;
 - (v) the details and locations of both physical and electronic records necessary to enable ongoing provision of the Services to the Customer;
 - (vi) strategies to enable the continued performance of the Services in the event of an incident disrupting the Supplier's business, including recovery teams, action plans and event escalation processes; and
 - (vii) any other requirements listed in Item A [Services and Subcontractors] of the Official Order.
- (b) if the Services, or part thereof, are Critical Services:
- (i) strategies to provide for the ongoing provision of the Services to the Customer;
 - (ii) a description of the key business processes required to enable delivery of the Services, including:
 - (A) each key business objective;
 - (B) each key business output;
 - (C) alignment of the key business processes with the key business activities; and
 - (D) a demonstrated understanding of the key activities, resources and inter-dependencies;
 - (iii) a business impact analysis which includes:
 - (A) names and contact details, including out of hours contact details, for all Personnel whose expertise is required to enable provision of the Services;
 - (B) concerns, priorities and expectations for all key business processes required to enable delivery of the Services;
 - (C) maximum acceptable outages for any business process, beyond which the Services would not be delivered to the Customer in accordance with the requirements of this Contract;
 - (iv) establishment of continuity treatments and response and recovery strategies, which must include:
 - (A) the establishment of recovery teams;
 - (B) action steps to be taken in respect of each business process to enable the continued performance of the Services in the event of an incident disrupting the Supplier's business;

- (C) event escalation processes;
- (D) document recovery management processes;
- (v) testing, review and maintenance of the Business Continuity Plan, including:
 - (A) review and update the names and contact details, including out of hours contact details, for all Personnel whose expertise is required to enable provision of the Services;
 - (B) ensuring critical records are backed-up and securely stored off-site (and in accordance with the requirements of clause 8 of this Schedule 4);
 - (C) ensuring supply, service and equipment availability is sufficient to allow for the ongoing provision of the Services; and
 - (D) unannounced assembly of recovery teams to practice response procedures, which must occur at least annually during the Contract Term and the results of which must be reported in writing to the Customer within 20 Business Days of the testing occurring, such report to include the results of the testing and any impact on the Business Continuity Plan as a result of the testing; and
- (vi) any other requirements listed in Item A [Services and Subcontractors] of the Official Order.

2.10.8 Without limiting or qualifying the Customer's other rights under this Contract, the Customer may at its discretion audit or arrange for accredited third parties to audit, the Supplier's compliance with the requirements of this clause 2.10.

2.10.9 Without prejudice to any other right or remedy which the Customer may have, if the Supplier fails to meet any of the minimum contractual and regulatory delivery requirements required for the Business Continuity Plan or this Contract (that relate to the Business Continuity Plan), the Customer may do any or all of the following:

- (a) seek damages as a result of that failure;
- (b) in addition to any other right the Customer has under clause 17 of this Schedule 4 or at law, terminate this Contract immediately under clause 17.2 of this Schedule 4 by giving notice in writing; and / or
- (c) obtain the Services elsewhere or make any other arrangements considered necessary to maintain the continuity of Services at the cost of the Supplier.

2.11 Work Health and Safety

2.11.1 The Supplier must ensure that the Services and the work conducted by the Supplier and any of the Supplier's Personnel complies with all Applicable WHS law, standards and policies, and requirements of this Contract, that relate to the health and safety of the Supplier, the Supplier's Personnel, the Customer's Personnel and third parties.

- 2.11.2 The Supplier must comply with the Supplier's obligations under any Applicable WHS law, and must ensure, so far as is reasonably practicable, that the Supplier's officers (as defined by Applicable WHS law) and workers comply with their obligations under the Applicable WHS law. The other provisions of this clause 2.11 do not limit this sub-clause.
- 2.11.3 The Supplier must ensure, so far as is reasonably practicable, the health and safety of:
- (a) workers engaged, or caused to be engaged by the Supplier; and
 - (b) workers whose activities in carrying out work are influenced or directed by the Supplier,
 - (c) while the workers are at work in relation to this Contract.
- 2.11.4 The Supplier must ensure, so far as is reasonably practicable, that the health and safety of other persons (including the Customer's employees, contractors, subcontractors and agents) is not put at risk from work carried out under this Contract.
- 2.11.5 The Supplier must consult, cooperate and coordinate with the Customer in relation to the Supplier's work health and safety duties.
- 2.11.6 Without limiting the other clauses of this Contract, the Supplier must, on request, give all reasonable assistance to the other, by way of provision of information and documents, to assist the Customer and the Customer's officers (as defined in the WHS Act) to comply with the duties imposed under the WHS Act.
- 2.11.7 The Customer may direct the Supplier to take specified measures in connection with the Supplier's work under this Contract or otherwise in connection with the Services that the Customer considers reasonably necessary to deal with an event or circumstance that has, or is likely to have, an adverse effect on the health or safety of persons. The Supplier must comply with the direction. The Supplier is not entitled to an adjustment to the fees, or to charge additional allowances or expenses, merely because of compliance with the direction.
- 2.11.8 If an event occurs in relation to the Supplier's work under this Contract that leads, or could lead, to the death or, or an injury or illness to, a person (Notifiable Incident), the Supplier must:
- (a) immediately report the matter to the Customer, including all relevant details that are known to the Supplier;
 - (b) as soon as possible after the Notifiable Incident, investigate the Notifiable Incident to determine, as far as it can reasonably be done:
 - (i) its cause; and
 - (ii) what adverse effects (if any) it will have on the Supplier's work under this Contract, including adverse effects on risks to health and safety;
 - (c) as soon as possible after the Notifiable Incident, take all reasonable steps to remedy any effects of the Notifiable Incident on health and safety;
 - (d) as soon as possible after the Notifiable Incident, take all reasonable steps (including by instituting procedures and systems) to ensure that an event or circumstance of the kind that led to the Notifiable Incident does not recur;

- (e) within three (3) Business Days after the Notifiable Incident, give the Customer a written report giving further details of the Notifiable Incident, including the results of the investigations required by clause 2.11.8(b) of this Schedule 4 and a statement of the steps the Supplier have taken or that the Supplier propose to take as required by clauses 2.11.8(c) and 2.11.8(d) of this Schedule 4; and
 - (f) within three (3) months after the Notifiable Incident, give the Customer a written report giving full details of its actions in relation to the Notifiable Incident.
- 2.11.9 The Supplier's obligations under this clause 2.11.8 are in addition to any reporting obligation that the Supplier has under any applicable legislation.
- 2.11.10 The Supplier must fully co-operate, at the Supplier's own cost, with any investigation by any government agency (including the Commonwealth) with respect to a Notifiable Incident, including parliamentary inquiries, boards of inquiry and coroner's investigations.
- 2.11.11 The Supplier must not enter into any subcontract for the purpose of directly or indirectly fulfilling the Supplier's obligations under this Contract unless such a subcontract obliges the subcontractor to comply with equivalent provisions to those contained in this clause 2.11.
- 2.11.12 A word or expression in this clause 2.11 that is:
- (a) used or defined in an Applicable WHS law; and
 - (b) is not otherwise defined in this clause 2.11 or elsewhere in this Contract,
- has, for the purposes of this clause 2.11, the meaning given to it under the Applicable WHS law.
- 2.12 Workplace Gender Equality**
- 2.12.1 This clause 2.12 applies only to the extent that the Supplier is a 'relevant employer' for the purposes of the *Workplace Gender Equality Act 2012* (Cth) (the **WGE Act**).
- 2.12.2 The Supplier must comply with its obligations, if any, under the WGE Act.
- 2.12.3 If the Supplier becomes non-compliant with the WGE Act during the Contract Term, the Supplier must notify the Customer Contact Officer.
- 2.12.4 If the Contract Term exceeds eighteen (18) months, the Supplier must provide a current letter of compliance within eighteen (18) months from the Contract Commencement Date and following this, annually, to the Customer Contact Officer.
- 2.12.5 Compliance with the WGE Act does not relieve the Supplier, from its responsibility to comply with its other obligations under the Contract.
- 2.13 Disability Discrimination**
- 2.13.1 The Supplier must comply with the *Disability Discrimination Act 1992* (Cth) in accordance with the National Disability Strategy 2010-2020.
- 2.14 Prohibition on Illegal Workers**
- 2.14.1 The Supplier must not engage Illegal Workers in performing the Services under this Contract.

3 FEES, EXPENSES AND ASSISTANCE

3.1 Fees, expenses and assistance

3.1.1 Subject to the Supplier's compliance with this Contract, the Customer will:

- (a) pay the Supplier the fees in the instalments and subject to the Milestones (if any) specified in Item D [Fees] of the Official Order;
- (b) pay the expenses and meet the costs specified in Item E [Expenses and Costs] of the Official Order;
- (c) make all the payments in the manner specified in Item F [Invoices] of the Official Order; and
- (d) provide the facilities and assistance specified in Item K [Facilities and Assistance] of the Official Order.

3.1.2 The Supplier must submit invoices for payment in the manner specified in Item F [Invoices] of the Official Order.

3.1.3 Subject to clauses 3.1.4 and 3.2 of this Schedule 4, if:

- (a) the amount of fees payable is less than \$1 million (GST inclusive); and
- (b) the Customer pays an Instalment more than thirty (30) days from the receipt by the Customer of a correctly rendered tax invoice in the manner specified in Item F [Invoices] of the Official Order, and where the Supplier issues a correctly rendered invoice for the Interest,

the Customer will pay Interest to the Supplier for each day from the day after payment was due up to and including the day that payment of the Instalment was made by the Customer.

3.1.4 The Customer will not be required to make a payment of Interest pursuant to clause 3.1.3 of this Schedule 4 if the amount of Interest calculated in accordance with clause 3.1.3 of this Schedule 4 is less than ten dollars (\$10).

3.2 Customer's right to defer payment

3.2.1 The Customer will be entitled (in addition and without prejudice to any other right it may have) to defer payment or reduce the amount of any payment (including an Instalment) if, and for so long as, the Supplier has not completed, to the satisfaction of the Customer, that part of the Services to which the payment relates.

3.2.2 If the Customer exercises its rights under clause 3.2.1 of this Schedule 4, the Supplier must continue to perform any obligations under this Contract unless the Customer directs otherwise in writing.

3.3 Overpayments

3.3.1 If an overpayment occurs at any time and for any reason (including where an invoice is found to have been incorrectly rendered after payment) the Customer may issue the Supplier with a written notice requiring repayment of the full amount of the overpayment.

3.3.2 The Supplier must pay to the Customer the full amount of the overpayment specified in the notice referred to in clause 3.3.1 of this Schedule 4 in the manner specified in the notice, and within thirty (30) days of the date of the notice.

3.3.3 The Customer may, at its sole and absolute discretion, recover the overpayment from the Supplier by offsetting that overpayment against any amount subsequently due to the Supplier under this Contract.

3.3.4 If the Supplier fails to repay the full amount of an overpayment in accordance with a notice given pursuant to clause 3.3.1 of this Schedule 4, the Customer may (at its sole discretion) require that interest be paid on the amount after the expiry of the thirty (30) days' notice referred to in clause 3.3.2 of this Schedule 4, until the amount is paid to the Customer in full.

3.3.5 The Supplier must provide the Customer with an adjustment note if required by the GST Act, including where the Supplier repays to the Customer some or all of the fees or expenses.

3.4 Taxes, duties and government charges

3.4.1 Except as provided by this clause 3.4, the Supplier must pay all taxes, duties and government charges imposed or levied in Australia or overseas in connection with the performance of this Contract.

3.4.2 The following terms have the meanings respectively given to them in the GST Act:

- (a) consideration;
- (b) input tax credit;
- (c) supply;
- (d) tax invoice; and
- (e) taxable supply.

3.4.3 Unless otherwise indicated, the fees and all other consideration for any supply made under this Contract include any GST imposed on the supply.

3.4.4 If one party (the supplier) makes a taxable supply to the other party (the recipient) under this Contract, on receipt of a tax invoice from the supplier the recipient must pay without setoff, subject to the terms of this Contract, the full amount inclusive of GST.

3.4.5 No party may claim from the other party under this Contract any amount for which the first party may claim an input tax credit.

3.4.6 If one party is required to reimburse or pay to the other party an amount calculated by reference to a cost, expense or an amount paid or incurred by that party (the reimbursement amount):

- (a) the reimbursement amount will be reduced by an amount equal to the value of any input tax credits to which the party being reimbursed is entitled in respect of that cost, expense or amount; and
- (b) after making the adjustment under clause a of this Schedule 4, where the payment of the reimbursement attracts GST the reimbursement amount will be increased by the rate of the GST.

3.5 Survival

3.5.1 This clause 3 survives the expiration or earlier termination of this Contract.

4 INTELLECTUAL PROPERTY

4.1 Rights in Commonwealth Material, Existing Material and Third Party Material not affected

4.1.1 This clause 4 does not affect the ownership of the Intellectual Property in any Commonwealth Material, Existing Material or Third Party Material.

4.2 Intellectual Property in Contract Material

- 4.2.1 One of three models for the ownership and licensing of Intellectual Property in Contract Material applies to the Contract. The three models are set out in clauses 4.2.6 to 4.2.15 of this Schedule 4 below. Each of the models is mutually exclusive.
- 4.2.2 The ownership and licensing model for Intellectual Property in Contract Material which applies to the Contract is the model set out in Item G [Intellectual Property] of the Official Order, and the other two models do not apply to the Contract.
- 4.2.3 If no ownership and licensing model is set out in Item G [Intellectual Property] of the Official Order, Model 1 as set out in clauses 4.2.6 to 4.2.9 of this Schedule 4 applies to the Contract and clauses 4.2.10 and 4.2.15 of this Schedule 4 do not apply to the Contract.
- 4.2.4 The Supplier must deliver all Contract Material (and any Existing Material or Third Party Material licensed under the Contract) to the Customer by the Contract Completion Date, unless otherwise specified in Item B [Contract Material] of the Official Order or otherwise directed by the Customer Contact Officer. If specified in Item B [Contract Material] of the Official Order, the Supplier may retain a copy of the Contract Material for record-keeping and audit purposes. These copies will be subject to the security and non-disclosure requirements of this Contract.
- 4.2.5 The Supplier's rights in respect of each of the three models set out in clauses 4.2.6 to 4.2.15 of this Schedule 4 are subject to clause 5 of this Schedule 4.

MODEL 1 – Customer ownership of Intellectual Property in Contract Material with limited licence to Supplier

- 4.2.6 All Intellectual Property in the Contract Material vests in the Customer on creation.
- 4.2.7 The Supplier must deliver all Contract Material to the Customer by the Contract Completion Date, unless otherwise specified in Item B [Contract Material] of the Official Order or otherwise directed by the Customer's Contact Officer.
- 4.2.8 To the extent that the Supplier needs to use any of the Contract Material for the purpose of performing its obligations under the Contract, the Customer grants to the Supplier, subject to any direction by the Customer, a world-wide, perpetual, irrevocable, royalty free and licence fee free, non exclusive, non transferable licence (including the right to sublicense) to use, reproduce, modify, adapt, publish, broadcast, communicate and commercialise the Contract Material for the Contract Term and solely for the purposes of, and as permitted by, the Contract.
- 4.2.9 The Supplier grants to the Customer, or must, prior to delivering any Services, procure for the Customer at no additional cost, a perpetual, irrevocable, non-exclusive, world-wide, transferable licence (including the right to sublicense) to use, reproduce, modify, adapt, publish, broadcast, communicate and commercialise the Existing Material and Third Party Material, but only to the extent necessary for the Customer to exercise its rights in the Contract Material.

MODEL 2 –Customer ownership of Intellectual Property in Contract Material with broad licence to Supplier

- 4.2.10 All Intellectual Property in the Contract Material vests in the Customer on creation.

- 4.2.11 The Customer grants to the Supplier, subject to any direction by the Customer, a world-wide, perpetual, irrevocable, royalty-free, non-exclusive, non-transferable licence (including the right to sublicense) to use, reproduce, modify, adapt, publish, broadcast, communicate and commercialise the Contract Material.
- 4.2.12 The Supplier grants to the Customer, or must, prior to delivering any Services, procure for the Customer at no additional cost, a world-wide, perpetual, irrevocable, non-exclusive, transferable licence (including the right to sublicense) to use, reproduce, modify, adapt, publish, broadcast, communicate and commercialise the Existing Material and Third Party Material, but only to the extent necessary for the Customer to exercise its rights in the Contract Material.

MODEL 3 – Supplier ownership of Intellectual Property in Contract Material

- 4.2.13 Subject to clause 4.6 of this Schedule 4, all Intellectual Property in the Contract Material vests in the Supplier on creation.
- 4.2.14 The Supplier grants to the Customer a world-wide, perpetual, irrevocable, royalty free and licence-fee free, non-exclusive, non-transferable licence (including the right to sublicense) to use, reproduce, modify, adapt, publish, broadcast and communicate the Contract Material, including the right to commercialise the Contract Material.
- 4.2.15 The Supplier grants to the Customer, or must, prior to delivering any Services, procure for the Customer at no additional cost, a world-wide, perpetual, irrevocable, non-exclusive, transferable licence (including the right to sublicense) to use, reproduce, modify, adapt, publish, broadcast, communicate and commercialise the Existing Material and Third Party Material, but only to the extent necessary for the Customer to exercise its rights in the Contract Material.

4.3 Commonwealth Material

- 4.3.1 To the extent that the Supplier needs to use any of the Commonwealth Material for the purpose of performing its obligations under a Contract, the Customer grants to the Supplier, subject to any direction by the Customer, a world-wide, royalty-free and licence-fee free, non-exclusive, non-transferable licence (including the right to sublicense) to use, reproduce, modify, adapt, publish, broadcast and communicate the Commonwealth Material for Contract Term and solely for the purposes of the Contract.
- 4.3.2 The Supplier must ensure that the Commonwealth Material is used and held strictly in accordance with any conditions or restrictions set out in Item J [Use of Commonwealth Material] of the Official Order, and any direction from the Customer.
- 4.3.3 The Supplier must, on or before the Contract Completion Date, destroy or return to the Customer all Commonwealth Material in its possession, or in the possession of its Personnel, unless otherwise specified in Item J [Use of Commonwealth Material] of the Official Order or otherwise directed by the Customer's Contact Officer.

4.4 Existing Material

- 4.4.1 The Supplier must, at the time of or prior to delivering any Services, notify the Customer in writing of the details of all Existing Material comprised in those Services, including the owner of the Existing Material.
- 4.4.2 The Supplier must obtain all necessary copyright and other Intellectual Property rights permissions before making any third party material available as Existing Material for the purposes of this Contract.

4.5 Third Party Material

- 4.5.1 The Supplier must, at the time of or prior to delivering any Services, notify the Customer in writing of the details of all Third Party Material comprised in those Services, including the owner of the Third Party Material.
- 4.5.2 The Supplier must obtain all necessary copyright and other Intellectual Property rights permissions before supplying or making any Material available as Third Party Material for the purposes of this Contract.

4.6 Ownership of copies

- 4.6.1 In this clause 4.6 'Copies' means copies of any documents, devices, articles or media including digital copies.
- 4.6.2 Unless agreed otherwise in Item J [Use of Commonwealth Material], Copies of Commonwealth Material made by or on behalf of the Supplier will be owned by the Customer upon creation and the Intellectual Property in the Copies will vest in the Customer upon creation.

4.7 Intellectual Property Warranty

- 4.7.1 The Supplier warrants that:
 - (a) the Services and the use of the Services by any person will not infringe the Intellectual Property of any person; and
 - (b) it has the necessary rights to grant the licences set out in this clause 4.

4.8 Moral Rights

- 4.8.1 In this clause 4.8, 'Permitted Acts' means any of the following classes or types of acts or omissions:
 - (a) using, reproducing, communicating, adapting, modifying, publishing or exploiting all or any part of the Contract Material, Existing Material or Third Party Material, with or without attribution of authorship;
 - (b) supplementing the Contract Material, Existing Material or Third Party Material with any other Material;
 - (c) materially altering the style, format, colours, content or layout of the Contract Material, Existing Material or Third Party Material and dealing in any way with the altered Contract Material or Existing Material;
 - (d) using the Contract Material, Existing Material or Third Party Material in a different context to that originally envisaged; and
 - (e) the acts or omissions specifically set out in Item I [Moral Rights] of the Official Order,but does not include false attribution of authorship.
- 4.8.2 Where the Supplier is a natural person and the author of the Contract Material or Existing Material, he or she consents to the performance of the Permitted Acts by the Customer or any person claiming under or through the Customer.
- 4.8.3 If clause 4.8.2 of this Schedule 4 does not apply, the Supplier must:
 - (a) use its best endeavours to obtain from each author of Contract Material, and any Existing Material or Third Party Material a written consent which extends directly or indirectly to the performance of the Permitted Acts by the Customer or any person claiming under or through the Customer (whether occurring before or after the consent is given); and

- (b) on request, provide the executed original of any such consent to the Customer.

4.9 Survival

- 4.9.1 This clause 4 survives the expiry or earlier termination of this Contract.

5 PUBLICATIONS

5.1 Publications

- 5.1.1 Unless provided otherwise in Item S [Publications] of the Official Order, and regardless of any ownership of or licence to Intellectual Property in the Contract Material held by the Supplier, the Customer has the right to publish all or any part of the Contract Material before any publication of the Contract Material can be made by any other person, including the Supplier.
- 5.1.2 Nothing in this clause 5.1 is intended to give the Supplier the right to publish Contract Material if the Supplier does not possess this right under clause 4 of this Schedule 4.
- 5.1.3 The Customer will provide notice to the Supplier of its intention to publish the Contract Material prior to publication.
- 5.1.4 If the Supplier publishes any Contract Material the Supplier must, as soon as practicable, provide a copy of all such publications to the Customer.
- 5.1.5 The parties must comply with any additional requirements for publication of the Contract Material in Item S [Publications] of the Official Order.
- 5.1.6 Nothing in this clause 5 is intended to prevent the Supplier or its Personnel from entering into public debate or criticism of the Commonwealth, its Agencies, officers, employees or agents.
- 5.1.7 If:
 - (a) despite complying with clause 4.8.3, the Supplier has not obtained or provided a consent to the Permitted Acts by an author of the Contract Material, Existing Material or Third Party Material; and
 - (b) the Customer notifies the Supplier that it is aware that such an author has objected, or is likely to object, to the Permitted Acts, and this would, in the Customer's reasonable view:
 - (i) prevent the Customer from exercising its rights of publication under this clause; or
 - (ii) expose the Customer to additional liability in relation to publication of the Contract Material,the Supplier must
 - (c) as reasonably directed by the Customer, work with the Customer to resolve the issue and do all things necessary to ensure that the Customer can exercise its rights of publication in accordance with the Contract; and
 - (d) reimburse the Customer for any payment it is required by law to make to the author of any Contract Material, Existing Material or Third Party Material as a result of publication such Material, to the extent that the payment arose because the Supplier was unable to, or did not, obtain a consent to the Permitted Acts from that author.

5.2 Survival

- 5.2.1 This clause 5 survives the expiry or earlier termination of this Contract.

6 CONFIDENTIAL INFORMATION

6.1 Interpretation

- 6.1.1 In this clause 6, 'Third Party Interest' means any legal or equitable right, interest, power or remedy in favour of any person other than the Commonwealth or the Supplier in connection with the Contract, including, without limitation, any right of possession, receivership, control or power of sale, and any mortgage, charge, security or other interest.

6.2 Additional Customer Confidential Information

- 6.2.1 Subject to clause 6.2.4 of this Schedule 4, the Supplier must not, without the prior written consent of the Customer, disclose any Additional Customer Confidential Information to a third party.
- 6.2.2 The Supplier must not transfer any of the Additional Customer Confidential Information outside Australia or allow persons outside Australia to have access to that Material without the prior written consent of the Customer. For clarity, if Item U [Transfer of Information Outside Australia] of an Official Order expressly permits the transfer of particular Additional Customer Confidential Information outside Australia, or allows persons outside of Australia to have access to that Material, the Customer has deemed to have given its prior written consent under this clause. The Customer may impose any conditions it considers appropriate when giving consent under this clause 6.2 and the Supplier must comply with these conditions.
- 6.2.3 The Supplier must, on request by the Customer at any time, arrange for:
- (a) its Personnel;
 - (b) Subcontractors; or
 - (c) any person with a Third Party Interest,
 - (d) to promptly give a written undertaking in a form acceptable to the Customer relating to the use and non-disclosure of the Additional Customer Confidential Information.
- 6.2.4 The Supplier will not be taken to have breached its obligations under this clause 6.2 to the extent that the Additional Customer Confidential Information is:
- (a) subject to clause 6.2.2 of this Schedule 4, disclosed by the Supplier to its Personnel or Subcontractors solely in order to comply with obligations, or to exercise rights, under this Contract;
 - (b) subject to clause 6.2.2 of this Schedule 4, disclosed by the Supplier to its internal management Personnel, solely to enable effective management or auditing of Contract-related activities;
 - (c) authorised or required by law to be disclosed;
 - (d) in the possession of the Supplier without restriction in relation to the disclosure before the date of receipt by the Customer; or
 - (e) in the public domain otherwise than due to a breach of this clause 6.
- 6.2.5 Where the Supplier intends to disclose Additional Customer Confidential Information to another person pursuant to clauses 6.2.4(a) – 6.2.4(c) of this Schedule 4, it must

(where reasonably practicable) notify the Customer's Contact Officer of its intention to disclose the Additional Customer Confidential Information prior to its disclosure, or as soon as possible thereafter if notification could not occur prior to disclosure for reasons beyond the Supplier's control.

- 6.2.6 Where the Supplier discloses Additional Customer Confidential Information to another person pursuant to clauses 6.2.4(a) – 6.2.4(c) of this Schedule 4, the Supplier must notify the receiving person that the information is confidential.
- 6.2.7 The Supplier must not disclose Customer Confidential Information in the circumstances referred to in clauses 6.2.4(a) – 6.2.4(c) of this Schedule 4 unless the receiving person agrees to keep the information confidential.

6.3 Additional Supplier Confidential Information

- 6.3.1 Subject to clause 6.3.2 of this Schedule 4, the Customer must not, without the prior written consent of the Supplier, disclose any Supplier Confidential Information to a third party.
- 6.3.2 The Customer will not be taken to have breached its obligations under this clause 6.3 to the extent that the Additional Supplier Confidential Information is:
- (a) disclosed by the Customer to its Personnel solely in order to comply with obligations, or to exercise rights, under this Contract;
 - (b) disclosed by the Customer to its internal management Personnel, solely to enable effective management or auditing of Contract-related activities;
 - (c) disclosed by the Customer to the responsible Minister;
 - (d) disclosed by the Customer in response to a request by a House or a Committee of the Parliament of the Commonwealth of Australia;
 - (e) shared by the Customer within the Customer's organisation;
 - (f) shared by the Customer with another government agency, where this serves the Commonwealth's legitimate interests;
 - (g) authorised or required by law to be disclosed;
 - (h) in the possession of the Customer without restriction in relation to the disclosure before the date of receipt by the Supplier; or
 - (i) in the public domain otherwise than due to a breach of this clause 6.

6.4 Additional Confidential Information

- 6.4.1 The parties may agree in writing after the Contract Commencement Date that certain additional information is to be Additional Supplier Confidential Information for the purposes of this Contract.

6.5 Period of confidentiality

- 6.5.1 The obligations under this clause 6 continue, notwithstanding the expiry or termination of this Contract:
- (a) in relation to an item of information described in Item L [Confidential Information] of the Official Order— for the period set out in Item L [Confidential Information] of the Official Order in respect of that item; and
 - (b) in relation to any item of information referred to in clause 6.4 of this Schedule 4 – for the period agreed by the parties in writing in respect of that item.

6.6 No reduction in privacy obligations

- 6.6.1 This clause 6 does not detract from any of the Supplier's obligations under the *Privacy Act 1988* (Cth), or under clause 7 of this Schedule 4, in relation to the protection of Personal Information.

7 PROTECTION OF PERSONAL INFORMATION

7.1 Application of this clause

- 7.1.1 This clause 7 applies only to the extent that the Supplier deals with Personal Information in providing the Services under this Contract.

7.2 Obligations of Supplier in relation to Personal Information

- 7.2.1 The Supplier must, and must ensure its Personnel:

- (a) comply with the *Privacy Act 1988* (Cth), including in respect of all Personal Information that it collects, uses, holds or discloses, whether directly (i.e. by itself) or indirectly (i.e. through a third party or the Customer) in relation to, or for the purposes of, this Contract (collectively, 'Information');
- (b) not do an act, or engage in a practice, that would breach an Australian Privacy Principle (as defined in the *Privacy Act 1988* (Cth)) if done or engaged in by the Customer;
- (c) not transfer Personal Information outside of Australia or allow access to Personal Information from a location outside of Australia, unless Item U [Transfer of Information Outside Australia] of the Official Order expressly permits such transfer or access, or permission has otherwise been otherwise granted in writing by the Customer;
- (d) comply with any mandatory data breach notification obligations, as required by law; and
- (e) comply with all directions, guidelines, determinations and recommendations of the Customer to the extent such are not contrary to the *Privacy Act 1988* (Cth).

- 7.2.2 The Supplier must ensure that:

- (a) all its Personnel required to deal with Personal Information are made aware of the obligations of Supplier set out in this clause 7.2; and
- (b) any Subcontract entered into by Supplier imposes on the Subcontractor the same obligations that Supplier has under this clause 7.2 (including this requirement in relation to subcontracts).

- 7.2.3 The Supplier must notify the Customer immediately if it becomes aware of a breach or possible breach of any of its obligations under this clause 7.2.

- 7.2.4 The provisions of this clause 7.2 survive termination or expiry of this Contract.

7.3 Handling of complaints

- 7.3.1 A complaint alleging an interference with the privacy of an individual in respect of any Services performed under this Contract will be handled by the parties in accordance with the following procedures:

- (a) where the Customer receives a complaint alleging an interference with the privacy of an individual by the Supplier or any Subcontractor, it must immediately notify the Supplier of only those details of the complaint necessary to minimise any breach or prevent further breaches of the privacy provisions of this Contract;
- (b) where the Supplier receives a complaint alleging an interference with the privacy of an individual by the Supplier or any Subcontractor, it must immediately notify the Customer of the nature of the complaint but must only release to the Customer Confidential Information concerning the complainant with that person's consent;
- (c) after the Customer has given or been given notice in accordance with (a) or (b) above, it must keep the Supplier informed of all progress with the complaint as relates to the actions of the Supplier in connection with the allegation of an interference with the privacy of an individual; and
- (d) the Customer will give the Supplier fourteen (14) days written notice of an intention to assume a liability, loss or expense in accordance with this clause 7.3, including in that notice an explanation of how that liability, loss or expense was assessed and the Supplier's proposed share of that liability.

7.4 Termination for breach of this clause

- 7.4.1 If the Supplier breaches this clause 7, the Customer may terminate this Contract immediately, in accordance with clause 17.2 of this Schedule 4.

8 SECURITY

8.1 Security Requirements

- 8.1.1 The Supplier must ensure that all Supplier Personnel and Subcontractors safeguard any keys or passes that are provided to the Supplier for the purposes of this Contract.
- 8.1.2 The Supplier must ensure that access to Contract Material and other Material related to the Services is restricted to those Personnel and Subcontractors who require access to perform their functions.
- 8.1.3 The Supplier must, as and when reasonably requested by the Customer, participate in security reviews by the Customer (or the Customer's authorised representative) and provide security reports to the Customer, to demonstrate compliance with this clause 8.
- 8.1.4 The Supplier must, and must ensure that all Supplier Personnel and Subcontractors, comply with:
 - (a) all security requirements specified in Item M [Security Requirements] of the Official Order, which may include (but are not limited to):
 - (i) requirements to comply with the Australian Government's Protective Security Policy Framework (PSPF) and Information Security Manual (ISM);
 - (ii) appropriate security clearance classification for those Personnel and Subcontractors who will have access to Security Classified Information;

- (iii) specifications in relation to the handling, storage, transmission and disposal of all hard copies of Security Classified Information;
- (iv) specifications in relation to the transition of security arrangements at expiry or earlier termination of the Contract, to ensure that all electronic and hard copies of Security Classified Information are removed from the control of the Supplier;
- (v) specifications in relation to the Supplier's premises and facilities at which Security Classified Information may be stored or handled; and
- (vi) specifications in relation to the Supplier's systems, to ensure those systems meet designated information security standards for the electronic processing, storage, transmission and disposal of Security Classified Information;
- (b) any variations or additions to these security requirements that the Customer notifies the Supplier; and
- (c) any additional requirements in relation to cyber-security which are specified in Item V [Cyber-security] of the Official Order.

8.2 Third party access to Security Classified Information

8.2.1 The Supplier must ensure that, in circumstances where a third party holds legal rights that may allow access to the Customer's Security Classified Information, the Supplier:

- (a) immediately notifies the Customer of the risk that a third party may access the Customer's Security Classified Information, providing full details of the information to which the third party may have access;
- (b) proposes steps that would remove or mitigate the risk of such access by a third party; and
- (c) takes such steps as the Customer may reasonably require to deal with the risk of access to the Security Classified Information.

8.2.2 If the Supplier is unwilling or unable to comply with the Customer's requirements under clause 8.2.1(c) of this Schedule 4, the Customer may immediately terminate this Contract pursuant to clause 17.2 of this Schedule 4.

8.3 Notification

8.3.1 The Supplier must notify the Customer immediately if it becomes aware or has reason to suspect that a breach of the Supplier's security obligations under the Contract has occurred.

8.4 Unauthorised disclosure

8.4.1 The Supplier acknowledges that unauthorised disclosure of information held by the Commonwealth is subject to the sanction of criminal law under sections 70 and 79 of the *Crimes Act 1914* (Cth) and section 91.1 of the *Criminal Code Act 1995* (Cth).

8.5 Supplier fully responsible

8.5.1 The Supplier remains fully responsible for ensuring that all security requirements under the Contract are met.

8.6 Termination for breach of this clause

- 8.6.1 If the Supplier breaches this clause 8, in addition to any other right the Customer has under clause 17.2 of this Schedule 4, the Customer may terminate this Contract pursuant to that clause immediately.

9 AUDIT AND ACCESS

9.1 Audit and access

9.1.1 The Supplier agrees that:

- (a) the Customer, including any persons authorised in writing by the Customer;
- (b) the Customer's Contact Officer, or any person authorised in writing by the Customer's Contact Officer;
- (c) the Customer's auditors;
- (d) the Auditor-General or a delegate of the Auditor-General (for the purposes of performing the Auditor-General's statutory functions);
- (e) the Australian Information Commissioner, Privacy Commissioner, Freedom of Information Commissioner and their respective delegates; and
- (f) the Commonwealth Ombudsman,

have the right of access to the premises of the Supplier at all reasonable times (and in accordance with clause 9.1.3), to:

- (g) require the provision by the Supplier (including its Personnel and Subcontractors) of records and information in a data format and storage medium accessible by the Customer by use of the Customer's existing computer hardware and software;
- (h) inspect and copy Material, including Contract Material, documentation, records, accounts and financial Material, however and wherever stored, in the custody or under the control of the Supplier (including its Personnel and Subcontractors) for purposes associated with this Contract or any review of performance under this Contract;
- (i) require assistance from the Supplier in respect of any inquiry into or concerning the Services or this Contract. For these purposes an inquiry includes any administrative or statutory review, audit or inquiry (whether within or external to the Customer), any request for information directed to the Customer, and any inquiry conducted by Parliament or any Parliamentary committee; and
- (j) inspect any Customer assets located on the premises of the Supplier which:
 - (i) come into existence as a result of the Contract; or
 - (ii) are provided to the Supplier as a result of the Contract.

- 9.1.2 In the case of documents or records stored on a medium other than in writing, the Supplier will make available on request such reasonable facilities as may be necessary to enable a legible reproduction to be created at no additional cost to the Customer.

- 9.1.3 In exercising the rights granted by this clause 9, the Customer will provide reasonable prior notice (except where it believes that there is an actual or apprehended breach of the law), use reasonable endeavours to not interfere with the Supplier's performance of the Services under the Contract in any material respect and will endeavour to comply with the Supplier's reasonable security procedures.

9.2 Delay

- 9.2.1 If, in the Supplier's reasonable opinion, there is likely to be a significant delay in the Supplier discharging an obligation under the Contract because of a cause beyond the reasonable control of the Supplier and as a direct result of the Customer's action under this clause 9, the Supplier may request a reasonable extension of time, providing written justification for the extension.
- 9.2.2 The Customer will consider any request under clause 9.2.1 of this Schedule 4 in good faith.

9.3 Costs

- 9.3.1 Each party must bear its own costs of any audit or access as a result of clause 9.1 of this Schedule 4.

9.4 Supplier to comply with Auditor-General's requirements

- 9.4.1 The Supplier must do all things necessary to comply with the requirements of the Auditor-General, Australian Information Commissioner, Privacy Commissioner, Freedom of Information Commissioner or their delegates' requirements, provided such requirements are legally enforceable and within the power of the Auditor General, Information Commissioner, Privacy Commissioner, Freedom of Information Commissioner or their delegates.

9.5 No reduction in responsibility

- 9.5.1 The requirement for access as specified in clause 9.1.1 of this Schedule 4 does not in any way reduce the Supplier's responsibility to perform its obligations in accordance with this Contract.

9.6 No restriction

- 9.6.1 Nothing in this Contract reduces limits or restricts in any way any function, power, right or entitlement of the Auditor-General, Australian Information Commissioner, Privacy Commissioner, Freedom of Information Commissioner or their delegates. The rights of the Customer, Auditor-General, Australian Information Commissioner, Privacy Commissioner, Freedom of Information Commissioner and their delegates under this Contract are in addition to any other power, right or entitlement of the Auditor-General, Australian Information Commissioner, Privacy Commissioner, Freedom of Information Commissioner, or their delegates.

9.7 Freedom of Information

- 9.7.1 In this clause, 'document' and 'Commonwealth contract' have the same meaning as in the *Freedom of Information Act 1982* (Cth).
- 9.7.2 This clause 9.7 only applies to the Contract if it is a 'Commonwealth contract'.
- 9.7.3 Where the Customer has received a request for access to a document created by, or in the possession of, the Supplier or any Subcontractor that relates to the performance of the Contract (and not to the entry into the Contract), the Customer may at any time by written notice require the Supplier to provide the document to the Customer and the Supplier must, at no additional cost to the Customer, promptly comply with the notice.

9.7.4 The Supplier must include in any subcontract relating to the performance of this Contract provisions that will enable the Supplier to comply with its obligations under this clause 9.7.

9.8 Archives and record keeping requirements

9.8.1 The Supplier must comply with any reasonable directions by the Customer which are relevant to any applicable Commonwealth, State or Territory legislation relating to archival requirements, including as required to enable the Customer to comply with the requirements of the *Archives Act 1983* (Cth).

9.8.2 The Supplier must (to the extent consistent with applicable legislation, Commonwealth policy and Departmental procedures) adopt international best practice in research record-keeping and disposal of research materials. For example, Section 2 of the Australian Code for the Responsible Conduct of Research includes guidelines for the management of research materials including record-keeping and disposal requirements.

9.9 Survival

9.9.1 This clause applies for Term of this Contract and for a period of seven (7) years from the termination or expiry of this Contract.

10 INSURANCE

10.1 Insurance requirements

10.1.1 The Supplier must, in addition to the insurance requirements specified in clause 9 of the Deed:

- (a) effect and maintain, or cause to be effected and maintained, the insurance specified in Item P [Insurance] of the Official Order from the Contract Commencement Date;
- (b) maintain the Insurance specified in Item P [Insurance] for the period specified in that Item P; and
- (c) if required in Item P [Insurance] of the Official Order, ensure that the insurance cover provided by the insurance contract extends to cover any third party liability of the Customer arising from acts or omissions of the Supplier (including its Personnel) made in connection with this Contract, where there was fault on the part of the Supplier (or its Personnel).

10.1.2 The Supplier must require all Subcontractors to effect and maintain, or cause to be effected and maintained, the insurances required by this clause 10 and clause 9 of the Deed as appropriate given the nature of the Services to be provided by the Subcontractor.

10.1.3 For the avoidance of doubt, this clause 10 does not relieve the Supplier of its obligations under any other provisions of this Contract.

10.1.4 This clause 10 applies for the life of this Contract and for a period of seven (7) years from the termination or expiry of this Contract.

11 INDEMNITY

11.1 Indemnity

11.1.1 The Supplier indemnifies the Customer, its officers, employees and agents (those indemnified) from and against any:

- (a) loss or liability incurred by those indemnified;
- (b) loss of or damage to the property of those indemnified; or
- (c) loss or expense incurred by those indemnified in dealing with any claim against them, including legal costs and expenses on a solicitor / own client basis and the cost of time spent, resources used, or disbursements paid by those indemnified,

arising from:

- (d) any act or omission by the Supplier, its Personnel or Subcontractors, in connection with this Contract, where there was fault on the part of the person whose conduct gave rise to that liability, loss, damage, or expense;
- (e) any breach by the Supplier, its Personnel or Subcontractors, of obligations or warranties under this Contract;
- (f) any use or disclosure by the Supplier, its Personnel or Subcontractors, of Personal Information held or controlled in connection with this Contract; or
- (g) the use by those indemnified of the Contract Material, including any claims by third parties about the ownership or right to use Intellectual Property rights (including Moral Rights) in Contract Material.

11.1.2 The Supplier agrees that the Customer will be taken to be acting as agent or trustee for or on behalf of those indemnified from time to time.

11.1.3 The Supplier's liability to indemnify the Customer under this clause 11 will be reduced proportionately to the extent that any fault on the part of those indemnified contributed to the relevant loss, damage, expense or liability.

11.1.4 The right of the Customer to be indemnified under this clause 11 is in addition to, and not exclusive of, any other right, power or remedy provided by law, but the Customer is not entitled to be compensated in excess of the amount of the relevant cost, loss, damage, expense or liability.

11.2 Limitation on liability

11.2.1 The liability of each party arising out of or in connection with the Contract is, subject to clause 11.2.3, limited to the amount specified in Item T [Limitation of Liability] of the Official Order .

11.2.2 Unless otherwise specified in Item T [Limitation of Liability], the limitation of liability specified in clause 11.2.1 applies in respect of a single occurrence, or a series of occurrences arising from a single event.

11.2.3 Any limit on the liability of each party under clause 11.2.1 does not apply in relation to liability:

- (a) for personal injury (including sickness and death);
- (b) for loss of, or damage to, tangible property;
- (c) for an infringement of Intellectual Property rights;

- (d) for a breach of any obligation of confidentiality, security or privacy or with respect to the protection and preservation of Customer Confidential Information, Additional Customer Confidential Information or Personal Information; or
- (e) in respect of fraud, breach of a statute or any illegal act or omission.

11.3 Professional Standards Schemes

- 11.3.1 If a cost, loss, damage, expense or liability is limited by a Professional Standards Scheme, the Supplier's civil liability for such cost, loss, damage, expense or liability is then determined by the relevant scheme.

11.4 Survival

- 11.4.1 This clause 11 survives the expiration or earlier termination of this Contract.

12 CONFLICT OF INTEREST

- 12.1.1 The Supplier warrants that, to the best of its knowledge and having made diligent enquiries, at the Contract Commencement Date no Conflict exists or is likely to arise in the performance of the Services.

- 12.1.2 If, during the period of this Contract, a Conflict arises or appears likely to arise, the Supplier agrees to:

- (a) notify the Customer immediately;
- (b) make full disclosure of all relevant information relating to the Conflict;
- (c) propose steps to take for managing, resolving or otherwise dealing with the Conflict; and
- (d) take any steps the Customer reasonably requires, which may include those proposed by the Supplier pursuant to clause 12.1.2(c) of this Schedule 4, to resolve or otherwise deal with the Conflict.

- 12.1.3 At any time during the period of this Contract, the Customer may require the relevant Personnel and Subcontractors to execute a conflict of interest declaration in the form specified by the Customer.

- 12.1.4 The Supplier must not, and must ensure that its Personnel do not, engage in any activity or obtain any interest during the course of this Contract that is likely to cause a Conflict, or restrict, the Supplier providing the Services to the Customer fairly and independently.

- 12.1.5 If the Supplier fails to notify the Customer of a Conflict under this clause 12, or is unable or unwilling to resolve or deal with the Conflict as required, the Customer may terminate this Contract pursuant to clause 17.2 of this Schedule 4.

13 DISCLOSURE BY THE SUPPLIER

- 13.1 The Supplier warrants that, as at the date of this Contract and having made reasonable enquiries of its Personnel and Subcontractors, it is not aware of any:

- (a) matter relating to the commercial, financial or legal capacity or status of the Supplier that has not been disclosed to the Customer and may affect the ability of the Supplier to perform the Services;

- (b) litigation, proceedings, judicial or administrative inquiry, investigation, claim or allegation, actual or threatened, and whether admitted or contested, by another person or body (including regulatory bodies such as the Australian Securities and Investments Commission, the Australian Competition and Consumer Commission, the Australian Stock Exchange or equivalent bodies), against or in any way involving the Supplier or any settlement in respect of any such matter;
- (c) proven or alleged breach or default under any law, regulation, agreement, order or award binding on the Supplier;
- (d) judicial decision against the Supplier (not including decisions under appeal) relating to employee entitlements, for which the Supplier has not paid the claim; or
- (e) any criminal or other act or any other behaviour, conduct or activity of the Supplier which may:
 - (i) materially and adversely affect the Supplier's credit worthiness, integrity, character or reputation; or
 - (ii) attract or have attracted negative publicity or attention or generate public or media criticism either inside or outside of Australia,

and which was not disclosed to the Customer prior to execution of the Official Order which created the Contract.

14 COMPLIANCE WITH LAWS AND POLICIES

14.1 Compliance with Laws

14.1.1 The Supplier agrees, in carrying out this Contract, to comply with all relevant legislation of the Commonwealth and any State, Territory or local authority, and including in particular:

- (a) Division 3 of Part 5 of the *Social Security (Administration) Act 1999* (Cth);
- (b) Division 2 of Part 6 of the *A New Tax System (Family Assistance) (Administration) Act 1999* (Cth);
- (c) the *Crimes Act 1914* (Cth);
- (d) the *Racial Discrimination Act 1975* (Cth);
- (e) the *Sex Discrimination Act 1984* (Cth);
- (f) the *Disability Discrimination Act 1992* (Cth);
- (g) the *Workplace Gender Equality Act 2012* (Cth);
- (h) Part 4 of the *Charter of United Nations Act 1945* (Cth) and the *Charter of United Nations (Terrorism and Dealing with Assets) Regulations 2008* (Cth);
- (i) the *Archives Act 1983* (Cth);
- (j) the *Privacy Act 1988* (Cth);
- (k) the *Freedom of Information Act* (Cth);
- (l) the *Competition and Consumer Act 2010* (Cth);

- (m) the *Auditor-General Act 1997* (Cth);
- (n) the *Fair Work Act 2009* (Cth); the *Criminal Code Act 1995* (Cth);
- (o) the *Carer Recognition Act 2010* (Cth);
- (p) the *Work Health and Safety Act 2011* (Cth); and
- (q) any other work health and safety legislation applicable to the Supplier.

14.2 Criminal Code Act 1995 (Cth)

14.2.1 The Supplier acknowledges that the giving of false or misleading information to the Commonwealth is a serious offence under section 137.1 of the *Criminal Code Act 1995* (Cth).

14.3 Compliance with the Commonwealth's Policies and Guidelines

14.3.1 The Supplier must comply with, and require its Personnel to comply with, the behaviours specified in:

- (a) the APS Values in section 10 of the *Public Service Act 1999* (Cth) and the Code of Conduct in section 13 of that Act, as if the Supplier and its Personnel were APS employees as defined in that Act; and
- (b) the general duties of officials at sections 25 to 29 of the *Public Governance, Performance and Accountability Act 2013* (Cth), as if the Supplier and its Personnel were officials as defined in that Act.

[Note: Information on the APS Code of Conduct and APS Values is available at: <http://www.apsc.gov.au/legislativeframework/index.html>]

14.3.2 The Supplier acknowledges that it complies with obligations specified under the Australian Government's Lobbying Code of Conduct as published by the Australian Public Service Commission.

14.3.3 The Supplier must ensure that the Services comply with any requirements for accessibility set out in Item N [Standards and Best Practice] of the Official Order.

14.3.4 The Supplier must, and must ensure its Personnel, comply with the Commonwealth's policies and guidelines which:

- (a) are notified to the Supplier by the Customer from time to time; or
- (b) the Supplier knows or reasonably ought to know apply to the Contract.

14.3.5 If the Supplier can demonstrate compliance with a particular Commonwealth policy, which has been notified by the Customer after the Commencement Date, will significantly increase the cost of the Contract, the parties will negotiate in good faith to resolve the issue.

14.4 Indigenous Procurement Policy

14.4.1 In this Contract:

- (a) **Indigenous enterprise** means an organisation that is 50 per cent or more Indigenous owned that is operating as a business.
- (b) **Indigenous Participation Plan** means the plan detailing how the Supplier will meet the minimum mandatory requirements for the Indigenous Procurement Policy, as described in the Indigenous Procurement Policy.

- (c) **Indigenous Procurement Policy** means the policy of that name, as amended from time to time, available on the Indigenous Procurement Website.
 - (d) **Indigenous Procurement Website** means the website at www.dpmc.gov.au/ipp.
- 14.4.2 Clauses 14.4.3 to 14.4.5 of this Schedule 4 apply to all Contracts, unless otherwise specified in Item N [Standards and Best Practice] of the Official Order.
- 14.4.3 It is Commonwealth policy to stimulate Indigenous entrepreneurship and business development, providing Indigenous Australians with more opportunities to participate in the economy (see the Indigenous Procurement Policy for further information).
- 14.4.4 The Supplier must use its reasonable endeavours to increase its:
- (a) purchasing from Indigenous enterprises; and
 - (b) employment of Indigenous Australians,
- in the delivery of the Services, including as specified in the Official Order. Purchases from Indigenous enterprises may be in the form of engagement of an Indigenous enterprise as a Subcontractor, and use of Indigenous suppliers in the Supplier's supply chain.
- 14.4.5 The Supplier must provide any written reports and evidence of its compliance with clause 14.4.4 as specified in Item N [Standards and Best Practice] of the Official Order or as otherwise required by the Customer.
- 14.4.6 Clauses 14.4.7 to 14.4.8 of this Schedule 4 apply to a Contract if:
- (a) the Contract is specified as a High Value Contract in Item N [Standards and Best Practice] of the Official Order; or
 - (b) the Contract becomes a High Value Contract during the Contract Term (including because its value exceeds \$7.5 million).
- 14.4.7 The Supplier must:
- (a) within 30 days after the Contract Commencement Date (if clause 14.4.6(a) applies) or becoming a High Value Contract (if clause 14.4.6(b) applies), develop an Indigenous Participation Plan that addresses:
 - (i) how the Supplier intends on meeting the mandatory minimum requirements for the Indigenous Procurement Policy;
 - (ii) the Supplier's current rate of Indigenous employment and supplier use;
 - (iii) the Supplier's commitment to Indigenous participation; and
 - (iv) if any part of the Contract is being or will be delivered in a Remote Area, how the Supplier will ensure that its provision of the Services will deliver significant Indigenous employment or supplier use outcomes in that Remote Area; and
 - (b) submit the draft Indigenous Participation Plan to the Customer for its review and, if appropriate, approval.
- 14.4.8 Upon approval of the draft Indigenous Participation Plan under clause 14.4.7(b) of this Schedule 4, the Supplier must:

- (a) comply with the Indigenous Participation Plan (which will by contract amendment become an attachment to the Contract); and
- (b) report against its compliance with the Indigenous Participation Plan quarterly during the Contract Term and provide any other information or reports specified in Item N [Standards and Best Practice] of the Official Order or reasonably required by the Customer; and
- (c) comply with any reasonable directions issued by the Customer Contact Officer in relation to the Supplier's implementation of the Indigenous Participation Plan.

14.4.9 The Supplier acknowledges and agrees that any reports it submits in accordance with this clause 14.4:

- (a) may be recorded in a central database that is able to be accessed by Commonwealth entities and may be made publicly available;
- (b) will not be considered to be confidential to the Supplier or any third party; and
- (c) may be used by Commonwealth entities for any purpose, including for evaluation of an offer to provide goods and / or services to that entity.

14.5 Cultural and Community Sensitivities

14.5.1 If the Supplier is required to work with groups, communities or populations from culturally and linguistically diverse backgrounds in providing the Services, the Supplier must ensure that its Personnel are aware of basic cultural communication protocols, taboos or sensitivities that could adversely affect the quality of the Services or the performance of the Contract.

14.5.2 If the Supplier undertakes work in Aboriginal and Torres Strait Islander communities in providing the Services:

- (a) the Supplier must exercise a high degree of cultural sensitivity and respect for local cultures and authority structures. This includes being mindful of Indigenous peoples' right to have different values, norms and aspirations to non-Indigenous people;
- (b) the Supplier must recognise that Indigenous communities are diverse, with different languages, cultures, histories and perspectives; and
- (c) the Supplier must ensure that its Personnel are aware of, and avoid, behaviours, expressions and images that may offend Indigenous people.

14.5.3 The Supplier acknowledges that respectful conduct is the core principle underpinning APS Values, and that the Supplier will need to display this behaviour in order to comply with clause 14.3 of this Schedule 4.

15 ASSIGNMENT AND NOVATION

15.1 The Supplier must consult the Customer before entering negotiations with any other person regarding any arrangement that might require novation of this Contract. For the avoidance of doubt, the Customer is under no obligation to consent to any novation of the Contract.

15.2 The Supplier cannot assign its obligations, and agrees not to assign its rights, under this Contract without the Customer's prior written approval.

16 DISPUTE RESOLUTION

16.1 Subject to clause 16.3 of this Schedule 4, If a dispute arises in relation to the interpretation, conduct, enforcement or any other aspect of this Schedule 4 (Dispute), the parties agree not to terminate this Contract or commence any legal proceedings in respect of any Dispute arising under this Contract, which cannot be resolved by informal discussion, until the procedure provided by this clause 16 has been used.

16.2 The parties agree that any dispute arising during the course of this Contract will be dealt with as follows:

- (a) the party claiming that there is a Dispute will send the other party a written notice setting out the nature of the Dispute;
- (b) the parties will try to resolve the Dispute through direct negotiation by persons to whom they have given authority to resolve the Dispute;
- (c) failing settlement within ten (10) Business Days of the receipt of the written notice, the parties may agree to refer the Dispute to mediation or some alternative dispute resolution procedure; and
- (d) if:
 - (i) there is no resolution of the Dispute;
 - (ii) there is no agreement on submission of the Dispute to mediation or some alternative dispute resolution procedure; or
 - (iii) there is a submission to mediation or some other form of alternative dispute resolution procedure, but there is no resolution within fifteen (15) Business Days of the submission, or extended time as the parties may agree in writing before the expiration of the fifteen (15) Business Days,

then either party may commence legal proceedings.

16.3 This clause 16 does not apply if:

- (a) either party commences legal proceedings for urgent interlocutory relief;
- (b) action is taken by the Customer under, or purportedly under, clauses 3.3, 9 or 17.1 of this Schedule 4;
- (c) action is taken by either party under, or purportedly under, clause 17.2 of this Schedule 4; or
- (d) an authority of the Commonwealth, a State or Territory is investigating a breach or suspected breach of the law by the Supplier.

16.4 Despite the existence of a Dispute, both parties must (unless requested in writing by the other party not to do so) continue to perform obligations under this Contract.

17 TERMINATION

17.1 Termination for convenience

17.1.1 The Customer may, at any time by notice and at its sole discretion, terminate this Contract in whole or reduce the scope of this Contract without prejudice to the rights, liabilities, or obligations of either party accruing prior to the date of termination.

17.1.2 The Supplier must, on receipt of a notice of termination or reduction:

- (a) stop or reduce work as specified in the notice;

- (b) take all available steps to minimise loss resulting from that termination or reduction and to protect Commonwealth Material and Contract Material; and
 - (c) continue work on any part of the Services not affected by the notice.
- 17.1.3 In the event of termination under clause 17.1.1 of this Schedule 4, the Customer will only be liable to:
- (a) pay any Instalment, or part of an Instalment, relating to Services completed before the effective date of termination;
 - (b) reimburse any expenses the Supplier unavoidably incurs relating entirely to Services not covered under clause 17.1.3(a) of this Schedule 4, which the Supplier fully substantiates;
 - (c) pay any expenses and meet any costs unavoidably incurred under Item E [Expenses and Costs] of the Official Order before the effective date of termination; and
 - (d) provide the facilities and assistance necessarily required under Item K [Facilities and Assistance] of the Official Order before the effective date of termination.
- 17.1.4 The Customer will not be liable to pay compensation under clause 17.1.3(a) and 17.1.3(b) of this Schedule 4 of in an amount which would, added to any fees already paid to the Supplier under this Contract, together exceed the fees set out in Item D [Fees] of the Official Order.
- 17.1.5 If there is a reduction in scope of the obligations under this Contract, the Commonwealth's liability to pay any Instalment or expenses set out in Item D [Fees] and Item E [Expenses and Costs] will, in the absence of agreement to the contrary, abate proportionately to the reduction in the obligations under this Contract.
- 17.1.6 The Customer will not be liable to pay any compensation for loss of prospective profits for a termination or reduction in scope under this clause 17.1, or loss of any benefits that would have been conferred on the Supplier had the termination or reduction not occurred.

17.2 Customer termination for breach

- 17.2.1 The Customer may immediately terminate this Contract by giving written notice to the Supplier of the termination, if:
- (a) the Customer is satisfied that, prior to entering into this Contract, the Supplier engaged in misleading or deceptive conduct, or omitted to provide information to the Customer that:
 - (i) is material to the performance of the Contract; or
 - (ii) may have affected the:
 - (A) original decision to enter into the Contract;
 - (B) terms and conditions of the Contract; or
 - (C) action taken by the Customer under this Contract, where that action was taken in reliance on the Supplier's representations, warranties or information provided;

- (b) the Supplier fails to fulfil, or is in breach of, any of its obligations under this Contract, and does not rectify the omission or breach within twenty (20) Business Days (or such other timeframe the Customer determines is reasonable in the circumstances) of receiving a notice in writing from the Customer requiring the Supplier to do so;
- (c) the Supplier is unable to pay all its debts as and when they become due;
- (d) the Supplier is an incorporated body and:
 - (i) it fails to comply with a statutory demand within the meaning of section 459F of the *Corporations Act 2001* (Cth);
 - (ii) proceedings are initiated to obtain an order for its winding up or any shareholder, member or director convenes a meeting to consider a resolution for its winding up;
 - (iii) it comes under one of the forms of external administration referred to in Chapter 5 of the *Corporations Act 2001* (Cth) or equivalent provisions in other legislation, or an order has been made to place it under external administration; or
 - (iv) notice is served on it or proceedings are taken to cancel its incorporation or registration or to dissolve it as a legal entity;
- (e) the Supplier is an individual, and he or she becomes bankrupt or enters into a scheme of arrangement with creditors;
- (f) the Supplier ceases to carry on a business relevant to the performance of the Services;
- (g) another provision of this Contract allows the Customer to terminate it; or
- (h) the Deed under which this Contract was created is terminated under clause 11.2 of the Deed.

17.2.2 In addition to any other right the Customer has under clause 17.2.1 of this Schedule 4 the Customer may terminate this Contract immediately without giving notice to the Supplier for:

- (a) a failure to comply with clause 7 (Protection of Personal Information) of this Schedule 4; or
- (b) a failure to comply with clause 8 (Security) of this Schedule 4.

17.3 Supplier termination for breach

17.3.1 Subject to clauses 16.1 and 16.2 of this Schedule 4, the Supplier may immediately terminate this Contract by giving the Customer written notice of the termination if:

- (a) the Customer fails to fulfil, or is in breach of, any of its obligations under this Contract; and
- (b) the Customer does not rectify the omission or breach within twenty (20) Business Days (or such other timeframe that is reasonable in the circumstances) of receiving a notice in writing from the Supplier to do so.

18 KNOWLEDGE TRANSFER

18.1 If specified in Item A [Services and Subcontractors] of the Official Order, the Supplier must provide the following assistance to the Customer on termination or expiration of this Contract:

- (a) transferring or providing access to the Customer to all information stored by whatever means held by the Supplier or under the control of the Supplier in connection with this Contract; and
- (b) making Specified Personnel and Supplier Personnel available for discussions with the Customer as may be required. The time, length and subject of these discussions will be at the sole discretion of the Customer (acting reasonably), provided that any matter discussed is not considered to reveal any "commercially sensitive" information of the Supplier.

19 NOTICES

19.1 A party giving notice under this Contract must do so in writing, and that notice must be:

- (a) if given by the Supplier to the Customer – addressed to the person specified in Item R [Customer and Addresses for Notices] of the Official Order, or as otherwise notified by the Customer; or
- (b) if given by the Customer to the Supplier – addressed to the person specified in in Item R [Customer and Addresses for Notices] of the Official Order, or as otherwise notified by the Supplier.

19.2 A notice is to be:

- (a) signed by the person giving the notice and delivered by hand;
- (b) signed by the person giving the notice and sent by pre-paid post; or
- (c) transmitted electronically by the person giving the notice by electronic mail or facsimile transmission.

19.3 A notice is deemed to be effected:

- (a) if delivered by hand – upon delivery to the relevant address;
- (b) if sent by pre-paid post – on the sixth Business Day after it is posted;
- (c) if transmitted electronically – upon actual receipt by the addressee.

20 TRUSTEE

20.1 Trustee's warranties

20.1.1 If the Supplier acts as Trustee for a Trust (the Trust) in relation to this Contract, the Supplier warrants to the Customer that:

- (a) the Supplier is the only trustee of the Trust;
- (b) the Supplier has not been removed from, or ceased to act, or resigned or retired from the office of trustee of the Trust, nor has any decision or action been taken or proposed in respect of the removal, resignation or retirement of the Trustee as trustee of the Trust, or to appoint an additional trustee of the Trust;
- (c) the Supplier is not in default under the Trust deed;
- (d) the Supplier has power under the Trust deed to enter into and observe the Trustee's obligations under this Contract;

- (e) the Supplier has entered in this contract in the Trustee's capacity as trustee of the Trust and for the benefit of the beneficiaries of the Trust;
- (f) the Supplier has a right, and will at all times have a right, to be fully indemnified out of the assets of the Trust in respect of the obligations incurred by the Trustee under this Contract;
- (g) the assets of the Trust are sufficient to satisfy that right of indemnity and all other obligations in respect of which the Supplier has a right to be indemnified out of the trust fund; and
- (h) to the extent that the assets of the Trust are insufficient to satisfy any right of indemnity, the Supplier holds professional indemnity insurance as required by clause 10 of this Schedule 4.

20.2 Trustee's indemnity

20.2.1 The Supplier indemnifies the Customer against any liability or loss arising from, and any expenses incurred in connection with the following situations, including, without limitation, legal costs and expenses on a full indemnity basis:

- (a) where a warranty made by the Supplier under clause 20.1 of this Schedule 4 is found to be incorrect or misleading when made or taken to be made; and/or
- (b) the Supplier ceases to be the Trustee of the Trust or any step is taken to appoint another trustee of the Trust.

SCHEDULE 5 – OFFICIAL ORDER TEMPLATE - STATEMENT OF WORK

[Note: This Schedule will be completed to create a Contract under the Deed, based on the RFQ process in clause 3.2 of the Deed. This Schedule includes notes to the drafter to assist in completion (such notes will not be included in an Official Order).]

This Official Order is placed on [Insert date]. The Official Order is placed pursuant and subject to the terms and conditions of the Deed between the Department of Social Services and [Insert name of Supplier] dated [Insert date of Deed] and with Deed number [insert Deed number] ("Deed").

The Customer placing the Official Order is [insert name of Agency placing the Official Order].

Item A [Services and Subcontractors]

Details of the Services

Services Categories

The Supplier will provide Services in relation to the following Services Category set out below.

1. Social Policy Research Services Category ☐

2. Evaluation and Programme Review Services Category ☐

3. Investment in Data Services Category ☐

4. Professional Development Services Category ☐

Project and objectives

[Insert project title and specify the objectives (including Milestones).]

Background

[Insert any relevant background information only. Do not include any objectives or obligations here.]

Project Details, objectives and Milestones

[Insert a description of the Services required, includes the objectives and Milestones which should reflect the outcomes the Department seeks to achieve.]

Skills

[Insert details or 'Not applicable']

Subcontractors (clause 2.7 of Schedule 4)

Subcontractor 1

[Insert details or 'Not applicable']

Business Continuity Plan (clause 2.10 of Schedule 4)

The Supplier is not required to maintain a Business Continuity Plan.

OR

The Supplier is required to maintain a Business Continuity Plan in accordance with clause 2.10 of Schedule 4. The Services are [Critical Services / Non-critical Services]

[Note : If the Supplier is required to maintain a Business Continuity Plan, the relevant Security Arrangements will be specified in Item M.]

Knowledge Transfer (clause 18 of Schedule 4)

The Supplier is not required to provide knowledge transfer assistance to the Customer.

OR

The Supplier is required to provide knowledge transfer assistance to the Customer on termination or on expiration of the Contract in accordance with clause 18 of Schedule 4.

Item B [Contract Material]

[Insert description of the Contract Material which is to be created by the Supplier and/or provided to the Customer by the Supplier, if applicable]

Item C [Contract Commencement and Timeframe]

Contract Commencement Date (clause 2.1.1 of Schedule 4)

The Contract Commencement Date is [Insert Commencement Date].

Contract Completion Date (clause 2.1.1 of Schedule 4)

The Contract Completion Date is [Insert date].

Timeframe (clause 2.2.1(d) of Schedule 4)

The Supplier must perform and deliver the following Services to the Customer:

| No | Description | Requirements or Specifications | Milestone/Due date |
|----|-------------|--------------------------------|--------------------|
| 1 | [Insert] | [Insert] | [Insert] |
| 2 | [Insert] | [Insert] | [Insert] |

Item D [Fees]

[Note: The fees are to be calculated using the pricing set out in Schedule 3 to the Deed.]

Milestones (clause 3.1.1(a) of Schedule 4)

The total fees payable to the Supplier by the Customer are [Insert GST inclusive amount] (GST inclusive), payable by the following Instalments:

| Milestone | Milestone Achievement Criteria | Milestone Payment Amount | Milestone Due Date |
|-----------|---|--------------------------|--------------------|
| MS [#] | [Insert - e.g. acceptance of phase 1 of a project.] | \$(Amount) | [Insert] |
| MS [#] | [Insert] | \$(Amount) | [Insert] |
| Total | [Insert] | \$(Amount) | [Insert] |

Staffing costs (clause 3.1.1(a) of Schedule 4)

The fees payable to the Supplier by the Customer will be calculated in accordance with the following table, payable in monthly Instalments (in arrears):

| Personnel (by position) | Fees - hourly (GST exclusive)* | Fees – daily rate 7.5 hours (GST exclusive)* | GST component | Time to be spent by Personnel | Total cost (GST inclusive) |
|---|-----------------------------------|---|------------------|-------------------------------------|----------------------------------|
| [Insert e.g. Senior analyst, Professor] | [Insert] | [Insert] | [Insert] | [Insert] | [Insert] |
| [Insert] | [Insert] | [Insert] | [Insert] | [Insert] | [Insert] |
| [Insert] | [Insert] | [Insert] | [Insert] | [Insert] | [Insert] |
| | | | | | [Insert] |

* Fees specified are inclusive of on-costs (incorporating workers' compensation, superannuation and leave entitlements).

* If the Term of the Deed is extended in accordance with clause 2.1.2 of the Deed, the fees specified in the Deed will be adjusted to reflect any increase in the Consumer Price Index in accordance with the processes specified in the Deed. If the fees specified in the Deed increase during the Contract Term, [insert either: the hourly or daily rates specified in the above table will also be increased to reflect the adjusted rates under the Deed, and the total cost set out in the table will also be adjusted accordingly] OR [this will have no effect on the hourly or daily rates specified in the above table.]

Item E [Expenses and Costs]

Note: These details are to reflect the terms of Schedule 3 to the Deed.]

[Insert details]

Item F [Invoices]

Invoices (clause 4 of Schedule 4)

The Supplier must submit correctly rendered tax invoices to the Customer by either:

Post: Department of Social Services, PO Box 34, FYSHWICK, ACT, 2609; or

Email: invoices@dss.gov.au

A correctly rendered tax invoice is one which includes:

- (a) the Reference / Contract / Purchase Order number;

- (b) the name of the Customer's Contact Officer;
- (c) the DSS ABN (36342015855)
- (d) the title of the Services;
- (e) details the fees payable;
- (f) details expenses and costs payable, and attaches original receipts;
- (g) contains written certification in a form acceptable to the Customer that the Supplier has paid all remuneration, fees or other amounts payable to an employee, agent or Subcontractor performing Services under this Contract; and
- (h) meets the requirements of a tax invoice under the GST Act.

The due date for payment by the Customer is thirty (30) days after receipt by the Customer of a correctly rendered invoice.

Payment will be effected by electronic funds transfer (EFT) to the Supplier's bank account specified at Schedule 3 of the Deed.

OR

Invoices (clause 4 of Schedule 4)

The Supplier must submit correctly rendered tax invoices to the Customer by either:

Post: [Insert]; or

Email: [Insert]

A correctly rendered tax invoice is one which includes:

- (a) the Reference / Contract / Purchase Order number;
- (b) the name of the Customer's Contact Officer;
- (c) the [insert Commonwealth entity name] ABN ([Insert])
- (d) the title of the Services;
- (e) details the fees payable;
- (f) details expenses and costs payable, and attaches original receipts;
- (g) contains written certification in a form acceptable to the Customer that the Supplier has paid all remuneration, fees or other amounts payable to an employee, agent or Subcontractor performing Services under this Contract; and
- (h) meets the requirements of a tax invoice under the GST Act.

The due date for payment by the Customer is 30 days after receipt by the Customer of a correctly rendered invoice.

Payment will be effected by electronic funds transfer (EFT) to the Supplier's bank account specified at Schedule 3 of the Deed.

Item G [Intellectual Property]

[Note: Only one of the following models for Intellectual Property ownership and licensing of Contract Material is to be inserted — see clause 4.2 of Schedule 4.]

[Option A: 'MODEL 1— Customer ownership of Intellectual Property in Contract Material with limited license to Supplier.']

OR

[Option B: 'MODEL 2 — Customer ownership of Intellectual Property in Contract Material with broad license to Supplier.']

OR

[Option C: 'MODEL 3 - Supplier ownership of Intellectual Property in Contract Material with broad license to the Customer.']

Item H [Existing Material]

[Insert description or "None specified"]

Item I [Moral Rights]

[Insert description of any acts or omissions which are to be additional 'Permitted Acts' (see clause 4.8.1 of Schedule 4) or "None specified"]

Item J [Use of Commonwealth Material]

[Describe any Commonwealth Material that is to be provided to the Supplier and any conditions or restrictions you are aware of or "None specified"]

Item K [Facilities and Assistance]

[Insert description of facilities or assistance to be provided by the Customer or "None specified"]

Item L [Confidential Information]

Additional Customer Confidential Information:

| DESCRIPTION | PERIOD OF CONFIDENTIALITY |
|-------------|---------------------------|
| [Insert] | [Insert] |
| [Insert] | [Insert] |

Additional Supplier Confidential Information:

| DESCRIPTION | PERIOD OF CONFIDENTIALITY |
|-------------|---------------------------|
| [Insert] | [Insert] |
| [Insert] | [Insert] |

Item M [Security Requirements]

The Supplier must comply with the PSPF and the ISM.

[Insert other details - see clause 8.1.4 of Schedule 4]

Item N [Standards and Best Practice]

Standards for Research on Human Subjects (clause 2.9 of Schedule 4)

[Insert description or "None specified"]

Additional Standards and Guidelines (clause c of Schedule 4)

[Insert any additional standards, guidelines or other best practice requirements]

Standards for Accessibility of Services (clause 14.3.3 of Schedule 4)

[Insert any applicable standards, guidelines or other best practice requirements (for example 'The Supplier must ensure that all [describe relevant deliverables, eg: websites, documents, or other deliverables] provided by the Supplier as part of the Services comply with the Web Content Accessibility Guidelines 2.0 as developed by the World Wide Web Consortium (WC3) and endorsed by the Commonwealth's Web Accessibility National Transition Strategy'), or 'Not applicable'.]

Indigenous Procurement Policy (clause 14.4 of Schedule 4)

Clauses 14.4.3 to 14.4.5 of Schedule 4 [insert either: do OR do not] apply to the Contract.

As at the Contract Commencement date, the Contract [insert either: is OR is not] a High Value Contract.

Item O [Specified Personnel]

[Insert description or "None specified"]

Item P [Insurance]

[Insert the following, or "No additional Insurance specified"]

In addition to the insurances required by clause 9 of the Deed, the Supplier must effect and maintain, or cause to be effected and maintained, the following additional types and amounts of insurances for the Contract, for the period specified:

- (i) [insert details of additional insurance] - to be held for [insert period for which it is to be held, eg "for the life of the Contract and seven (7) years from the termination or expiry of the Contract"]

Item Q [Contact Officers]

The Customer's Contact Officer is the person holding the position of [insert position description], currently:

| | |
|------------------|------------------|
| Name of person | [insert details] |
| Postal Address | [insert details] |
| Physical Address | [insert details] |
| Email | [insert details] |
| Phone | [insert details] |
| Facsimile | [insert details] |

The Supplier's Contact Officer is the person holding the position of [insert position description], currently:

| | |
|------------------|------------------|
| Name of person | [insert details] |
| Postal Address | [insert details] |
| Physical Address | [insert details] |
| Email | [insert details] |
| Phone | [insert details] |
| Facsimile | [insert details] |

A party may change their Contact Officer or their details by notifying the other party in writing of the changed details.

Item R [Customer and Addresses for Notices]

For the purposes of the Contract:

The Customer's address for notices is:

| | |
|------------------|------------------|
| Name of person | [insert details] |
| Postal Address | [insert details] |
| Physical Address | [insert details] |
| Email | [insert details] |
| Phone | [insert details] |
| Facsimile | [insert details] |

The Supplier's address for notices is:

| | |
|------------------|------------------|
| Name of person | [insert details] |
| Postal Address | [insert details] |
| Physical Address | [insert details] |
| Email | [insert details] |
| Phone | [insert details] |
| Facsimile | [insert details] |

A party may change their address for notices by notifying the other party in writing of the changed details.

Item S [Publications]

Publications (clause 5 of the Contract)

[Insert description (including any additional requirements such as a requirement that the Customer obtain the Supplier's permission before using the Supplier's logo in any publication) or "Not applicable"]

Item T [Limited Liability]

[Insert agreed limit for indemnity in clause 11 or "Not applicable"]

Item U [Transfer of Information Outside Australia]

[Insert agreed permission and details for transfer of Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information outside Australia in Schedule 4, clause 7 or "Not applicable"]

Item V [Cyber-Security]

[Insert the following, or "No additional cyber-security requirements"]

- 1 The purpose of clauses 1, 2 and 3 is to set out the Supplier's additional obligations in respect of Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information:
 - (a) in respect of which the Supplier has custody or control for purposes connected with this Contract; or
 - (b) which are accessed, transmitted or stored using or on the Supplier's information systems or equipment under this Contract.
- 2 The Supplier must:
 - (a) do all things that a reasonable and prudent entity would do to ensure that all Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information is protected at all times from unauthorised access or use by a third party or misuse, damage or destruction by any person;
 - (b) provide protective measures for the Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information that are no less rigorous than accepted industry standards and commensurate with the consequences and probability of unauthorised access to, or use, misuse or loss of, the Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information;
 - (c) without limiting clauses 2(a) or 2(b), comply with all security regulations or procedures or directions as are specified in the Contract or given by the Customer from time to time regarding any aspect of security of, or access to, the Customer's information, material or premises; and
 - (d) develop for acceptance by the Customer a Commonwealth Data Protection Plan (CDPP) that sets out how the Supplier and the Customer will deal with and discharge their obligations in respect of Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information during the provision of the Services. The CDPP must:
 - (i) be consistent with the requirements of the Contract (including clauses 2(a) and 2(b) of this Item V);
 - (ii) be consistent with the requirements of the *Privacy Act 1988* (Cth);
 - (iii) specifically deal with cybercrime risks, including unauthorised access;
 - (iv) be consistent with the Australian Government's Protective Security Policy Framework (PSPF) and Information Security Manual (ISM); and

- (v) set out the steps and processes that the Supplier and the Customer will follow to protect the Customer Confidential Information from unauthorised access, use, misuse, destruction or loss,

and once accepted, the CDPP will form part of the Contract and the Supplier must comply with it unless the Customer otherwise agrees in writing.

3 If the Supplier becomes aware of any actual or suspected:

- (a) action taken through the use of computer networks that result in an actual or potentially adverse effect on the Supplier's information system and/or Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information residing on that system (**Cyber Incident**); or

- (b) any other unauthorised access or use by a third party or misuse, damage or destruction by any person (**Other Incident**),

the Supplier must:

- (c) notify the Customer in writing immediately (and no longer than 12 hours after becoming aware of the Cyber Incident or Other Incident); and

- (d) comply with any directions issued by the Customer in connection with the Cyber Incident or Other Incident, including in relation to:

- (i) notifying the Australian Cyber Security Centre, or any other relevant body, as required by the Customer;
- (ii) obtaining evidence about how, when and by whom the Supplier's information system and/or the Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information has or may have been compromised, providing it to the Customer on request, and preserving and protecting that evidence for a period of up to 12 months;
- (iii) implementing any mitigation strategies to reduce the impact of the Cyber Incident or Other Incident or the likelihood or impact of any future similar incident; and
- (iv) preserving and protecting Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information (including as necessary reverting to any backup or alternative site or taking other action to recover Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information).

4 The Supplier must take out and maintain insurance to protect against the risks of a Cyber Incident, and comply with the provisions of clause 10 of Schedule 4 in respect of that insurance.

5 The Supplier must ensure that:

- (a) all subcontracts and other supply chain arrangements, which may allow or cause access to Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information, contain no provisions that are inconsistent with clauses 1, 2, 3 or 4 or 5 of this Item V; and
- (b) all Personnel and any Subcontractors who have access to Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information comply with clauses 2 and 3 of this Item V.

SIGNED for and on behalf of

[Insert name of Customer, eg: THE COMMONWEALTH OF AUSTRALIA as represented by the Department of Social Services], by:

[Insert name of Signatory]

[Signature]

[Insert Signatory's work title]

On:

[Insert date]

In the presence of:

[Insert name of Witness]

[Signature]

SIGNED for and on behalf of ACN 613 066 541 PTY LTD trading as
BEHAVIOURAL INSIGHTS (AUSTRALIA), ABN 16 613 066 541 by:

[Insert name of Signatory]

[Signature]

[Insert Signatory's work title]

On:

[Insert date]

In the presence of:

[Insert name of Witness]

[Signature]

SCHEDULE 6 - DEED POLL



Australian Government

Department of Social Services

DEED POLL

Date and Governing Law

This Deed Poll is dated 29 March 2017

This Deed Poll is to be construed in accordance with the laws of the Australian Capital Territory.

Party

This Deed is made by:

ACN 613 066 541 PTY LTD trading as BEHAVIOURAL INSIGHTS (AUSTRALIA) ABN
16 613 066 541 (the **Supplier**)

In favour of:

COMMONWEALTH OF AUSTRALIA, represented by the Department of Social Services

And in favour of:

THE AGENCIES as referred to in clause 1 of this Deed.

Purpose

This Deed is made in the following context:

- A The Supplier has entered into a Deed of Standing Offer dated
29 March 2017
(Deed number 60002773) (Deed) with the Commonwealth of Australia represented by the Department of Social Services (Department), under which the Supplier has agreed to offer the Services to the Department.
- B Under the Deed, the Supplier also agreed to offer the Services to other Agencies, therefore allowing those Agencies to 'piggy back' on the Deed.
- C The Supplier has executed this Deed Poll to provide an irrevocable standing offer to the Agencies to provide the Services on the terms and conditions of the Deed.

OPERATIVE PROVISIONS

1 AGENCIES

- 1.1.1 For the avoidance of doubt, the standing offer in clause 2 of this Deed Poll is extended to any Commonwealth entity as that term is defined in the *Public Governance, Performance and Accountability Act 2013* (Cth).

2 STANDING OFFER

2.1 Offer to provide Services

- 2.1.1 The Supplier irrevocably offers to provide the Services as and when directed by Agencies on the terms and conditions of the Deed.
- 2.1.2 The Supplier irrevocably undertakes that the Services provided to Agencies will be in full compliance with the terms and conditions of the Deed.
- 2.1.3 The Supplier's standing offer in clause 2.1.1 will remain open for acceptance by the Agencies for the Term of the Deed.
- 2.1.4 The Supplier's standing offer is subject to the Agencies accepting the obligations of the Customer under the Deed when issuing an Official Order.

2.2 Acknowledgements

- 2.2.1 The Supplier acknowledges that it is one of a number of suppliers which may be issued with Official Orders by Agencies.
- 2.2.2 Agencies:
- (a) are not obliged to place any Official Order with the Supplier or to request any volume of Services from the Supplier; and
 - (b) may at any time purchase or acquire goods and services the same as, or similar to, the Services from any other Supplier on such terms and conditions as the Agencies wish.

2.3 Notices

- 2.3.1 Any notice, request or other communication to be given or served pursuant to this Deed Poll should be addressed as specified in the Deed.

2.4 Defined terms

2.4.1 In this Deed Poll, the following terms have the same meaning as in the Deed:

- (a) Agency
- (b) Official Order;
- (c) Services; and
- (d) Term.

Executed as a Deed Poll

Signed by ACN 613 066 541 PTY LTD
trading as BEHAVIOURAL INSIGHTS
(AUSTRALIA) ABN 16 613 066 541, in
accordance with section 127 of the
Corporations Act 2001 by or in the
presence of:

s47F - personal privacy

Signature of Secretary/Other Director

s47F - personal privacy

Signature of Director or sole Director and
sole Secretary

s47F - personal privacy

[Name of Secretary/other Director in full]

[Name of Director or sole Director and
sole Secretary, in full]

**[Note to Supplier: The Supplier must return the original of this Deed Poll to the
Department's Contact Officer as soon as practicable after its execution (but within 10
Business Days of the Commencement Date).]**

SCHEDULE 5 – OFFICIAL ORDER TEMPLATE - STATEMENT OF WORK

This Official Order is placed on Thursday 26 September. The Official Order is placed pursuant and subject to the terms and conditions of the Deed between the Department of Social Services and Behavioural Insights Australia dated 29 March 2017 and with Deed number 6002773 ("**Deed**").

The Customer placing the Official Order is the Department of Communications and the Arts (the Department).

Item A [Services and Subcontractors]

Details of the Services

Services Categories

The Supplier will provide Services in relation to the following Services Category/Categories set out below.

| | | |
|----|---|-------------------------------------|
| 1. | Social Policy Research Services Category | <input checked="" type="checkbox"/> |
| 2. | Evaluation and Program Review Services Category | <input type="checkbox"/> |
| 3. | Investment in Data Services Category | <input type="checkbox"/> |
| 4. | Professional Development Services Category | <input type="checkbox"/> |

Project and objectives

The project title is 'Literature review on the impacts of violent video games from an Australian perspective' (DCON/19/91). The key project milestones will be as follows.

| Action | Date |
|--|-----------------------|
| Closing date for submissions | Monday 16 September |
| Notification of successful tenderer | Tuesday 24 September |
| Execution of contract (working order) | Thursday 26 September |
| Inception meeting | Monday 30 September |
| Provision of research plan to Department | Friday 4 October |
| Provision of draft report to Department | Friday 1 November |
| Provision of Departmental comments following review of draft | Friday 8 November |
| Provision of final report to Department | Friday 15 November |

Background

Playing video games is a popular pastime for Australians. The Interactive Games and Entertainment Association (IGEA) reports that 2 out of 3 Australians play video games.¹

While most video games are not extremely violent (55 per cent of the games submitted to the Classification Board were G or PG in 2017-18), there exists an ongoing community concern that playing violent video games may normalise or encourage violent behaviour. Over time, technological advancements in games development have provided more realistic experiences for players, which can be positive and immersive in some cases, but can also make the experience of violence (such as real life warfare with guns or street violence) more impactful. In some games where the player's character can freely explore a world, the players character can commit acts of violence against both men and women characters should the player choose. Such content has contributed to community debate about the potential impact of games on real-life behaviour and attitudes, including violence towards women.

Over the last three decades, there has been considerable global research and case studies examined to further understand the possible effects of playing violent video games, in particular the extent to which these games cause aggressive behaviour or attitudes. Much of the research relating to the impacts of violent video games on behaviour and attitudes has been conducted in the United States and Europe.

Project Details, objectives and Milestones

The Department of Communications and the Arts (the Department) is seeking to commission a review of academic research literature on the effects of violent video games to identify if there are any gaps in this research from an Australian perspective. The research will also assess the extent to which findings from international research can be used to inform an understanding of the potential impact of such games in an Australian setting.

The Department is seeking a suitably qualified research provider to conduct a review of academic literature, focusing on material from the last 10 years, to address the following requirements:

- Source, collate and synthesise relevant research conducted in Australia on any link between violent video games and aggression, and violent games and attitudes to women.
- Source, collate and synthesise research conducted in Australia and internationally focussing on the impacts of *extremely* violent games.
- Source, collate and synthesise relevant international research that compares findings across multiple countries and interrogates the role of cultural, political or other differences between countries in relation to the impacts of violent video games on attitudes and behaviour.
- Form recommendations as to the generalisability of findings on the behavioural and attitudinal impacts of violent (and extremely violent) games between comparable countries and the utility of research conducted in other countries for policy makers in Australia.

A research plan, detailing search criteria and sources to be used (such as online academic bibliographies) must be provided prior to submission of the draft literature review.

¹ <https://igea.net/wp-content/uploads/2019/07/DA20-Summary-Report.pdf>

A high quality draft literature review report, complete with recommendations as specified and appropriate referencing, must be provided to the Department by Friday 1 November 2019. All material to be reviewed is to be sourced by the research provider, and any costs incurred in procuring this material are included in the costing given in the quotation provided by Behavioural Insights Australia.

Milestones are as outlined under Project and objectives.

Skills

Experience performing systematic literature reviews. Ability to apply international insights to the Australian context.

Subcontractors (clause 2.7 of Schedule 4)

Subcontractor 1

Not applicable

Business Continuity Plan (clause 2.10 of Schedule 4)

The Supplier is not required to maintain a Business Continuity Plan.

Knowledge Transfer (clause 18 of Schedule 4)

The Supplier is required to provide knowledge transfer assistance to the Customer on termination or on expiration of the Contract in accordance with clause 18 of Schedule 4.

Item B [Contract Material]

Behavioural Insights Australia is to provide the Department with the following:

A research plan, detailing search criteria and sources to be used (such as online academic bibliographies) must be provided prior to submission of the draft literature review.

A high quality draft literature review report, addressing each of the points specified in Item A under Project Details, objectives and Milestones and with recommendations and appropriate referencing, must be provided to the Department by Friday 1 November 2019.

A final publication quality literature review report incorporating any comments from the Department must be provided to the Department by Friday 15 November 2019.

Both draft and final literature review reports are to contain referencing consisting of a full bibliography and citations using a recognised format (for example the American Psychological Association [APA] style).

All documents are to be submitted in Microsoft Word and must comply with Web Content Accessibility Guidelines 2.0 (see more information under Item N below).

Item C [Contract Commencement and Timeframe]

Contract Commencement Date (clause 2.1.1 of Schedule 4)

The Contract Commencement Date is Thursday 26 September 2019.

Contract Completion Date (clause 2.1.1 of Schedule 4)

The Contract Completion Date is Friday 15 November 2019.

Timeframe (clause 2.2.1(d) of Schedule 4)

The Supplier must perform and deliver the following Services to the Customer:

| No | Description | Requirements or Specifications | Milestone/Due date |
|----|--|---|---------------------|
| 1 | Inception meeting | Background briefing, confirmation of final scope, agreement on key contacts. | Monday 30 September |
| 2 | Provision of research plan to Department | Plan to include final research questions, detailed search methodology and draft report structure. | Friday 4 October |
| 3 | Provision of draft report to Department | A high quality draft literature review report, addressing each of the points specified in Item A under Project Details, objectives and Milestones and with recommendations and appropriate referencing. | Friday 1 November |
| 4 | Provision of final report to Department | Publication standard final literature review report incorporating comments on Draft received from Department. | Friday 15 November |

Item D [Fees]

The fees do not exceed the pricing set out in Schedule 3 to the Deed.

Milestones (clause 3.1.1(a) of Schedule 4)

The total fees payable to the Supplier by the Customer are \$65,092.5 (GST inclusive), payable by the following Instalments:

| Milestone | Milestone Achievement Criteria | Milestone Payment Amount | Milestone Due Date |
|-----------|--|--------------------------|--------------------|
| MS [2] | Provision of research plan to Department including final research questions, detailed search methodology and draft report structure. | \$13,018,50 | Friday 4 October |

| Milestone | Milestone Achievement Criteria | Milestone Payment Amount | Milestone Due Date |
|------------------|--|---------------------------------|---------------------------|
| MS [3] | Provision to the Department of a high quality draft literature review report, addressing each of the points specified in Item A under Project Details, objectives and Milestones and with recommendations and appropriate referencing. | \$19,527.75 | Friday 1 November |
| MS [4] | Provision to the Department of a publication standard final literature review report incorporating comments on Draft received from the Department. | \$32,546.25 | Friday 15 November |
| Total | | \$65,092.5 | |

Item E [Expenses and Costs]

All expenses associated with delivery of the project will be covered by the fees contained in the tender provided by Behavioural Insights Australia.

Item F [Invoices]

Invoices (clause 3 of Schedule 4)

The Supplier must submit correctly rendered tax invoices to the Customer by either:

Post: Locked Bag 3, Haymarket NSW 1240; or

Email: accounts@classification.gov.au

A correctly rendered tax invoice is one which includes:

- (a) the Reference / Contract / Purchase Order number;
- (b) the name of the Customer's Contact Officer;
- (c) the Department of Communications and the Arts ABN 51491646726
- (d) the title of the Services;
- (e) details the fees payable;
- (f) details expenses and costs payable, and attaches original receipts;
- (g) contains written certification in a form acceptable to the Customer that the Supplier has paid all remuneration, fees or other amounts payable to an employee, agent or Subcontractor performing Services under this Contract; and
- (h) meets the requirements of a tax invoice under the GST Act.

The due date for payment by the Customer is 30 days after receipt by the Customer of a correctly rendered invoice.

Payment will be effected by electronic funds transfer (EFT) to the Supplier's bank account specified at Schedule 3 of the Deed.

Item G [Intellectual Property]

'MODEL 1— Customer ownership of Intellectual Property in Contract Material with limited license to Supplier.'

Item H [Existing Material]

"EAST – Four simple ways to apply behavioural insights". Research framework published by the Behavioural Insights Team in 2014.

Item I [Moral Rights]

None specified.

Item J [Use of Commonwealth Material]

None specified.

Item K [Facilities and Assistance]

No reference material will be provided by the Department for this review, however there is a literature review on the link between violent computer games and aggression commissioned by the then Office of Film and Literature Classification (OFLC) in 2010 which can be located on the Australian Classification website www.classification.gov.au.

Item L [Confidential Information]

None specified on the part of the Supplier. On the part of the Department, all matters relating to this procurement, including correspondence, notes from discussions, research plan, draft and final reports, recommendations and other deliverables required to be provided under this Official Order are to remain confidential until advised, in writing, that they are no longer confidential.

Item M [Security Requirements]

The Supplier must comply with the PSPF and ISM.

Item N [Standards and Best Practice]

Standards for Research on Human Subjects (clause 2.9 of Schedule 4)

None specified.

Additional Standards and Guidelines (clause 2.2.1c of Schedule 4)

None specified.

Standards for Accessibility of Services (clause 14.3.3 of Schedule 4)

The Supplier must ensure that all documents, or other deliverables provided by the Supplier as part of the Services comply with the Web Content Accessibility Guidelines 2.0 as developed by the World Wide Web Consortium (WC3) and endorsed by the Commonwealth's Web Accessibility National Transition Strategy).

In order for the Department to comply with WCAG2.0 requirements, any web-based products (websites and web applications and any documents which are intended to be available on

the Customer's website) which include text and images must be provided in a source document. As a minimum:

- Microsoft Office 2007 or higher (this includes Word, Excel, PowerPoint) is required;
- a semantic heading structure (Heading 1, Heading 2, etc.);
- other structural elements (paragraphs, dot points, quotes, emphasised text, etc.);
- images with descriptive text (alt text);
- a linked table of contents;
- correct reading and tab order;
- file formats (ie PDF and Word); and
- summary text that you will publish in HTML to aid document discovery.

Further information regarding policies relating to accessibility, are available on the Department of Finance website ([Web Accessibility National Transition Strategy](#)) and the Digital Transformation Office's Digital Service Standard ([Digital Service Standard](#)).

Indigenous Procurement Policy (clause 14.4 of Schedule 4)

Clauses 14.4.3 to 14.4.5 of Schedule 4 do not apply to the Contract.

As at the Contract Commencement date, the Contract is not a High Value Contract.

Item O [Specified Personnel]

Dr Iseult Cremen – Advisor (Project Lead)

Dr Ashleigh Morse – Advisor (Project Support and Research)

Saul Wodack – Associate Advisor (Project Support and Research)

Edward Bradon – Principal Advisor (Quality Assurance)

Item P [Insurance]

The Supplier is required to maintain minimum levels of professional indemnity, public liability and workers' compensation insurance under both the Deed and the Contract.

No additional insurance is specified.

Item Q [Contact Officers]

The Customer's Contact Officer is the person holding the position of Assistant Director, Classification Policy and Research currently:

| | |
|------------------|--|
| Name of person | Samantha 547F - personal |
| Postal Address | Locked Bag 3, Haymarket, Sydney NSW 1240 |
| Physical Address | Level 6, 23-33 Mary Street, Surry Hills NSW 2010 |
| Email | <a #990000;="" #cccccc;="" 0.8em;"="" background-color:="" color:="" font-size:="" href="mailto:Samantha547F - personal@classification.gov.au">Samantha547F - personal@classification.gov.au |
| Phone | 02 9289 7117 |
| Facsimile | None |

The Supplier's Contact Officer is the person holding the position of Project Manager, currently:

| | |
|------------------|--|
| Name of person | s47F - personal privacy |
| Postal Address | Suite 3, Level 13, 9 Hunter Street Sydney 2000 |
| Physical Address | As above |
| Email | s47F - personal privacy @bi.team |
| Phone | s47F - personal privacy |
| Facsimile | n/a |

A party may change their Contact Officer or their details by notifying the other party in writing of the changed details.

Item R [Customer and Addresses for Notices]

For the purposes of the Contract:

The Customer's address for notices is:

| | |
|------------------|--|
| Name of person | s47F - personal privacy |
| Postal Address | Suite 3, Level 13, 9 Hunter Street Sydney 2000 |
| Physical Address | As above |
| Email | s47F - personal privacy @bi.team |
| Phone | s47F - personal privacy |
| Facsimile | n/a |

The Supplier's address for notices is:

| | |
|------------------|---|
| Name of person | Samantha s47F - personal |
| Postal Address | Locked Bag 3, Haymarket Sydney NSW 1240 |
| Physical Address | Level 6, 23-33 Mary Street Surry Hills 2010 |
| Email | Samantha.s47F - personal @classification.gov.au |
| Phone | 02 9289 7117 |
| Facsimile | n/a |

A party may change their address for notices by notifying the other party in writing of the changed details.

Item S [Publications]

Publications

The Supplier must not publish the report without permission, in writing, from the Department.

Item T [Limited Liability]

Not applicable.

Item U [Transfer of Information Outside Australia]

Not applicable.

Item V [Cyber Security]

- 1 The purpose of clauses 1, 2 and 3 is to set out the Supplier's additional obligations in respect of Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information:
 - (a) in respect of which the Supplier has custody or control for purposes connected with this Contract; or
 - (b) which are accessed, transmitted or stored using or on the Supplier's information systems or equipment under this Contract.
- 2 The Supplier must:
 - (a) do all things that a reasonable and prudent entity would do to ensure that all Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information is protected at all times from unauthorised access or use by a third party or misuse, damage or destruction by any person;
 - (b) provide protective measures for the Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information that are no less rigorous than accepted industry standards and commensurate with the consequences and probability of unauthorised access to, or use, misuse or loss of, the Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information;
 - (c) without limiting clauses 2(a) or 2(b), comply with all security regulations or procedures or directions as are specified in the Contract or given by the Customer from time to time regarding any aspect of security of, or access to, the Customer's information, material or premises; and
 - (d) develop for acceptance by the Customer a Commonwealth Data Protection Plan (**CDPP**) that sets out how the Supplier and the Customer will deal with and discharge their obligations in respect of Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information during the provision of the Services. The CDPP must:
 - (i) be consistent with the requirements of the Contract (including clauses 2(a) and 2(b) of this Item V);
 - (ii) be consistent with the requirements of the *Privacy Act 1988* (Cth);
 - (iii) specifically deal with cybercrime risks, including unauthorised access;
 - (iv) be consistent with the Australian Government's Protective Security Policy Framework (PSPF) and Information Security Manual (ISM); and
 - (v) set out the steps and processes that the Supplier and the Customer will follow to protect the Customer Confidential Information from unauthorised access, use, misuse, destruction or loss,and once accepted, the CDPP will form part of the Contract and the Supplier must comply with it unless the Customer otherwise agrees in writing.

- 3 If the Supplier becomes aware of any actual or suspected:
- (a) action taken through the use of computer networks that result in an actual or potentially adverse effect on the Supplier's information system and/or Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information residing on that system (**Cyber Incident**); or
 - (b) any other unauthorised access or use by a third party or misuse, damage or destruction by any person (**Other Incident**),
- the Supplier must:
- (c) notify the Customer in writing immediately (and no longer than 12 hours after becoming aware of the Cyber Incident or Other Incident); and
 - (d) comply with any directions issued by the Customer in connection with the Cyber Incident or Other Incident, including in relation to:
 - (i) notifying the Australian Cyber Security Centre, or any other relevant body, as required by the Customer;
 - (ii) obtaining evidence about how, when and by whom the Supplier's information system and/or the Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information has or may have been compromised, providing it to the Customer on request, and preserving and protecting that evidence for a period of up to 12 months;
 - (iii) implementing any mitigation strategies to reduce the impact of the Cyber Incident or Other Incident or the likelihood or impact of any future similar incident; and
 - (iv) preserving and protecting Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information (including as necessary reverting to any backup or alternative site or taking other action to recover Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information).
- 4 The Supplier must take out and maintain insurance to protect against the risks of a Cyber Incident, and comply with the provisions of clause 10 of Schedule 4 in respect of that insurance.
- 5 The Supplier must ensure that:
- (a) all subcontracts and other supply chain arrangements, which may allow or cause access to Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information, contain no provisions that are inconsistent with clauses 1, 2, 3 or 4 or 5 of this Item V; and
 - (b) all Personnel and any Subcontractors who have access to Customer Confidential Information, Additional Customer Confidential Information and/or Personal Information comply with clauses 2 and 3 of this Item V.

SIGNED for and on behalf of

THE COMMONWEALTH OF AUSTRALIA as represented by the Department of Communications and the Arts, by:

SAMANTHA

s47F - personal privacy

s47F - personal privacy

[Insert name of Signatory]

ASSISTANT DIRECTOR, POLICY + RESEARCH

[Insert Signatory's work title]

On:

26 SEPTEMBER 2019

[Insert date]

s47F - personal privacy

In the presence of:

s47F - personal privacy

[Insert name of Witness]

[Signature]

SIGNED for and on behalf of Behavioural Insights Australia, ABN 16 613 066 541 by:

s47F - personal privacy

s47F - personal privacy

[Insert name of Signatory]

[Signature]

Operations Manager

[Insert Signatory's work title]

On:

26/9/19

[Insert date]

In the presence of:

s47F - personal privacy

[Insert name of Witness]

[Signature]

From: [REDACTED]
To: [REDACTED] [Samantha](#)
Cc: [REDACTED] [Barbara](#); [REDACTED] [Indiana](#); [REDACTED] [Shannon](#)
Subject: Re: Inception meeting [DLM=For-Official-Use-Only]
Date: Monday, 30 September 2019 1:56:43 PM
Attachments: [image001.png](#)
[Video Games- inception.pptx](#)

Hi Samantha,

Please find attached the short deck we put together for the inception meeting.

Thanks,

[REDACTED]

On Mon, 30 Sep 2019 at 11:54, [REDACTED] <[REDACTED]@bi.team> wrote:

Hi Samantha,

That agenda looks great and aligns with our presentation. I will bring along my PC to present.

Many thanks and speak soon,

[REDACTED]

On Mon, 30 Sep 2019 at 11:48, [REDACTED] Samantha
<[Samantha.\[REDACTED\]@classification.gov.au](#)> wrote:

Hi [REDACTED] absolutely fine to bring [REDACTED] and there will be a screen you can present on. Is it possible for you to present from a PC? Our system seems a bit unreliable with Mac products. If you would like to email the slides through to me that is also fine.

Here is our proposed agenda. Please note Shannon [REDACTED] will be an apology as she is on annual leave.

1. Introductions
2. Project background briefing
3. Research scope and aims discussion
4. Deliverables and timing confirmation
5. Contacts
6. Any other questions from BIT/other matters

We look forward to seeing you this afternoon.

Sam [REDACTED]



Samantha

s47F - personal privacy

Assistant Director / Policy and Research / Classification Branch

Department of Communications and the Arts

s47F - personal privacy

Samantha s47F-personal-privacy@communications.gov.au

s47F - personal privacy

L6, 23-33 Mary Street, Surry Hills NSW 2010

Locked Bag 3 Haymarket NSW 1240

For Official Use Only

From: s47F - personal privacy <s47F-personal-privacy@bi.team>
Sent: Monday, 30 September 2019 11:13 AM
To: s47F - personal privacy Samantha <s47F-personal-privacy@communications.gov.au>
Cc: s47F - personal privacy <s47F-personal-privacy@bi.team>; s47F - personal privacy Barbara
<s47F-personal-privacy@communications.gov.au>; s47F - personal privacy Indiana
<s47F-personal-privacy@communications.gov.au>; s47F - personal privacy Shannon
<s47F-personal-privacy@communications.gov.au>
Subject: Re: Inception meeting [DLM=For-Official-Use-Only]

Hi Samantha,

We are very much looking forward to the kick-off meeting later today and getting started on this exciting project. I wanted to flag two things in advance:

Firstly, we were wondering if there will be a screen in the room we can use to present a short powerpoint? We have prepared a couple of slides to help structure our conversation and make sure we are covering off on the key questions.

Secondly, our colleague s47F - personal privacy Senior Advisor and evaluation expert, will be joining the meeting to assist with the set-up of our research plan. Let me know if either

of these will be a problem- I realise we are now bringing 5 team members so let me know if there won't be enough space!

Many thanks,

s47F - personal
[redacted]

On Tue, 24 Sep 2019 at 14:20, s47F - personal p [redacted] Samantha
<[Samantha.\[redacted\]@classification.gov.au](mailto:Samantha.[redacted]@classification.gov.au)> wrote:

Hi s47F - perso [redacted] that's great, see you on Monday afternoon. When you come to reception call my extension on the list provided.

Sam



Samantha s47F - personal [redacted]

Assistant Director / Policy and Research / Classification Branch

Department of Communications and the Arts

s47F - personal privacy
[redacted]

[Samantha.\[redacted\]@communications.gov.au](mailto:Samantha.[redacted]@communications.gov.au)

s47F - personal privacy
[redacted]

L6, 23-33 Mary Street, Surry Hills NSW 2010

Locked Bag 3 Haymarket NSW 1240

For Official Use Only

From: s47F - personal privacy <s47F - personal privacy@bi.team>

Sent: Tuesday, 24 September 2019 1:47 PM

To: s47F - personal [redacted] Samantha <[Samantha.\[redacted\]@classification.gov.au](mailto:Samantha.[redacted]@classification.gov.au)>

Cc: s47F - personal priv [redacted] Barbara <[Barbara.\[redacted\]@classification.gov.au](mailto:Barbara.[redacted]@classification.gov.au)>; s47F - personal [redacted] Indiana
<[Indiana.\[redacted\]@classification.gov.au](mailto:Indiana.[redacted]@classification.gov.au)>; s47F - personal privacy [redacted] Shannon

<Shannon. [REDACTED] classification.gov.au>; [REDACTED] <[REDACTED] bi.team>;
[REDACTED] <[REDACTED] bi.team>

Subject: Re: Inception meeting [DLM=For-Official-Use-Only]

Hi Samantha,

Thank you for your email. The team are delighted to be working on this project with you.

The team, [REDACTED] [REDACTED] and I are all available on Monday at 2:30pm. We look forward to meeting with you and your team then.

I have copied [REDACTED] who is leading the project, and [REDACTED] who is our Ops Manager, who will sign off on the Official Order/contract when it is sent through.

Kind regards,

[REDACTED]

On Tue, 24 Sep 2019 at 13:20, [REDACTED] Samantha
<Samantha. [REDACTED] classification.gov.au> wrote:

Hi [REDACTED]

As discussed earlier, Behavioural Insights Australia has been successful in its response to RFQ DCON 19/91. We would like to arrange a 1 hour inception meeting with the project team on Monday 30 September at 2.30pm. If this time doesn't suit, we are currently available between 9.30 and 11.30 on Tuesday.

We will email the Official order shortly.

We look forward to working with Behavioural Insights on this project.

Regards



Samantha s47F - personal

Assistant Director / Policy and Research / Classification Branch

Department of Communications and the Arts

Ext 8117

Samantha s47F - personal [communications.gov.au](mailto:s47F - personal@communications.gov.au)

s47F - personal privacy

L6, 23-33 Mary Street, Surry Hills NSW 2010

Locked Bag 3 Haymarket NSW 1240

communications.gov.au / [@CommsAu](https://www.facebook.com/CommsAu)

arts.gov.au / [@artsculturegov](https://www.facebook.com/artsculturegov)

I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

For Official Use Only

NOTICE: This email message is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

This message has been content scanned by the Axway MailGate.

--

s47F - personal privacy

Project Manager

Mob: s47F - personal privacy

s47F - personal privacy bi.team



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

NOTICE: This email message is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

This message has been content scanned by the Axway MailGate.

--

Dr s47F - personal privacy
Advisor

Mob: s47F - personal privacy

s47F - personal privacy [bi.team](https://www.bi.team)

Pronouns: she/her



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

NOTICE: This email message is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

This message has been content scanned by the Axway MailGate.

--

Dr s47F - personal privacy
Advisor

Mob: s47F - personal privacy
s47F - personal privacy [bi.team](https://www.bi.team)

Pronouns: she/her

--

Dr s47F - personal privacy
Advisor

Mob: s47F - personal privacy
s47F - personal privacy [bi.team](https://www.bi.team)

Pronouns: she/her



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

From: s47F - personal privacy
To: s47F - perso Samantha
Cc: s47F - personal p Shannon; s47F - personal privacy s47F - personal privacy s47F - personal Barbara; s47F - pers Indiana; s47F - persons
Subject: Re: Draft Research Plan [DLM=For-Official-Use-Only]
Date: Friday, 4 October 2019 4:17:21 PM
Attachments: [image001.png](#)
[BIT Research plan v2.docx](#)

Hi s47F - personal privacy,

Thank you for your helpful comments - I have updated the research plan attached to reflect these.

Let me know if you would like to make any other changes- in the meantime, we will start working on the review.

I hope you have a lovely long weekend.

Many thanks,

s47F - personal

On Thu, 3 Oct 2019 at 17:02, s47F - personal p Samantha <Samantha.s47F - personal privacy@classification.gov.au> wrote:

Hi s47F - persona

Thanks for the draft research plan. Please find attached with our comments. Don't be alarmed by the volume of comments etc, it's definitely on the right track.

If you would like to discuss I can be available tomorrow. Do you want to text me (s47F - personal privacy) when you've had a look at the comments and we can set up a time?

Thanks

Sam



Samantha s47F - personal

Assistant Director / Policy and Research / Classification Branch

Department of Communications and the Arts

02 9289 7117

Samantha. s47F - personal communications.gov.au

s47F - personal privacy

L6, 23-33 Mary Street, Surry Hills NSW 2010

Locked Bag 3 Haymarket NSW 1240

For Official Use Only

From: s47F - personal privacy <s47F - personal privacybi.team>

Sent: Thursday, 3 October 2019 10:35 AM

To: s47F - personal Samantha <Samantha.s47F - personal privaclassification.gov.au>

Cc: s47F - personal privacy Shannon <Shannon.s47F - personal privacyclassification.gov.au>; s47F - personal privacy

<s47F - personal privacybi.team>; s47F - personal privacy <s47F - personal privacybi.team>; s47F - personal privacy

<s47F - personal privacybi.team>; s47F - personal priva Barbara <Barbara.s47F - personal privacyclassification.gov.au>; s47F - personal

Indiana <Indiana.s47F - personal privaclassification.gov.au>; s47F - personal privacy <s47F - personal privacybi.team>

Subject: Draft Research Plan

Hi Samantha,

Please find our draft research plan attached, which we compiled based on the RFQ and the inception meeting on Monday.

It would be great to get any thoughts and feedback from your team.

Many thanks,

s47F - personal

--

Dr s47F - personal privacy
Advisor

Mob: s47F - personal privacy

s47F - personal privacybi.team

Pronouns: she/her



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

NOTICE: This email message is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

This message has been content scanned by the Axway MailGate.

--

Dr s47F - personal privacy
Advisor

Mob: s47F - personal privacy
s47F - personal privacy [bi.team](https://www.bi.team)

Pronouns: she/her



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or

disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

The impacts of violent video games from an Australian perspective

Literature Review for the Department of Communications and the Arts

Contents

| | |
|---|-------------------------------------|
| Executive summary | 3 |
| Our recommendations based on the research findings | 4 |
| 01 / Introduction | 6 |
| 1.1 / Generalisability of international findings to the Australian context | 7 |
| 1.2 / Strength of evidence | 10 |
| 02 / The effect of violent video games on aggression | 12 |
| 2.1 / Violent video games are unlikely to cause aggression | 12 |
| World | 12 |
| Australia | 14 |
| 2.2 / Extremely violent games do not cause more aggression than violent video games. | 16 |
| World | 16 |
| Australia | 17 |
| 2.3 / Conclusions | 17 |
| 03 / The effect of VVGs on attitudes towards women | 18 |
| 3.1 / Violent video games do not change attitudes towards women | 18 |
| World | 18 |
| Australia | 20 |
| 3.2 / Conclusions | 20 |
| 04 / The impacts of VVGs on young peoples' mental health | 20 |
| 4.1 / Violent video games do not cause negative mental health outcomes in young players | 20 |
| World | 20 |
| Australia | 23 |
| 4.2 / Conclusions | 24 |
| 05 / Recommendations | 25 |
| 5.1 / Aggression | 25 |
| 5.2 / Mental health outcomes | 25 |
| 5.3 / Attitudes towards women | Error! Bookmark not defined. |
| Appendix A | Error! Bookmark not defined. |

Executive summary

Playing video games is a popular pastime among Australians, with 2 out of 3 Australians reporting that they play video games.¹ There is ongoing concern internationally that playing violent or extremely violent video games (VVGs) may lead to negative outcomes, including increased aggression, negative attitudes to women and poor mental health outcomes for young players. While decades of research exists attempting to address these questions, concerns continue to grow alongside technological advances and increasingly realistic and immersive player experiences.

The current review of academic research literature on the effects of violent video games to seeks to determine whether there are any gaps in this research from an Australian perspective. Much of the research relating to the impacts of violent video games on behaviour and attitudes has been conducted in the United States, Europe and Asia. Here, we assess the extent to which findings from international research can be used to inform an understanding of the potential impact of VVGs in an Australian setting.

Research Finding 1: International research is generalisable to the Australian context

Overall, given the small differences between results on the strength of these associations across cultures, international research is highly relevant and sufficient to our understanding of the relationship between VVGs and aggression in the Australian context. Some small effects of culture on the relationship between VVGs and aggression are apparent, with researchers generally finding that effect sizes of the impact of VVGs on aggression tend to be slightly smaller for Eastern and Hispanic cultures than Western cultures.^{2, 3, 4} However, the magnitude of these effects is small, and does not lead us to the conclusion that they are helpful in understanding the effects of VVGs in Australian players.

Unlike the aggression literature, little research exists on the cross-cultural generalisability of findings concerning the impact of VVGs on youth mental health and attitudes towards women. However, what research does exist does not suggest that violent content results in VVG players having poor attitudes towards women or negative mental health outcomes.

Research Finding 2: Evidence suggests that exposure to VVGs does not have a negative impact on aggression, youth mental health or attitudes to women.

¹ Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: Interactive Games and Entertainment Association.

² Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

³ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882–9888.

⁴ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

Internationally, there is much debate over the nature of the relationship between violent video games and players' behaviours and attitudes. The current review synthesises findings from the last decade to draw up-to-date conclusions as to the impact of violent video games.

Interpreting contradictory findings in the research literature is challenging due to widely varying methodologies, the tendency to only measure short-term outcomes, an overreliance on correlational evidence, and inconsistent definitions and measurements of aggression and attitudes towards women. Much of the academic literature on VVGs is dominated by supporters⁵ and opponents⁶ of the hypothesised link between playing VVGs and aggression. Despite the ongoing controversy, high-quality individual studies that use meaningful measures of aggression, and meta-analyses that control for other likely causes of aggression, converge on the same conclusion: VVGs have little to no meaningful impact on real-world aggressive behaviour.

There are also fears that VVGs have other negative effects, namely on players' mental health and their attitudes towards women. The effect of VVGs on attitudes towards women and the mental health of young players are less well studied than aggression. At present there are few high-quality studies and meta-analyses on these outcomes, and drawing conclusions from individual studies is limited by inconsistent definitions and measures. The limited high-quality studies that are available support the same general conclusion as the aggression literature: it is unlikely that violent content in video games meaningfully impacts attitudes towards women and the mental health of young players.

Our recommendations based on the research findings

Based on the above conclusions, we make the following recommendations to the Department of Communications and the Arts:

- **We do not recommend that further research is carried out in an Australian context to understand the relationship between VVGs and aggression.** It is unlikely that additional research in Australia on the effect of VVGs on aggression would meaningfully add to the academic literature. Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.
- **We recommend that any additional research on the effect of VVGs on attitudes towards women focus on sexist and sexualised content, not on violent content.** While there is no strong evidence that violent content causes players to develop negative attitudes towards women, the effect of sexualised or sexist content has not been adequately investigated, including in the Australian context. If further research is

⁵ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

⁶ Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

to be conducted, the effects of sexualised and sexist content should be prioritised over investigating the impact of violent content.

- **We do not recommend that further research is carried out in an Australian context to understand the relationship between VVGs and mental health outcomes in young players.** It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content does not affect mental health over and above general game play.

01 / Introduction

The purported link between violent video games (VVGs) and real-world violent attitudes and behaviours is a controversial and politicised issue. Mass shootings have been linked to VVGs since the infamous Columbine school shooting, as the perpetrators were avid players of *Doom*, a graphic first-person shooter game. Mass shootings continue to be linked to VVGs by some politicians and public commentators, despite evidence that not all perpetrators play VVGs, or played video games regularly.⁷

The nature of the relationship between violent and extremely violent video games and players' attitudes and behaviours is also contentious amongst academics.^{8, 9, 10, 11} The controversy around VVGs is fuelled by the rapid pace of game development, which outstrips the pace of academic research. VVGs are increasingly complex, social, and graphic, such that academic studies from only 10 years ago may not apply to current games. Advances in video game graphics have greatly enhanced the realism of games, making them more immersive. Some researchers have argued that violent content¹² and sexualisation of characters¹³ in immersive games have a greater impact on players. This has broadened community concerns about the effects of VVGs from aggression and violence to include attitudes towards women and mental health, particularly in young players.

The purpose of this review is to determine the relationship between violent, and extremely violent, video games and aggression, attitudes towards women, and youth mental health in the Australian context. Due to the relative lack of studies in Australian cohorts, this review is also designed to determine to what degree international findings can be generalised to Australia. Finally, in light of the available evidence and generalisability to Australia, we will form recommendations as to whether further research is needed in Australians to cover gaps in the VVG research.

⁷ Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 1 Nov. 2019].

⁸ Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological science*, 12(5), 353-359.

⁹ Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

¹⁰ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.

¹¹ Ferguson, C. J., & Kilburn, J. (2010). Much ado about nothing: The misestimation and overinterpretation of violent video game effects in Eastern and Western nations: Comment on Anderson et al.(2010).

¹² Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.

¹³ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

1.1 / Generalisability of international findings to the Australian context

The impacts of VVGs on aggression, attitudes to women and youth mental health are questions of global interest. Internationally, a large body of research has been carried out to attempt to understand these associations, in particular relating to impacts on aggression. As with many questions in other policy areas, in order to reach the most robust conclusions we want to draw widely from the findings of international research. This is particularly the case for the Australian context, given that Australian research is still emerging in this space. Relying on Australian research alone is not sufficient for drawing robust conclusions. In order to draw from international research, we need to first think carefully about how and when findings are likely to generalise across countries and cultures; a question posed by social scientists in other contexts for decades. There is some consensus that generalising findings across contexts is most appropriate with rigorous quantitative methodologies, and among studies using large samples.¹⁴ Hence, when looking at the international literature, we have given higher weighting to these studies (refer to section 1.3 below on 'Strength of Evidence' for more information about the research we have highlighted in this review).

Most research has been carried out in countries that are, like Australia, industrialised, economically stable and technologically advanced

It is worth noting that the majority of countries in which research has been carried out on the impacts of violent video games have moderate or high economic strength and level of technological sophistication. A common criticism of attempts to generalise from psychological studies is that participants in psychology studies tend to be Western, Educated, Industrialised, Rich and Democratic (WEIRD). While Australians are classified as WEIRD, globally speaking, most people are not.¹⁵ While not all samples discussed in this review are WEIRD, they are predominantly educated, industrialised, rich and democratic. In other words, only countries that are sufficiently developed such that inhabitants have general access to VVGs and high usage characteristics can provide enough data from which to draw robust conclusions.

Culture may have a small impact on the impacts of Violent Video games

It is apparent that any cultural factors mediating the relationship between VVGs and aggression and mental health are small, if not trivial. Many explanations have been proposed for why culture would be a moderating factor on the impacts of VVGs on aggression, including differences in collectivistic values and moral discipline,¹⁶ how violence is contextualised in the media, the context in which video-games are played,¹⁷ and variation

¹⁴ Generalizability and Transferability, The WAC Clearing house. Retrieved from: <https://wac.colostate.edu/resources/writing/guides/gentrans/>.

¹⁵ Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.

¹⁶ JIN, Y., & LI, J. (2014). Cultural Differences in the Effect of Violent Video Games on Adolescent Aggression Cognition: Based on the Perspective of Meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.

¹⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

across cultures in the meaning of being a perpetrator and a victim of aggression.^{18, 19} These studies predominantly explore the differences between research outcomes in Eastern (predominantly Japan, but also Singapore and China) versus Western (predominantly the USA, UK, Australia, Germany, and other European countries) cultures.

Some small effects of culture are apparent, generally finding that effect sizes of the impact of VVGs on aggression tend to be slightly smaller for Eastern and Hispanic cultures than Western cultures.^{20, 21, 22} For example, in a cross-cultural comparison of the impacts of VVGs in Eastern (primarily Japan, but also China, Singapore) and Western (primarily USA) cultures, Anderson²³ found larger effects of VVGs on aggression in Western than Eastern countries. However, this finding was only marginally significant, and only apparent in longitudinal research studies. However, in these comparisons, cultural differences are often confounded with differences in research design, meaning that variance could in fact be due different ways of measuring aggression.

This finding is supported by researchers who argue both that VVGs lead to increased aggression, and those who argue that there is an impact of VVGs on aggression. For example, Ferguson²⁴ found Eastern samples returned smaller effect sizes, as did Latin/Hispanic samples, than did Western samples. Given that effect sizes across all studies analysed by Ferguson were generally small, the differences among culture as a moderating variable were also deemed small. It is also important to note that this meta-analysis looked at all video games, both violent and non-violent. However, they do corroborate Anderson's argument that culture/ethnicity might somewhat moderate the impact on aggression, with Western samples showing greater effect sizes. Similarly, a subsequent meta-analysis from Prescott, Sargent and Hull²⁵ (2018) focusing exclusively on the longitudinal outcomes of VVGs on White, Asian and Hispanic samples found strongest associations between White samples, intermediate associations with Asian samples and smallest with Hispanic samples (acknowledging that only a small number of studies exist that us Hispanic samples).

¹⁸ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹⁹ Bartholow, B. D., Sestir, M. A., & Davis, E. B. (2005). Correlates and consequences of exposure to video game violence: Hostile personality, empathy, and aggressive behaviour. *Personality and Social Psychology Bulletin*, 31(11), 1573-1586.

²⁰ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151-173.

²¹ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

²² Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646-666.

²³ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151-173.

²⁴ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646-666.

²⁵ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

While some studies suggest that rates of aggression vary²⁶ across cultures,²⁷ the size and direction of the association between the two factors (predictor and outcome) generally remains the same.²⁸ More broadly, correlational research looking at the relationship between media violence exposure and aggressive behaviours across cultures has found few cross-cultural differences.^{29, 30} One comparison of the impact of media violence among seven countries (Australia, China, Croatia, Germany, Japan, Romania, the United States) found no significant differences in the strength of the relationship with aggression across cultures.³¹

There are few studies looking at cross-cultural variations in the impacts of VVGs on attitudes towards women and youth mental health.

One cross-cultural study looked at the relationship between the amount of time spent playing VVGs and mental health in young children.³² Comparisons were made across Eastern and Western European countries (Germany, The Netherlands, Lithuania, Romania, Bulgaria, and Turkey). Across cultures, differences were seen in usage patterns - but once these were controlled for, no differences were found in mental health outcomes across countries. Although there is a relative lack of cross-cultural studies investigating the effects of VVGs on attitudes towards women, as we outline in Section 3.1 below, any effects are more likely to be due to the sexist and sexualised content of games, not violence per se.

We are assessing generalisability to the Australian context based on whether research comes from ‘Western’ or ‘Eastern’ contexts

Given the above evidence, we have characterised the research outlined throughout the review as having ‘high’, ‘medium’ or ‘low’ generalisability to the Australian context (see Table 1 below for an outline of the classification criteria). Below we have divided the research outlined in the review into that carried out in the international context (‘World’) and in an Australian context (‘Australia’).

Table 1. How we have assessed generalisability to Australia

²⁶ Research into aggression has found common factor structures underlying aggression across cultures. Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive behavior*, 38(4), 298-308.

²⁷ Bergeron, N., & Schneider, B. H. (2005). Explaining cross-national differences in peer-directed aggression: A quantitative synthesis. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, 31(2), 116-137.

²⁸ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

²⁹ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998.

³⁰ Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.

³¹ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998. .

³² Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.

| Low generalisability to the Australian context | Medium generalisability to the Australian context | High generalisability to the Australian context. |
|---|---|--|
| <p>Studies that come from developing nations where social, cultural and political factors are contrasting to Western standards.</p> <p>In addition, access to technologies and games associated with gaming are markedly low.</p> | <p>Research comes from countries (predominantly Eastern) that have similar socio-economic conditions to the Australian context, and most studies show cross-cultural similarities in relation to Western contexts. However, some small differences in effect sizes between rates of game play and effect sizes (e.g. Japan).</p> <p>Countries include: Japan, Singapore, China, Taiwan. Also included are studies with Latin/Hispanic cultures</p> | <p>Carried out in countries that have been shown to have similar gaming characteristics and cultural factors to Australia (primarily Western countries with similar patterns seen in the effects of VVGs). We are confident that the studies detailed can be helpful in understanding the Australian context.</p> <p>Countries include: UK, USA, Germany, Belgium, France, the Netherlands.</p> |

1.2 / Strength of evidence

Strength of evidence was assessed using the criteria in the table below. This review prioritised research conducted in the past 10 years which had the characteristics outlined in the green *high* column below. Where high quality evidence was not available, evidence that was categorised as *medium* or *low* was included in order to form conclusions and recommendations.

Table 2. How we have assessed strength of evidence

| Strength of evidence | | |
|--|--|--|
| Low | Medium | High |
| <p>Evidence of research bias or subject to peer-reviewed criticism.</p> <p>Studies with unvalidated measures of aggression/attitudes towards women/mental health.</p> <p>Correlational studies where other known causes of aggression/attitudes towards women/mental health are not controlled for.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with low</p> | <p>Correlational studies with a small number of known causes of aggression/attitudes towards women/mental health controlled for.</p> <p>Studies which rely on self-report measures only.</p> <p>Studies with small samples with low generalisability.</p> <p>Meta-analyses with evidence of research bias, have been subjected to peer-reviewed criticism or have not been independently replicated.</p> | <p>Correlational studies which have controlled for multiple known causes of aggression/attitudes towards women/mental health.</p> <p>Longitudinal or retrospective studies which measure attitudes or behaviour over time</p> <p>Studies with large nationally representative samples.</p> <p>Studies or meta-analyses which have been independently replicated.</p> <p>Studies with artificial measures</p> |

| | | |
|--|--|---|
| or undemonstrated association with real life attitudes or behaviour. | | <p>of aggression/attitudes towards women/mental health with high demonstrated association with real-life attitudes or behaviour.</p> <p>Studies which have adopted open science practices such as pre-registration.</p> <p>Studies which include multiple outcome measures such as self-reports, peer-report and validated measurement scales.</p> <p>Studies which have conducted cross-cultural comparisons or have generalised findings across different contexts.</p> |
|--|--|---|

As stated above, each recommendation set out in this review was made using studies that span this spectrum of research quality. We prioritised studies that meet the criteria for *high* quality, and have made stronger recommendations where more high-quality research was available to draw on. In our recommendations, a *high* degree of research quality indicates that additional research is unlikely to meaningfully contribute to the existing literature. *Low* quality of available studies indicates that there may be some scope for additional research on that topic.

02 / The effect of violent video games on aggression

2.1 / Violent video games are unlikely to cause aggression

| Strength of evidence | Generalisability to Australia |
|--|--|
| High | High quality studies drawn from the US, UK, Germany, China, Singapore and Australia. |
| The results of high-quality international and Australian studies suggest that the effect of VVGs on aggression is small to non-existent. | |



World

Recent high-quality studies indicate that the link between VVGs and aggression is small to non-existent. Studies that properly control for other known causes of aggression, and those that measure real-world behaviour either find no relationship, or a very small effect of VVGs on aggression.

While only a recent phenomenon, recent pre-registered studies have mostly found no link between VVGs and aggression, nor any other negative effects. In a pre-registered trial conducted in the UK, researchers interviewed a large sample of British adolescents and their parents or carers. They found no association between exposure to VVGs over the past month and real-life aggressive behaviour as measured by carer assessment.³³ Similarly, three pre-registered randomised controlled trials conducted in the USA found no effect of VVGs on short-term measures of aggressive inclinations³⁴, hostility³⁵ or aggressive behaviour.³⁶ Two pre-registered longitudinal studies have also found no association between VVG exposure and aggression measured at a later time.³⁷ For instance, a study of over 3,000 Singaporean youth found no association between playing VVGs and aggression

³³ Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society open science*, 6(2), 171474.

³⁴ McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.

³⁵ Ferguson, C. J., Trigan, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric quarterly*, 87(1), 49-56.

³⁶ Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337

³⁷ Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric quarterly*, 1-5.

measured two years later.³⁸ The authors concluded that it would take 27 hours per day of playing VVGs to produce clinically noticeable changes in aggression.

In the past 10 years four meta-analyses have been conducted to synthesise the literature investigating the effect of VVGs on aggression.^{39 40 41 42} Combined, these meta-analyses cover hundreds correlational, experimental and longitudinal studies involving hundreds of thousands of participants. The overall conclusion to be drawn from these meta-analyses is that VVGs have a small effect on aggression.

However there are several reasons to question whether any effect in fact exists:

- These meta-analyses include many laboratory experiments with poor methodology. They rely on artificial measures of short-term aggression, with unproven correlation to real-life aggressive behaviour.
- Effect sizes are smaller in studies with outcome measures that are more closely related to real-life aggressive behaviour, and research measuring long-term outcomes.
- As research methodology and rigor has improved over the past 10 years, evidence of a link between VVGs and aggression has grown weaker.
- When other known risk factors associated with aggression are controlled for (baseline aggression levels, gender, socioeconomic status) the association between VVGs and aggression diminishes almost entirely, suggesting that VVGs are not an independent cause of aggression.

There is also substantial evidence of bias within this literature (see Appendix A), especially in experimental studies claiming to demonstrate that VVGs cause aggression.⁴³ The aforementioned emerging research has begun to address these biases by adopting more rigorous methodology. Research which is pre-registered, measures real-life aggressive behaviour or long-term outcomes reports effects that are small to non-existent.

Contrary to these findings, one recent pre-registered cross-sectional study found an association between playing video games and self-reported interpersonal violence in US

³⁸ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.

³⁹ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.

⁴⁰ Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and social psychology bulletin*, 40(5), 578-589.

⁴¹ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on psychological science*, 10(5), 646-666.

⁴² Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁴³ Hilgard, J., Engelhardt, C. R., & Rouders, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al.(2010). *Psychological Bulletin*, 143(7), 757-774.

university students.⁴⁴ However the study did not address the impact of *violence* in video games, so it does not provide any evidence that violent content in games drives aggression.

While experimental studies are useful to gather evidence about causality, they have mostly relied on short-term measures of aggression. To investigate whether VVGs *cause* aggression over time, researchers conducted a randomised controlled trial in Germany. Participants were assigned to play a VVG, a non-violent video game or no game at all. There was no difference between the groups across a range of measures of aggression immediately following eight weeks of gameplay, or two months after the experiment ended.⁴⁵

Research investigating the effects of VVGs have used a range of aggression measures, many of which are artificial behaviours in a laboratory setting (e.g. putting hot sauce into another participant's food), or self-report scales of aggressive thoughts and emotions. There is no clear evidence that these measures relate to or predict real-world behaviours, which are the real concern to the community. If VVGs did in fact cause real-world aggressive behaviours, we would expect to observe a correlation between violent video game consumption and real-world violent incidents. In four separate analyses,⁴⁶ researchers compared patterns of US crime data with measures of VVG consumption over the past 30 years.⁴⁷ They found no evidence of a relationship between VVG consumption and aggressive assaults or homicides. In fact, several measures of VVG consumption were associated with *decreased* crime-rates, a finding supported by other research comparing patterns of VVG consumption and US crime data.^{48, 49}

There are several possible explanations as to why VVG consumption would be associated with less violent crime. VVGs might have a cathartic effect, allowing healthy venting of aggression in a controlled and harmless environment. Alternatively, more aggressive people might prefer to play VVGs, and are therefore occupied by a non-violent activity following VVG releases. It is important to note that these findings are correlational, and therefore cannot be used to draw causal conclusions.



Australia

Research on the link between VVGs and aggression conducted in Australia is largely consistent with international findings. A number of Australian studies find no effect of

⁴⁴ Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29, 42-53.

⁴⁵ Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular psychiatry*, 24(8), 1220.

⁴⁶ The analyses compared US data on violent crime with release dates for major VVGs, VVG sales data and internet searches for VVG guides.

⁴⁷ Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.

⁴⁸ Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.

⁴⁹ Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.

violent or ultra-violent games on aggression,⁵⁰ even if the participant was primed to take on a hostile cognitive state.⁵¹

One 2019 Australian study found that playing violent video games for five to 15 minutes impaired players' recognition of anger, enhanced their perception of their fighting ability and perception of a target as weak.⁵² However, consistent with international studies, the authors found that gender and baseline aggression mediated the effects of VVGs on these aggression measures. It is also important to note that these aggression measures are based on perception, not action. Another 2019 Australian study found that game competition, not violence, increased aggressive emotions.⁵³ Moreover, the authors found that neither competition nor violence increased aggressive behaviour. This is consistent with international studies, which often find larger effects of violent games on aggressive emotions and perceptions than on actual aggressive behaviour.

A very recent Australian study found that players find in-game aggression more acceptable than offline aggression.⁵⁴ This suggests that players perceive in-game and real-world behaviour as governed by different norms, which may explain why acting out violence in a game does not cause real-world aggression. It is important to note that the authors recruited players online, and that only 11.5 per cent of their sample were Australian (the majority were American). The most common games played in their sample were World of Warcraft and World of Tanks, which have M and PG ratings respectively, so it is possible that the authors would have obtained different findings if their sample played more violent games.

A study of young Australians found that boys were significantly more likely than girls to play violent video games (or watch other violent media), and to have used physical violence in the past year.⁵⁵ However, this cross-sectional (and therefore non-causal) study also found that young people who committed acts of aggression were also more likely to have been threatened with physical violence in the community, at home, or at school. This study suggests that factors such as gender may predict VVG gameplay and exposure to experiences that are more likely to directly cause aggression.

An Australian study of male and female violent video game players revealed complex reasons for why players are drawn to violent games.⁵⁶ For example, women in this study reported playing VVGs to be more attractive to romantic partners. This study did not find any

⁵⁰ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

⁵¹ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

⁵² Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of Men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.

⁵³ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

⁵⁴ Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.

⁵⁵ Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.

⁵⁶ Kasumovic, M. M., Blake, K., Dixon, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.

relationship between violent video game play and aggression or dominance measures. However, as the authors note, their measure of aggression was acts of intimate partner violence, which is a more extreme measure than is typically used in VVG studies. This makes it difficult to relate this study to the wider violent video game literature.

2.2 / Extremely violent games do not cause more aggression than violent video games

| Strength of evidence | Generalisability to Australia |
|---|---|
| Medium | High - studies largely drawn from Australia, US, Germany and Canada |
| The results of higher quality studies suggest that that extremely VVGs do not increase aggression more than VVGs. | |



World

Video game content can differ on a number of dimensions, including pace, realism and graphicness. Due to the difficulty in matching games to ensure that the effect of violent content can be measured, most of this research has been conducted in experimental laboratories. Several randomised controlled trials in Germany, Australia and the US have compared video games which only differ in the severity of violent content. They find that higher levels of violence do not affect player aggression.

A trial in Germany varied the amount of displayed violence and the pace of action in a first person shooter game, ensuring that all other features of the game were otherwise the same. They found that neither pace nor displayed violence had any effect on aggressive behaviour, as measured by willingness to expose another participant to an unpleasant noise-blast.⁵⁷ Similarly, researchers in the US assigned 275 undergraduates to play a first person shooter game that was modified to be more or less violent. Neither game difficulty nor violent content was found to affect aggressive behaviour.⁵⁸ Finally, across seven randomised controlled trials conducted on US university students, researchers found that competence-impeding play increased frustration and aggression, however of levels of violent content had no impact.⁵⁹

⁵⁷ Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.

⁵⁸ Hilgard, J., Engelhardt, C. R., Rouders, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological science*, 30(4), 606-616.

⁵⁹ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.

The results from these and other studies suggest that other video game variables have a greater influence on aggression. Level of competition^{60, 61} and perceived game difficulty⁶² have been associated with increased player aggression. For instance, a Canadian study which measured patterns of gameplay over 3 years found that increased competitive gameplay was associated with increased self-reported aggressive behaviour.⁶³ On the other hand, increased graphic realism of violence depicted in video games does not appear to increase player aggression.⁶⁴



Australia

A series of Australian studies comparing non-violent, violent, and ultra-violent video games found no effect of the level of game violence on aggression,⁶⁵ even if the participant was primed to take on a hostile cognitive state.⁶⁶ The authors did, however, find that ultra-violent games significantly increase players' self-dehumanisation. This replicates another Australian finding that playing (extremely violent) *Mortal Kombat* diminished players' perceived humanity, but only if they were the target of violence.⁶⁷ This self-dehumanisation effect does not appear to cause aggressive behaviour; in fact the authors argue that participants may have acted pro-socially to counteract their feelings of dehumanisation.

2.3 / Conclusions

Overall, combined international and Australian evidence suggests the effect of VVGs on aggression in Australia is small to non-existent, with **high** strength of evidence and **high** generalisability to Australia. The weight of evidence shows that even if VVGs do cause aggression, they would still only account for a very small proportion of aggressive behaviour, indicating little value in conducting additional research in this area.

Similarly, combined world and Australian evidence suggests that higher levels of violence in VVGs do not affect aggression, with **medium** strength of evidence and **high** generalisability to Australia. Extremely-violent or ultra-violent games are unlikely to contribute to any increased risk of aggression or violence.

⁶⁰ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

⁶¹ Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence?. *Psychology of violence*, 1(4), 259.

⁶² Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.

⁶³ Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of youth and adolescence*, 42(7), 1090-1104.

⁶⁴ Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment computing*, 24, 21-29.

⁶⁵ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

⁶⁶ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

⁶⁷ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

03 / The effect of VVGs on attitudes towards women

| Strength of evidence | Generalisability to Australia |
|--|---|
| Medium | Medium - small number of studies largely drawn from Australia, US, UK, Canada |
| The highest quality international evidence finds no relationship between VVGs and attitudes towards women. However, at present there is a lack of high-quality studies on this topic. VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players. | |

3.1 / Violent video games do not change attitudes towards women



World

Content analyses have revealed that video games contain fewer female protagonists, portray overly sexualised female characters, and games which depict violence can involve aggressive acts towards women.^{68, 69} There is growing concern that these representations of female characters normalise the objectification and sexualisation of women.

The highest quality evidence suggests that VVGs do not change attitudes towards women in the long-term for either men or women. A three year study on a representative sample of German youth found that preference for action or first person shooter video games was not associated with sexist attitudes. Amount of time spent playing video games also had no association with sexism.⁷⁰ The study controlled for other known risk factors of negative attitudes towards women such as age and education. A 2008 study on US college students found a significant correlation between long-term exposure to VVGs and rape myth acceptance⁷¹ as well as tolerance of sexual harassment. However a more complete analysis controlling for other factors resulted in no correlation between VVGs and these outcomes.⁷²

⁶⁸ Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.

⁶⁹ Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.

⁷⁰ Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games= sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.

⁷¹ Rape myth acceptance refers to holding prejudicial, stereotyped and false beliefs about sexual assaults, rapists, and rape victims. These beliefs often serve to excuse sexual aggression, create hostility toward victims, and bias criminal prosecution.

⁷² Dill, K. E., Brown, B. P., & Collins, M. A. (2008). Effects of exposure to sex-stereotyped video game characters on tolerance of sexual harassment. *Journal of Experimental Social Psychology*, 44(5), 1402-1408.

When researchers measure short-term attitudes towards women the results are more mixed. Two laboratory studies conducted in Italy⁷³ and the USA have found that violent games can reduce empathy towards women⁷⁴ and increase hostile sexism⁷⁵ for some male players. However, the violent content appeared to have no independent effect on attitudes towards women. Sexist content, or combined sexist and violent content were necessary to change players' attitudes towards women.

Overall, this evidence suggests that if video games do cause negative attitudes towards women, this effect is driven by sexualised or sexist content, rather than violent content. This conclusion is supported by other research. Correlational studies conducted online and in France found that playing video games is associated with both benevolent sexism^{76, 77} and hostile attitudes⁷⁸ towards women, a meta-analysis of 54 studies concluded that video games increase self-objectification for both men and women⁷⁹ and an RCT found that sexualised avatars in an adventure game increased adolescent players acceptance of rape myths compared to non-sexualised avatars.⁸⁰

Increased levels of sexist or sexualised content within video games are also associated with more negative attitudes towards women. A correlational study found that male college students who played more sexist games held more sexist attitudes towards women,⁸¹ and a 2018 systematic-review found that women experienced self-objectification and low levels of self-efficacy as a result of exposure to sexist content within video games, compared with video games which didn't contain sexist content.⁸²

While violent video game content on its own appears to have no effect on attitudes towards women, these studies provide some evidence that sexualised content may impact attitudes towards women. The available evidence suggests that this is driven by sexualised or sexist content, rather than violence.

⁷³ Note this study has been criticised for poor methodology including failure to randomise participants into study conditions.

⁷⁴ Gabbiadini, A., Riva, P., Andrighetto, L., Volpato, C., & Bushman, B. J. (2016). Acting like a tough guy: Violent-sexist video games, identification with game characters, masculine beliefs, & empathy for female violence victims. *PLoS one*, 11(4), e0152121.

⁷⁵ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

⁷⁶ Benevolent sexism is a form of paternalistic prejudice (treating a lower status group as a father might treat a child) directed toward women.

⁷⁷ Bègue, L., Sarda, E., Gentile, D. A., Bry, C., & Roché, S. (2017). Video games exposure and sexism in a representative sample of adolescents. *Frontiers in psychology*, 8, 466.

⁷⁸ Fox, J., & Potocki, B. (2016). Lifetime video game consumption, interpersonal aggression, hostile sexism, and rape myth acceptance: A cultivation perspective. *Journal of interpersonal violence*, 31(10), 1912-1931.

⁷⁹ Interestingly, video games had a larger impact than television consumption. Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing media use and self-objectification: A meta-analysis. *Psychology of women quarterly*, 42(1), 9-28.

⁸⁰ Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for health journal*, 4(2), 91-94.

⁸¹ **Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.**

⁸² Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social networking*, 21(9), 535-541.



Australia

An Australian experimental study found that low-skilled male *Halo 3* players were more hostile towards female teammates, particularly when they were performing poorly.⁸³ In contrast, high-skilled male players were more *positive* towards female teammates. This study therefore suggests that sexism elicited by gameplay is triggered by the player’s sense of their own ability, and not by in-game violence. Moreover, this study did not compare *Halo 3* to a non-violent game.

3.2 / Conclusions

Overall, combined world and Australian evidence suggests that violent video games don’t increase negative attitudes towards women with **medium** strength of evidence and **medium** generalisability to Australia. However some evidence suggests that sexist video game content is harmful, and that VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players.

04 / The impacts of VVGs on young peoples’ mental health

| Strength of evidence | Generalisability to Australia |
|--|---|
| Medium | High - studies largely drawn from Australia, US, UK, Canada |
| There is no high quality evidence of a causal relationship between VVGs and depression, anxiety, suicidal ideation, attention problems, academic achievement or pro-social outcomes. | |

4.1 / Violent video games do not cause negative mental health outcomes in young players



World

Research into the impact of VVGs on young peoples’ mental health is the most recent form of a long history of concerns about the impact of violent media on aggression, particularly as video games become ubiquitous in children’s lives. The peak body for the Australian video game industry reported that young Australians play video games for an average of 100 minutes per day for boys and 75 minutes for girls.⁸⁴ Researchers are increasingly interested in understanding the long-term psychosocial and developmental

⁸³ Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS one*, 10(7), e0131613.
⁸⁴ Interactive Games & Entertainment Association. 2016 report.

impacts of playing video games, especially those with extremely violent content. These include impacts on peer-relations, internalising problems such as anxiety or depression and attentional problems such as ADHD.

There is no high quality evidence to suggest that VVGs increase negative mental health outcomes for young players. A meta-analysis by Ferguson et al. of 101 studies found neither video games nor VVGs had any impact on depression, attention disorders, conduct disorders, pro-social behaviour or academic achievement for both children and adolescents.⁸⁵ The meta-analyses included correlational, experimental and longitudinal studies measuring both short and long-term effects. This meta-analysis has been replicated by an independent research team, which is noteworthy given the above mentioned biases and flawed methodology prevalent in this literature.⁸⁶

Longitudinal research conducted in the USA, Europe and Singapore find VVGs are not associated with negative mental health outcomes for young players. For example a prospective longitudinal study of over 5000 UK children found no association between preference for first-person shooter games at 8 years old and depression in adolescence.⁸⁷ A longitudinal study on 300 Dutch children reported that preference for violent video games was not associated with mental health outcomes (neither positive nor negative) 1 year later.⁸⁸ Similarly violent video game play was not associated with depression or anxiety over 1 year of measurement in 10-14 years olds in the USA.⁸⁹ A recent pre-registered study of 3000 Singaporean youth found that playing VVGs was unrelated to youth pro-social behaviour 2 years later.⁹⁰

Contrary to these findings, a recent correlational study of over 5000 US 5th grade students reported that playing VVGs for more than 2 hours per day was associated with increased depressive symptoms. However these results compared high daily VVG play to low daily VVG play, and did not compare violent to nonviolent games. When time spent playing video games was matched, there was no relationship between violent content and symptoms of depression.⁹¹

⁸⁵ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

⁸⁶ Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877-1892.

⁸⁷ Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.

⁸⁸ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.

⁸⁹ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

⁹⁰ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.

⁹¹ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.

Research on suicidal ideation is more mixed. A recent correlational study in the USA found no relationship between VVGs and suicidal ideation.⁹² Whilst another study in a nationally representative sample of US high-school students found a correlation between excessive video game use and suicidal ideation,⁹³ this was not explicitly related to *violent* video games. It is also unclear whether video games cause suicidal ideation, or whether children experiencing suicidal ideation video game play.

Other risk factors such as prior youth depression, anxiety, family, socio-economic status or peer delinquency, are a more reliable predictor of mental health outcomes for children and adolescents. Many studies suggest that compared to other known socio-demographic risk factors, VVGs present minimal danger to the mental health of young players. A 1 year longitudinal study in the US⁹⁴ found that anxiety and depression were predicted by parental aggression, delinquent peers and previous symptoms of depression, whereas exposure to VVGs was not associated with any negative mental health outcomes.⁹⁵ Similarly, a US study found that gender, antisocial traits, family environment and prior mental health conditions predicted attention problems in children,⁹⁶ whereas attention problems were not related to playing more video games or a preference for VVGs.

Evidence suggests that other game characteristics such as competition,⁹⁷ and excessive gameplay,^{98, 99} in particular pathological video-gaming,¹⁰⁰ have a larger effect on mental health outcomes than violent content. Research carried out with 10-14 year olds in the USA over one year found that playing VVGs did not predict depression or anxiety,¹⁰¹ however, high levels of competitive gaming were associated with negative mental health outcomes such as depression and reduced pro-social behaviour.

Emerging evidence suggests that video games might have a protective effect for children's mental health. In a high quality correlational study surveying over 3000 young children across six European nations, increased video game usage (more than five hours per week)

⁹² Jami M. Gauthier, Kelly L. Zuromski, Seth A. Gitter, Tracy K. Witte, Ian J. Cero, Kathryn H. Gordon, Jessica Ribeiro, Michael Anestis, and Thomas Joiner (2014). The Interpersonal-Psychological Theory of Suicide and Exposure to Video Game Violence. *Journal of Social and Clinical Psychology*: Vol. 33, No. 6, pp. 512-535.

⁹³ Messias, E., Castro, J., Saini, A., Usman, M., & Peeples, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.

⁹⁴ Sample mostly identified as Hispanic

⁹⁵ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

⁹⁶ Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of psychiatric research*, 45(6), 808-813.

⁹⁷ Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.

⁹⁸ Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.

⁹⁹ Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

¹⁰⁰ Liao, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.

¹⁰¹ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

was not associated with any negative mental health, social or behavioural outcomes. Children who played more video games had lower rates of internalising disorders and fewer thoughts of death, and experienced pro-social and academic benefits, including elevated intellectual functioning, high overall competence, and specific benefits in reading, mathematics and spelling.¹⁰²

While beyond the scope of this review, there is also increasing evidence that playing video games more generally provides many benefits for children and adolescents. Researchers have summarised the evidence for various cognitive, social and psychological benefits of video games for young players.¹⁰³



Australia

To our knowledge, there are no Australian studies that compare mental health outcomes in young people for violent and non-violent games. Australian studies have found that young peoples' mental health¹⁰⁴ and academic performance¹⁰⁵ decline as screen time increases. However, there is no evidence from the Australian context that violent game content mediates or exacerbates any negative impacts of playing video games. Below we have separated out Australian findings in relation to mental health outcomes:

Pathological gaming. A study of over 1200 South Australian high school students found a rate of Pathological Video Gaming (PVG) of less than two per cent.¹⁰⁶ Young people with PVG did not meet the criteria for clinical depression or anxiety, although this study did not specifically address video game violence.

Sleep. Some Australian studies have found that playing violent video games before bed disrupts young players' sleep.^{107, 108} These studies did not compare sleep quality after playing a non-violent game, and attribute effects on sleep to the arousing nature of the games chosen. These studies also used very small sample sizes (less than 20 participants).

¹⁰² Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.

¹⁰³ Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.

¹⁰⁴ Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.

¹⁰⁵ Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.

¹⁰⁶ King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.

¹⁰⁷ King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: an experimental study. *Journal of sleep research*, 22(2), 137-143.

¹⁰⁸ Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.

Other Australian studies suggest that the general stimulation of computer use,¹⁰⁹ duration of play,¹¹⁰ and the tendency of young gamers to enter a flow state¹¹¹ while playing¹¹² disrupt sleep, not necessarily violent content.

Behavioural and emotional problems. Australian studies have found that children who play more video games are more likely to have behavioural and emotional problems,¹¹³ and less ability to self-regulate.¹¹⁴ However, these studies only measured video game play or media exposure (including all types of video games) overall, and did not distinguish between violent and non-violent games.

Self-dehumanisation.¹¹⁵ Australian studies comparing non-violent, violent and extremely violent games have found that extremely violent games cause players to self-dehumanise.¹¹⁶ Another Australian study found that an extremely violent game (*Mortal Kombat*) reduced players' perception of their own humanity when they were the target, not the perpetrator, of violence in the game.¹¹⁷ However, these studies were conducted with an adult sample, so it is unclear whether young people experience dehumanisation due to game violence.

Positive social outcomes. A laboratory study conducted in Australia found that playing a violent game (*Left 4 Dead 2*) increased players' positive affect and sense of connection when their teammate was a human-controlled (not computer-controlled) character.¹¹⁸ This finding is consistent with international research on the prosocial benefits of playing cooperative VVGs. Other Australian studies have found no effect of violent¹¹⁹ or even prosocial¹²⁰ games on prosocial behaviour, although their measures of prosocial behaviour have questionable relevance to real-world behaviour. In addition, these studies were conducted in an adult sample, so it is unclear whether young people experience the same benefits.

4.2 / Conclusions

¹⁰⁹ Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Prebedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.

¹¹⁰ Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep medicine*, 30, 64-70.

¹¹¹ Flow is "an experience of immersion and time distortion" while playing

¹¹² Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: the roles of game difficulty and flow. *Sleep medicine*, 39, 70-76.

¹¹³ Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic pediatrics*, 17(6), 620-624.

¹¹⁴ Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic pediatrics*, 18(7), 813-819.

¹¹⁵ Note that these studies were covered in the section on aggression.

¹¹⁶ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

¹¹⁷ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

¹¹⁸ Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.

¹¹⁹ Tear, M. J. (2015).

¹²⁰ Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS one*, 8(7), e68382.

Overall, combined world and Australian evidence suggests that video games do not cause negative mental health outcomes for young players with **medium** strength of evidence and **high** generalisability to Australia. However some evidence suggests that VVGs might have a positive impact on mental health outcomes.

05 / Recommendations

The aim of this literature review was to answer the question:

“What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia?”

Below, we outline our conclusions and recommendations as to whether further research is needed to explore the impacts of VVGs in the Australian context in relation to aggression, attitudes to women or mental health outcomes for young players.

5.1 / Aggression

Research questions:

1. What are the key findings about violent games and aggression emerging from international research?
2. What is the relationship between violent and extremely violent video games and aggression in Australian research?

Conclusions:

- Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.
- To date, limited research has been conducted in Australia. However, the strength of generalisable international research can fill any research gaps in the Australian context. This includes meta-analyses and emerging high quality research which converge on the conclusion that VVGs cause little or no real-world aggressive behaviour.
- It is unlikely that additional research in Australia would meaningfully add to the academic literature.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and aggression.

5.2 / Attitudes towards women

Research questions:

1. What are the key findings about violent games, aggression and attitudes to women emerging from international research?
2. What is the relationship between violent and extremely violent video games and attitudes towards women in Australian research?

Conclusions:

- The highest quality international evidence finds no relationship between VVGs and attitudes towards women. There is only one Australian study on the effect of a VVG on attitudes towards women, and this study did not compare violent and non-violent video games.
- Violent video game content on its own appears to have no effect on attitudes towards women. Some studies suggest that VVGs which contain sexist or sexualised content increase negative attitudes towards women. However, the available evidence suggests that this effect is driven by the sexualised or sexist content, rather than violence. While there is no strong evidence that violent content increases the negative impacts of sexist video games, the effect of sexualised or sexist content has not been adequately addressed in the literature.
- Additional research on the effect of VVGs on attitudes towards women focus on sexist and sexualised content should be prioritised over the impact of violent content. Research suggests highly sexualised/sexist games may have an impact on attitudes towards women. Future research should compare the effects of matched video games with and without sexualised/sexist content to determine the independent effect of this content.

Recommendation: As the available high quality evidence finds that violent content in VVGs alone has no effect on attitudes towards women, no further research is recommended to understand the relationship between VVGs and attitudes to women in the Australian context.

5.3 / Mental health outcomes

Research questions:

1. What are the key findings of international research on how violent or extremely violent games impact the mental health of young game players?
2. How do violent or extremely violent games impact the mental health of young game players according in Australia?

Conclusions:

- There is no evidence in the international literature of a robust causal relationship between VVGs and depression, anxiety, suicidal ideation, attention problems, academic achievement or pro-social outcomes. Other risk factors such as family environment, delinquent peers and prior mental health conditions are much more robust predictors of poor mental health outcomes.
- It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content has not been shown to affect mental health over and above general game play.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and youth mental health.

Appendix A

Different types of bias identified in the literature investigating the effect of VVGs on aggression:

| Bias | Description | Influence on the debate on whether VVGs cause negative outcomes |
|------------------|--|---|
| Citation bias | Authors selectively reference studies that support their hypotheses, and exclude studies that contradict their hypotheses. | VVG meta-analyses selectively include studies which match the researchers' pre-determined hypotheses. Evidence suggests that scholars who neglect to refer to research which contradicts their hypotheses report higher effect sizes. ¹²¹ |
| Publication bias | Statistically significant effects are more likely to be reported in journals than null effects. | Studies that find an effect of VVGs on aggression, attitudes towards women, and mental health outcomes are over-represented in the literature. ¹²² Studies finding no relationship between VVGs and aggression are less likely to be published. This results in a false perception of the amount of evidence in favour of VVGs causing both positive and negative outcomes in players. |
| Inflation bias | Measures of aggression, attitudes towards women, and mental health outcomes are not standardised across studies and there is no consensus on how they should be interpreted. | Study results can be selectively interpreted by authors to support their predetermined hypotheses. The authors of VVG meta-analyses may have biases which influence how they interpret and present evidence from the literature. ¹²³ |

Greater transparency has been proposed as a way to address research bias and poor methodology.¹²⁴ Pre-registration requires scholars to submit their research rationale, hypotheses, design and analytic strategy prior to conducting an experiment. This locks researchers into a pre-specified plan and reduces the opportunity for both explicit and implicit bias creeping in to the research process. Publicising research agendas ahead of time also prevents the failure to report results which contradict the original aims of the researchers.

¹²¹ Ferguson, C.J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹²² Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International journal of law and psychiatry*, 56, 35-43.

¹²³ Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.

¹²⁴ Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.

The impacts of violent video games from an Australian perspective

Literature Review for the Department of Communications and the Arts

Contents

| | |
|---|----|
| | 2 |
| Executive summary | 4 |
| | 4 |
| Our recommendations based on the research findings | 5 |
| 01 / Introduction | 7 |
| 1.1 / Generalisability of international findings to the Australian context | 8 |
| 1.2 / Methodology | 12 |
| Search Criteria | 12 |
| Inclusion Criteria | 12 |
| Strength of evidence | 12 |
| 02 / The effect of violent video games on aggression | 14 |
| 2.1 / Violent video games are unlikely to cause aggression | 14 |
| World | 14 |
| Australia | 19 |
| 2.2 / Extremely violent games do not cause more aggression than violent video games | 20 |
| World | 20 |
| Australia | 21 |
| 2.3 / Conclusions | 22 |
| 03 / The effect of VVGs on attitudes towards women | 22 |
| 3.1 / Violent video games do not change attitudes towards women | 22 |
| World | 22 |
| Australia | 24 |
| 3.2 / Conclusions | 24 |
| 04 / The impacts of VVGs on young peoples' mental health | 24 |
| 4.1 / Violent video games do not cause negative mental health outcomes in young players | 25 |
| World | 25 |
| Australia | 27 |
| 4.2 / Conclusions | 29 |
| 05 / Recommendations | 29 |
| 5.1 / Aggression | 29 |
| 5.2 / Attitudes towards women | 31 |

| | |
|------------------------------|----|
| 5.3 / Mental health outcomes | 32 |
| Appendix A | 33 |
| Appendix B | 35 |

Executive summary

Playing video games is a popular pastime among Australians, with 2 out of 3 Australians reporting that they play video games.¹ There is ongoing concern internationally that playing violent or extremely violent video games (VVGs) may lead to negative outcomes, including increased aggression, negative attitudes to women and poor mental health outcomes for young players. While decades of research exists attempting to address these questions, there is ongoing controversy on the effects of VVGs. Meanwhile community concerns continue to grow alongside technological advances and increasingly realistic and immersive player experiences.

The evidence is therefore of interest to policy makers in Australia. The current review of academic research literature on the effects of violent video games seeks to determine whether there are any gaps in this research from an Australian perspective. At the time of publication, only a small number of studies investigating the impacts of violent video games on behaviour and attitudes have been conducted within Australia. The vast majority of research has been carried out in the United States, Europe and Asia. Here, we assess the extent to which findings from international research can be used to inform an understanding of the potential impact of VVGs in an Australian setting.

Research Finding 1: International research is generalisable to the Australian context

Most of the existing research on the effects of VVGs has been conducted in Western Europe and the United States. Australia shares many cultural and economic similarities with these countries and this research is therefore considered highly generalisable to the Australian context. Further, given the marginal differences in the strength of effects reported across cultures, international research from Asia and Hispanic cultures is also considered relevant to our understanding of the relationship between VVGs and aggression in the Australian context. Small effects of culture are apparent, with researchers generally finding that effect sizes of the impact of VVGs on aggression are slightly smaller for Eastern and Hispanic cultures than for Western cultures.^{2, 3, 4} However, the magnitude of these effects across all cultures studied is small, and supports the conclusion that they are helpful in understanding the effects of VVGs on Australian players.

Unlike the aggression literature, little research exists on the cross-cultural generalisability of findings concerning the impact of VVGs on youth mental health and attitudes towards

¹ Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: Interactive Games and Entertainment Association.

² Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

³ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882–9888.

⁴ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

women. However, what research does exist does not suggest that violent content results in VVG players having poor attitudes towards women or negative mental health outcomes.

Research Finding 2: Evidence suggests that exposure to VVGs does not have a negative impact on aggression.

Internationally there is much debate over the nature of the relationship between violent video games and players' behaviours and attitudes. The current review synthesises findings from the last decade to draw up-to-date conclusions as to the impact of violent video games.

Interpreting contradictory findings in the research literature is challenging due to widely varying methodologies, the tendency to only measure short-term outcomes, an overreliance on correlational evidence, and inconsistent definitions and measurements of aggression and attitudes towards women. Much of the academic literature on VVGs is dominated by supporters⁵ and opponents⁶ of the hypothesised link between playing VVGs and aggression. Despite the ongoing controversy, high-quality individual studies that use meaningful measures of aggression, and meta-analyses that control for other likely causes of aggression, converge on the same conclusion: VVGs have little to no meaningful impact on real-world aggressive behaviour.

Research Finding 3: Evidence suggests that exposure to VVGs does not have a negative impact on youth mental health or attitudes to women.

There are also fears that VVGs have other negative effects, namely on players' mental health and their attitudes towards women. The high-quality studies that are available support the same general conclusion as the aggression literature: it is unlikely that violent content in video games meaningfully impacts attitudes towards women and the mental health of young players. The effect of VVGs on attitudes towards women and the mental health of young players are less well studied than aggression, with few high-quality studies and meta-analyses available at present.

Our recommendations based on the research findings

We were asked by the Department of Communications and the Arts to conduct a review of academic literature on the impacts of violent video games relating to attitudes to women, child and youth mental health and aggression to identify any gaps in the research from an Australian perspective that would necessitate the conduct of new research in Australia. Based on the above conclusions, we make the following recommendations to the Department of Communications and the Arts:

- **We do not recommend that further research is carried out in an Australian context to understand the relationship between VVGs and aggression.** It is

⁵ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

⁶ Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

unlikely that additional research in Australia on the effect of VVGs on aggression would meaningfully add to the academic literature. Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.

- **We do not recommend that further research is carried out in an Australian context to understand the relationship between VVGs and attitudes towards women.** While there is a lack of Australian evidence addressing this research question, the highest quality international research from the US and Western Europe finds no strong evidence that violent content in itself causes players to develop negative attitudes towards women. If further research is to be conducted, the effects of sexualised and sexist content on attitudes to women should be prioritised over investigating the impact of violent content.
- **We do not recommend that further research is carried out in an Australian context to understand the relationship between VVGs and mental health outcomes in young players.** It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content does not affect mental health over and above general game play.

01 / Introduction

The purported link between violent video games (VVGs) and real-world violent attitudes and behaviours is a controversial and politicised issue. Mass shootings have been linked to VVGs since the infamous Columbine school shooting, as the perpetrators were avid players of *Doom*, a graphic first-person shooter game. Mass shootings continue to be linked to VVGs by some politicians and public commentators, however evidence suggests that not all perpetrators play VVGs, or played video games regularly.⁷

The nature of the relationship between violent and extremely violent video games and players' attitudes and behaviours is also contentious amongst academics.^{8, 9, 10, 11} The controversy around VVGs is fuelled by the rapid pace of game development, which outstrips the pace of academic research. VVGs are increasingly complex, social, and graphic, such that academic studies from only 10 years ago may not apply to current games. Advances in video game graphics have greatly enhanced the realism of games, making them more immersive. Some researchers have argued that video game realism¹² and sexualisation of characters¹³ in immersive games might lead to greater negative impacts of playing video games than more traditional, less immersive video game formats. This has broadened community concerns about the effects of VVGs from aggression and violence to include attitudes towards women and mental health, particularly in young players.

The purpose of this review is to determine the relationship between violent, and extremely violent, video games and aggression, attitudes towards women, and youth mental health in the Australian context. Due to the relative lack of studies in Australian cohorts, this review is also designed to determine to what degree international findings can be generalised to Australia. Finally, in light of the available evidence and generalisability to Australia, we will form recommendations as to whether further research is needed in Australians to cover gaps in the VVG research.

⁷ Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 1 Nov. 2019].

⁸ Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological science*, 12(5), 353-359.

⁹ Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

¹⁰ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.

¹¹ Ferguson, C. J., & Kilburn, J. (2010). Much ado about nothing: The misestimation and overinterpretation of violent video game effects in Eastern and Western nations: Comment on Anderson et al.(2010).

¹² Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.

¹³ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

1.1 / Generalisability of international findings to the Australian context

The impacts of VVGs on aggression, attitudes to women and youth mental health are questions of global interest. Internationally, a large body of research has been carried out to attempt to understand these associations, in particular relating to impacts on aggression. As with many questions in other policy areas, in order to reach the most robust conclusions we want to draw widely from the findings of international research. This is particularly the case for the Australian context, given that Australian research is currently limited in this space. In order to draw from international research, we need to first think carefully about how and when findings are likely to generalise across countries and cultures; a question posed by social scientists in other contexts for decades. There is some consensus that generalising findings across contexts is most appropriate with rigorous quantitative methodologies, and among studies using large samples.¹⁴ Hence, when looking at the international literature, we have given higher weighting to these studies (refer to section 1.3 below on ‘Strength of Evidence’ for more information about the research we have highlighted in this review).

Most research has been carried out in countries that are, like Australia, industrialised, economically stable and technologically advanced

It is worth noting that the majority of countries in which research has been carried out on the impacts of violent video games have moderate or high economic strength and level of technological sophistication. A common criticism of attempts to generalise from psychological studies is that participants in psychology studies tend to be Western, Educated, Industrialised, Rich and Democratic (WEIRD). While Australians are classified as WEIRD, globally speaking, most people are not.¹⁵ While not all samples discussed in this review are WEIRD, they are predominantly educated, industrialised, rich and democratic. In other words, only countries that are sufficiently developed such that inhabitants have general access to VVGs and high usage characteristics can provide enough data from which to draw robust conclusions.

Culture may have a small impact on the impacts of Violent Video games in relation to non –WEIRD countries

It is apparent that any cultural factors mediating the relationship between VVGs and aggression and mental health are small, if not trivial. Many explanations have been proposed for why culture would be a moderating factor on the impacts of VVGs on aggression, including differences in collectivistic values and moral discipline,¹⁶ how violence is contextualised in the media, the context in which video-games are played,¹⁷ and variation

¹⁴ Generalizability and Transferability, The WAC Clearing house. Retrieved from: <https://wac.colostate.edu/resources/writing/guides/gentrans/>.

¹⁵ Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.

¹⁶ JIN, Y., & LI, J. (2014). Cultural Differences in the Effect of Violent Video Games on Adolescent Aggression Cognition: Based on the Perspective of Meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.

¹⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

across cultures in the meaning of being a perpetrator and a victim of aggression.¹⁸ These studies predominantly explore the differences between research outcomes in Eastern (predominantly Japan, but also Singapore and China) versus Western (predominantly the USA, UK, Australia, Germany, and other European countries) cultures.

Some small effects of culture are apparent, generally finding that effect sizes of the impact of VVGs on aggression tend to be slightly smaller for Eastern and Hispanic cultures than Western cultures.^{19,20, 21} For example, in a cross-cultural comparison of the impacts of VVGs in Eastern (primarily Japan, but also China, Singapore) and Western (primarily USA) cultures, Anderson²² found larger effects of VVGs on aggression in Western than Eastern countries. However, this finding was only marginally significant, and only apparent in longitudinal research studies. However, in these comparisons, cultural differences are often confounded with differences in research design, meaning that variance could in fact be due different ways of measuring aggression.

This finding is supported by researchers who argue both that VVGs lead to increased aggression, and those who argue that VVGs have no impact on aggression. For example, Ferguson²³ found Eastern samples returned smaller effect sizes, as did Latin/Hispanic samples, than did Western samples. Given that effect sizes across all studies analysed by Ferguson were generally small, the differences among culture as a moderating variable were also deemed small. It is also important to note that this meta-analysis looked at all video games, both violent and non-violent. However, they do corroborate Anderson's argument that culture/ethnicity might somewhat moderate the impact on aggression, with Western samples showing greater effect sizes. Similarly, a subsequent meta-analysis from Prescott, Sargent and Hull²⁴ (2018) focusing exclusively on the longitudinal outcomes of VVGs on White, Asian and Hispanic samples found strongest associations between White samples, intermediate associations with Asian samples and smallest with Hispanic samples (acknowledging that only a small number of studies exist that us Hispanic samples).

¹⁸ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹⁹ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

²⁰ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

²¹ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

²² Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

²³ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

²⁴ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

While some studies suggest that rates of aggression vary across cultures,²⁵ the size and direction of the association between the two factors (predictor and outcome) generally remains the same.²⁶ More broadly, correlational research looking at the relationship between media violence exposure and aggressive behaviours across cultures has found few cross-cultural differences.^{27, 28} One comparison of the impact of media violence among seven countries (Australia, China, Croatia, Germany, Japan, Romania, and the United States) found no significant differences in the strength of the relationship with aggression across cultures.²⁹

There are few studies looking at cross-cultural variations in the impacts of VVGs on attitudes towards women and youth mental health.

One cross-cultural study looked at the relationship between the amount of time spent playing VVGs and mental health in young children.³⁰ Comparisons were made across Eastern and Western European countries (Germany, The Netherlands, Lithuania, Romania, Bulgaria, and Turkey). Across cultures, differences were seen in usage patterns - but once these were controlled for, no differences were found in mental health outcomes across countries. Although there is a relative lack of cross-cultural studies investigating the effects of VVGs on attitudes towards women, as we outline in Section 3.1 below, any effects are more likely to be due to the sexist and sexualised content of games, not violence per se.

We are assessing generalisability to the Australian context based on whether research comes from 'Western' or 'Eastern' contexts

Given the above evidence, we have characterised the research outlined throughout the review as having 'high', 'medium' or 'low' generalisability to the Australian context (see Table 1 below for an outline of the classification criteria). Below we have divided the research outlined in the review into that carried out in the international context ('World') and in an Australian context ('Australia').

²⁵ Research into aggression has found common factor structures underlying aggression across cultures. Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive behavior*, 38(4), 298-308.

²⁶ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

²⁷ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998.

²⁸ Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.

²⁹ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998. .

³⁰ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.

Table 1. How we have assessed generalisability to Australia

| Low generalisability to the Australian context | Medium generalisability to the Australian context | High generalisability to the Australian context. |
|--|---|--|
| <p>Studies that come from developing nations where social, cultural and political factors are contrasting to those of Western nations.</p> <p>In addition, access to technologies and games associated with gaming are markedly low.</p> | <p>Research comes from countries (predominantly Eastern) that have similar socio-economic conditions to the Australian context, and most studies show cross-cultural similarities in relation to Western contexts. However, some small differences in effect sizes between rates of game play and effect sizes (e.g. Japan).</p> <p>Countries include: Japan, Singapore, China, and Taiwan. Also included are studies with Latin/Hispanic cultures</p> | <p>Carried out in countries that have been shown to have similar gaming characteristics and cultural factors to Australia (primarily Western countries with similar patterns seen in the effects of VVGs). We are confident that the studies detailed can be helpful in understanding the Australian context.</p> <p>Countries include: UK, USA, Germany, Belgium, France, and the Netherlands.</p> |

1.2 / Methodology

This section outlines the methodology for the present review of academic literature on the impact of VVGs.

Search Criteria

A computerised literature search was conducted via Google Scholar, PubMed, ScienceDirect, Web of Science, Proquest and PsycINFO, using relevant search terms (see Table 1 in Appendix A) to identify the most relevant literature.

Using the above criteria over 200 original research articles were collected and reviewed, in addition to meta-analyses and systematic reviews. A large number of studies met the search criteria but were not included in this report as they did not meet the inclusion criteria detailed below. Therefore, the attached bibliography does not reflect an exhaustive list of all extant research on the impacts of VVGs. Rather it reflects research referenced in the body of the literature review, which synthesises and summarises the highest quality research conducted in the past 10 years.

Inclusion Criteria

This review synthesises the highest quality research investigating the impacts of VVGs on aggression, attitudes to women and youth mental health. Due to the increased graphic realism, immersive experience and levels of violent content in modern video games only studies conducted in the past 10 years were included. A systematic scan of the literature revealed hundreds of studies investigating the impacts of VVG's on aggression, attitudes towards women and youth mental health. Due to the volume of poor-quality studies identified, the inclusion criteria were restricted to prioritise only the most rigorous research. This was assessed using the criteria outlined in the Strength of Evidence Table (Table 2) below.

Strength of evidence

Strength of evidence was assessed using the criteria in the table below. This review prioritised research conducted in the past 10 years which had the characteristics outlined in the green *high* column below. Where high quality evidence was not available, evidence that was categorised as *medium* or *low* was included in order to form conclusions and recommendations. Low strength of evidence studies were included in only 7 occasions and only where higher quality studies were not available. Where low quality research is referred to this is explicitly labelled within this report.

Table 2. How we have assessed strength of evidence

| Strength of evidence | | |
|---|--|---|
| Low | Medium | High |
| <p>Evidence of research bias or subject to peer-reviewed criticism.</p> <p>Studies with unvalidated measures of aggression/attitudes towards women/mental health.</p> <p>Correlational studies where other known causes of aggression/attitudes towards women/mental health are not controlled for.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with low or undemonstrated association with real life attitudes or behaviour.</p> | <p>Correlational studies with a small number of known causes of aggression/attitudes towards women/mental health controlled for.</p> <p>Studies which rely on self-report measures only.</p> <p>Studies with small samples with low generalisability.</p> <p>Meta-analyses with evidence of research bias, have been subjected to peer-reviewed criticism or have not been independently replicated.</p> | <p>Correlational studies which have controlled for multiple known causes of aggression/attitudes towards women/mental health.</p> <p>Longitudinal or retrospective studies which measure attitudes or behaviour over time</p> <p>Studies with large nationally representative samples.</p> <p>Studies or meta-analyses which have been independently replicated.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with high demonstrated association with real-life attitudes or behaviour.</p> <p>Studies which have adopted open science practices such as pre-registration.</p> <p>Studies which include multiple outcome measures such as self-reports, peer-report and validated measurement scales.</p> <p>Studies which have conducted cross-cultural comparisons or have generalised findings across different contexts.</p> |

As stated above, each recommendation set out in this review was made using studies that span this spectrum of research quality. We prioritised studies that meet the criteria for *high* quality, and have made stronger recommendations where more high-quality research was available to draw on. In our recommendations, a *high* degree of research quality indicates that additional research is unlikely to meaningfully contribute to the existing literature.

02 / The effect of violent video games on aggression

2.1 / Violent video games are unlikely to cause aggression

| Strength of evidence | Generalisability to Australia |
|--|--|
| High | High quality studies drawn from the US, UK, Germany, China, Singapore and Australia. |
| The results of high-quality international and Australian studies suggest that the effect of VVGs on aggression is small to non-existent. | |



World

Recent high-quality studies indicate that the link between VVGs and aggression is small to non-existent. Studies that properly control for other known causes of aggression, and those that measure real-world behaviour either find no relationship, or a very small effect of VVGs on aggression.

While only a recent phenomenon, recent pre-registered studies have mostly found no link between VVGs and aggression, nor any other negative effects. In a pre-registered trial conducted in the UK, researchers interviewed a large sample of British adolescents and their parents or carers. They found no association between exposure to VVGs over the past month and real-life aggressive behaviour as measured by carer assessment.³² Similarly, three pre-registered randomised controlled trials conducted in the USA found no effect of VVGs on short-term measures of aggressive inclinations³³, hostility³⁴ or aggressive behaviour.³⁵ Two pre-registered longitudinal studies have also found no association between VVG exposure and aggression measured at a later time.³⁶ For instance, a study of over 3000 Singaporean youth found no association between playing VVGs and aggression measured

³² Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society open science*, 6(2), 171474.

³³ McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.

³⁴ Ferguson, C. J., Trigani, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric quarterly*, 87(1), 49-56.

³⁵ Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337.

³⁶ Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric quarterly*, 1-5.

two years later.³⁷ The authors concluded that it would take 27 hours per day of playing VVGs to produce clinically noticeable changes in aggression.

In the past 10 years four meta-analyses have been conducted to synthesise the literature investigating the effect of VVGs on aggression.^{38, 39, 40, 41} Combined, these meta-analyses cover hundreds of correlational, experimental and longitudinal studies involving hundreds of thousands of participants. The overall conclusion to be drawn from these meta-analyses is that VVGs have a small effect on aggression.

However there are several reasons to question whether any effect in fact exists:

- These meta-analyses include many laboratory experiments with poor methodology. They rely on artificial measures of short-term aggression, with unproven correlation to real-life aggressive behaviour.
- Effect sizes are smaller in studies with outcome measures that are more closely related to real-life aggressive behaviour, and research measuring long-term outcomes.
- As research methodology and rigor has improved over the past 10 years, evidence of a link between VVGs and aggression has grown weaker.
- When other known risk factors associated with aggression are controlled for (baseline aggression levels, gender, socioeconomic status) the association between VVGs and aggression diminishes almost entirely, suggesting that VVGs are not an independent cause of aggression.

There is also substantial evidence of bias within this literature (see Appendix B), especially in experimental studies claiming to demonstrate that VVGs cause aggression.⁴² The aforementioned emerging research has begun to address these biases by adopting more rigorous methodology. Research which is pre-registered, has been independently replicated, measures real-life aggressive behaviour or long-term outcomes reports effects that are small to non-existent.

Contrary to these findings, one recent pre-registered cross-sectional study found an association between playing video games and self-reported interpersonal violence in US

³⁷ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.

³⁸ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.

³⁹ Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and social psychology bulletin*, 40(5), 578-589.

⁴⁰ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on psychological science*, 10(5), 646-666.

⁴¹ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁴² Hilgard, J., Engelhardt, C. R., & Rouders, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al.(2010). *Psychological Bulletin*, 143(7), 757-774.

university students.⁴³ However the study did not address the impact of *violence* in video games, so it does not provide any evidence that violent content in games drives aggression.

While experimental studies are useful to gather evidence about causality, they have mostly relied on short-term measures of aggression. To investigate whether VVGs *cause* aggression over time, researchers conducted a randomised controlled trial in Germany. Participants were assigned to play a VVG, a non-violent video game or no game at all. There was no difference between the groups across a range of measures of aggression immediately following eight weeks of gameplay, or two months after the experiment ended.⁴⁴

Research investigating the effects of VVGs have used a range of aggression measures, many of which are artificial behaviours in a laboratory setting^{45, 46, 47, 48} (e.g. putting hot sauce into another participant's food), or self-report scales of aggressive thoughts and emotions^{49 50, 51, 52, 53, 54}. There is no clear evidence that these measures relate to or predict real-world behaviours,⁵⁵ which are the real concern to the community. If VVGs did in fact cause real-world aggressive behaviours, we would expect to observe a correlation between violent video game consumption and real-world violent incidents. In four separate analyses,⁵⁶ researchers compared patterns of US crime data with measures of VVG consumption over the past 30 years.⁵⁷ They found no evidence of a relationship between VVG consumption and aggressive assaults or homicides. In fact, several measures of VVG consumption were

⁴³ Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29,42-53.

⁴⁴ Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular psychiatry*, 24(8), 1220.

⁴⁵ Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior* 38: 281–287, DOI: <https://doi.org/10.1002/ab.21428>

⁴⁶ Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics*, 140(Supplement 2), S142-S147.

⁴⁷ Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.

⁴⁸ Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS one*, 9(11), e111790.

⁴⁹ Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.

⁵⁰ Bösch, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology*.

⁵¹ Bucolo, D. (2010). Violent video game exposure and physical aggression in adolescence: tests of the general aggression model.

⁵² Saleem, M., Anderson, C. A., & Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on college students' affect. *Aggressive behavior*, 38(4), 263-271.

⁵³ Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The Influence of Empathy and Morality of Violent Video Game Characters on Gamers' Aggression. *Frontiers in psychology*, 8, 1863.

⁵⁴ Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.

⁵⁵ McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).

⁵⁶ The analyses compared US data on violent crime with release dates for major VVGs, VVG sales data and internet searches for VVG guides.

⁵⁷ Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.

associated with *decreased* crime-rates, a finding supported by other research comparing patterns of VVG consumption and US crime data.^{58, 59}

There are several possible explanations as to why VVG consumption would be associated with less violent crime. VVGs might have a cathartic effect, allowing healthy venting of aggression in a controlled and harmless environment. Alternatively, more aggressive people might prefer to play VVGs, and are therefore occupied by a non-violent activity following VVG releases. It is important to note that these findings are correlational, and therefore cannot be used to draw causal conclusions.

Variable susceptibility to the effects of VVGs

An area of increasing interest to researchers is whether individuals differ in their susceptibility to the impacts of VVGs. Valkenburg and Peter (2013) propose that individual differences in personality traits, social-context and mental health conditions might determine the size and nature of VVG effects.⁶⁰ However there is currently a lack of strong evidence that this is the case.⁶¹ While some studies report variable effects on aggression based on peer factors,⁶² age,⁶³ sex,^{64,65} personality traits^{66, 67} and family environment^{68, 69} the evidence is inconsistent. For example, one US correlational study found no evidence that children with

⁵⁸ Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.

⁵⁹ Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.

⁶⁰ Valkenburg PM, Peter J. (2013a). The differential susceptibility to media effects model. *J. Commun.* 63:221–43

⁶¹ Valkenburg, P. M., & Peter, J. (2013b). Comm Research—Views from Europe| Five Challenges for the Future of Media-Effects Research. *International Journal of Communication*, 7, 19.

⁶² Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.

⁶³ Breuer, J., Vogelgesang, J., Quandt, T., & Festl, R. (2015). Violent video games and physical aggression: Evidence for a selection effect among adolescents. *Psychology of Popular Media Culture*, 4(4), 305-328.

⁶⁴ Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through “blood-red tinted glasses”: The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.

⁶⁵ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive behavior*, 44(3), 257-267.

⁶⁶ Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.

⁶⁷ Greitemeyer, T., & Sagioglou, C. (2017). The longitudinal relationship between everyday sadism and the amount of violent video game play. *Personality and individual differences*, 104, 238-242.

⁶⁸ Shao, R., & Wang, Y. (2019). Effect of Violent Video Games on Adolescent Aggression: Moderated Mediation Effect of Family Environment and Normative Beliefs. *Frontiers in psychology*, 10, 384.

⁶⁹ Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.

mental health symptoms constitute a vulnerable population for VVG effects. In a sample of 377 children with either clinically diagnosed attention or depression symptoms, exposure to VVGs was not associated with increased levels of delinquency or bullying behaviour.⁷⁰ Another 3 year longitudinal study reported that sex, age, history of aggressive behaviour and family environment made no difference to the impact of VVGs on aggressive behaviour.⁷¹ Where there is evidence of individual differences in susceptibility to VVGs, the effect is small and diminishes over time. For instance, two studies found that parental mediation style⁷² and family hostility had a small influence on VVG effects when measured cross-sectionally, however neither had any impact on the relationship between VVGs and aggression when measured longitudinally.^{73, 74}

Overall conclusions from international research

The highest quality evidence suggests that playing violent video games does not account for a meaningful proportion of observed aggression, if any at all. Even when the largest possible effect sizes are reported their level barely approaches levels deemed of practical or clinical importance.^{75, 76} This is particularly true when the effect of VVGs is compared to other known causal risk factors for aggression such as poverty, family violence and mental health.^{77, 78} In a longitudinal study conducted in the UK childhood mental health symptoms related to attention deficit disorder, depression and early conduct disorder predicted adolescent criminal behaviour 8 years later. In contrast, exposure to first person shooter games in childhood had no relationship with aggressive or criminal adolescent behaviour.⁷⁹ Similarly,

⁷⁰ Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among “vulnerable” populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of youth and adolescence*, 43(1), 127-136.

⁷¹ Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA pediatrics*, 168(5), 450-457.

⁷² Measured cross-sectionally, inconsistent restrictive mediation styles were associated with increased adolescent aggression, however no parental mediation styles were longitudinally related to media violence exposure and aggression.

⁷³ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.

⁷⁴ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.

⁷⁵ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁷⁶ **Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour.**

⁷⁷ Ferguson, C. J. (2011). Video games and youth violence: A prospective analysis in adolescents. *Journal of youth and adolescence*, 40(4), 377-391.

⁷⁸ Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of psychiatric research*, 46(2), 141-146.

⁷⁹ Smith, S., Ferguson, C., & Beaver, K. (2018). A longitudinal analysis of shooter games and their relationship with conduct disorder and self-reported delinquency. *International journal of law and psychiatry*, 58, 48-53.

when studies control for these individual or socio-demographic risk factors the impacts of VVGs on aggression diminish^{80, 81} or disappear completely.⁸²



Australia

Research on the link between VVGs and aggression conducted in Australia is largely consistent with international findings. Two Australian studies which were classified as find no effect of violent or ultra-violent games on aggression,⁸³ even if the participant was primed to take on a hostile cognitive state.⁸⁴ However both studies were classified as providing low strength of evidence (see Table 2).

One 2019 Australian study found that playing violent video games for five to 15 minutes impaired players' recognition of anger, enhanced their perception of their fighting ability and perception of a target as weak.⁸⁵ However, consistent with international studies, the authors found that gender and baseline aggression mediated the effects of VVGs on these aggression measures. It is also important to note that these aggression measures are based on perception, not action. Another 2019 Australian study found that game competition, not violence, increased aggressive emotions.⁸⁶ Moreover, the authors found that neither competition nor violence increased aggressive behaviour. This is consistent with international studies, which often find larger effects of violent games on aggressive emotions and perceptions than on actual aggressive behaviour.

A very recent Australian study found that players find in-game aggression more acceptable than offline aggression.⁸⁷ This suggests that players perceive in-game and real-world behaviour as governed by different norms, which may explain why acting out violence in a game does not cause real-world aggression. It is important to note that the authors recruited players online, and that only 11.5 per cent of their sample were Australian (the majority were American). The most common games played in their sample were World of Warcraft and

⁸⁰ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

⁸¹ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁸² **Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of psychiatric research*, 46(2), 141-146.**

⁸³ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

⁸⁴ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

⁸⁵ Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of Men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.

⁸⁶ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

⁸⁷ Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.

World of Tanks, which have M and PG ratings respectively, so it is possible that the authors would have obtained different findings if their sample played more violent games.

A study of young Australians found that boys were significantly more likely than girls to play violent video games (or watch other violent media), and to have used physical violence in the past year.⁸⁸ However, this cross-sectional (and therefore non-causal) study also found that young people who committed acts of aggression were also more likely to have been threatened with physical violence in the community, at home, or at school. This study suggests that factors such as gender may predict VVG gameplay and exposure to experiences that are more likely to directly cause aggression.

An Australian study of male and female violent video game players revealed complex reasons for why players are drawn to violent games.⁸⁹ For example, women in this study reported playing VVGs to be more attractive to romantic partners. This study did not find any relationship between violent video game play and aggression or dominance measures. However, as the authors note, their measure of aggression was acts of intimate partner violence, which is a more extreme measure than is typically used in VVG studies. This makes it difficult to relate this study to the wider violent video game literature.

2.2 / Extremely violent games do not cause more aggression than violent video games

| Strength of evidence | Generalisability to Australia |
|---|---|
| Medium | High - studies largely drawn from Australia, US, Germany and Canada |
| The results of higher quality studies suggest that that extremely VVGs do not increase aggression more than VVGs. | |



World

Video game content can differ on a number of dimensions, including pace, realism and graphicness. Due to the difficulty in matching games to ensure that the effect of violent content can be measured, most of this research has been conducted in experimental laboratories. Several randomised controlled trials in Germany, Australia and the US have compared video games which only differ in the severity of violent content. They find that higher levels of violence do not affect player aggression.

⁸⁸ Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.

⁸⁹ Kasumovic, M. M., Blake, K., Dixon, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.

A trial in Germany varied the amount of displayed violence and the pace of action in a first person shooter game, ensuring that all other features of the game were otherwise the same. They found that neither pace nor displayed violence had any effect on aggressive behaviour, as measured by willingness to expose another participant to an unpleasant noise-blast.⁹⁰ Similarly, researchers in the US assigned 275 undergraduates to play a first person shooter game that was modified to be more or less violent. Neither game difficulty nor violent content was found to affect aggressive behaviour.⁹¹ Finally, across seven randomised controlled trials conducted on US university students, researchers found that competence-impeding play increased frustration and aggression, however of levels of violent content had no impact.⁹²

The results from these and other studies suggest that other video game variables have a greater influence on aggression. Level of competition^{93, 94} and perceived game difficulty⁹⁵ have been associated with increased player aggression. For instance, a Canadian study which measured patterns of gameplay over 3 years found that increased competitive gameplay was associated with increased self-reported aggressive behaviour.⁹⁶ On the other hand, increased graphic realism of violence depicted in video games does not appear to increase player aggression.⁹⁷



A series of Australian studies comparing non-violent, violent, and ultra-violent video games found no effect of the level of game violence on aggression,⁹⁸ even if the participant was primed to take on a hostile cognitive state.⁹⁹ The authors did, however, find that ultra-violent games significantly increase players' self-dehumanisation.¹⁰⁰ This replicates another Australian finding that playing (extremely violent) *Mortal Kombat* diminished players' perceived humanity, but only if they were the target of violence.¹⁰¹ This self-dehumanisation

⁹⁰ Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.

⁹¹ Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological science*, 30(4), 606-616.

⁹² Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.

⁹³ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

⁹⁴ Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence?. *Psychology of violence*, 1(4), 259.

⁹⁵ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.

⁹⁶ Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of youth and adolescence*, 42(7), 1090-1104.

⁹⁷ Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment computing*, 24, 21-29.

⁹⁸ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

⁹⁹ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

¹⁰⁰ Self-dehumanisation is defined as the attribution of less human nature or human uniqueness traits to the self and has been regarded as a process that permits delegitimizing beliefs about others

¹⁰¹ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

effect does not appear to cause aggressive behaviour; in fact the authors argue that participants may have acted pro-socially to counteract their feelings of dehumanisation. The above three studies have been classified as providing low strength of evidence (see Table 2).

2.3 / Conclusions

Overall, combined international and Australian evidence suggests the effect of VVGs on aggression in Australia is small to non-existent, with **high** strength of evidence and **high** generalisability to Australia. The weight of evidence shows that even if VVGs do cause aggression, they would still only account for a very small proportion of aggressive behaviour, indicating little value in conducting additional research in this area.

Similarly, combined world and Australian evidence suggests that higher levels of violence in VVGs do not affect aggression, with **medium** strength of evidence and **high** generalisability to Australia. Extremely-violent or ultra-violent games are unlikely to contribute to any increased risk of aggression or violence.

03 / The effect of VVGs on attitudes towards women

| Strength of evidence | Generalisability to Australia |
|--|--|
| Medium | Medium - small number of studies largely drawn from Australia, US, UK, Canada and Germany. |
| The highest quality international evidence finds no relationship between VVGs and attitudes towards women. However, at present there is a lack of high-quality studies on this topic. VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players. | |

3.1 / Violent video games do not change attitudes towards women



World

Content analyses have revealed that video games contain fewer female protagonists, portray overly sexualised female characters, and games which depict violence can involve aggressive acts towards women.^{102, 103} There is growing concern that these

¹⁰² Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.

¹⁰³ Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.

representations of female characters normalise the objectification and sexualisation of women.

The highest quality evidence suggests that VVGs do not change attitudes towards women in the long-term for either men or women. A three year study on a representative sample of German youth found that preference for action or first person shooter video games was not associated with sexist attitudes. Amount of time spent playing video games also had no association with sexism.¹⁰⁴ The study controlled for other known risk factors of negative attitudes towards women such as age and education.

When researchers measure short-term attitudes towards women the results are more mixed. Two laboratory studies conducted in Italy and the USA have found that violent games can reduce empathy towards women¹⁰⁵ and increase hostile sexism¹⁰⁶ for some male players. However, the violent content appeared to have no independent effect on attitudes towards women. Sexist content, or combined sexist and violent content were necessary to change players' attitudes towards women. It should be noted that one of these studies, Gabbiadini *et al.* (2016), was classified as providing low strength of evidence (see Table 2 p#).

Overall, this evidence suggests that if video games do cause negative attitudes towards women, this effect is driven by sexualised or sexist content, rather than violent content. This conclusion is supported by other research. Correlational studies conducted online and in France found that playing video games is associated with both benevolent sexism^{107, 108} and hostile attitudes¹⁰⁹ towards women, a meta-analysis of 54 studies concluded that video games increase self-objectification for both men and women¹¹⁰ and a randomised control trial found that sexualised avatars in an adventure game increased adolescent players acceptance of rape myths¹¹¹ compared to non-sexualised avatars.¹¹²

¹⁰⁴ Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games= sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.

¹⁰⁵ Gabbiadini, A., Riva, P., Andrighetto, L., Volpato, C., & Bushman, B. J. (2016). Acting like a tough guy: Violent-sexist video games, identification with game characters, masculine beliefs, & empathy for female violence victims. *PLoS one*, 11(4), e0152121.

¹⁰⁶ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

¹⁰⁷ Benevolent sexism is a form of paternalistic prejudice (treating a lower status group as a father might treat a child) directed toward women.

¹⁰⁸ Bègue, L., Sarda, E., Gentile, D. A., Bry, C., & Roché, S. (2017). Video games exposure and sexism in a representative sample of adolescents. *Frontiers in psychology*, 8, 466.

¹⁰⁹ Fox, J., & Potocki, B. (2016). Lifetime video game consumption, interpersonal aggression, hostile sexism, and rape myth acceptance: A cultivation perspective. *Journal of interpersonal violence*, 31(10), 1912-1931.

¹¹⁰ Interestingly, video games had a larger impact than television consumption. Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing media use and self-objectification: A meta-analysis. *Psychology of women quarterly*, 42(1), 9-28.

¹¹¹ Rape myth acceptance refers to holding prejudicial, stereotyped and false beliefs about sexual assaults, rapists, and rape victims. These beliefs often serve to excuse sexual aggression, create hostility toward victims, and bias criminal prosecution.

¹¹² Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for health journal*, 4(2), 91-94.

Increased levels of sexist or sexualised content within video games are also associated with more negative attitudes towards women. A correlational study found that male college students who played more sexist games held more sexist attitudes towards women,¹¹³ and a 2018 systematic-review found that women experienced self-objectification and low levels of self-efficacy as a result of exposure to sexist content within video games, compared with video games which didn't contain sexist content.¹¹⁴

While violent video game content on its own appears to have no effect on attitudes towards women, these studies provide some evidence that sexualised content may impact attitudes towards women. The available evidence suggests that this is driven by sexualised or sexist content, rather than violence.



Australia

An Australian experimental study found that low-skilled male *Halo 3* players were more hostile towards female teammates, particularly when they were performing poorly.¹¹⁵ In contrast, high-skilled male players were more *positive* towards female teammates. This study therefore suggests that sexism elicited by gameplay is triggered by the player's sense of their own ability, and not by in-game violence. Moreover, this study did not compare *Halo 3* to a non-violent game.

3.2 / Conclusions

Overall, combined world and Australian evidence suggests that violent video games don't increase negative attitudes towards women with **medium** strength of evidence and **medium** generalisability to Australia. However some evidence suggests that sexist video game content is harmful, and that VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players.

04 / The impacts of VVGs on young peoples' mental health

| Strength of evidence | Generalisability to Australia |
|----------------------|---|
| Medium | High - studies largely drawn from Australia, US, UK, Canada |

¹¹³ Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.

¹¹⁴ Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social networking*, 21(9), 535-541.

¹¹⁵ Kasumovic, M. M., & Kuzneff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS one*, 10(7), e0131613.

There is no high quality evidence of a causal relationship between VVGs and depression, anxiety, suicidal ideation, attention problems, academic achievement or pro-social outcomes.

4.1 / Violent video games do not cause negative mental health outcomes in young players



World

Research into the impact of VVGs on young peoples' mental health is the most recent form of a long history of concerns about the impact of violent media on aggression, particularly as video games become ubiquitous in children's lives. The peak body for the Australian video game industry reported that young Australians play video games for an average of 100 minutes per day.¹¹⁶ Researchers are increasingly interested in understanding the long-term psychosocial and developmental impacts of playing video games, especially those with extremely violent content. These include impacts on peer-relations, internalising problems such as anxiety or depression and attentional problems such as ADHD.

There is no high quality evidence to suggest that VVGs increase negative mental health outcomes for young players. A meta-analysis by Ferguson et al. of 101 studies found neither video games nor VVGs had any impact on depression, attention disorders, conduct disorders, pro-social behaviour or academic achievement for both children and adolescents.¹¹⁷ The meta-analyses included correlational, experimental and longitudinal studies measuring both short and long-term effects. This meta-analysis has been replicated by an independent research team, which is noteworthy given the above mentioned biases and flawed methodology prevalent in this literature.¹¹⁸

Longitudinal research conducted in the USA, Europe and Singapore find VVGs are not associated with negative mental health outcomes for young players. For example a prospective longitudinal study of over 5000 UK children found no association between preference for first-person shooter games at 8 years old and depression in adolescence.¹¹⁹ A longitudinal study on 300 Dutch children reported that preference for violent video games was not associated with mental health outcomes (neither positive nor negative) 1 year later.¹²⁰ Similarly violent video game play was not associated with depression or anxiety over

¹¹⁶ Brand, J. E., Jervis, J., Huggins, P., & Wison, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

¹¹⁷ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹¹⁸ Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877-1892.

¹¹⁹ Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.

¹²⁰ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.

1 year of measurement in 10-14 years olds in the USA.¹²¹ A recent pre-registered study of 3000 Singaporean youth found that playing VVGs was unrelated to youth pro-social behaviour 2 years later.¹²²

Contrary to these findings, a recent correlational study of over 5000 US 5th grade students reported that playing VVGs for more than 2 hours per day was associated with increased depressive symptoms. However these results compared high daily VVG play to low daily VVG play, and did not compare violent to nonviolent games. When time spent playing video games was matched, there was no relationship between violent content and symptoms of depression.¹²³

Research on suicidal ideation is more mixed. A recent correlational study in the USA found no relationship between VVGs and suicidal ideation.¹²⁴ Whilst another study in a nationally representative sample of US high-school students found a correlation between excessive video game use and suicidal ideation,¹²⁵ this was not explicitly related to *violent* video games. It is also unclear whether video games cause suicidal ideation, or whether children experiencing suicidal ideation video game play.

Other risk factors such as prior youth depression, anxiety, family, socio-economic status or peer delinquency, are a more reliable predictor of mental health outcomes for children and adolescents. Many studies suggest that compared to other known socio-demographic risk factors, VVGs present minimal danger to the mental health of young players. A 1 year longitudinal study in the US¹²⁶ found that anxiety and depression were predicted by parental aggression, delinquent peers and previous symptoms of depression, whereas exposure to VVGs was not associated with any negative mental health outcomes.¹²⁷ Similarly, a US study found that gender, antisocial traits, family environment and prior mental health conditions predicted attention problems in children,¹²⁸ whereas attention problems were not related to playing more video games or a preference for VVGs.

¹²¹ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹²² Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.

¹²³ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.

¹²⁴ Jami M. Gauthier, Kelly L. Zuromski, Seth A. Gitter, Tracy K. Witte, Ian J. Cero, Kathryn H. Gordon, Jessica Ribeiro, Michael Anestis, and Thomas Joiner (2014). The Interpersonal-Psychological Theory of Suicide and Exposure to Video Game Violence. *Journal of Social and Clinical Psychology*: Vol. 33, No. 6, pp. 512-535.

¹²⁵ Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.

¹²⁶ Sample mostly identified as Hispanic

¹²⁷ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹²⁸ Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of psychiatric research*, 45(6), 808-813.

Evidence suggests that other game characteristics such as competition,¹²⁹ and excessive gameplay,^{130 131} in particular pathological video-gaming,¹³² have a larger effect on mental health outcomes than violent content. Research carried out with 10-14 year olds in the USA over one year found that playing VVGs did not predict depression or anxiety,¹³³ however, high levels of competitive gaming were associated with negative mental health outcomes such as depression and reduced pro-social behaviour.

Emerging evidence suggests that video games might have a protective effect for children's mental health. In a high quality correlational study surveying over 3000 young children across six European nations, increased video game usage (more than five hours per week) was not associated with any negative mental health, social or behavioural outcomes. Children who played more video games had lower rates of internalising disorders and fewer thoughts of death, and experienced pro-social and academic benefits, including elevated intellectual functioning, high overall competence, and specific benefits in reading, mathematics and spelling.¹³⁴

While beyond the scope of this review, there is also increasing evidence that playing video games more generally provides many benefits for children and adolescents. Researchers have summarised the evidence for various cognitive, social and psychological benefits of video games for young players.¹³⁵



Australia

To our knowledge, there are no Australian studies that compare mental health outcomes in young people for violent and non-violent games. Australian studies have found that young peoples' mental health¹³⁶ and academic performance¹³⁷ decline as screen time increases. However, there is no evidence from the Australian context that violent

¹²⁹ Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.

¹³⁰ Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.

¹³¹ Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

¹³² Liao, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.

¹³³ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹³⁴ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.

¹³⁵ Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.

¹³⁶ Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.

¹³⁷ Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.

game content mediates or exacerbates any negative impacts of playing video games. Below we have separated out Australian findings in relation to mental health outcomes:

Pathological gaming.¹³⁸ A study of over 1200 South Australian high school students found a rate of Pathological Video Gaming (PVG) of less than two per cent.¹³⁹ Young people with PVG did not meet the criteria for clinical depression or anxiety, although this study did not specifically address video game violence.

Sleep. Some Australian studies have found that playing violent video games before bed disrupts young players' sleep.^{140, 141} These studies did not compare sleep quality after playing a non-violent game, and attribute effects on sleep to the arousing nature of the games chosen. These studies also used very small sample sizes (less than 20 participants). They have therefore been classified as providing low strength of evidence (see Table 2). Other Australian studies suggest that the general stimulation of computer use,¹⁴² duration of play,¹⁴³ and the tendency of young gamers to enter a flow state¹⁴⁴ while playing¹⁴⁵ disrupt sleep, not necessarily violent content.

Behavioural and emotional problems. Australian studies have found that children who play more video games are more likely to have behavioural and emotional problems,¹⁴⁶ and less ability to self-regulate.¹⁴⁷ However, these studies only measured video game play or media exposure (including all types of video games) overall, and did not distinguish between violent and non-violent games.

Self-dehumanisation.¹⁴⁸ Australian studies comparing non-violent, violent and extremely violent games have found that extremely violent games cause players to self-dehumanise.¹⁴⁹ Another Australian study found that an extremely violent game (*Mortal Kombat*) reduced

¹³⁸ Pathological gaming is defined as the persistent inability to control excessive gaming habits despite associated social or emotional problems

¹³⁹ King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.

¹⁴⁰ King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: an experimental study. *Journal of sleep research*, 22(2), 137-143.

¹⁴¹ Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.

¹⁴² Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Prebedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.

¹⁴³ Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep medicine*, 30, 64-70.

¹⁴⁴ Flow is "an experience of immersion and time distortion" while playing

¹⁴⁵ Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: the roles of game difficulty and flow. *Sleep medicine*, 39, 70-76.

¹⁴⁶ Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic pediatrics*, 17(6), 620-624.

¹⁴⁷ Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic pediatrics*, 18(7), 813-819.

¹⁴⁸ Note that these studies were covered in the section on aggression.

¹⁴⁹ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

players' perception of their own humanity when they were the target, not the perpetrator, of violence in the game.¹⁵⁰ However, these studies were conducted with an adult sample, so it is unclear whether young people experience dehumanisation due to game violence. They were also classified as low strength of evidence studies (see Table 2).

Positive social outcomes. A laboratory study conducted in Australia found that playing a violent game (*Left 4 Dead 2*) increased players' positive affect and sense of connection when their teammate was a human-controlled (not computer-controlled) character.¹⁵¹ This finding is consistent with international research on the prosocial benefits of playing cooperative VVGs. Other Australian studies have found no effect of violent¹⁵² or even prosocial¹⁵³ games on prosocial behaviour, although their measures of prosocial behaviour have questionable relevance to real-world behaviour. These studies were classified as providing low strength of evidence (see Table 2). In addition, these studies were conducted in an adult sample, so it is unclear whether young people experience the same benefits.

4.2 / Conclusions

Overall, combined world and Australian evidence suggests that VVGs do not cause negative mental health outcomes for young players with **medium** strength of evidence and **high** generalisability to Australia. Some evidence suggests VVGs might have a positive impact on mental health outcomes.

05 / Recommendations

The aim of this literature review was to answer the question:

“What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia?”

Below, we outline our conclusions and recommendations as to whether further research is needed to explore the impacts of VVGs in the Australian context in relation to aggression, attitudes to women or mental health outcomes for young players.

5.1 / Aggression

Research questions:

¹⁵⁰ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

¹⁵¹ Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.

¹⁵² Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

¹⁵³ Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS one*, 8(7), e68382.

1. What are the key findings about violent games and aggression emerging from international research?
2. What is the relationship between violent and extremely violent video games and aggression in Australian research?

Conclusions:

- Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.
- To date, limited research has been conducted in Australia. However, the strength of generalisable international research can fill any research gaps in the Australian context. This includes meta-analyses and emerging high quality research which converge on the conclusion that VVGs cause little or no real-world aggressive behaviour.
- It is unlikely that additional research in Australia would meaningfully add to the academic literature.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and aggression.

5.2 / Attitudes towards women

Research questions:

1. What are the key findings about violent games, aggression and attitudes to women emerging from international research?
2. What is the relationship between violent and extremely violent video games and attitudes towards women in Australian research?

Conclusions:

- The highest quality international evidence finds no relationship between VVGs and attitudes towards women. There is only one Australian study on the effect of a VVG on attitudes towards women, and this study did not compare violent and non-violent video games.
- Violent video game content on its own appears to have no effect on attitudes towards women. Some studies suggest that VVGs which contain sexist or sexualised content increase negative attitudes towards women. However, the available evidence suggests that this effect is driven by the sexualised or sexist content, rather than violence. While there is no strong evidence that violent content increases the negative impacts of sexist video games, the effect of sexualised or sexist content has not been adequately addressed in the literature.
- Additional research on the effect of VVGs on attitudes towards women focussing on sexist and sexualised content should be prioritised over the impact of violent content. Research suggests highly sexualised/sexist games may have an impact on attitudes towards women. Future research should compare the effects of matched video games with and without sexualised/sexist content to determine the independent effect of this content.

Recommendation: As the available high quality evidence finds that violent content in VVGs alone has no effect on attitudes towards women, no further research is recommended to understand the relationship between VVGs and attitudes to women in the Australian context.

5.3 / Mental health outcomes

Research questions:

1. What are the key findings of international research on how violent or extremely violent games impact the mental health of young game players?
2. How do violent or extremely violent games impact the mental health of young game players in Australia?

Conclusions:

- There is no evidence in the international literature of a robust causal relationship between VVGs and depression, anxiety, suicidal ideation, attention problems, academic achievement or pro-social outcomes. Other risk factors such as family environment, delinquent peers and prior mental health conditions are much more robust predictors of poor mental health outcomes.
- It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content has not been shown to affect mental health over and above general game play.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and youth mental health.

Appendix A

Table 1: Search Criteria and Search Terms

| | Research Question | Search Criteria | Working Search Terms |
|---|---|---|--|
| 1 | What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia? | Academic research conducted in Australian cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. | "Violent Video games" "Violent computer games" "Extremely violent Video games" "First-person shooter" "Aggression" "Aggressive behaviour" "Attitudes towards women" "Gendered" "Australia" "Australian" "Causational" "Intervention study" "Randomised controlled trial" "Meta-Analysis" "Systematic Review" "Longitudinal" "Impacts Behaviour/behaviour" |
| 2 | What is the relationship between violent and extremely violent video games and aggression and/or attitudes towards women in international contexts? | <p>Academic research conducted in overseas contexts and cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. We will give special attention to high quality systematic reviews or meta-analysis, or research measuring longitudinal outcomes. We will prioritise research conducted in comparable countries to Australia on social, cultural and political dimensions. High quality research conducted in countries which are not generalisable to the Australian context will supplement this search, however receive lower prioritisation.</p> <p>We will also give consideration to academic research which identifies and operationalises levels of violent content or realism of violence in video games and explores the variance in impact on aggression, and attitudes towards women.</p> | We will use the same core search terms (in Row 1) removing references to Australia, with additional terms to explore levels of violence in games: "MA15+" "R18+ "R" "Very violent" "Extremely violent" "Ultra-violent" "Violent vs extremely violent" "Violent vs ultra-violent" "Violent vs very violent" "Level of violence" "Unrated" |

| | | | |
|---|---|--|---|
| 4 | Do violent or extremely violent games impact the mental health of young game players? | Academic research conducted exploring any link between violent and extremely violent video games and mental health outcomes for young people. We will give special attention to longitudinal research, as well as including both positive and negative mental health impacts. | We will use the same core search terms (in Row 1), with additional terms relevant to mental health: "Mental health" "Young people" "Adolescents" "Suicide" "Anxiety" "Depression" "Cognitive benefits" "Social benefits" "Cognitive development" "Emotional development" "Cognitive impacts" "Social impacts" |
| 3 | How can international and cross-jurisdictional research on the impact of violent games be generalised to the Australian context? | <p>Cross-cultural academic studies on violent video games, especially those involving countries likely to be compared to Australia.</p> <p>Any other research on the generalisability of international findings cross-culturally, and if available, to the Australian context and relating to aggression, attitudes to women and gaming.</p> | <p>"Generalisable" "Generalisability" "Applicability" "Comparable" "Research" "Cross-cultural research" "Violent video games" "Attitudes to women" "Gaming" "Australia" "Australian"</p> <p>(we will also include here names of countries that come up as most comparable to Australia)</p> |

Appendix B

Different types of bias identified in the literature investigating the effect of VVGs on aggression:

| Bias | Description | Influence on the debate on whether VVGs cause negative outcomes |
|------------------|--|---|
| Citation bias | Authors selectively reference studies that support their hypotheses, and exclude studies that contradict their hypotheses. | VVG meta-analyses selectively include studies which match the researchers' pre-determined hypotheses. Evidence suggests that scholars who neglect to refer to research which contradicts their hypotheses report higher effect sizes. ¹⁵⁴ |
| Publication bias | Statistically significant effects are more likely to be reported in journals than null effects. | Studies that find an effect of VVGs on aggression, attitudes towards women, and mental health outcomes are over-represented in the literature. ¹⁵⁵ Studies finding no relationship between VVGs and aggression are less likely to be published. This results in a false perception of the amount of evidence in favour of VVGs causing both positive and negative outcomes in players. |
| Inflation bias | Measures of aggression, attitudes towards women, and mental health outcomes are not standardised across studies and there is no consensus on how they should be interpreted. | Study results can be selectively interpreted by authors to support their predetermined hypotheses. The authors of VVG meta-analyses may have biases which influence how they interpret and present evidence from the literature. ¹⁵⁶ |

Greater transparency has been proposed as a way to address research bias and poor methodology.¹⁵⁷ Pre-registration requires scholars to submit their research rationale, hypotheses, design and analytic strategy prior to conducting an experiment. This locks researchers into a pre-specified plan and reduces the opportunity for both explicit and implicit bias creeping in to the research process. Publicising research agendas ahead of time also prevents the failure to report results which contradict the original aims of the researchers.

¹⁵⁴ Ferguson, C.J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹⁵⁵ Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International journal of law and psychiatry*, 56, 35-43.

¹⁵⁶ Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.

¹⁵⁷ Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.

Bibliography

- Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877-1892.
- Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence? *Psychology of violence*, 1(4), 259.
- Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of youth and adolescence*, 42(7), 1090-1104.
- Anderson CA, et al. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.
- Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998.
- Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics*, 140(Supplement 2), S142-S147.
- Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.
- Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.
- Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.
- Bègue, L., Sarda, E., Gentile, D. A., Bry, C., & Roché, S. (2017). Video games exposure and sexism in a representative sample of adolescents. *Frontiers in psychology*, 8, 466.
- Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 1 Nov. 2019].
- Bösche, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology*.
- Brand, J. E., Jervis, J., Huggins, P., & Wison, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

- Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games= sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.
- Bucolo, D. (2010). Violent video game exposure and physical aggression in adolescence: tests of the general aggression model.
- Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic pediatrics*, 18(7), 813-819.
- Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.
- Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.
- Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.
- Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for health journal*, 4(2), 91-94.
- Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.
- Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.
- Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.
- Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.
- Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.
- Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of psychiatric research*, 45(6), 808-813.
- Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.

- Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International journal of law and psychiatry*, 56, 35-43.
- Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric quarterly*, 1-5.
- Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.
- Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among “vulnerable” populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of youth and adolescence*, 43(1), 127-136.
- Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.
- Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337.
- Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.
- Ferguson, C. J., Trigani, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric quarterly*, 87(1), 49-56.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.
- Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.
- Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.
- Fox, J., & Potocki, B. (2016). Lifetime video game consumption, interpersonal aggression, hostile sexism, and rape myth acceptance: A cultivation perspective. *Journal of interpersonal violence*, 31(10), 1912-1931.

- Gabbiadini, A., Riva, P., Andrighetto, L., Volpato, C., & Bushman, B. J. (2016). Acting like a tough guy: Violent-sexist video games, identification with game characters, masculine beliefs, & empathy for female violence victims. *PLoS one*, 11(4), e0152121.
- Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The Influence of Empathy and Morality of Violent Video Game Characters on Gamers' Aggression. *Frontiers in psychology*, 8, 1863.
- Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.
- Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA pediatrics*, 168(5), 450-457.
- Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social networking*, 21(9), 535-541.
- Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.
- Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and social psychology bulletin*, 40(5), 578-589.
- Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Prebedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.
- Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through "blood-red tinted glasses": The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.
- Hilgard, J., Engelhardt, C. R., & Rouder, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al. (2010). *Psychological Bulletin*, 143(7), 757-774.
- Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological science*, 30(4), 606-616.
- Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.
- Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS one*, 9(11), e111790.

- Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.
- Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29, 42-53.
- Jami, M., Gauthier, K. L., Zuromski, S. A., Gitter, T. K., Witte, I. J., ... & Joiner, T. (2014). The Interpersonal-Psychological Theory of Suicide and Exposure to Video Game Violence. *Journal of Social and Clinical Psychology*: Vol. 33, No. 6, pp. 512-535.
- Jin, Y., & Li, J. (2014). Cultural Differences in the Effect of Violent Video Games on Adolescent Aggression Cognition: Based on the Perspective of Meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.
- Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing media use and self-objectification: A meta-analysis. *Psychology of women quarterly*, 42(1), 9-28.
- Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS one*, 10(7), e0131613.
- Kasumovic, M. M., Blake, K., Dixon, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.
- King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.
- King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: an experimental study. *Journal of sleep research*, 22(2), 137-143.
- Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.
- Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.
- Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular psychiatry*, 24(8), 1220.
- LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.
- Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive behavior*, 38(4), 298-308.

- Liau, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.
- Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.
- Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.
- Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.
- Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.
- Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.
- McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.
- McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).
- Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.
- Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.
- Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic pediatrics*, 17(6), 620-624.
- Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.
- Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.
- Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society open science*, 6(2), 171474.

- Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.
- Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.
- Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior* 38: 281–287, DOI: <https://doi.org/10.1002/ab.21428>
- Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.
- Shao, R., & Wang, Y. (2019). Effect of Violent Video Games on Adolescent Aggression: Moderated Mediation Effect of Family Environment and Normative Beliefs. *Frontiers in psychology*, 10, 384
- Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep medicine*, 30, 64-70.
- Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: the roles of game difficulty and flow. *Sleep medicine*, 39, 70-76.
- Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.
- Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.
- Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS one*, 8(7), e68382.
- Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.
- Valkenburg PM, Peter J. (2013a). The differential susceptibility to media effects model. *J. Commun.* 63:221–43
- Valkenburg, P. M., & Peter, J. (2013b). Comm Research—Views from Europe| Five Challenges for the Future of Media-Effects Research. *International Journal of Communication*, 7, 19.
- Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.

- Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.
- Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive behavior*, 44(3), 257-267.
- Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.
- Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment computing*, 24, 21-29.

From: [REDACTED] Samantha
To: [REDACTED]
Cc: [REDACTED] Shannon; [REDACTED] Barbara
Subject: BIT- Impacts of Violent Video Games Literature Review- Draft 2 changes tracked.docx [DLM=For-Official-Use-Only]
Date: Thursday, 21 November 2019 5:07:00 PM
Attachments: [BIT- Impacts of Violent Video Games Literature Review- Draft 2 changes tracked.docx](#)
[image001.png](#)

Hi [REDACTED] thanks for the revised report. We have requested a small number of final revisions- they are quite minor and in the service of ensuring the report is internally consistent.

Please feel free to contact me on Monday if you need clarification on any points raised.

Many thanks for the team's work to date and we look forward to receiving the final report.

Regards



Samantha [REDACTED]

Assistant Director / Policy and Research / Classification Branch
Department of Communications and the Arts

[REDACTED]

[Samantha.\[REDACTED\]communications.gov.au](#)

[REDACTED]

L6, 23-33 Mary Street, Surry Hills NSW 2010
Locked Bag 3 Haymarket NSW 1240

For Official Use Only

The impacts of violent video games from an Australian perspective

Literature Review for the Department of Communications and the Arts

Contents

| | |
|--|----|
| Executive summary | 4 |
| 01 / Introduction | 7 |
| 1.1 / Generalisability of international findings to the Australian context | 8 |
| 1.2 / Methodology | 12 |
| Games involving depictions of violence which are classified as MA15+ or R18+ in Australia, or equivalent in the international context. | 12 |
| Search Criteria | 12 |
| Inclusion Criteria | 12 |
| Strength of evidence | 13 |
| 02 / The effect of violent video games on aggression | 15 |
| 2.1 / Violent video games are unlikely to cause aggression | 15 |
| World | 15 |
| <i>Variable susceptibility to the effects of VVGs</i> | 18 |
| <i>Overall conclusions from international research</i> | 19 |
| Australia | 20 |
| 2.2 / Extremely violent games do not cause more aggression than violent video games | 21 |
| World | 21 |
| Australia | 22 |
| 2.3 / Conclusions | 23 |
| 03 / The effect of VVGs on attitudes towards women | 23 |
| 3.1 / Violent video games do not change attitudes towards women | 23 |
| World | 23 |
| Australia | 25 |
| 3.2 / Conclusions | 25 |
| 04 / The impacts of VVGs on young peoples' mental health | 25 |
| 4.1 / Violent video games do not cause negative mental health outcomes in young players | 26 |
| World | 26 |
| Australia | 28 |
| 4.2 / Conclusions | 30 |
| 05 / Recommendations | 30 |
| 5.1 / Aggression | 30 |
| 5.2 / Attitudes towards women | 32 |

| | |
|------------------------------|----|
| 5.3 / Mental health outcomes | 33 |
| Appendix A | 34 |
| Appendix B | 36 |

Executive summary

Playing video games is a popular pastime among Australians, with 2 out of 3 Australians reporting that they play video games.¹ There is ongoing concern internationally that playing violent or extremely violent video games (VVGs) may lead to negative outcomes, including increased aggression, negative attitudes to women and poor mental health outcomes for young players. While decades of research exists attempting to address these questions, there is ongoing controversy on the effects of VVGs. Meanwhile community concerns continue to grow alongside technological advances and increasingly realistic and immersive player experiences.

The evidence is therefore of interest to policy makers in Australia. The current review of academic research literature on the effects of violent video games seeks to determine whether there are any gaps in this research from an Australian perspective. At the time of publication, only a small number of studies investigating the impacts of violent video games on behaviour and attitudes have been conducted within Australia. The vast majority of research has been carried out in the United States, Europe and Asia. Here, we assess the extent to which findings from international research can be used to inform an understanding of the potential impact of VVGs in an Australian setting.

Research Finding 1: International research is generalisable to the Australian context

Overall, given the small differences between results on the strength of these associations across cultures, international research is highly relevant and sufficient to our understanding of the relationship between VVGs and aggression in the Australian context. Some small effects of culture on the relationship between VVGs and aggression are apparent, with researchers generally finding that effect sizes of the impact of VVGs on aggression tend to be slightly smaller for Eastern and Hispanic cultures than Western cultures.^{2, 3, 4} However, the magnitude of these effects across all cultures studied is small, and supports the conclusion that they are helpful in understanding the effects of VVGs on Australian players.

Unlike the aggression literature, little research exists on the cross-cultural generalisability of findings concerning the impact of VVGs on youth mental health and attitudes towards women. However, what research does exist does not suggest that violent content results in VVG players having poor attitudes towards women or negative mental health outcomes.

¹ Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: Interactive Games and Entertainment Association.

² Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

³ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882–9888.

⁴ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

Research Finding 2: Evidence suggests that exposure to VVGs does not have a negative impact on aggression.

Internationally there is much debate over the nature of the relationship between violent video games and players' behaviours and attitudes. The current review synthesises findings from the last decade to draw up-to-date conclusions as to the impact of violent video games.

Interpreting contradictory findings in the research literature is challenging due to widely varying methodologies, the tendency to only measure short-term outcomes, an overreliance on correlational evidence, and inconsistent definitions and measurements of aggression and attitudes towards women. Much of the academic literature on VVGs is dominated by supporters⁵ and opponents⁶ of the hypothesised link between playing VVGs and aggression. Despite the ongoing controversy, high-quality individual studies that use meaningful measures of aggression, and meta-analyses that control for other likely causes of aggression, converge on the same conclusion: VVGs have little to no meaningful impact on real-world aggressive behaviour.

Research Finding 3: Evidence suggests that exposure to VVGs does not have a negative impact on youth mental health or attitudes to women.

There are also fears that VVGs have other negative effects, namely on players' mental health and their attitudes towards women. The high-quality studies that are available support the same general conclusion as the aggression literature: it is unlikely that violent content in video games meaningfully impacts attitudes towards women and the mental health of young players. The effect of VVGs on attitudes towards women and the mental health of young players are less well studied than aggression. At present there are few high-quality studies and meta-analyses available on these outcomes, and drawing conclusions from individual studies is limited by inconsistent definitions and measures.

Our recommendations based on the research findings

We were asked by the Department of Communications and the Arts to conduct a review of academic literature on the impacts of violent video games relating to attitudes to women, child and youth mental health and aggression to identify any gaps in the research from an Australian perspective that would necessitate the conduct of new research in Australia. Based on the above conclusions, we make the following recommendations to the Department of Communications and the Arts:

- **At present, no further Australian research is needed to understand the relationship between VVGs and aggression.** It is unlikely that additional research in Australia on the effect of VVGs on aggression would meaningfully add to the academic literature. Correlational, longitudinal and experimental research from

⁵ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

⁶ Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

generalisable populations in Europe, North America and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.

- **At present, no further research is recommended to understand the relationship between VVGs and attitudes to women in the Australian context.** While there is a lack of Australian evidence addressing this research question, the highest quality international research from the US and Western Europe finds no strong evidence that violent content in itself causes players to develop negative attitudes towards women. If further research is to be conducted, the effects of sexualised and sexist content on attitudes to women should be prioritised over investigating the impact of violent content.
- **At present, no further Australian research is needed to understand the relationship between VVGs and mental health outcomes in young players.** It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content does not affect mental health over and above general game play.

01 / Introduction

The purported link between violent video games (VVGs) and real-world violent attitudes and behaviours is a controversial and politicised issue. Mass shootings have been linked to VVGs since the infamous Columbine school shooting, as the perpetrators were avid players of *Doom*, a graphic first-person shooter game. Mass shootings continue to be linked to VVGs by some politicians and public commentators, however evidence suggests that not all perpetrators play VVGs, or played video games regularly.⁷

The nature of the relationship between violent and extremely violent video games and players' attitudes and behaviours is also contentious amongst academics.^{8, 9, 10, 11} The controversy around VVGs is fuelled by the rapid pace of game development, which outstrips the pace of academic research. VVGs are increasingly complex, social, and graphic, such that academic studies from only 10 years ago may not apply to current games. Advances in video game graphics have greatly enhanced the realism of games, making them more immersive. Some researchers have argued that video game realism¹² and sexualisation of characters¹³ in immersive games might lead to greater negative impacts of playing video games than more traditional, less immersive video game formats. This has broadened community concerns about the effects of VVGs from aggression and violence to include attitudes towards women and mental health, particularly in young players.

The purpose of this review is to determine the relationship between violent, and extremely violent, video games and aggression, attitudes towards women, and youth mental health in the Australian context. Due to the relative lack of studies in Australian cohorts, this review is also designed to determine to what degree international findings can be generalised to Australia. Finally, in light of the available evidence and generalisability to Australia, we will form recommendations as to whether further research is needed in Australians to cover gaps in the VVG research.

⁷ Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 1 Nov. 2019].

⁸ Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological science*, 12(5), 353-359.

⁹ Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

¹⁰ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.

¹¹ Ferguson, C. J., & Kilburn, J. (2010). Much ado about nothing: The misestimation and overinterpretation of violent video game effects in Eastern and Western nations: Comment on Anderson et al.(2010).

¹² Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.

¹³ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

1.1 / Generalisability of international findings to the Australian context

The impacts of VVGs on aggression, attitudes to women and youth mental health are questions of global interest. Internationally, a large body of research has been carried out to attempt to understand these associations, in particular relating to impacts on aggression. As with many questions in other policy areas, in order to reach the most robust conclusions we want to draw widely from the findings of international research. This is particularly the case for the Australian context, given that Australian research is currently limited in this space. In order to draw from international research, we need to first think carefully about how and when findings are likely to generalise across countries and cultures; a question posed by social scientists in other contexts for decades. There is some consensus that generalising findings across contexts is most appropriate with rigorous quantitative methodologies, and among studies using large samples.¹⁴ Hence, when looking at the international literature, we have given higher weighting to these studies (refer to section 1.3 below on 'Strength of Evidence' for more information about the research we have highlighted in this review).

Our criteria for assessing the generalisability of international research to Australia

Most research on the impact of violent video games has been carried out in countries that are, like Australia, industrialised, economically stable and technologically advanced. A common criticism of attempts to generalise from psychological studies is that participants in psychology studies tend to be Western, Educated, Industrialised, Rich and Democratic (WEIRD). While Australians are classified as WEIRD, globally speaking, most people are not.¹⁵ While not all samples discussed in this review are WEIRD, they are predominantly educated, industrialised, rich and democratic. In other words, only countries that are sufficiently developed such that inhabitants have general access to VVGs and high usage characteristics can provide enough data from which to draw robust conclusions.

While effect sizes are very small across cultures, studies on WEIRD samples tend to produce similar effect sizes, confirming that evidence from these culturally, economically and politically similar countries as highly generalisable to Australia. Samples from socio-economically similar but culturally different countries tend to produce smaller effect sizes in relation to VVGs and aggression and therefore we would consider them less generalisable, and non-WEIRD countries with few socio-economic similarities are associated with even smaller effect sizes, indicating they are the least generalisable. However, it is apparent that any cultural factors mediating the relationship between VVGs and aggression and mental health are small, if not trivial, and therefore even studies classes as having medium generalisability are relevant for understanding the relationship between VVGs and behavioural and attitudinal outcomes.

In this review we have divided the research outlined in the review into that carried out in the international context ('World') and in an Australian context ('Australia').

¹⁴ Generalizability and Transferability, The WAC Clearing house. Retrieved from: <https://wac.colostate.edu/resources/writing/guides/gentrans/>.

¹⁵ Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.

Table 1. How we have assessed generalisability to Australia

| Low generalisability to the Australian context | Medium generalisability to the Australian context | High generalisability to the Australian context. |
|--|---|--|
| <p>Studies that come from developing nations where social, cultural and political factors are contrasting to those of Western nations.</p> <p>In addition, access to technologies and games associated with gaming are markedly low.</p> | <p>Research comes from countries (predominantly Eastern) that have similar socio-economic conditions to the Australian context, and most studies show cross-cultural similarities in relation to Western contexts. However, some small differences in effect sizes between rates of game play and effect sizes (e.g. Japan).</p> <p>Countries include: Japan, Singapore, China, and Taiwan. Also included are studies with Latin/Hispanic cultures</p> | <p>Carried out in countries that have been shown to have similar gaming characteristics and cultural factors to Australia (primarily Western countries with similar patterns seen in the effects of VVGs). We are confident that the studies detailed can be helpful in understanding the Australian context.</p> <p>Countries include: UK, USA, Germany, Belgium, France, and the Netherlands.</p> |

Many explanations have been proposed for why culture would be a moderating factor on the impacts of VVGs on aggression, including differences in collectivistic values and moral discipline,¹⁶ how violence is contextualised in the media, the context in which video-games are played,¹⁷ and variation across cultures in the meaning of being a perpetrator and a victim of aggression.¹⁸ These studies predominantly explore the differences between research outcomes in Eastern (non-WEIRD; predominantly Japan, but also Singapore and China) versus Western (WEIRD; predominantly the USA, UK, Australia, Germany, and other European countries) cultures.

While some studies suggest that underlying rates of aggression vary across cultures,¹⁹ the size and direction of the association between the two factors (predictor and outcome) generally remains the same.²⁰ More broadly, correlational research looking at the relationship between media violence exposure and aggressive behaviours across cultures has found few

¹⁶ JIN, Y., & LI, J. (2014). Cultural Differences in the Effect of Violent Video Games on Adolescent Aggression Cognition: Based on the Perspective of Meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.

¹⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

¹⁸ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹⁹ Research into aggression has found common factor structures underlying aggression across cultures. Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive behavior*, 38(4), 298-308.

²⁰ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

cross-cultural differences.^{21, 22} One comparison of the impact of media violence among seven countries (Australia, China, Croatia, Germany, Japan, Romania, and the United States) found no significant differences in the strength of the relationship with aggression across cultures.²³

Some small effects of culture are apparent in the violent video game literature, with researchers generally finding that effect sizes of the impact of VVGs on aggression are slightly smaller for Eastern and Hispanic cultures than Western cultures.^{24, 25, 26} For example, in a cross-cultural comparison of the impacts of VVGs in Eastern (primarily Japan, but also China, Singapore) and Western (primarily USA) cultures, Anderson²⁷ found larger effects of VVGs on aggression in Western than Eastern countries. However, this finding was only marginally significant, and only apparent in longitudinal research studies. However, in these comparisons, cultural differences are often confounded with differences in research design, meaning that variance could in fact be due different ways of measuring aggression.

This finding is supported by researchers who argue both that VVGs lead to increased aggression, and those who argue that VVGs have no impact on aggression. For example, Ferguson²⁸ found Eastern samples returned smaller effect sizes, as did Latin/Hispanic samples, than Western samples. Given that effect sizes across all studies analysed by Ferguson were generally small, the differences among culture as a moderating variable were also deemed small. It is also important to note that this meta-analysis looked at all video games, both violent and non-violent. However, they do corroborate Anderson's argument that culture/ethnicity might somewhat moderate the impact on aggression, with Western samples showing greater effect sizes. Similarly, a subsequent meta-analysis from Prescott, Sargent and Hull²⁹ (2018) focusing exclusively on the longitudinal outcomes of VVGs on White, Asian and Hispanic samples found strongest associations between White samples, intermediate associations with Asian samples and smallest with Hispanic samples (acknowledging that only a small number of studies exist that use Hispanic samples).

²¹ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998.

²² Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.

²³ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998. .

²⁴ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

²⁵ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

²⁶ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

²⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

²⁸ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

²⁹ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

There are few studies looking at cross-cultural variations in the impacts of VVGs on attitudes towards women and youth mental health.

One cross-cultural study looked at the relationship between the amount of time spent playing VVGs and mental health in young children.³⁵ Comparisons were made across Eastern and Western European countries (Germany, The Netherlands, Lithuania, Romania, Bulgaria, and Turkey). Across cultures, differences were seen in usage patterns - but once these were controlled for, no differences were found in mental health outcomes across countries. Although there is a relative lack of cross-cultural studies investigating the effects of VVGs on attitudes towards women, as we outline in Section 3.1 below, any effects are more likely to be due to the sexist and sexualised content of games, not violence per se.

³⁵ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.

1.2 / Methodology

This section outlines the methodology for the present review of academic literature on the impact of VVGs.

- Definitions for 'aggression' and 'extremely violent'
- Criteria and search terms for scan of the literature
- Inclusion criteria

Definitions:

Aggression

*"Any behaviour directed toward another individual that is carried out with the proximate (immediate) intent to cause harm. In addition, the perpetrator must believe that the behaviour will harm the target, and that the target is motivated to avoid the behaviour."*³⁶

Extremely violent games

Games involving depictions of violence which are classified as MA15+ or R18+ in Australia, or equivalent in the international context. Search Criteria

A computerised literature search was conducted via Google Scholar, PubMed, ScienceDirect, Web of Science, Proquest and PsycINFO, using relevant search terms (see Table 1 in Appendix A) to identify the most relevant literature.

Using the criteria outlined in this section, over 200 original research articles were collected and reviewed, in addition to meta-analyses and systematic reviews. A large number of studies met the search criteria but were not included in this report as they did not meet the inclusion criteria detailed below. Therefore, the attached bibliography does not reflect an exhaustive list of all extant research on the impacts of VVGs. Rather it reflects research referenced in the body of the literature review, which synthesises and summarises the highest quality research conducted in the past 10 years.

Inclusion Criteria

This review synthesises the highest quality research investigating the impacts of VVGs on aggression, attitudes to women and youth mental health. Due to the increased graphic realism, immersive experience and levels of violent content in modern video games only studies conducted in the past 10 years were included. A systematic scan of the literature revealed hundreds of studies investigating the impacts of VVG's on aggression, attitudes towards women and youth mental health. Due to the volume of poor-quality studies identified, the inclusion criteria were restricted to prioritise only the most rigorous research. This was assessed using the criteria outlined in the Strength of Evidence Table (Table 2) below.

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. Annual review of psychology, 53.

Strength of evidence

Strength of evidence was assessed using the criteria in the table below. This review prioritised research conducted in the past 10 years which had the characteristics outlined in the green *high* column below. Where high quality evidence was not available, evidence that was categorised as *medium* or *low* was included in order to form conclusions and recommendations. Only eight low quality studies have been included, and only where higher quality studies were not available. Where low quality research is referred to this is explicitly labelled within this report. The eight studies we labelled low quality relate to: international study on the link between VVGs and attitudes towards women (one study), and Australian studies on the impacts of VVG and aggression (three studies) and mental health of young players (six studies of which two are also referenced in the section on the impact of VVGs on aggression).

Table 2. How we have assessed strength of evidence

| Strength of evidence | | |
|---|--|---|
| Low | Medium | High |
| <p>Evidence of research bias or subject to peer-reviewed criticism.</p> <p>Studies with unvalidated measures of aggression/attitudes towards women/mental health.</p> <p>Correlational studies where other known causes of aggression/attitudes towards women/mental health are not controlled for.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with low or undemonstrated association with real life attitudes or behaviour.</p> | <p>Correlational studies with a small number of known causes of aggression/attitudes towards women/mental health controlled for.</p> <p>Studies which rely on self-report measures only.</p> <p>Studies with small samples with low generalisability.</p> <p>Meta-analyses with evidence of research bias, have been subjected to peer-reviewed criticism or have not been independently replicated.</p> | <p>Correlational studies which have controlled for multiple known causes of aggression/attitudes towards women/mental health.</p> <p>Longitudinal or retrospective studies which measure attitudes or behaviour over time</p> <p>Studies with large nationally representative samples.</p> <p>Studies or meta-analyses which have been independently replicated.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with high demonstrated association with real-life attitudes or behaviour.</p> <p>Studies which have adopted open science practices such as pre-registration.</p> <p>Studies which include multiple outcome measures such as self-reports, peer-report and validated measurement scales.</p> <p>Studies which have conducted cross-cultural comparisons or have generalised findings across different contexts.</p> |

As stated above, each recommendation set out in this review was made using studies that span this spectrum of research quality. We prioritised studies that meet the criteria for *high* quality, and have made stronger recommendations where more high-quality research was available to draw on. In our recommendations, a *high* degree of research quality indicates that additional research is unlikely to meaningfully contribute to the existing literature.

02 / The effect of violent video games on aggression

2.1 / Violent video games are unlikely to cause aggression

| Strength of evidence | Generalisability to Australia |
|--|--|
| High | High quality studies drawn from the US, UK, Germany, China, Singapore and Australia. |
| The results of high-quality international and Australian studies suggest that the effect of VVGs on aggression is small to non-existent. | |



World

Recent high-quality studies indicate that the link between VVGs and aggression is small to non-existent. Studies that properly control for other known causes of aggression, and those that measure real-world behaviour either find no relationship, or a very small effect of VVGs on aggression.

While only a recent phenomenon, recent pre-registered studies have mostly found no link between VVGs and aggression, nor any other negative effects. In a pre-registered trial conducted in the UK, researchers interviewed a large sample of British adolescents and their parents or carers. They found no association between exposure to VVGs over the past month and real-life aggressive behaviour as measured by carer assessment.³⁷ Similarly, three pre-registered randomised controlled trials conducted in the USA found no effect of VVGs on short-term measures of aggressive inclinations³⁸, hostility³⁹ or aggressive behaviour.⁴⁰ Two pre-registered longitudinal studies have also found no association between VVG exposure and aggression measured at a later time.⁴¹ For instance, a study of over 3000 Singaporean youth found no association between playing VVGs and aggression measured

³⁷ Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society open science*, 6(2), 171474.

³⁸ McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.

³⁹ Ferguson, C. J., Trigani, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric quarterly*, 87(1), 49-56.

⁴⁰ Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337.

⁴¹ Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric quarterly*, 1-5.

two years later.⁴² The authors concluded that it would take 27 hours per day of playing VVGs to produce clinically noticeable changes in aggression.

In the past 10 years four meta-analyses have been conducted to synthesise the literature investigating the effect of VVGs on aggression.^{43, 44, 45, 46} Combined, these meta-analyses cover hundreds of correlational, experimental and longitudinal studies involving hundreds of thousands of participants. The overall conclusion to be drawn from these meta-analyses is that VVGs have a small effect on aggression.

However there are several reasons to question whether any effect in fact exists:

- These meta-analyses include many laboratory experiments with poor methodology. They rely on artificial measures of short-term aggression, with unproven correlation to real-life aggressive behaviour.
- Effect sizes are smaller in studies with outcome measures that are more closely related to real-life aggressive behaviour, and research measuring long-term outcomes.
- As research methodology and rigor has improved over the past 10 years, evidence of a link between VVGs and aggression has grown weaker.
- When other known risk factors associated with aggression are controlled for (baseline aggression levels, gender, socioeconomic status) the association between VVGs and aggression diminishes almost entirely, suggesting that VVGs are not an independent cause of aggression.

There is also substantial evidence of bias within this literature (see Appendix B), especially in experimental studies claiming to demonstrate that VVGs cause aggression.⁴⁷ The aforementioned emerging research has begun to address these biases by adopting more rigorous methodology. Research which is pre-registered, has been independently replicated, measures real-life aggressive behaviour or long-term outcomes reports effects that are small to non-existent.

Contrary to these findings, one recent pre-registered cross-sectional study found an association between playing video games and self-reported interpersonal violence in US

⁴² Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.

⁴³ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.

⁴⁴ Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and social psychology bulletin*, 40(5), 578-589.

⁴⁵ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on psychological science*, 10(5), 646-666.

⁴⁶ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁴⁷ Hilgard, J., Engelhardt, C. R., & Rouders, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al.(2010). *Psychological Bulletin*, 143(7), 757-774.

university students.⁴⁸ However the study did not address the impact of *violence* in video games, so it does not provide any evidence that violent content in games drives aggression.

While experimental studies are useful to gather evidence about causality, they have mostly relied on short-term measures of aggression. To investigate whether VVGs *cause* aggression over time, researchers conducted a randomised controlled trial in Germany. Participants were assigned to play a VVG, a non-violent video game or no game at all. There was no difference between the groups across a range of measures of aggression immediately following eight weeks of gameplay, or two months after the experiment ended.⁴⁹

Research investigating the effects of VVGs have used a range of aggression measures, many of which are artificial behaviours in a laboratory setting^{50, 51, 52, 53} (e.g. putting hot sauce into another participant's food), or self-report scales of aggressive thoughts and emotions^{54 55, 56, 57, 58, 59}. There is no clear evidence that these measures relate to or predict real-world behaviours,⁶⁰ which are the real concern to the community. If VVGs did in fact cause real-world aggressive behaviours, we would expect to observe a correlation between violent video game consumption and real-world violent incidents. In four separate analyses,⁶¹ researchers compared patterns of US crime data with measures of VVG consumption over the past 30 years.⁶² They found no evidence of a relationship between VVG consumption and aggressive assaults or homicides. In fact, several measures of VVG consumption were

⁴⁸ Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29,42-53.

⁴⁹ Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular psychiatry*, 24(8), 1220.

⁵⁰ Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior* 38: 281–287, DOI: <https://doi.org/10.1002/ab.21428>

⁵¹ Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics*, 140(Supplement 2), S142-S147.

⁵² Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.

⁵³ Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS one*, 9(11), e111790.

⁵⁴ Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.

⁵⁵ Bösch, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology*.

⁵⁶ Bucolo, D. (2010). Violent video game exposure and physical aggression in adolescence: tests of the general aggression model.

⁵⁷ Saleem, M., Anderson, C. A., & Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on college students' affect. *Aggressive behavior*, 38(4), 263-271.

⁵⁸ Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The Influence of Empathy and Morality of Violent Video Game Characters on Gamers' Aggression. *Frontiers in psychology*, 8, 1863.

⁵⁹ Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.

⁶⁰ McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).

⁶¹ The analyses compared US data on violent crime with release dates for major VVGs, VVG sales data and internet searches for VVG guides.

⁶² Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.

associated with *decreased* crime-rates, a finding supported by other research comparing patterns of VVG consumption and US crime data.^{63, 64}

There are several possible explanations as to why VVG consumption would be associated with less violent crime. VVGs might have a cathartic effect, allowing healthy venting of aggression in a controlled and harmless environment. Alternatively, more aggressive people might prefer to play VVGs, and are therefore occupied by a non-violent activity following VVG releases. It is important to note that these findings are correlational, and therefore cannot be used to draw causal conclusions

Variable susceptibility to the effects of VVGs

An area of increasing interest to researchers is whether individuals differ in their susceptibility to the impacts of VVGs. Valkenburg and Peter (2013) propose that individual differences in personality traits, social-context and mental health conditions might determine the size and nature of VVG effects.⁶⁵ However there is currently a lack of strong evidence that this is the case.⁶⁶ While some studies report variable effects on aggression based on peer factors,⁶⁷ age,⁶⁸ sex,^{69,70} personality traits^{71, 72} and family environment^{73, 74} the evidence is inconsistent. For example, one US correlational study found no evidence that children with mental health symptoms constitute a vulnerable population for VVG effects. In a sample of

⁶³ Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.

⁶⁴ Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.

⁶⁵ Valkenburg PM, Peter J. (2013a). The differential susceptibility to media effects model. *J. Commun.* 63:221–43

⁶⁶ Valkenburg, P. M., & Peter, J. (2013b). Comm Research—Views from Europe| Five Challenges for the Future of Media-Effects Research. *International Journal of Communication*, 7, 19.

⁶⁷ Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.

⁶⁸ Breuer, J., Vogelgesang, J., Quandt, T., & Festl, R. (2015). Violent video games and physical aggression: Evidence for a selection effect among adolescents. *Psychology of Popular Media Culture*, 4(4), 305-328.

⁶⁹ Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through “blood-red tinted glasses”: The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.

⁷⁰ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive behavior*, 44(3), 257-267.

⁷¹ Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.

⁷² Greitemeyer, T., & Sagioglou, C. (2017). The longitudinal relationship between everyday sadism and the amount of violent video game play. *Personality and individual differences*, 104, 238-242.

⁷³ Shao, R., & Wang, Y. (2019). Effect of Violent Video Games on Adolescent Aggression: Moderated Mediation Effect of Family Environment and Normative Beliefs. *Frontiers in psychology*, 10, 384.

⁷⁴ Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.

377 children with either clinically diagnosed attention or depression symptoms, exposure to VVGs was not associated with increased levels of delinquency or bullying behaviour.⁷⁵ Another 3 year longitudinal study reported that sex, age, history of aggressive behaviour and family environment made no difference to the impact of VVGs on aggressive behaviour.⁷⁶ Where there is evidence of individual differences in susceptibility to VVGs, the effect is small and diminishes over time. For instance, two studies found that parental mediation style⁷⁷ and family hostility had a small influence on VVG effects when measured cross-sectionally, however neither had any impact on the relationship between VVGs and aggression when measured longitudinally.^{78, 79}

Overall conclusions from international research

The highest quality evidence suggests that playing violent video games does not account for a meaningful proportion of observed aggression, if any at all. Even when the largest possible effect sizes are reported their level barely approaches levels deemed of practical or clinical importance.^{80, 81} This is particularly true when the effect of VVGs is compared to other known causal risk factors for aggression such as poverty, family violence and mental health.^{82, 83} In a longitudinal study conducted in the UK childhood mental health symptoms related to attention deficit disorder, depression and early conduct disorder predicted adolescent criminal behaviour 8 years later. In contrast, exposure to first person shooter games in childhood had no relationship with aggressive or criminal adolescent behaviour.⁸⁴ Similarly,

⁷⁵ Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among “vulnerable” populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of youth and adolescence*, 43(1), 127-136.

⁷⁶ Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA pediatrics*, 168(5), 450-457.

⁷⁷ Measured cross-sectionally, inconsistent restrictive mediation styles were associated with increased adolescent aggression, however no parental mediation styles were longitudinally related to media violence exposure and aggression.

⁷⁸ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.

⁷⁹ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.

⁸⁰ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁸¹ **Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour.**

⁸² Ferguson, C. J. (2011). Video games and youth violence: A prospective analysis in adolescents. *Journal of youth and adolescence*, 40(4), 377-391.

⁸³ Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of psychiatric research*, 46(2), 141-146.

⁸⁴ Smith, S., Ferguson, C., & Beaver, K. (2018). A longitudinal analysis of shooter games and their relationship with conduct disorder and self-reported delinquency. *International journal of law and psychiatry*, 58, 48-53.

when studies control for these individual or socio-demographic risk factors the impacts of VVGs on aggression diminish^{85, 86} or disappear completely.⁸⁷



Australia

Research on the link between VVGs and aggression conducted in Australia is largely consistent with international findings. Two Australian studies which were classified as find no effect of violent or ultra-violent games on aggression,⁸⁸ even if the participant was primed to take on a hostile cognitive state.⁸⁹ However both studies were classified as providing low strength of evidence (see Table 2).

One 2019 Australian study found that playing violent video games for five to 15 minutes impaired players' recognition of anger, enhanced their perception of their fighting ability and perception of a target as weak.⁹⁰ However, consistent with international studies, the authors found that gender and baseline aggression mediated the effects of VVGs on these aggression measures. It is also important to note that these aggression measures are based on perception, not action. Another 2019 Australian study found that game competition, not violence, increased aggressive emotions.⁹¹ Moreover, the authors found that neither competition nor violence increased aggressive behaviour. This is consistent with international studies, which often find larger effects of violent games on aggressive emotions and perceptions than on actual aggressive behaviour.

A very recent Australian study found that players find in-game aggression more acceptable than offline aggression.⁹² This suggests that players perceive in-game and real-world behaviour as governed by different norms, which may explain why acting out violence in a game does not cause real-world aggression. It is important to note that the authors recruited players online, and that only 11.5 per cent of their sample were Australian (the majority were American). The most common games played in their sample were World of Warcraft and

⁸⁵ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

⁸⁶ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁸⁷ **Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of psychiatric research*, 46(2), 141-146.**

⁸⁸ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

⁸⁹ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

⁹⁰ Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of Men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.

⁹¹ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

⁹² Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.

World of Tanks, which have M and PG ratings respectively, so it is possible that the authors would have obtained different findings if their sample played more violent games.

A study of young Australians found that boys were significantly more likely than girls to play violent video games (or watch other violent media), and to have used physical violence in the past year.⁹³ However, this cross-sectional (and therefore non-causal) study also found that young people who committed acts of aggression were also more likely to have been threatened with physical violence in the community, at home, or at school. This study suggests that factors such as gender may predict VVG gameplay and exposure to experiences that are more likely to directly cause aggression.

An Australian study of male and female violent video game players revealed complex reasons for why players are drawn to violent games.⁹⁴ For example, women in this study reported playing VVGs to be more attractive to romantic partners. This study did not find any relationship between violent video game play and aggression or dominance measures. However, as the authors note, their measure of aggression was acts of intimate partner violence, which is a more extreme measure than is typically used in VVG studies. This makes it difficult to relate this study to the wider violent video game literature.

2.2 / Extremely violent games do not cause more aggression than violent video games

| Strength of evidence | Generalisability to Australia |
|---|---|
| Medium | High - studies largely drawn from Australia, US, Germany and Canada |
| The results of higher quality studies suggest that that extremely VVGs do not increase aggression more than VVGs. | |



World

Video game content can differ on a number of dimensions, including pace, realism and graphicness. Due to the difficulty in matching games to ensure that the effect of violent content can be measured, most of this research has been conducted in experimental laboratories. Several randomised controlled trials in Germany, Australia and the US have compared video games which only differ in the severity of violent content. They find that higher levels of violence do not affect player aggression.

⁹³ Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.

⁹⁴ Kasumovic, M. M., Blake, K., Dixon, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.

A trial in Germany varied the amount of displayed violence and the pace of action in a first person shooter game, ensuring that all other features of the game were otherwise the same. They found that neither pace nor displayed violence had any effect on aggressive behaviour, as measured by willingness to expose another participant to an unpleasant noise-blast.⁹⁵ Similarly, researchers in the US assigned 275 undergraduates to play a first person shooter game that was modified to be more or less violent. Neither game difficulty nor violent content was found to affect aggressive behaviour.⁹⁶ Finally, across seven randomised controlled trials conducted on US university students, researchers found that competence-impeding play increased frustration and aggression, however of levels of violent content had no impact.⁹⁷

The results from these and other studies suggest that other video game variables have a greater influence on aggression. Level of competition^{98, 99} and perceived game difficulty¹⁰⁰ have been associated with increased player aggression. For instance, a Canadian study which measured patterns of gameplay over 3 years found that increased competitive gameplay was associated with increased self-reported aggressive behaviour.¹⁰¹ On the other hand, increased graphic realism of violence depicted in video games does not appear to increase player aggression.¹⁰²



A series of Australian studies comparing non-violent, violent, and ultra-violent video games found no effect of the level of game violence on aggression,¹⁰³ even if the participant was primed to take on a hostile cognitive state.¹⁰⁴ The authors did, however, find that ultra-violent games significantly increase players' self-dehumanisation.¹⁰⁵ This replicates another Australian finding that playing (extremely violent) *Mortal Kombat* diminished players' perceived humanity, but only if they were the target of violence.¹⁰⁶ This self-dehumanisation

⁹⁵ Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.

⁹⁶ Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological science*, 30(4), 606-616.

⁹⁷ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.

⁹⁸ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

⁹⁹ Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence?. *Psychology of violence*, 1(4), 259.

¹⁰⁰ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.

¹⁰¹ Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of youth and adolescence*, 42(7), 1090-1104.

¹⁰² Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment computing*, 24, 21-29.

¹⁰³ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

¹⁰⁴ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

¹⁰⁵ Self-dehumanisation is defined as the attribution of less human nature or human uniqueness traits to the self and has been regarded as a process that permits delegitimizing beliefs about others

¹⁰⁶ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

effect does not appear to cause aggressive behaviour; in fact the authors argue that participants may have acted pro-socially to counteract their feelings of dehumanisation. The above three studies have been classified as providing low strength of evidence (see Table 2).

2.3 / Conclusions

Overall, combined international and Australian evidence suggests the effect of VVGs on aggression in Australia is small to non-existent, with **high** strength of evidence and **high** generalisability to Australia. The weight of evidence shows that even if VVGs do cause aggression, they would still only account for a very small proportion of aggressive behaviour, indicating little value in conducting additional research in this area.

Similarly, combined world and Australian evidence suggests that higher levels of violence in VVGs do not affect aggression, with **medium** strength of evidence and **high** generalisability to Australia. Extremely-violent or ultra-violent games are unlikely to contribute to any increased risk of aggression or violence.

03 / The effect of VVGs on attitudes towards women

| Strength of evidence | Generalisability to Australia |
|--|--|
| Medium | Medium - small number of studies largely drawn from Australia, US, UK, Canada and Germany. |
| The highest quality international evidence finds no relationship between VVGs and attitudes towards women. However, at present there is a lack of high-quality studies on this topic. VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players. | |

3.1 / Violent video games do not change attitudes towards women



World

Content analyses have revealed that video games contain fewer female protagonists, portray overly sexualised female characters, and games which depict violence can involve aggressive acts towards women.^{107, 108} There is growing concern that these

¹⁰⁷ Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.

¹⁰⁸ Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.

representations of female characters normalise the objectification and sexualisation of women.

The highest quality evidence suggests that VVGs do not change attitudes towards women in the long-term for either men or women. A three year study on a representative sample of German youth found that preference for action or first person shooter video games was not associated with sexist attitudes. Amount of time spent playing video games also had no association with sexism.¹⁰⁹ The study controlled for other known risk factors of negative attitudes towards women such as age and education.

When researchers measure short-term attitudes towards women the results are more mixed. Two laboratory studies conducted in Italy and the USA have found that violent games can reduce empathy towards women¹¹⁰ and increase hostile sexism¹¹¹ for some male players. However, the violent content appeared to have no independent effect on attitudes towards women. Sexist content, or combined sexist and violent content were necessary to change players' attitudes towards women. It should be noted that one of these studies, Gabbiadini *et al.* (2016), was classified as providing low strength of evidence (see Table 2 p15).

Overall, this evidence suggests that if video games do cause negative attitudes towards women, this effect is driven by sexualised or sexist content, rather than violent content. This conclusion is supported by other research. Correlational studies conducted online and in France found that playing video games is associated with both benevolent sexism^{112, 113} and hostile attitudes¹¹⁴ towards women, a meta-analysis of 54 studies concluded that video games increase self-objectification for both men and women¹¹⁵ and a randomised control trial found that sexualised avatars in an adventure game increased adolescent players acceptance of rape myths¹¹⁶ compared to non-sexualised avatars.¹¹⁷

¹⁰⁹ Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games= sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.

¹¹⁰ Gabbiadini, A., Riva, P., Andrighetto, L., Volpato, C., & Bushman, B. J. (2016). Acting like a tough guy: Violent-sexist video games, identification with game characters, masculine beliefs, & empathy for female violence victims. *PLoS one*, 11(4), e0152121.

¹¹¹ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

¹¹² Benevolent sexism is a form of paternalistic prejudice (treating a lower status group as a father might treat a child) directed toward women.

¹¹³ Bègue, L., Sarda, E., Gentile, D. A., Bry, C., & Roché, S. (2017). Video games exposure and sexism in a representative sample of adolescents. *Frontiers in psychology*, 8, 466.

¹¹⁴ Fox, J., & Potocki, B. (2016). Lifetime video game consumption, interpersonal aggression, hostile sexism, and rape myth acceptance: A cultivation perspective. *Journal of interpersonal violence*, 31(10), 1912-1931.

¹¹⁵ Interestingly, video games had a larger impact than television consumption. Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing media use and self-objectification: A meta-analysis. *Psychology of women quarterly*, 42(1), 9-28.

¹¹⁶ Rape myth acceptance refers to holding prejudicial, stereotyped and false beliefs about sexual assaults, rapists, and rape victims. These beliefs often serve to excuse sexual aggression, create hostility toward victims, and bias criminal prosecution.

¹¹⁷ Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for health journal*, 4(2), 91-94.

Increased levels of sexist or sexualised content within video games are also associated with more negative attitudes towards women. A correlational study found that male college students who played more sexist games held more sexist attitudes towards women,¹¹⁸ and a 2018 systematic-review found that women experienced self-objectification and low levels of self-efficacy as a result of exposure to sexist content within video games, compared with video games which didn't contain sexist content.¹¹⁹

While violent video game content on its own appears to have no effect on attitudes towards women, these studies provide some evidence that sexualised content may impact attitudes towards women. The available evidence suggests that this is driven by sexualised or sexist content, rather than violence.



Australia

An Australian experimental study found that low-skilled male *Halo 3* players were more hostile towards female teammates, particularly when they were performing poorly.¹²⁰ In contrast, high-skilled male players were more *positive* towards female teammates. This study therefore suggests that sexism elicited by gameplay is triggered by the player's sense of their own ability, and not by in-game violence. Moreover, this study did not compare *Halo 3* to a non-violent game.

3.2 / Conclusions

Overall, combined world and Australian evidence suggests that violent video games don't increase negative attitudes towards women with **medium** strength of evidence and **medium** generalisability to Australia. However some evidence suggests that sexist video game content is harmful, and that VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players.

04 / The impacts of VVGs on young peoples' mental health

| Strength of evidence | Generalisability to Australia |
|----------------------|---|
| Medium | High - studies largely drawn from Australia, US, UK, Canada |

¹¹⁸ Stermer, S. P., & Burkley, M. (2015). *SeX-Box: Exposure to sexist video games predicts benevolent sexism. Psychology of Popular Media Culture, 4*(1), 47-55.

¹¹⁹ Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social networking, 21*(9), 535-541.

¹²⁰ Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS one, 10*(7), e0131613.

There is no high quality evidence of a causal relationship between VVGs and depression, anxiety, suicidal ideation, attention problems, academic achievement or pro-social outcomes.

4.1 / Violent video games do not cause negative mental health outcomes in young players



World

Research into the impact of VVGs on young peoples' mental health is the most recent form of a long history of concerns about the impact of violent media on aggression, particularly as video games become ubiquitous in children's lives. The peak body for the Australian video game industry reported that young Australians play video games for an average of 100 minutes per day.¹²¹ Researchers are increasingly interested in understanding the long-term psychosocial and developmental impacts of playing video games, especially those with extremely violent content. These include impacts on peer-relations, internalising problems such as anxiety or depression and attentional problems such as ADHD.

There is no high quality evidence to suggest that VVGs increase negative mental health outcomes for young players. A meta-analysis by Ferguson et al. of 101 studies found neither video games nor VVGs had any impact on depression, attention disorders, conduct disorders, pro-social behaviour or academic achievement for both children and adolescents.¹²² The meta-analyses included correlational, experimental and longitudinal studies measuring both short and long-term effects. This meta-analysis has been replicated by an independent research team, which is noteworthy given the above mentioned biases and flawed methodology prevalent in this literature.¹²³

Longitudinal research conducted in the USA, Europe and Singapore find VVGs are not associated with negative mental health outcomes for young players. For example a prospective longitudinal study of over 5000 UK children found no association between preference for first-person shooter games at 8 years old and depression in adolescence.¹²⁴ A longitudinal study on 300 Dutch children reported that preference for violent video games was not associated with mental health outcomes (neither positive nor negative) 1 year later.¹²⁵ Similarly violent video game play was not associated with depression or anxiety over

¹²¹ Brand, J. E., Jervis, J., Huggins, P., & Wison, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

¹²² Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹²³ Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877-1892.

¹²⁴ Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.

¹²⁵ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.

1 year of measurement in 10-14 years olds in the USA.¹²⁶ A recent pre-registered study of 3000 Singaporean youth found that playing VVGs was unrelated to youth pro-social behaviour 2 years later.¹²⁷

Contrary to these findings, a recent correlational study of over 5000 US 5th grade students reported that playing VVGs for more than 2 hours per day was associated with increased depressive symptoms. However these results compared high daily VVG play to low daily VVG play, and did not compare violent to nonviolent games. When time spent playing video games was matched, there was no relationship between violent content and symptoms of depression.¹²⁸

Research on suicidal ideation is more mixed. A recent correlational study in the USA found no relationship between VVGs and suicidal ideation.¹²⁹ Whilst another study in a nationally representative sample of US high-school students found a correlation between excessive video game use and suicidal ideation,¹³⁰ this was not explicitly related to *violent* video games. It is also unclear whether video games cause suicidal ideation, or whether children experiencing suicidal ideation video game play.

Other risk factors such as prior youth depression, anxiety, family, socio-economic status or peer delinquency, are a more reliable predictor of mental health outcomes for children and adolescents. Many studies suggest that compared to other known socio-demographic risk factors, VVGs present minimal danger to the mental health of young players. A 1 year longitudinal study in the US¹³¹ found that anxiety and depression were predicted by parental aggression, delinquent peers and previous symptoms of depression, whereas exposure to VVGs was not associated with any negative mental health outcomes.¹³² Similarly, a US study found that gender, antisocial traits, family environment and prior mental health conditions predicted attention problems in children,¹³³ whereas attention problems were not related to playing more video games or a preference for VVGs.

¹²⁶ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹²⁷ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.

¹²⁸ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.

¹²⁹ Jami M. Gauthier, Kelly L. Zuromski, Seth A. Gitter, Tracy K. Witte, Ian J. Cero, Kathryn H. Gordon, Jessica Ribeiro, Michael Anestis, and Thomas Joiner (2014). The Interpersonal-Psychological Theory of Suicide and Exposure to Video Game Violence. *Journal of Social and Clinical Psychology*: Vol. 33, No. 6, pp. 512-535.

¹³⁰ Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.

¹³¹ Sample mostly identified as Hispanic

¹³² Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹³³ Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of psychiatric research*, 45(6), 808-813.

Evidence suggests that other game characteristics such as competition,¹³⁴ and excessive gameplay,^{135 136} in particular pathological video-gaming,¹³⁷ have a larger effect on mental health outcomes than violent content. Research carried out with 10-14 year olds in the USA over one year found that playing VVGs did not predict depression or anxiety,¹³⁸ however, high levels of competitive gaming were associated with negative mental health outcomes such as depression and reduced pro-social behaviour.

Emerging evidence suggests that video games might have a protective effect for children's mental health. In a high quality correlational study surveying over 3000 young children across six European nations, increased video game usage (more than five hours per week) was not associated with any negative mental health, social or behavioural outcomes. Children who played more video games had lower rates of internalising disorders and fewer thoughts of death, and experienced pro-social and academic benefits, including elevated intellectual functioning, high overall competence, and specific benefits in reading, mathematics and spelling.¹³⁹

While beyond the scope of this review, there is also increasing evidence that playing video games more generally provides many benefits for children and adolescents. Researchers have summarised the evidence for various cognitive, social and psychological benefits of video games for young players.¹⁴⁰



Australia

To our knowledge, there are no Australian studies that compare mental health outcomes in young people for violent and non-violent games. Australian studies have found that young peoples' mental health¹⁴¹ and academic performance¹⁴² decline as screen time increases. However, there is no evidence from the Australian context that violent

¹³⁴ Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.

¹³⁵ Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.

¹³⁶ Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

¹³⁷ Liao, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.

¹³⁸ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹³⁹ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.

¹⁴⁰ Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.

¹⁴¹ Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.

¹⁴² Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.

game content mediates or exacerbates any negative impacts of playing video games. Below we have separated out Australian findings in relation to mental health outcomes:

Pathological gaming.¹⁴³ A study of over 1200 South Australian high school students found a rate of Pathological Video Gaming (PVG) of less than two per cent.¹⁴⁴ Young people with PVG did not meet the criteria for clinical depression or anxiety, although this study did not specifically address video game violence.

Sleep. Some Australian studies have found that playing violent video games before bed disrupts young players' sleep.^{145, 146} These studies did not compare sleep quality after playing a non-violent game, and attribute effects on sleep to the arousing nature of the games chosen. These studies also used very small sample sizes (less than 20 participants). They have therefore been classified as providing low strength of evidence (see Table 2). Other Australian studies suggest that the general stimulation of computer use,¹⁴⁷ duration of play,¹⁴⁸ and the tendency of young gamers to enter a flow state¹⁴⁹ while playing¹⁵⁰ disrupt sleep, not necessarily violent content.

Behavioural and emotional problems. Australian studies have found that children who play more video games are more likely to have behavioural and emotional problems,¹⁵¹ and less ability to self-regulate.¹⁵² However, these studies only measured video game play or media exposure (including all types of video games) overall, and did not distinguish between violent and non-violent games.

Self-dehumanisation.¹⁵³ Australian studies comparing non-violent, violent and extremely violent games have found that extremely violent games cause players to self-dehumanise.¹⁵⁴ Another Australian study found that an extremely violent game (*Mortal Kombat*) reduced

¹⁴³ Pathological gaming is defined as the persistent inability to control excessive gaming habits despite associated social or emotional problems

¹⁴⁴ King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.

¹⁴⁵ King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: an experimental study. *Journal of sleep research*, 22(2), 137-143.

¹⁴⁶ Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.

¹⁴⁷ Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Prebedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.

¹⁴⁸ Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep medicine*, 30, 64-70.

¹⁴⁹ Flow is "an experience of immersion and time distortion" while playing

¹⁵⁰ Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: the roles of game difficulty and flow. *Sleep medicine*, 39, 70-76.

¹⁵¹ Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic pediatrics*, 17(6), 620-624.

¹⁵² Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic pediatrics*, 18(7), 813-819.

¹⁵³ Note that these studies were covered in the section on aggression.

¹⁵⁴ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

players' perception of their own humanity when they were the target, not the perpetrator, of violence in the game.¹⁵⁵ However, these studies were conducted with an adult sample, so it is unclear whether young people experience dehumanisation due to game violence. They were also classified as low strength of evidence studies (see Table 2).

Positive social outcomes. A laboratory study conducted in Australia found that playing a violent game (*Left 4 Dead 2*) increased players' positive affect and sense of connection when their teammate was a human-controlled (not computer-controlled) character.¹⁵⁶ This finding is consistent with international research on the prosocial benefits of playing cooperative VVGs. Other Australian studies have found no effect of violent¹⁵⁷ or even prosocial¹⁵⁸ games on prosocial behaviour, although their measures of prosocial behaviour have questionable relevance to real-world behaviour. These studies were classified as providing low strength of evidence (see Table 2). In addition, these studies were conducted in an adult sample, so it is unclear whether young people experience the same benefits.

4.2 / Conclusions

Overall, combined world and Australian evidence suggests that VVGs do not cause negative mental health outcomes for young players with **medium** strength of evidence and **high** generalisability to Australia. Some evidence suggests VVGs might have a positive impact on mental health outcomes.

05 / Recommendations

The aim of this literature review was to answer the question:

“What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia?”

Below, we outline our conclusions and recommendations as to whether further research is needed to explore the impacts of VVGs in the Australian context in relation to aggression, attitudes to women or mental health outcomes for young players.

5.1 / Aggression

Research questions:

¹⁵⁵ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

¹⁵⁶ Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.

¹⁵⁷ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

¹⁵⁸ Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS one*, 8(7), e68382.

1. What are the key findings about violent games and aggression emerging from international research?
2. What is the relationship between violent and extremely violent video games and aggression in Australian research?

Conclusions:

- Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.
- To date, limited research has been conducted in Australia. However, the strength of generalisable international research can fill any research gaps in the Australian context. This includes meta-analyses and emerging high quality research which converge on the conclusion that VVGs cause little or no real-world aggressive behaviour.
- It is unlikely that additional research in Australia would meaningfully add to the academic literature.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and aggression.

5.2 / Attitudes towards women

Research questions:

1. What are the key findings about violent games, aggression and attitudes to women emerging from international research?
2. What is the relationship between violent and extremely violent video games and attitudes towards women in Australian research?

Conclusions:

- The highest quality international evidence finds no relationship between VVGs and attitudes towards women. There is only one Australian study on the effect of a VVG on attitudes towards women, and this study did not compare violent and non-violent video games.
- Violent video game content on its own appears to have no effect on attitudes towards women. Some studies suggest that VVGs which contain sexist or sexualised content increase negative attitudes towards women. However, the available evidence suggests that this effect is driven by the sexualised or sexist content, rather than violence. While there is no strong evidence that violent content increases the negative impacts of sexist video games, the effect of sexualised or sexist content has not been adequately addressed in the literature.

Recommendation: As the available high quality evidence finds that violent content in VVGs alone has no effect on attitudes towards women, no further research is recommended to understand the relationship between VVGs and attitudes to women in the Australian context.

5.3 / Mental health outcomes

Research questions:

1. What are the key findings of international research on how violent or extremely violent games impact the mental health of young game players?
2. How do violent or extremely violent games impact the mental health of young game players in Australia?

Conclusions:

- There is no evidence in the international literature of a robust causal relationship between VVGs and depression, anxiety, suicidal ideation, attention problems, academic achievement or pro-social outcomes. Other risk factors such as family environment, delinquent peers and prior mental health conditions are much more robust predictors of poor mental health outcomes.
- It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content has not been shown to affect mental health over and above general game play.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and youth mental health.

Appendix A

Table 1: Search Criteria and Search Terms

| | Research Question | Search Criteria | Working Search Terms |
|---|---|---|--|
| 1 | What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia? | Academic research conducted in Australian cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. | "Violent Video games" "Violent computer games" "Extremely violent Video games" "First-person shooter" "Aggression" "Aggressive behaviour" "Attitudes towards women" "Gendered" "Australia" "Australian" "Causational" "Intervention study" "Randomised controlled trial" "Meta-Analysis" "Systematic Review" "Longitudinal" "Impacts Behaviour/behaviour" |
| 2 | What is the relationship between violent and extremely violent video games and aggression and/or attitudes towards women in international contexts? | <p>Academic research conducted in overseas contexts and cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. We will give special attention to high quality systematic reviews or meta-analysis, or research measuring longitudinal outcomes. We will prioritise research conducted in comparable countries to Australia on social, cultural and political dimensions. High quality research conducted in countries which are not generalisable to the Australian context will supplement this search, however receive lower prioritisation.</p> <p>We will also give consideration to academic research which identifies and operationalises levels of violent content or realism of violence in video games and explores the variance in impact on aggression, and attitudes towards women.</p> | We will use the same core search terms (in Row 1) removing references to Australia, with additional terms to explore levels of violence in games: "MA15+" "R18+ "R" "Very violent" "Extremely violent" "Ultra-violent" "Violent vs extremely violent" "Violent vs ultra-violent" "Violent vs very violent" "Level of violence" "Unrated" |

| | | | |
|---|---|--|---|
| 4 | Do violent or extremely violent games impact the mental health of young game players? | Academic research conducted exploring any link between violent and extremely violent video games and mental health outcomes for young people. We will give special attention to longitudinal research, as well as including both positive and negative mental health impacts. | We will use the same core search terms (in Row 1), with additional terms relevant to mental health: "Mental health" "Young people" "Adolescents" "Suicide" "Anxiety" "Depression" "Cognitive benefits" "Social benefits" "Cognitive development" "Emotional development" "Cognitive impacts" "Social impacts" |
| 3 | How can international and cross-jurisdictional research on the impact of violent games be generalised to the Australian context? | <p>Cross-cultural academic studies on violent video games, especially those involving countries likely to be compared to Australia.</p> <p>Any other research on the generalisability of international findings cross-culturally, and if available, to the Australian context and relating to aggression, attitudes to women and gaming.</p> | <p>"Generalisable" "Generalisability" "Applicability" "Comparable" "Research" "Cross-cultural research" "Violent video games" "Attitudes to women" "Gaming" "Australia" "Australian"</p> <p>(we will also include here names of countries that come up as most comparable to Australia)</p> |

Appendix B

Different types of bias identified by researcher Christopher Ferguson

| Bias | Description | Influence on the debate on whether VVGs cause negative outcomes |
|------------------|--|---|
| Citation bias | Authors selectively reference studies that support their hypotheses, and exclude studies that contradict their hypotheses. | VVG meta-analyses selectively include studies which match the researchers' pre-determined hypotheses. Evidence suggests that scholars who neglect to refer to research which contradicts their hypotheses report higher effect sizes. ¹⁵⁹ |
| Publication bias | Statistically significant effects are more likely to be reported in journals than null effects. | Studies that find an effect of VVGs on aggression, attitudes towards women, and mental health outcomes are over-represented in the literature. ¹⁶⁰ Studies finding no relationship between VVGs and aggression are less likely to be published. This results in a false perception of the amount of evidence in favour of VVGs causing both positive and negative outcomes in players. |
| Inflation bias | Measures of aggression, attitudes towards women, and mental health outcomes are not standardised across studies and there is no consensus on how they should be interpreted. | Study results can be selectively interpreted by authors to support their predetermined hypotheses. The authors of VVG meta-analyses may have biases which influence how they interpret and present evidence from the literature. ¹⁶¹ |

Greater transparency has been proposed as a way to address research bias and poor methodology.¹⁶² Pre-registration requires scholars to submit their research rationale, hypotheses, design and analytic strategy prior to conducting an experiment. This locks researchers into a pre-specified plan and reduces the opportunity for both explicit and implicit bias creeping in to the research process. Publicising research agendas ahead of time also prevents the failure to report results which contradict the original aims of the researchers.

¹⁵⁹ Ferguson, C.J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹⁶⁰ Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International journal of law and psychiatry*, 56, 35-43.

¹⁶¹ Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.

¹⁶² Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.

Bibliography

- Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877-1892.
- Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence? *Psychology of Violence*, 1(4), 259.
- Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of youth and adolescence*, 42(7), 1090-1104.
- Anderson CA, et al. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin* 136:151–173.
- Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychological Bulletin* 43, 986–998.
- Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics*, 140(Supplement 2), S142-S147.
- Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.
- Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.
- Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.
- Bègue, L., Sarda, E., Gentile, D. A., Bry, C., & Roché, S. (2017). Video games exposure and sexism in a representative sample of adolescents. *Frontiers in psychology*, 8, 466.
- Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 1 Nov. 2019].
- Bösche, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology*.
- Brand, J. E., Jervis, J., Huggins, P., & Wison, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

- Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games= sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.
- Bucolo, D. (2010). Violent video game exposure and physical aggression in adolescence: tests of the general aggression model. (Doctoral dissertation). University of New Hampshire, New Hampshire, USA.
- Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic pediatrics*, 18(7), 813-819.
- Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.
- Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.
- Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.
- Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for health journal*, 4(2), 91-94.
- Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.
- Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.
- Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.
- Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.
- Ferguson C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science* 10:646–666.
- Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of psychiatric research*, 45(6), 808-813.

- Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.
- Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International journal of law and psychiatry*, 56, 35-43.
- Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric quarterly*, 1-5.
- Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.
- Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among “vulnerable” populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of youth and adolescence*, 43(1), 127-136.
- Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.
- Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337.
- Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croats. *Computers in Human Behavior*, 27(3), 1195-1200.
- Ferguson, C. J., Trigani, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric quarterly*, 87(1), 49-56.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.
- Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.
- Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.

- Fox, J., & Potocki, B. (2016). Lifetime video game consumption, interpersonal aggression, hostile sexism, and rape myth acceptance: A cultivation perspective. *Journal of interpersonal violence*, 31(10), 1912-1931.
- Gabbiadini, A., Riva, P., Andrighetto, L., Volpato, C., & Bushman, B. J. (2016). Acting like a tough guy: Violent-sexist video games, identification with game characters, masculine beliefs, & empathy for female violence victims. *PLoS One*, 11(4), e0152121.
- Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The Influence of Empathy and Morality of Violent Video Game Characters on Gamers' Aggression. *Frontiers in psychology*, 8, 1863.
- Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.
- Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA pediatrics*, 168(5), 450-457.
- Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social networking*, 21(9), 535-541.
- Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.
- Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and social psychology bulletin*, 40(5), 578-589.
- Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Prebedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.
- Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through "blood-red tinted glasses": The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.
- Hilgard, J., Engelhardt, C. R., & Rouder, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al. (2010). *Psychological Bulletin*, 143(7), 757-774.
- Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological science*, 30(4), 606-616.
- Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.

- Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS One*, 9(11), e111790.
- Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.
- Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29, 42-53.
- Jami, M., Gauthier, K. L., Zuromski, S. A., Gitter, T. K., Witte, I. J., ... & Joiner, T. (2014). The Interpersonal-Psychological Theory of Suicide and Exposure to Video Game Violence. *Journal of Social and Clinical Psychology*: Vol. 33, No. 6, pp. 512-535.
- Jin, Y., & Li, J. (2014). Cultural Differences in the Effect of Violent Video Games on Adolescent Aggression Cognition: Based on the Perspective of Meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.
- Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing media use and self-objectification: A meta-analysis. *Psychology of women quarterly*, 42(1), 9-28.
- Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS One*, 10(7), e0131613.
- Kasumovic, M. M., Blake, K., Dixson, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.
- King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.
- King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: an experimental study. *Journal of sleep research*, 22(2), 137-143.
- Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.
- Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.
- Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular psychiatry*, 24(8), 1220.
- LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

- Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive behavior*, 38(4), 298-308.
- Liau, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.
- Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.
- Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.
- Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.
- Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.
- Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.
- McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.
- McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).
- Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). Media managing mood: a look at the possible effects of violent media on affect. In *Child & Youth Care Forum* (Vol. 45, No. 2, pp. 241-258). Springer US.
- Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.
- Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic pediatrics*, 17(6), 620-624.
- Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.
- Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

- Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society open science*, 6(2), 171474.
- Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.
- Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.
- Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior* 38: 281–287.
- Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.
- Shao, R., & Wang, Y. (2019). Effect of Violent Video Games on Adolescent Aggression: Moderated Mediation Effect of Family Environment and Normative Beliefs. *Frontiers in psychology*, 10, 384.
- Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep medicine*, 30, 64-70.
- Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: The roles of game difficulty and flow. *Sleep medicine*, 39, 70-76.
- Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.
- Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.
- Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS One*, 8(7), e68382.
- Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.
- Valkenburg PM, Peter J. (2013). The differential susceptibility to media effects model. *Journal of Communication*. 63:221–43
- Valkenburg, P. M., & Peter, J. (2013b). Comm Research—Views from Europe| Five Challenges for the Future of Media-Effects Research. *International Journal of Communication*, 7, 19.

- Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.
- Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.
- Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive behavior*, 44(3), 257-267.
- Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.
- Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment computing*, 24, 21-29.

From: [REDACTED]
To: [REDACTED]
Cc: [REDACTED] [Samantha](#); [REDACTED] [Barbara](#)
Subject: Re: Urgent: Finalisation of literature review [DLM=For-Official-Use-Only]
Date: Monday, 25 November 2019 2:59:00 PM
Attachments: [image001.png](#)
[BIT- Impacts of Violent Video Games Literature Review- Draft 3- changes tracked.docx](#)
[BIT- Impacts of Violent Video Games Literature Review- Draft 3.pdf](#)

Hi Samantha,

Attached are a Word document and PDF of the literature review incorporating your comments. The Word document shows the changes we have made today.

Let us know if you need anything else from us!

Best,

[REDACTED]

On Mon, 25 Nov 2019 at 10:56, [REDACTED] <[REDACTED]@bi.team> wrote:
 Hi Samantha,

Sure, that won't be a problem - we will make those final edits and get it over to you before 3pm.

I will give you a call if there is anything we need to clarify.

Thanks,

[REDACTED]

On Mon, 25 Nov 2019 at 10:49, [REDACTED] Samantha
 <[Samantha.\[REDACTED\]@classification.gov.au](#)> wrote:

Hi [REDACTED] hope you are well. I've just been notified that our Assistant Secretary wants to get the final report to the Minister today. Would it be possible for you to make the requested changes and re-submit the report this afternoon?

Please feel free to call me if there is anything I can do to expedite the finalisation of the report.

Many thanks



Samantha [REDACTED]

Assistant Director / Policy and Research / Classification Branch

Department of Communications and the Arts

Ext 8117

Samantha s47F - personal privacy [communications.gov.au](mailto:samantha@communications.gov.au)

s47F - personal privacy

L6, 23-33 Mary Street, Surry Hills NSW 2010

Locked Bag 3 Haymarket NSW 1240

communications.gov.au / [@CommsAu](https://twitter.com/CommsAu)

arts.gov.au / [@artsculturegov](https://twitter.com/artsculturegov)

I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

For Official Use Only

NOTICE: This email message is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

This message has been content scanned by the Axway MailGate.

--

Dr s47F - personal privacy
Advisor

Mob: s47F - personal privacy
s47F - personal privacy bi.team

Pronouns: she/her

--

Dr s47F - personal privacy

Advisor

s47F - personal privacy | she / her

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

Suite 3, Level 13, 9 Hunter St, Sydney, NSW 2000

<https://www.bi.team>



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

From: s47F - perso [Samantha](#)
To: s47F - personal privacy
Cc: s47F - personal privacy s47F - personal privacy s47F - personal [Barbara](#)
Subject: RE: Urgent: Finalisation of literature review [DLM=For-Official-Use-Only]
Date: Monday, 25 November 2019 4:15:00 PM
Attachments: [image001.png](#)

Thanks s47F - per!

All done.

Sam

For Official Use Only

From: s47F - personal privacy <s47F - personal privacy bi.team>
Sent: Monday, 25 November 2019 4:03 PM
To: s47F - personal Samantha <s47F - personal priv classification.gov.au>
Cc: s47F - personal privacy <s47F - personal privacy bi.team>; s47F - personal privacy <s47F - personal privacy bi.team>; s47F - personal priv Barbara <s47F - personal privacy classification.gov.au>
Subject: Re: Urgent: Finalisation of literature review [DLM=For-Official-Use-Only]

Sorry about that, the clean PDF is attached!

On Mon, 25 Nov 2019 at 15:59, s47F - personal p Samantha
 <[Samantha.](#)s47F - personal privac [classification.gov.au](#)> wrote:

Hi Ashleigh thanks for this- can you please send a clean PDF?

Sam

For Official Use Only

From: s47F - personal privacy <s47F - personal privacy bi.team>
Sent: Monday, 25 November 2019 3:56 PM
To: s47F - personal Samantha <s47F - personal priv [classification.gov.au](#)>
Cc: s47F - personal privacy <s47F - personal privacy bi.team>; s47F - personal privacy <s47F - personal privacy bi.team>; s47F - personal priv Barbara <s47F - personal privacy [classification.gov.au](#)>
Subject: Re: Urgent: Finalisation of literature review [DLM=For-Official-Use-Only]

Hi Samantha,

We have accepted the changes and the latest draft is attached.

Let me know if you need anything else!

s47F - personal privacy

On Mon, 25 Nov 2019 at 15:41, s47F - personal p Samantha
 <[Samantha.](#)s47F - personal privac [classification.gov.au](#)> wrote:

Hi Ashleigh- we have 3 more small changes we'd like you to make- all in track so just a matter of you agreeing to do them. We are in a bit of a rush to get these done, so can you please attend to them? They are marked with pink highlight in comments and are in p6, 9 and 10.

Thanks

Sam

For Official Use Only

From: s47F - personal privacy <s47F - personal privacy bi.team>

Sent: Monday, 25 November 2019 2:58 PM

To: s47F - personal privacy <s47F - personal privacy bi.team>

Cc: s47F - personal privacy Samantha <s47F - personal privacy Samantha classification.gov.au>; s47F - personal privacy <s47F - personal privacy bi.team>; s47F - personal privacy Barbara <s47F - personal privacy Barbara classification.gov.au>

Subject: Re: Urgent: Finalisation of literature review [DLM=For-Official-Use-Only]

Hi Samantha,

Attached are a Word document and PDF of the literature review incorporating your comments. The Word document shows the changes we have made today.

Let us know if you need anything else from us!

Best,

s47F - personal privacy

On Mon, 25 Nov 2019 at 10:56, s47F - personal privacy <s47F - personal privacy bi.team> wrote:

Hi Samantha,

Sure, that won't be a problem - we will make those final edits and get it over to you before 3pm.

I will give you a call if there is anything we need to clarify.

Thanks,

s47F - personal

On Mon, 25 Nov 2019 at 10:49, s47F - personal p Samantha <s47F - personal p Samantha classification.gov.au> wrote:

Hi s47F - personal p hope you are well. I've just been notified that our Assistant Secretary wants to get the final report to the Minister today. Would it be possible for you to make the requested changes and re-submit the report this afternoon?

Please feel free to call me if there is anything I can do to expedite the finalisation of the report.

Many thanks



Samantha s47F - personal p

Assistant Director / Policy and Research / Classification Branch
Department of Communications and the Arts

Ext 8117

Samantha s47F - personal p communications.gov.au

s47F - personal privacy

L6, 23-33 Mary Street, Surry Hills NSW 2010
Locked Bag 3 Haymarket NSW 1240

communications.gov.au / [@CommsAu](https://twitter.com/CommsAu)
arts.gov.au / [@artsculturegov](https://twitter.com/artsculturegov)

I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

For Official Use Only

NOTICE: This email message is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

This message has been content scanned by the Axway MailGate.

--

Dr s47F - personal privacy
Advisor

Mob: s47F - personal privacy
s47F - personal privacy bi.team

Pronouns: she/her

--

Dr s47F - personal privacy

Advisor

s47F - personal privacy | she / her

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

Suite 3, Level 13, 9 Hunter St, Sydney, NSW 2000

<https://www.bi.team>



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

NOTICE: This email message is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

This message has been content scanned by the Axway MailGate.

--

Dr s47F - personal privacy

Advisor

s47F - personal privacy | she / her

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

Suite 3, Level 13, 9 Hunter St, Sydney, NSW 2000

<https://www.bi.team>



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

NOTICE: This email message is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message.

This message has been content scanned by the Axway MailGate.

--

Dr s47F - personal privacy

Advisor

s47F - personal privacy | she / her

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

Suite 3, Level 13, 9 Hunter St, Sydney, NSW 2000

<https://www.bi.team>



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>

The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

The impacts of violent video games from an Australian perspective

Literature Review for the Department of Communications and the Arts

Contents

| | |
|--|----|
| Executive summary | 4 |
| 01 / Introduction | 7 |
| 1.1 / Generalisability of international findings to the Australian context | 8 |
| 1.2 / Methodology | 12 |
| Games involving depictions of violence which are classified as MA15+ or R18+ in Australia, or equivalent in the international context. | 12 |
| Search Criteria | 12 |
| Inclusion Criteria | 12 |
| Strength of evidence | 13 |
| 02 / The effect of violent video games on aggression | 15 |
| 2.1 / Violent video games are unlikely to cause aggression | 15 |
| World | 15 |
| <i>Variable susceptibility to the effects of VVGs</i> | 18 |
| <i>Overall conclusions from international research</i> | 19 |
| Australia | 20 |
| 2.2 / Extremely violent games do not cause more aggression than violent video games | 21 |
| World | 21 |
| Australia | 22 |
| 2.3 / Conclusions | 23 |
| 03 / The effect of VVGs on attitudes towards women | 23 |
| 3.1 / Violent video games do not change attitudes towards women | 23 |
| World | 23 |
| Australia | 25 |
| 3.2 / Conclusions | 25 |
| 04 / The impacts of VVGs on young peoples' mental health | 25 |
| 4.1 / Violent video games do not cause negative mental health outcomes in young players | 26 |
| World | 26 |
| Australia | 28 |
| 4.2 / Conclusions | 30 |
| 05 / Recommendations | 30 |
| 5.1 / Aggression | 30 |
| 5.2 / Attitudes towards women | 32 |

| | |
|------------------------------|----|
| 5.3 / Mental health outcomes | 33 |
| Appendix A | 34 |
| Appendix B | 36 |

Executive summary

Playing video games is a popular pastime among Australians, with 2 out of 3 Australians reporting that they play video games.¹ There is ongoing concern internationally that playing violent or extremely violent video games (VVGs) may lead to negative outcomes, including increased aggression, negative attitudes to women and poor mental health outcomes for young players. While decades of research exists attempting to address these questions, there is ongoing controversy on the effects of VVGs. Meanwhile community concerns continue to grow alongside technological advances and increasingly realistic and immersive player experiences.

The evidence is therefore of interest to policy makers in Australia. The current review of academic research literature on the effects of violent video games seeks to determine whether there are any gaps in this research from an Australian perspective. At the time of publication, only a small number of studies investigating the impacts of violent video games on behaviour and attitudes have been conducted within Australia. The vast majority of research has been carried out in the United States, Europe and Asia. Here, we assess the extent to which findings from international research can be used to inform an understanding of the potential impact of VVGs in an Australian setting.

Research Finding 1: International research is generalisable to the Australian context

Overall, given the small differences between results on the strength of these associations across cultures, international research is highly relevant and sufficient to our understanding of the relationship between VVGs and aggression in the Australian context. Some small effects of culture on the relationship between VVGs and aggression are apparent, with researchers generally finding that effect sizes of the impact of VVGs on aggression tend to be slightly smaller for Eastern and Hispanic cultures than Western cultures.^{2, 3, 4} However, the magnitude of these effects across all cultures studied is small, and supports the conclusion that they are helpful in understanding the effects of VVGs on Australian players.

Unlike the aggression literature, little research exists on the cross-cultural generalisability of findings concerning the impact of VVGs on youth mental health and attitudes towards women. However, what research does exist does not suggest that violent content results in VVG players having poor attitudes towards women or negative mental health outcomes.

¹ Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: Interactive Games and Entertainment Association.

² Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

³ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882–9888.

⁴ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

Research Finding 2: Evidence suggests that exposure to VVGs does not have a negative impact on aggression.

Internationally there is much debate over the nature of the relationship between violent video games and players' behaviours and attitudes. The current review synthesises findings from the last decade to draw up-to-date conclusions as to the impact of violent video games.

Interpreting contradictory findings in the research literature is challenging due to widely varying methodologies, the tendency to only measure short-term outcomes, an overreliance on correlational evidence, and inconsistent definitions and measurements of aggression and attitudes towards women. Much of the academic literature on VVGs is dominated by supporters⁵ and opponents⁶ of the hypothesised link between playing VVGs and aggression. Despite the ongoing controversy, high-quality individual studies that use meaningful measures of aggression, and meta-analyses that control for other likely causes of aggression, converge on the same conclusion: VVGs have little to no meaningful impact on real-world aggressive behaviour.

Research Finding 3: Evidence suggests that exposure to VVGs does not have a negative impact on youth mental health or attitudes to women.

There are also fears that VVGs have other negative effects, namely on players' mental health and their attitudes towards women. The high-quality studies that are available support the same general conclusion as the aggression literature: it is unlikely that violent content in video games meaningfully impacts attitudes towards women and the mental health of young players. The effect of VVGs on attitudes towards women and the mental health of young players are less well studied than aggression. At present there are few high-quality studies and meta-analyses available on these outcomes, and drawing conclusions from individual studies is limited by inconsistent definitions and measures.

Our recommendations based on the research findings

We were asked by the Department of Communications and the Arts to conduct a review of academic literature on the impacts of violent video games relating to attitudes to women, child and youth mental health and aggression to identify any gaps in the research from an Australian perspective that would necessitate the conduct of new research in Australia. Based on the above conclusions, we make the following recommendations to the Department of Communications and the Arts:

- **At present, no further Australian research is needed to understand the relationship between VVGs and aggression.** It is unlikely that additional research in Australia on the effect of VVGs on aggression would meaningfully add to the academic literature. Correlational, longitudinal and experimental research from

⁵ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

⁶ Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

generalisable populations in Europe, North America and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.

- **At present, no further research is recommended to understand the relationship between VVGs and attitudes to women in the Australian context.** While there is a lack of Australian evidence addressing this research question, the highest quality international research from the US and Western Europe finds no strong evidence that violent content in itself causes players to develop negative attitudes towards women. If further research is to be conducted, the effects of sexualised and sexist content on attitudes to women should be prioritised over investigating the impact of violent content.
- **At present, no further Australian research is needed to understand the relationship between VVGs and mental health outcomes in young players.** It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content does not affect mental health over and above general game play.

01 / Introduction

The purported link between violent video games (VVGs) and real-world violent attitudes and behaviours is a controversial and politicised issue. Mass shootings have been linked to VVGs since the infamous Columbine school shooting, as the perpetrators were avid players of *Doom*, a graphic first-person shooter game. Mass shootings continue to be linked to VVGs by some politicians and public commentators, however evidence suggests that not all perpetrators play VVGs, or played video games regularly.⁷

The nature of the relationship between violent and extremely violent video games and players' attitudes and behaviours is also contentious amongst academics.^{8, 9, 10, 11} The controversy around VVGs is fuelled by the rapid pace of game development, which outstrips the pace of academic research. VVGs are increasingly complex, social, and graphic, such that academic studies from only 10 years ago may not apply to current games. Advances in video game graphics have greatly enhanced the realism of games, making them more immersive. Some researchers have argued that video game realism¹² and sexualisation of characters¹³ in immersive games might lead to greater negative impacts of playing video games than more traditional, less immersive video game formats. This has broadened community concerns about the effects of VVGs from aggression and violence to include attitudes towards women and mental health, particularly in young players.

The purpose of this review is to determine the relationship between violent, and extremely violent, video games and aggression, attitudes towards women, and youth mental health in the Australian context. Due to the relative lack of studies in Australian cohorts, this review is also designed to determine to what degree international findings can be generalised to Australia. Finally, in light of the available evidence and generalisability to Australia, we will form recommendations as to whether further research is needed in Australians to cover gaps in the VVG research.

⁷ Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 1 Nov. 2019].

⁸ Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological science*, 12(5), 353-359.

⁹ Ferguson CJ (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

¹⁰ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.

¹¹ Ferguson, C. J., & Kilburn, J. (2010). Much ado about nothing: The misestimation and overinterpretation of violent video game effects in Eastern and Western nations: Comment on Anderson et al.(2010).

¹² Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.

¹³ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

1.1 / Generalisability of international findings to the Australian context

The impacts of VVGs on aggression, attitudes to women and youth mental health are questions of global interest. Internationally, a large body of research has been carried out to attempt to understand these associations, in particular relating to impacts on aggression. As with many questions in other policy areas, in order to reach the most robust conclusions we want to draw widely from the findings of international research. This is particularly the case for the Australian context, given that Australian research is currently limited in this space. In order to draw from international research, we need to first think carefully about how and when findings are likely to generalise across countries and cultures; a question posed by social scientists in other contexts for decades. There is some consensus that generalising findings across contexts is most appropriate with rigorous quantitative methodologies, and among studies using large samples.¹⁴ Hence, when looking at the international literature, we have given higher weighting to these studies (refer to section 1.3 below on 'Strength of Evidence' for more information about the research we have highlighted in this review).

Our criteria for assessing the generalisability of international research to Australia

Most research on the impact of violent video games has been carried out in countries that are, like Australia, industrialised, economically stable and technologically advanced. A common criticism of attempts to generalise from psychological studies is that participants in psychology studies tend to be Western, Educated, Industrialised, Rich and Democratic (WEIRD). While Australians are classified as WEIRD, globally speaking, most people are not.¹⁵ While not all samples discussed in this review are WEIRD, they are predominantly educated, industrialised, rich and democratic. In other words, only countries that are sufficiently developed such that inhabitants have general access to VVGs and high usage characteristics can provide enough data from which to draw robust conclusions.

While effect sizes are very small across cultures, studies on WEIRD samples tend to produce similar effect sizes, confirming that evidence from these culturally, economically and politically similar countries as highly generalisable to Australia. Samples from socio-economically similar but culturally different countries tend to produce smaller effect sizes in relation to VVGs and aggression and therefore we would consider them less generalisable, and non-WEIRD countries with few socio-economic similarities are associated with even smaller effect sizes, indicating they are the least generalisable. However, it is apparent that any cultural factors mediating the relationship between VVGs and aggression and mental health are small, if not trivial, and therefore even studies classed as having medium generalisability are relevant for understanding the relationship between VVGs and behavioural and attitudinal outcomes.

In this review we have divided the research outlined in the review into that carried out in the international context ('World') and in an Australian context ('Australia').

¹⁴ Generalizability and Transferability, The WAC Clearing house. Retrieved from: <https://wac.colostate.edu/resources/writing/guides/gentrans/>.

¹⁵ Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.

Table 1. How we have assessed generalisability to Australia

| Low generalisability to the Australian context | Medium generalisability to the Australian context | High generalisability to the Australian context. |
|--|---|--|
| <p>Studies that come from developing nations where social, cultural and political factors are contrasting to those of Western nations.</p> <p>In addition, access to technologies and games associated with gaming are markedly low.</p> | <p>Research comes from countries (predominantly Eastern) that have similar socio-economic conditions to the Australian context, and most studies show cross-cultural similarities in relation to Western contexts. However, some small differences in effect sizes between rates of game play and effect sizes (e.g. Japan).</p> <p>Countries include: Japan, Singapore, China, and Taiwan. Also included are studies with Latin/Hispanic cultures</p> | <p>Carried out in countries that have been shown to have similar gaming characteristics and cultural factors to Australia (primarily Western countries with similar patterns seen in the effects of VVGs). We are confident that the studies detailed can be helpful in understanding the Australian context.</p> <p>Countries include: UK, USA, Germany, Belgium, France, and the Netherlands.</p> |

Many explanations have been proposed for why culture would be a moderating factor on the impacts of VVGs on aggression, including differences in collectivistic values and moral discipline,¹⁶ how violence is contextualised in the media, the context in which video-games are played,¹⁷ and variation across cultures in the meaning of being a perpetrator and a victim of aggression.¹⁸ These studies predominantly explore the differences between research outcomes in Eastern (non-WEIRD; predominantly Japan, but also Singapore and China) versus Western (WEIRD; predominantly the USA, UK, Australia, Germany, and other European countries) cultures.

While some studies suggest that underlying rates of aggression vary across cultures,¹⁹ the size and direction of the association between the two factors (predictor and outcome) generally remains the same.²⁰ More broadly, correlational research looking at the relationship between media violence exposure and aggressive behaviours across cultures has found few

¹⁶ JIN, Y., & LI, J. (2014). Cultural Differences in the Effect of Violent Video Games on Adolescent Aggression Cognition: Based on the Perspective of Meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.

¹⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

¹⁸ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹⁹ Research into aggression has found common factor structures underlying aggression across cultures. Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive behavior*, 38(4), 298-308.

²⁰ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

cross-cultural differences.^{21, 22} One comparison of the impact of media violence among seven countries (Australia, China, Croatia, Germany, Japan, Romania, and the United States) found no significant differences in the strength of the relationship with aggression across cultures.²³

Some small effects of culture are apparent in the violent video game literature, with researchers generally finding that effect sizes of the impact of VVGs on aggression are slightly smaller for Eastern and Hispanic cultures than Western cultures.^{24,25, 26} For example, in a cross-cultural comparison of the impacts of VVGs in Eastern (primarily Japan, but also China, Singapore) and Western (primarily USA) cultures, Anderson²⁷ found larger effects of VVGs on aggression in Western than Eastern countries. However, this finding was only marginally significant, and only apparent in longitudinal research studies. However, in these comparisons, cultural differences are often confounded with differences in research design, meaning that variance could in fact be due different ways of measuring aggression.

This finding is supported by researchers who argue both that VVGs lead to increased aggression, and those who argue that VVGs have no impact on aggression. For example, Ferguson²⁸ found Eastern samples returned smaller effect sizes, as did Latin/Hispanic samples, than Western samples. Given that effect sizes across all studies analysed by Ferguson were generally small, the differences among culture as a moderating variable were also deemed small. It is also important to note that this meta-analysis looked at all video games, both violent and non-violent. However, they do corroborate Anderson's argument that culture/ethnicity might somewhat moderate the impact on aggression, with Western samples showing greater effect sizes. Similarly, a subsequent meta-analysis from Prescott, Sargent and Hull²⁹ (2018) focusing exclusively on the longitudinal outcomes of VVGs on White, Asian and Hispanic samples found strongest associations between White samples, intermediate associations with Asian samples and smallest with Hispanic samples (acknowledging that only a small number of studies exist that use Hispanic samples).

²¹ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998.

²² Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.

²³ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychol. Bull.* 43, 986–998. .

²⁴ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

²⁵ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

²⁶ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

²⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

²⁸ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci* 10:646–666.

²⁹ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

There are few studies looking at cross-cultural variations in the impacts of VVGs on attitudes towards women and youth mental health.

One cross-cultural study looked at the relationship between the amount of time spent playing VVGs and mental health in young children.³⁵ Comparisons were made across Eastern and Western European countries (Germany, The Netherlands, Lithuania, Romania, Bulgaria, and Turkey). Across cultures, differences were seen in usage patterns - but once these were controlled for, no differences were found in mental health outcomes across countries. Although there is a relative lack of cross-cultural studies investigating the effects of VVGs on attitudes towards women, as we outline in Section 3.1 below, any effects are more likely to be due to the sexist and sexualised content of games, not violence per se.

³⁵ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.

1.2 / Methodology

This section outlines the methodology for the present review of academic literature on the impact of VVGs.

- Definitions for 'aggression' and 'extremely violent'
- Criteria and search terms for scan of the literature
- Inclusion criteria

Definitions:

Aggression

*"Any behaviour directed toward another individual that is carried out with the proximate (immediate) intent to cause harm. In addition, the perpetrator must believe that the behaviour will harm the target, and that the target is motivated to avoid the behaviour."*³⁶

Extremely violent games

Games involving depictions of violence which are classified as MA15+ or R18+ in Australia, or equivalent in the international context. Search Criteria

A computerised literature search was conducted via Google Scholar, PubMed, ScienceDirect, Web of Science, Proquest and PsycINFO, using relevant search terms (see Table 1 in Appendix A) to identify the most relevant literature.

Using the criteria outlined in this section, over 200 original research articles were collected and reviewed, in addition to meta-analyses and systematic reviews. A large number of studies met the search criteria but were not included in this report as they did not meet the inclusion criteria detailed below. Therefore, the attached bibliography does not reflect an exhaustive list of all extant research on the impacts of VVGs. Rather it reflects research referenced in the body of the literature review, which synthesises and summarises the highest quality research conducted in the past 10 years.

Inclusion Criteria

This review synthesises the highest quality research investigating the impacts of VVGs on aggression, attitudes to women and youth mental health. Due to the increased graphic realism, immersive experience and levels of violent content in modern video games only studies conducted in the past 10 years were included. A systematic scan of the literature revealed hundreds of studies investigating the impacts of VVG's on aggression, attitudes towards women and youth mental health. Due to the volume of poor-quality studies identified, the inclusion criteria were restricted to prioritise only the most rigorous research. This was assessed using the criteria outlined in the Strength of Evidence Table (Table 2) below.

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. Annual review of psychology, 53.

Strength of evidence

Strength of evidence was assessed using the criteria in the table below. This review prioritised research conducted in the past 10 years which had the characteristics outlined in the green *high* column below. Where high quality evidence was not available, evidence that was categorised as *medium* or *low* was included in order to form conclusions and recommendations. Only eight low quality studies have been included, and only where higher quality studies were not available. Where low quality research is referred to this is explicitly labelled within this report. The eight studies we labelled low quality relate to: international study on the link between VVGs and attitudes towards women (one study), and Australian studies on the impacts of VVG and aggression (three studies) and mental health of young players (six studies of which two are also referenced in the section on the impact of VVGs on aggression).

Table 2. How we have assessed strength of evidence

| Strength of evidence | | |
|---|--|---|
| Low | Medium | High |
| <p>Evidence of research bias or subject to peer-reviewed criticism.</p> <p>Studies with unvalidated measures of aggression/attitudes towards women/mental health.</p> <p>Correlational studies where other known causes of aggression/attitudes towards women/mental health are not controlled for.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with low or undemonstrated association with real life attitudes or behaviour.</p> | <p>Correlational studies with a small number of known causes of aggression/attitudes towards women/mental health controlled for.</p> <p>Studies which rely on self-report measures only.</p> <p>Studies with small samples with low generalisability.</p> <p>Meta-analyses with evidence of research bias, have been subjected to peer-reviewed criticism or have not been independently replicated.</p> | <p>Correlational studies which have controlled for multiple known causes of aggression/attitudes towards women/mental health.</p> <p>Longitudinal or retrospective studies which measure attitudes or behaviour over time</p> <p>Studies with large nationally representative samples.</p> <p>Studies or meta-analyses which have been independently replicated.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with high demonstrated association with real-life attitudes or behaviour.</p> <p>Studies which have adopted open science practices such as pre-registration.</p> <p>Studies which include multiple outcome measures such as self-reports, peer-report and validated measurement scales.</p> <p>Studies which have conducted cross-cultural comparisons or have generalised findings across different contexts.</p> |

As stated above, each recommendation set out in this review was made using studies that span this spectrum of research quality. We prioritised studies that meet the criteria for *high* quality, and have made stronger recommendations where more high-quality research was available to draw on. In our recommendations, a *high* degree of research quality indicates that additional research is unlikely to meaningfully contribute to the existing literature.

02 / The effect of violent video games on aggression

2.1 / Violent video games are unlikely to cause aggression

| Strength of evidence | Generalisability to Australia |
|--|--|
| High | High quality studies drawn from the US, UK, Germany, China, Singapore and Australia. |
| The results of high-quality international and Australian studies suggest that the effect of VVGs on aggression is small to non-existent. | |



World

Recent high-quality studies indicate that the link between VVGs and aggression is small to non-existent. Studies that properly control for other known causes of aggression, and those that measure real-world behaviour either find no relationship, or a very small effect of VVGs on aggression.

While only a recent phenomenon, recent pre-registered studies have mostly found no link between VVGs and aggression, nor any other negative effects. In a pre-registered trial conducted in the UK, researchers interviewed a large sample of British adolescents and their parents or carers. They found no association between exposure to VVGs over the past month and real-life aggressive behaviour as measured by carer assessment.³⁷ Similarly, three pre-registered randomised controlled trials conducted in the USA found no effect of VVGs on short-term measures of aggressive inclinations³⁸, hostility³⁹ or aggressive behaviour.⁴⁰ Two pre-registered longitudinal studies have also found no association between VVG exposure and aggression measured at a later time.⁴¹ For instance, a study of over 3000 Singaporean youth found no association between playing VVGs and aggression measured

³⁷ Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society open science*, 6(2), 171474.

³⁸ McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.

³⁹ Ferguson, C. J., Trigan, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric quarterly*, 87(1), 49-56.

⁴⁰ Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337

⁴¹ Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric quarterly*, 1-5.

two years later.⁴² The authors concluded that it would take 27 hours per day of playing VVGs to produce clinically noticeable changes in aggression.

In the past 10 years four meta-analyses have been conducted to synthesise the literature investigating the effect of VVGs on aggression.^{43, 44, 45, 46} Combined, these meta-analyses cover hundreds of correlational, experimental and longitudinal studies involving hundreds of thousands of participants. The overall conclusion to be drawn from these meta-analyses is that VVGs have a small effect on aggression.

However there are several reasons to question whether any effect in fact exists:

- These meta-analyses include many laboratory experiments with poor methodology. They rely on artificial measures of short-term aggression, with unproven correlation to real-life aggressive behaviour.
- Effect sizes are smaller in studies with outcome measures that are more closely related to real-life aggressive behaviour, and research measuring long-term outcomes.
- As research methodology and rigor has improved over the past 10 years, evidence of a link between VVGs and aggression has grown weaker.
- When other known risk factors associated with aggression are controlled for (baseline aggression levels, gender, socioeconomic status) the association between VVGs and aggression diminishes almost entirely, suggesting that VVGs are not an independent cause of aggression.

There is also substantial evidence of bias within this literature (see Appendix B), especially in experimental studies claiming to demonstrate that VVGs cause aggression.⁴⁷ The aforementioned emerging research has begun to address these biases by adopting more rigorous methodology. Research which is pre-registered, has been independently replicated, measures real-life aggressive behaviour or long-term outcomes reports effects that are small to non-existent.

Contrary to these findings, one recent pre-registered cross-sectional study found an association between playing video games and self-reported interpersonal violence in US

⁴² Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.

⁴³ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological bulletin*, 136(2), 151.

⁴⁴ Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and social psychology bulletin*, 40(5), 578-589.

⁴⁵ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on psychological science*, 10(5), 646-666.

⁴⁶ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁴⁷ Hilgard, J., Engelhardt, C. R., & Rouder, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al.(2010). *Psychological Bulletin*, 143(7), 757-774.

university students.⁴⁸ However the study did not address the impact of *violence* in video games, so it does not provide any evidence that violent content in games drives aggression.

While experimental studies are useful to gather evidence about causality, they have mostly relied on short-term measures of aggression. To investigate whether VVGs *cause* aggression over time, researchers conducted a randomised controlled trial in Germany. Participants were assigned to play a VVG, a non-violent video game or no game at all. There was no difference between the groups across a range of measures of aggression immediately following eight weeks of gameplay, or two months after the experiment ended.⁴⁹

Research investigating the effects of VVGs have used a range of aggression measures, many of which are artificial behaviours in a laboratory setting^{50, 51, 52, 53} (e.g. putting hot sauce into another participant's food), or self-report scales of aggressive thoughts and emotions^{54, 55, 56, 57, 58, 59}. There is no clear evidence that these measures relate to or predict real-world behaviours,⁶⁰ which are the real concern to the community. If VVGs did in fact cause real-world aggressive behaviours, we would expect to observe a correlation between violent video game consumption and real-world violent incidents. In four separate analyses,⁶¹ researchers compared patterns of US crime data with measures of VVG consumption over the past 30 years.⁶² They found no evidence of a relationship between VVG consumption and aggressive assaults or homicides. In fact, several measures of VVG consumption were

⁴⁸ Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29,42-53.

⁴⁹ Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular psychiatry*, 24(8), 1220.

⁵⁰ Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior* 38: 281–287, DOI: <https://doi.org/10.1002/ab.21428>

⁵¹ Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics*, 140(Supplement 2), S142-S147.

⁵² Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.

⁵³ Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS one*, 9(11), e111790.

⁵⁴ Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.

⁵⁵ Bösch, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology*.

⁵⁶ Bucolo, D. (2010). Violent video game exposure and physical aggression in adolescence: tests of the general aggression model.

⁵⁷ Saleem, M., Anderson, C. A., & Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on college students' affect. *Aggressive behavior*, 38(4), 263-271.

⁵⁸ Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The Influence of Empathy and Morality of Violent Video Game Characters on Gamers' Aggression. *Frontiers in psychology*, 8, 1863.

⁵⁹ Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.

⁶⁰ McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).

⁶¹ The analyses compared US data on violent crime with release dates for major VVGs, VVG sales data and internet searches for VVG guides.

⁶² Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.

associated with *decreased* crime-rates, a finding supported by other research comparing patterns of VVG consumption and US crime data.^{63, 64}

There are several possible explanations as to why VVG consumption would be associated with less violent crime. VVGs might have a cathartic effect, allowing healthy venting of aggression in a controlled and harmless environment. Alternatively, more aggressive people might prefer to play VVGs, and are therefore occupied by a non-violent activity following VVG releases. It is important to note that these findings are correlational, and therefore cannot be used to draw causal conclusions

Variable susceptibility to the effects of VVGs

An area of increasing interest to researchers is whether individuals differ in their susceptibility to the impacts of VVGs. Valkenburg and Peter (2013) propose that individual differences in personality traits, social-context and mental health conditions might determine the size and nature of VVG effects.⁶⁵ However there is currently a lack of strong evidence that this is the case.⁶⁶ While some studies report variable effects on aggression based on peer factors,⁶⁷ age,⁶⁸ sex,^{69,70} personality traits^{71, 72} and family environment^{73, 74} the evidence is inconsistent. For example, one US correlational study found no evidence that children with mental health symptoms constitute a vulnerable population for VVG effects. In a sample of 377 children

⁶³ Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.

⁶⁴ Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.

⁶⁵ Valkenburg PM, Peter J. (2013a). The differential susceptibility to media effects model. *J. Commun.* 63:221–43

⁶⁶ Valkenburg, P. M., & Peter, J. (2013b). Comm Research—Views from Europe| Five Challenges for the Future of Media-Effects Research. *International Journal of Communication*, 7, 19.

⁶⁷ Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.

⁶⁸ Breuer, J., Vogelgesang, J., Quandt, T., & Festl, R. (2015). Violent video games and physical aggression: Evidence for a selection effect among adolescents. *Psychology of Popular Media Culture*, 4(4), 305-328.

⁶⁹ Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through “blood-red tinted glasses”: The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.

⁷⁰ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive behavior*, 44(3), 257-267.

⁷¹ Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.

⁷² Greitemeyer, T., & Sagioglou, C. (2017). The longitudinal relationship between everyday sadism and the amount of violent video game play. *Personality and individual differences*, 104, 238-242.

⁷³ Shao, R., & Wang, Y. (2019). Effect of Violent Video Games on Adolescent Aggression: Moderated Mediation Effect of Family Environment and Normative Beliefs. *Frontiers in psychology*, 10, 384.

⁷⁴ Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.

with either clinically diagnosed attention or depression symptoms, exposure to VVGs was not associated with increased levels of delinquency or bullying behaviour.⁷⁵ Another 3 year longitudinal study reported that sex, age, history of aggressive behaviour and family environment made no difference to the impact of VVGs on aggressive behaviour.⁷⁶ Where there is evidence of individual differences in susceptibility to VVGs, the effect is small and diminishes over time. For instance, two studies found that parental mediation style⁷⁷ and family hostility had a small influence on VVG effects when measured cross-sectionally, however neither had any impact on the relationship between VVGs and aggression when measured longitudinally.^{78, 79}

Overall conclusions from international research

The highest quality evidence suggests that playing violent video games does not account for a meaningful proportion of observed aggression, if any at all. Even when the largest possible effect sizes are reported their level barely approaches levels deemed of practical or clinical importance.^{80, 81} This is particularly true when the effect of VVGs is compared to other known causal risk factors for aggression such as poverty, family violence and mental health.^{82, 83} In a longitudinal study conducted in the UK childhood mental health symptoms related to attention deficit disorder, depression and early conduct disorder predicted adolescent criminal behaviour 8 years later. In contrast, exposure to first person shooter games in childhood had no relationship with aggressive or criminal adolescent behaviour.⁸⁴ Similarly,

⁷⁵ Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among “vulnerable” populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of youth and adolescence*, 43(1), 127-136.

⁷⁶ Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA pediatrics*, 168(5), 450-457.

⁷⁷ Measured cross-sectionally, inconsistent restrictive mediation styles were associated with increased adolescent aggression, however no parental mediation styles were longitudinally related to media violence exposure and aggression.

⁷⁸ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.

⁷⁹ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.

⁸⁰ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁸¹ Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour.

⁸² Ferguson, C. J. (2011). Video games and youth violence: A prospective analysis in adolescents. *Journal of youth and adolescence*, 40(4), 377-391.

⁸³ Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of psychiatric research*, 46(2), 141-146.

⁸⁴ Smith, S., Ferguson, C., & Beaver, K. (2018). A longitudinal analysis of shooter games and their relationship with conduct disorder and self-reported delinquency. *International journal of law and psychiatry*, 58, 48-53.

when studies control for these individual or socio-demographic risk factors the impacts of VVGs on aggression diminish^{85, 86} or disappear completely.⁸⁷



Research on the link between VVGs and aggression conducted in Australia is largely consistent with international findings. Two Australian studies which were classified as find no effect of violent or ultra-violent games on aggression,⁸⁸ even if the participant was primed to take on a hostile cognitive state.⁸⁹ However both studies were classified as providing low strength of evidence (see Table 2).

One 2019 Australian study found that playing violent video games for five to 15 minutes impaired players' recognition of anger, enhanced their perception of their fighting ability and perception of a target as weak.⁹⁰ However, consistent with international studies, the authors found that gender and baseline aggression mediated the effects of VVGs on these aggression measures. It is also important to note that these aggression measures are based on perception, not action. Another 2019 Australian study found that game competition, not violence, increased aggressive emotions.⁹¹ Moreover, the authors found that neither competition nor violence increased aggressive behaviour. This is consistent with international studies, which often find larger effects of violent games on aggressive emotions and perceptions than on actual aggressive behaviour.

A very recent Australian study found that players find in-game aggression more acceptable than offline aggression.⁹² This suggests that players perceive in-game and real-world behaviour as governed by different norms, which may explain why acting out violence in a game does not cause real-world aggression. It is important to note that the authors recruited players online, and that only 11.5 per cent of their sample were Australian (the majority were American). The most common games played in their sample were World of Warcraft and


⁸⁵ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychol Bull* 136:151–173.

⁸⁶ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁸⁷ Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of psychiatric research*, 46(2), 141-146.

⁸⁸ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

⁸⁹ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

⁹⁰ Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon,  E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of Men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.

⁹¹ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

⁹² Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.

World of Tanks, which have M and PG ratings respectively, so it is possible that the authors would have obtained different findings if their sample played more violent games.

A study of young Australians found that boys were significantly more likely than girls to play violent video games (or watch other violent media), and to have used physical violence in the past year.⁹³ However, this cross-sectional (and therefore non-causal) study also found that young people who committed acts of aggression were also more likely to have been threatened with physical violence in the community, at home, or at school. This study suggests that factors such as gender may predict VVG gameplay and exposure to experiences that are more likely to directly cause aggression.

An Australian study of male and female violent video game players revealed complex reasons for why players are drawn to violent games.⁹⁴ For example, women in this study reported playing VVGs to be more attractive to romantic partners. This study did not find any relationship between violent video game play and aggression or dominance measures. However, as the authors note, their measure of aggression was acts of intimate partner violence, which is a more extreme measure than is typically used in VVG studies. This makes it difficult to relate this study to the wider violent video game literature.

2.2 / Extremely violent games do not cause more aggression than violent video games

| Strength of evidence | Generalisability to Australia |
|---|---|
| Medium | High - studies largely drawn from Australia, US, Germany and Canada |
| The results of higher quality studies suggest that that extremely VVGs do not increase aggression more than VVGs. | |



World

Video game content can differ on a number of dimensions, including pace, realism and graphicness. Due to the difficulty in matching games to ensure that the effect of violent content can be measured, most of this research has been conducted in experimental laboratories. Several randomised controlled trials in Germany, Australia and the US have compared video games which only differ in the severity of violent content. They find that higher levels of violence do not affect player aggression.

⁹³ Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.

⁹⁴ Kasumovic, M. M., Blake, K., Dixson, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.

A trial in Germany varied the amount of displayed violence and the pace of action in a first person shooter game, ensuring that all other features of the game were otherwise the same. They found that neither pace nor displayed violence had any effect on aggressive behaviour, as measured by willingness to expose another participant to an unpleasant noise-blast.⁹⁵ Similarly, researchers in the US assigned 275 undergraduates to play a first person shooter game that was modified to be more or less violent. Neither game difficulty nor violent content was found to affect aggressive behaviour.⁹⁶ Finally, across seven randomised controlled trials conducted on US university students, researchers found that competence-impeding play increased frustration and aggression, however levels of violent content had no impact.⁹⁷

The results from these and other studies suggest that other video game variables have a greater influence on aggression. Level of competition^{98, 99} and perceived game difficulty¹⁰⁰ have been associated with increased player aggression. For instance, a Canadian study which measured patterns of gameplay over 3 years found that increased competitive gameplay was associated with increased self-reported aggressive behaviour.¹⁰¹ On the other hand, increased graphic realism of violence depicted in video games does not appear to increase player aggression.¹⁰²



Australia

A series of Australian studies comparing non-violent, violent, and ultra-violent video games found no effect of the level of game violence on aggression,¹⁰³ even if the participant was primed to take on a hostile cognitive state.¹⁰⁴ The authors did, however, find that ultra-violent games significantly increase players' self-dehumanisation.¹⁰⁵ This replicates another Australian finding that playing (extremely violent) *Mortal Kombat* diminished players' perceived humanity, but only if they were the target of violence.¹⁰⁶ This self-dehumanisation

⁹⁵ Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.

⁹⁶ Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological science*, 30(4), 606-616.

⁹⁷ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.

⁹⁸ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

⁹⁹ Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence?. *Psychology of violence*, 1(4), 259.

¹⁰⁰ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.

¹⁰¹ Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of youth and adolescence*, 42(7), 1090-1104.

¹⁰² Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment computing*, 24, 21-29.

¹⁰³ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

¹⁰⁴ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

¹⁰⁵ Self-dehumanisation is defined as the attribution of less human nature or human uniqueness traits to the self and has been regarded as a process that permits delegitimizing beliefs about others

¹⁰⁶ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

effect does not appear to cause aggressive behaviour; in fact the authors argue that participants may have acted pro-socially to counteract their feelings of dehumanisation. The above three studies have been classified as providing low strength of evidence (see Table 2).

2.3 / Conclusions

Overall, combined international and Australian evidence suggests the effect of VVGs on aggression in Australia is small to non-existent, with **high** strength of evidence and **high** generalisability to Australia. The weight of evidence shows that even if VVGs do cause aggression, they would still only account for a very small proportion of aggressive behaviour, indicating little value in conducting additional research in this area.

Similarly, combined world and Australian evidence suggests that higher levels of violence in VVGs do not affect aggression, with **medium** strength of evidence and **high** generalisability to Australia. Extremely-violent or ultra-violent games are unlikely to contribute to any increased risk of aggression or violence.

03 / The effect of VVGs on attitudes towards women

| Strength of evidence | Generalisability to Australia |
|--|--|
| Medium | Medium - small number of studies largely drawn from Australia, US, UK, Canada and Germany. |
| The highest quality international evidence finds no relationship between VVGs and attitudes towards women. However, at present there is a lack of high-quality studies on this topic. VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players. | |

3.1 / Violent video games do not change attitudes towards women



World

Content analyses have revealed that video games contain fewer female protagonists, portray overly sexualised female characters, and games which depict violence can involve aggressive acts towards women.^{107, 108} There is growing concern that these

¹⁰⁷ Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.

¹⁰⁸ Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.

representations of female characters normalise the objectification and sexualisation of women.

The highest quality evidence suggests that VVGs do not change attitudes towards women in the long-term for either men or women. A three year study on a representative sample of German youth found that preference for action or first person shooter video games was not associated with sexist attitudes. Amount of time spent playing video games also had no association with sexism.¹⁰⁹ The study controlled for other known risk factors of negative attitudes towards women such as age and education.

When researchers measure short-term attitudes towards women the results are more mixed. Two laboratory studies conducted in Italy and the USA have found that violent games can reduce empathy towards women¹¹⁰ and increase hostile sexism¹¹¹ for some male players. However, the violent content appeared to have no independent effect on attitudes towards women. Sexist content, or combined sexist and violent content were necessary to change players' attitudes towards women. It should be noted that one of these studies, Gabbiadini *et al.* (2016), was classified as providing low strength of evidence (see Table 2 p15).

Overall, this evidence suggests that if video games do cause negative attitudes towards women, this effect is driven by sexualised or sexist content, rather than violent content. This conclusion is supported by other research. Correlational studies conducted online and in France found that playing video games is associated with both benevolent sexism^{112, 113} and hostile attitudes¹¹⁴ towards women, a meta-analysis of 54 studies concluded that video games increase self-objectification for both men and women¹¹⁵ and a randomised control trial found that sexualised avatars in an adventure game increased adolescent players acceptance of rape myths¹¹⁶ compared to non-sexualised avatars.¹¹⁷

¹⁰⁹ Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games= sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.

¹¹⁰ Gabbiadini, A., Riva, P., Andrighetto, L., Volpato, C., & Bushman, B. J. (2016). Acting like a tough guy: Violent-sexist video games, identification with game characters, masculine beliefs, & empathy for female violence victims. *PLoS one*, 11(4), e0152121.

¹¹¹ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

¹¹² Benevolent sexism is a form of paternalistic prejudice (treating a lower status group as a father might treat a child) directed toward women.

¹¹³ Bègue, L., Sarda, E., Gentile, D. A., Bry, C., & Roché, S. (2017). Video games exposure and sexism in a representative sample of adolescents. *Frontiers in psychology*, 8, 466.

¹¹⁴ Fox, J., & Potocki, B. (2016). Lifetime video game consumption, interpersonal aggression, hostile sexism, and rape myth acceptance: A cultivation perspective. *Journal of interpersonal violence*, 31(10), 1912-1931.

¹¹⁵ Interestingly, video games had a larger impact than television consumption. Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing media use and self-objectification: A meta-analysis. *Psychology of women quarterly*, 42(1), 9-28.

¹¹⁶ Rape myth acceptance refers to holding prejudicial, stereotyped and false beliefs about sexual assaults, rapists, and rape victims. These beliefs often serve to excuse sexual aggression, create hostility toward victims, and bias criminal prosecution.

¹¹⁷ Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for health journal*, 4(2), 91-94.

Increased levels of sexist or sexualised content within video games are also associated with more negative attitudes towards women. A correlational study found that male college students who played more sexist games held more sexist attitudes towards women,¹¹⁸ and a 2018 systematic-review found that women experienced self-objectification and low levels of self-efficacy as a result of exposure to sexist content within video games, compared with video games which didn't contain sexist content.¹¹⁹

While violent video game content on its own appears to have no effect on attitudes towards women, these studies provide some evidence that sexualised content may impact attitudes towards women. The available evidence suggests that this is driven by sexualised or sexist content, rather than violence.



Australia

An Australian experimental study found that low-skilled male *Halo 3* players were more hostile towards female teammates, particularly when they were performing poorly.¹²⁰ In contrast, high-skilled male players were more *positive* towards female teammates. This study therefore suggests that sexism elicited by gameplay is triggered by the player's sense of their own ability, and not by in-game violence. Moreover, this study did not compare *Halo 3* to a non-violent game.

3.2 / Conclusions

Overall, combined world and Australian evidence suggests that violent video games don't increase negative attitudes towards women with **medium** strength of evidence and **medium** generalisability to Australia. However some evidence suggests that sexist video game content is harmful, and that VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players.

04 / The impacts of VVGs on young peoples' mental health

| Strength of evidence | Generalisability to Australia |
|----------------------|---|
| Medium | High - studies largely drawn from Australia, US, UK, Canada |

¹¹⁸ Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.

¹¹⁹ Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social networking*, 21(9), 535-541.

¹²⁰ Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS one*, 10(7), e0131613.

There is no high quality evidence of a causal relationship between VVGs and depression, anxiety, suicidal ideation, attention problems, academic achievement or pro-social outcomes.

4.1 / Violent video games do not cause negative mental health outcomes in young players



World

Research into the impact of VVGs on young peoples' mental health is the most recent form of a long history of concerns about the impact of violent media on aggression, particularly as video games become ubiquitous in children's lives. The peak body for the Australian video game industry reported that young Australians play video games for an average of 100 minutes per day.¹²¹ Researchers are increasingly interested in understanding the long-term psychosocial and developmental impacts of playing video games, especially those with extremely violent content. These include impacts on peer-relations, internalising problems such as anxiety or depression and attentional problems such as ADHD.

There is no high quality evidence to suggest that VVGs increase negative mental health outcomes for young players. A meta-analysis by Ferguson et al. of 101 studies found neither video games nor VVGs had any impact on depression, attention disorders, conduct disorders, pro-social behaviour or academic achievement for both children and adolescents.¹²² The meta-analyses included correlational, experimental and longitudinal studies measuring both short and long-term effects. This meta-analysis has been replicated by an independent research team, which is noteworthy given the above mentioned biases and flawed methodology prevalent in this literature.¹²³

Longitudinal research conducted in the USA, Europe and Singapore find VVGs are not associated with negative mental health outcomes for young players. For example a prospective longitudinal study of over 5000 UK children found no association between preference for first-person shooter games at 8 years old and depression in adolescence.¹²⁴ A longitudinal study on 300 Dutch children reported that preference for violent video games was not associated with mental health outcomes (neither positive nor negative) 1 year later.¹²⁵ Similarly violent video game play was not associated with depression or anxiety over

¹²¹ Brand, J. E., Jervis, J., Huggins, P., & Wison, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

¹²² Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹²³ Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877-1892.

¹²⁴ Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.

¹²⁵ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.

1 year of measurement in 10-14 years olds in the USA.¹²⁶ A recent pre-registered study of 3000 Singaporean youth found that playing VVGs was unrelated to youth pro-social behaviour 2 years later.¹²⁷

Contrary to these findings, a recent correlational study of over 5000 US 5th grade students reported that playing VVGs for more than 2 hours per day was associated with increased depressive symptoms. However these results compared high daily VVG play to low daily VVG play, and did not compare violent to nonviolent games. When time spent playing video games was matched, there was no relationship between violent content and symptoms of depression.¹²⁸

Research on suicidal ideation is more mixed. A recent correlational study in the USA found no relationship between VVGs and suicidal ideation.¹²⁹ Whilst another study in a nationally representative sample of US high-school students found a correlation between excessive video game use and suicidal ideation,¹³⁰ this was not explicitly related to *violent* video games. It is also unclear whether video games cause suicidal ideation, or whether children experiencing suicidal ideation video game play.

Other risk factors such as prior youth depression, anxiety, family, socio-economic status or peer delinquency, are a more reliable predictor of mental health outcomes for children and adolescents. Many studies suggest that compared to other known socio-demographic risk factors, VVGs present minimal danger to the mental health of young players. A 1 year longitudinal study in the US¹³¹ found that anxiety and depression were predicted by parental aggression, delinquent peers and previous symptoms of depression, whereas exposure to VVGs was not associated with any negative mental health outcomes.¹³² Similarly, a US study found that gender, antisocial traits, family environment and prior mental health conditions predicted attention problems in children,¹³³ whereas attention problems were not related to playing more video games or a preference for VVGs.

¹²⁶ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹²⁷ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.

¹²⁸ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.

¹²⁹ Jami M. Gauthier, Kelly L. Zuromski, Seth A. Gitter, Tracy K. Witte, Ian J. Cero, Kathryn H. Gordon, Jessica Ribeiro, Michael Anestis, and Thomas Joiner (2014). The Interpersonal-Psychological Theory of Suicide and Exposure to Video Game Violence. *Journal of Social and Clinical Psychology*: Vol. 33, No. 6, pp. 512-535.

¹³⁰ Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.

¹³¹ Sample mostly identified as Hispanic

¹³² Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹³³ Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of psychiatric research*, 45(6), 808-813.

Evidence suggests that other game characteristics such as competition,¹³⁴ and excessive gameplay,^{135 136} in particular pathological video-gaming,¹³⁷ have a larger effect on mental health outcomes than violent content. Research carried out with 10-14 year olds in the USA over one year found that playing VVGs did not predict depression or anxiety,¹³⁸ however, high levels of competitive gaming were associated with negative mental health outcomes such as depression and reduced pro-social behaviour.

Emerging evidence suggests that video games might have a protective effect for children's mental health. In a high quality correlational study surveying over 3000 young children across six European nations, increased video game usage (more than five hours per week) was not associated with any negative mental health, social or behavioural outcomes. Children who played more video games had lower rates of internalising disorders and fewer thoughts of death, and experienced pro-social and academic benefits, including elevated intellectual functioning, high overall competence, and specific benefits in reading, mathematics and spelling.¹³⁹

While beyond the scope of this review, there is also increasing evidence that playing video games more generally provides many benefits for children and adolescents. Researchers have summarised the evidence for various cognitive, social and psychological benefits of video games for young players.¹⁴⁰



Australia

To our knowledge, there are no Australian studies that compare mental health outcomes in young people for violent and non-violent games. Australian studies have found that young peoples' mental health¹⁴¹ and academic performance¹⁴² decline as screen time increases. However, there is no evidence from the Australian context that violent

¹³⁴ Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.

¹³⁵ Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.

¹³⁶ Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

¹³⁷ Liao, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.

¹³⁸ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). *Media managing mood: a look at the possible effects of violent media on affect*. In Child & Youth Care Forum (Vol. 45, No. 2, pp. 241-258). Springer US.

¹³⁹ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.

¹⁴⁰ Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.

¹⁴¹ Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.

¹⁴² Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.

game content mediates or exacerbates any negative impacts of playing video games. Below we have separated out Australian findings in relation to mental health outcomes:

Pathological gaming.¹⁴³ A study of over 1200 South Australian high school students found a rate of Pathological Video Gaming (PVG) of less than two per cent.¹⁴⁴ Young people with PVG did not meet the criteria for clinical depression or anxiety, although this study did not specifically address video game violence.

Sleep. Some Australian studies have found that playing violent video games before bed disrupts young players' sleep.^{145, 146} These studies did not compare sleep quality after playing a non-violent game, and attribute effects on sleep to the arousing nature of the games chosen. These studies also used very small sample sizes (less than 20 participants). They have therefore been classified as providing low strength of evidence (see Table 2). Other Australian studies suggest that the general stimulation of computer use,¹⁴⁷ duration of play,¹⁴⁸ and the tendency of young gamers to enter a flow state¹⁴⁹ while playing¹⁵⁰ disrupt sleep, not necessarily violent content.

Behavioural and emotional problems. Australian studies have found that children who play more video games are more likely to have behavioural and emotional problems,¹⁵¹ and less ability to self-regulate.¹⁵² However, these studies only measured video game play or media exposure (including all types of video games) overall, and did not distinguish between violent and non-violent games.

Self-dehumanisation.¹⁵³ Australian studies comparing non-violent, violent and extremely violent games have found that extremely violent games cause players to self-dehumanise.¹⁵⁴ Another Australian study found that an extremely violent game (*Mortal Kombat*) reduced

¹⁴³ Pathological gaming is defined as the persistent inability to control excessive gaming habits despite associated social or emotional problems

¹⁴⁴ King, D. L., Delfabbro, P. H., Zwaans, T., & Kapsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.

¹⁴⁵ King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video gaming on adolescent sleep: an experimental study. *Journal of sleep research*, 22(2), 137-143.

¹⁴⁶ Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.

¹⁴⁷ Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Prebedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.

¹⁴⁸ Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep medicine*, 30, 64-70.

¹⁴⁹ Flow is "an experience of immersion and time distortion" while playing

¹⁵⁰ Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: the roles of game difficulty and flow. *Sleep medicine*, 39, 70-76.

¹⁵¹ Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic pediatrics*, 17(6), 620-624.

¹⁵² Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic pediatrics*, 18(7), 813-819.

¹⁵³ Note that these studies were covered in the section on aggression.

¹⁵⁴ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

players' perception of their own humanity when they were the target, not the perpetrator, of violence in the game.¹⁵⁵ However, these studies were conducted with an adult sample, so it is unclear whether young people experience dehumanisation due to game violence. They were also classified as low strength of evidence studies (see Table 2).

Positive social outcomes. A laboratory study conducted in Australia found that playing a violent game (*Left 4 Dead 2*) increased players' positive affect and sense of connection when their teammate was a human-controlled (not computer-controlled) character.¹⁵⁶ This finding is consistent with international research on the prosocial benefits of playing cooperative VVGs. Other Australian studies have found no effect of violent¹⁵⁷ or even prosocial¹⁵⁸ games on prosocial behaviour, although their measures of prosocial behaviour have questionable relevance to real-world behaviour. These studies were classified as providing low strength of evidence (see Table 2). In addition, these studies were conducted in an adult sample, so it is unclear whether young people experience the same benefits.

4.2 / Conclusions

Overall, combined world and Australian evidence suggests that VVGs do not cause negative mental health outcomes for young players with **medium** strength of evidence and **high** generalisability to Australia. Some evidence suggests VVGs might have a positive impact on mental health outcomes.

05 / Recommendations

The aim of this literature review was to answer the question:

“What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia?”

Below, we outline our conclusions and recommendations as to whether further research is needed to explore the impacts of VVGs in the Australian context in relation to aggression, attitudes to women or mental health outcomes for young players.

5.1 / Aggression

Research questions:

¹⁵⁵ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

¹⁵⁶ Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.

¹⁵⁷ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.

¹⁵⁸ Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS one*, 8(7), e68382.

1. What are the key findings about violent games and aggression emerging from international research?
2. What is the relationship between violent and extremely violent video games and aggression in Australian research?

Conclusions:

- Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.
- To date, limited research has been conducted in Australia. However, the strength of generalisable international research can fill any research gaps in the Australian context. This includes meta-analyses and emerging high quality research which converge on the conclusion that VVGs cause little or no real-world aggressive behaviour.
- It is unlikely that additional research in Australia would meaningfully add to the academic literature.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and aggression.

5.2 / Attitudes towards women

Research questions:

1. What are the key findings about violent games, aggression and attitudes to women emerging from international research?
2. What is the relationship between violent and extremely violent video games and attitudes towards women in Australian research?

Conclusions:

- The highest quality international evidence finds no relationship between VVGs and attitudes towards women. There is only one Australian study on the effect of a VVG on attitudes towards women, and this study did not compare violent and non-violent video games.
- Violent video game content on its own appears to have no effect on attitudes towards women. Some studies suggest that VVGs which contain sexist or sexualised content increase negative attitudes towards women. However, the available evidence suggests that this effect is driven by the sexualised or sexist content, rather than violence. While there is no strong evidence that violent content increases the negative impacts of sexist video games, the effect of sexualised or sexist content has not been adequately addressed in the literature.

Recommendation: As the available high quality evidence finds that violent content in VVGs alone has no effect on attitudes towards women, no further research is recommended to understand the relationship between VVGs and attitudes to women in the Australian context.

5.3 / Mental health outcomes

Research questions:

1. What are the key findings of international research on how violent or extremely violent games impact the mental health of young game players?
2. How do violent or extremely violent games impact the mental health of young game players in Australia?

Conclusions:

- There is no evidence in the international literature of a robust causal relationship between VVGs and depression, anxiety, suicidal ideation, attention problems, academic achievement or pro-social outcomes. Other risk factors such as family environment, delinquent peers and prior mental health conditions are much more robust predictors of poor mental health outcomes.
- It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content has not been shown to affect mental health over and above general game play.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and youth mental health.

Appendix A

Table 1: Search Criteria and Search Terms

| | Research Question | Search Criteria | Working Search Terms |
|---|---|---|--|
| 1 | What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia? | Academic research conducted in Australian cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. | "Violent Video games" "Violent computer games" "Extremely violent Video games" "First-person shooter" "Aggression" "Aggressive behaviour" "Attitudes towards women" "Gendered" "Australia" "Australian" "Causational" "Intervention study" "Randomised controlled trial" "Meta-Analysis" "Systematic Review" "Longitudinal" "Impacts" "Behaviour/behaviour" |
| 2 | What is the relationship between violent and extremely violent video games and aggression and/or attitudes towards women in international contexts? | <p>Academic research conducted in overseas contexts and cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. We will give special attention to high quality systematic reviews or meta-analysis, or research measuring longitudinal outcomes. We will prioritise research conducted in comparable countries to Australia on social, cultural and political dimensions. High quality research conducted in countries which are not generalisable to the Australian context will supplement this search, however receive lower prioritisation.</p> <p>We will also give consideration to academic research which identifies and operationalises levels of violent content or realism of violence in video games and explores the variance in impact on aggression, and attitudes towards women.</p> | We will use the same core search terms (in Row 1) removing references to Australia, with additional terms to explore levels of violence in games: "MA15+" "R18+ "R" "Very violent" "Extremely violent" "Ultra-violent" "Violent vs extremely violent" "Violent vs ultra-violent" "Violent vs very violent" "Level of violence" "Unrated" |

| | | | |
|---|---|--|---|
| 4 | Do violent or extremely violent games impact the mental health of young game players? | Academic research conducted exploring any link between violent and extremely violent video games and mental health outcomes for young people. We will give special attention to longitudinal research, as well as including both positive and negative mental health impacts. | We will use the same core search terms (in Row 1), with additional terms relevant to mental health: "Mental health" "Young people" "Adolescents" "Suicide" "Anxiety" "Depression" "Cognitive benefits" "Social benefits" "Cognitive development" "Emotional development" "Cognitive impacts" "Social impacts" |
| 3 | How can international and cross-jurisdictional research on the impact of violent games be generalised to the Australian context? | <p>Cross-cultural academic studies on violent video games, especially those involving countries likely to be compared to Australia.</p> <p>Any other research on the generalisability of international findings cross-culturally, and if available, to the Australian context and relating to aggression, attitudes to women and gaming.</p> | <p>"Generalisable" "Generalisability" "Applicability" "Comparable" "Research" "Cross-cultural research" "Violent video games" "Attitudes to women" "Gaming" "Australia" "Australian"</p> <p>(we will also include here names of countries that come up as most comparable to Australia)</p> |

Appendix B

Different types of bias identified by researcher Christopher Ferguson

| Bias | Description | Influence on the debate on whether VVGs cause negative outcomes |
|------------------|--|---|
| Citation bias | Authors selectively reference studies that support their hypotheses, and exclude studies that contradict their hypotheses. | VVG meta-analyses selectively include studies which match the researchers' pre-determined hypotheses. Evidence suggests that scholars who neglect to refer to research which contradicts their hypotheses report higher effect sizes. ¹⁵⁹ |
| Publication bias | Statistically significant effects are more likely to be reported in journals than null effects. | Studies that find an effect of VVGs on aggression, attitudes towards women, and mental health outcomes are over-represented in the literature. ¹⁶⁰ Studies finding no relationship between VVGs and aggression are less likely to be published. This results in a false perception of the amount of evidence in favour of VVGs causing both positive and negative outcomes in players. |
| Inflation bias | Measures of aggression, attitudes towards women, and mental health outcomes are not standardised across studies and there is no consensus on how they should be interpreted. | Study results can be selectively interpreted by authors to support their predetermined hypotheses. The authors of VVG meta-analyses may have biases which influence how they interpret and present evidence from the literature. ¹⁶¹ |

Greater transparency has been proposed as a way to address research bias and poor methodology.¹⁶² Pre-registration requires scholars to submit their research rationale, hypotheses, design and analytic strategy prior to conducting an experiment. This locks researchers into a pre-specified plan and reduces the opportunity for both explicit and implicit bias creeping in to the research process. Publicising research agendas ahead of time also prevents the failure to report results which contradict the original aims of the researchers.

¹⁵⁹ Ferguson, C.J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹⁶⁰ Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International journal of law and psychiatry*, 56, 35–43.

¹⁶¹ Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305–327.

¹⁶² Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.

Bibliography

- Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877-1892.
- Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence? *Psychology of Violence*, 1(4), 259.
- Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of youth and adolescence*, 42(7), 1090-1104.
- Anderson CA, et al. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin* 136:151–173.
- Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Pers. Soc. Psychological Bulletin* 43, 986–998.
- Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics*, 140(Supplement 2), S142-S147.
- Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.
- Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.
- Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.
- Bègue, L., Sarda, E., Gentile, D. A., Bry, C., & Roché, S. (2017). Video games exposure and sexism in a representative sample of adolescents. *Frontiers in psychology*, 8, 466.
- Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 1 Nov. 2019].
- Bösche, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology*.
- Brand, J. E., Jervis, J., Huggins, P., & Wison, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

- Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games= sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.
- Bucolo, D. (2010). Violent video game exposure and physical aggression in adolescence: tests of the general aggression model. (Doctoral dissertation). University of New Hampshire, New Hampshire, USA.
- Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic pediatrics*, 18(7), 813-819.
- Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.
- Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.
- Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.
- Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for health journal*, 4(2), 91-94.
- Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.
- Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.
- Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.
- Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.
- Ferguson C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science* 10:646–666.
- Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of psychiatric research*, 45(6), 808-813.

- Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.
- Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International journal of law and psychiatry*, 56, 35-43.
- Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric quarterly*, 1-5.
- Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.
- Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among “vulnerable” populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of youth and adolescence*, 43(1), 127-136.
- Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of youth and adolescence*, 48(8), 1439-1451.
- Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337.
- Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.
- Ferguson, C. J., Trigan, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric quarterly*, 87(1), 49-56.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.
- Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.
- Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.

- Fox, J., & Potocki, B. (2016). Lifetime video game consumption, interpersonal aggression, hostile sexism, and rape myth acceptance: A cultivation perspective. *Journal of interpersonal violence*, 31(10), 1912-1931.
- Gabbiadini, A., Riva, P., Andrighetto, L., Volpato, C., & Bushman, B. J. (2016). Acting like a tough guy: Violent-sexist video games, identification with game characters, masculine beliefs, & empathy for female violence victims. *PLoS One*, 11(4), e0152121.
- Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The Influence of Empathy and Morality of Violent Video Game Characters on Gamers' Aggression. *Frontiers in psychology*, 8, 1863.
- Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.
- Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA pediatrics*, 168(5), 450-457.
- Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social networking*, 21(9), 535-541.
- Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American psychologist*, 69(1), 66.
- Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and social psychology bulletin*, 40(5), 578-589.
- Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Prebedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.
- Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through "blood-red tinted glasses": The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.
- Hilgard, J., Engelhardt, C. R., & Rouder, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al. (2010). *Psychological Bulletin*, 143(7), 757-774.
- Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological science*, 30(4), 606-616.
- Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.

- Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS One*, 9(11), e111790.
- Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.
- Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29, 42-53.
- Jami, M., Gauthier, K. L., Zuromski, S. A., Gitter, T. K., Witte, I. J., ... & Joiner, T. (2014). The Interpersonal-Psychological Theory of Suicide and Exposure to Video Game Violence. *Journal of Social and Clinical Psychology*: Vol. 33, No. 6, pp. 512-535.
- Jin, Y., & Li, J. (2014). Cultural Differences in the Effect of Violent Video Games on Adolescent Aggression Cognition: Based on the Perspective of Meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.
- Karsay, K., Knoll, J., & Matthes, J. (2018). Sexualizing media use and self-objectification: A meta-analysis. *Psychology of women quarterly*, 42(1), 9-28.
- Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS One*, 10(7), e0131613.
- Kasumovic, M. M., Blake, K., Dixon, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.
- King, D. L., Delfabbro, P. H., Zwaans, T., & Kapsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.
- King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: an experimental study. *Journal of sleep research*, 22(2), 137-143.
- Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social psychiatry and psychiatric epidemiology*, 51(3), 349-357.
- Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.
- Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular psychiatry*, 24(8), 1220.
- LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of Immersive, Sexually Objectifying, and Violent Video Games on Hostile Sexism in Males. *Communication Research Reports*, 35(5), 413-423.

- Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive behavior*, 38(4), 298-308.
- Liau, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.
- Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.
- Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of youth and adolescence*, 46(4), 884-897.
- Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.
- Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.
- Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.
- McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.
- McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).
- Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016, April). Media managing mood: a look at the possible effects of violent media on affect. In *Child & Youth Care Forum* (Vol. 45, No. 2, pp. 241-258). Springer US.
- Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.
- Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic pediatrics*, 17(6), 620-624.
- Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.
- Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

- Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society open science*, 6(2), 171474.
- Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of personality and social psychology*, 106(3), 441.
- Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.
- Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior* 38: 281–287.
- Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.
- Shao, R., & Wang, Y. (2019). Effect of Violent Video Games on Adolescent Aggression: Moderated Mediation Effect of Family Environment and Normative Beliefs. *Frontiers in psychology*, 10, 384.
- Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep medicine*, 30, 64-70.
- Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: The roles of game difficulty and flow. *Sleep medicine*, 39, 70-76.
- Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.
- Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished Bachelor's Thesis). University of Queensland, Brisbane, Australia.
- Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS One*, 8(7), e68382.
- Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.
- Valkenburg PM, Peter J. (2013). The differential susceptibility to media effects model. *Journal of Communication*. 63:221–43
- Valkenburg, P. M., & Peter, J. (2013b). Comm Research—Views from Europe| Five Challenges for the Future of Media-Effects Research. *International Journal of Communication*, 7, 19.

- Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.
- Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.
- Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive behavior*, 44(3), 257-267.
- Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.
- Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment computing*, 24, 21-29.



TAX INVOICE

Department of Communications and the Arts
 Attention: Samantha s47F - person
 Locked Bag 3, Haymarket
 SYDNEY NSW 1240
 ABN: 51491646726

Behavioural Insights (Australia) Pty Ltd
 Level 13
 9 Hunter Street
 SYDNEY NSW 2000
 AUSTRALIA
 ABN:16 613 066 541



Invoice Date: 29 Oct 2019
Invoice Number: INV-1378
Reference: A9CA1

| Description | GST | Amount AUD |
|---|------------------------|------------------|
| Deed Number: 6002773 Contact Officer: Samantha s47F - person Project: Literature review on the impacts of violent video games from an Australian perspective (DCON/19/91) | | |
| Milestone: Provision of research plan to Department including final research questions, detailed search methodology and draft report structure | 10% | 11,835.00 |
| | Subtotal | 11,835.00 |
| | Total GST 10% | 1,183.50 |
| | Invoice Total AUD | 13,018.50 |
| | Total Net Payments AUD | 0.00 |
| | Amount Due AUD | 13,018.50 |

Due Date: 28 Nov 2019

Pay to account:

Account name: s47F - personal privacy
 BSB:
 Account number:
 Bank:

From:  Samantha
To:  Amy
Cc: [Classification Accounts](#)
Subject: FW: Invoice INV-1385 from Behavioural Insights (Australia) Pty Ltd for Department of Communications and the Arts [DLM=For-Official-Use-Only]
Date: Thursday, 28 November 2019 10:50:00 AM
Attachments: [Invoice INV-1385.pdf](#)
[image001.png](#)

Hi Amy- this is approved for payment (from cost centre 3202 Online Safety Research Program).

Thanks

Sam



Samantha 

Assistant Director / Policy and Research / Classification Branch
Department of Communications and the Arts

Ext 8117

[Samantha.](#)  [communications.gov.au](mailto:Samantha@communications.gov.au)

s47F - personal privacy

L6, 23-33 Mary Street, Surry Hills NSW 2010
Locked Bag 3 Haymarket NSW 1240

communications.gov.au / [@CommsAu](#)

arts.gov.au / [@artsculturegov](#)

I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

For Official Use Only

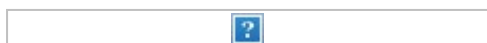
From: messaging-service@post.xero.com <messaging-service@post.xero.com>

Sent: Wednesday, 27 November 2019 12:06 PM

To:   bi.team; Classification Accounts <accounts@classification.gov.au>; 

Samantha <Samantha.@classification.gov.au>

Subject: Invoice INV-1385 from Behavioural Insights (Australia) Pty Ltd for Department of Communications and the Arts



[View invoice](#)

\$52,074.00 due 27 Dec
INV-1385

Dear Samantha,

Please find attached INV-1385 totalling \$52,074.00 for the delivery of draft and final literature review report by Behavioural Insights (Australia).

Payment is due on 27 Dec 2019.

View and pay your bill online:

<https://in.xero.com/oJsqonnXwD1QW9BVkIL8dOTVjIH3KXtJS3kfgokD>

From your online bill you can print a PDF, export a CSV, or create a free login and view your outstanding bills.

If you have any questions, please don't hesitate to contact me via email at

s47F - personal privacy [@bi.team](mailto:[redacted]@bi.team).

Regards,

s47F - personal privacy

Financial Accountant
Behavioural Insights (Australia)



Australian Government
Department of Communications and the Arts

Claim for payment form

How to use this form

This form can be used to request payment for:

- **'Fast Entry' invoices:** non-reportable items under \$10,000 (GST incl) that can't be paid by credit card, leave liabilities, staff reimbursements, travel allowance and international payments
- **'Contract' invoices:** reportable items, grants and purchases over \$10,000 (GST incl).
 - Reportable items include consultancy services and work undertaken by an advertising agency, market research organisation, polling organisation, direct mail organisation or media advertising organisation.
 - Contracts for reportable items must be reported on AusTender regardless of the dollar value of the contract. i.e. even where such contract are for less than \$10,000 (GST incl).

Please note the below changes that took effect from 1 July 2019 with the introduction of TechnologyOne:

- 'Purchase orders' are now known as 'contracts'. To check the contract number for a purchase order set up prior to 1 July 2019, please check the mapping document of former PO numbers to their new TechnologyOne contract number.
- New cost centre codes have been created. Refer to the [mapping document](#) which lists previous cost centres in SAP to the updated cost centre numbers.
- General ledger (or GL) codes are now known as 'natural account expenditure' codes. Please refer to this [mapping document](#) to cross check the old codes with the new ones.

Send the completed form for processing to:

- Arts Division: artsprogramsupport@communications.gov.au
- Everyone else: accounts@communications.gov.au

For more information, visit the [TechnologyOne page on the Finance Hub](#).

CLAIM FOR PAYMENT FORM

Please save a new version of this form before completing it
(File > Save As)

Enquiries to: accounts@communications.gov.au

| | | | |
|------------|---|-------------------------------|----------------------------------|
| Vendor No: | Vendor Name: Behavioural Insights Australia | ABN: 16 613 066 541 | Company Code: Choose an item. |
|------------|---|-------------------------------|----------------------------------|

RCTI INVOICE REQUIRED ☐

| | | | |
|--|-------------------|-----------------------------------|--------------------|
| Invoice/Reference no. | Invoice Date | Date Invoice Received in the Dept | Total (GST incl) |
| INV- 1378 | 29/10/2019 | 29/10/2019 | \$13,018.50 |
| Invoice description (max 40 characters): Provision of research plan to the Department | | | |
| IMS link to invoice (mandatory): Invoice INV-1378 | | | |
| IMS link(s) to other supporting documentation (optional): Click or tap here to enter text. | | | |

Fast Entry Invoice Payment: Non-reportable purchases under \$10,000 (GST incl) unable to be paid by credit card, leave liabilities, staff reimbursements, travel allowance and overseas/international payments

| Natural Account | Amount (GST incl) | GST | Cost Centre | Project Code (if req'd) |
|---------------------|-------------------|----------------|--|-------------------------|
| 62000 - Consultants | \$13,018 | C - GST Incl | 3202 - Online Safety - Research & Reform | Choose an item. |
| Choose an item | | Choose an item | Choose an item | Choose an item. |
| Choose an item | | Choose an item | Choose an item | Choose an item. |
| Choose an item | | Choose an item | Choose an item | Choose an item. |

Contract Invoice Payment: Reportable items, grants and purchases over \$10,000 (GST incl).

Reportable items include consultancy services and work undertaken by an advertising agency, market research organisation, polling organisation, direct mail organisation or media advertising organisation.

| Contract number | Contract line no. | Amount (GST excl) | Amount (GST incl) |
|-----------------|-------------------|-------------------|--------------------|
| 60002773 | 1 | \$11,835 | \$13,018.50 |
| | Choose an item | | |
| | Choose an item | | |
| | Choose an item | | |

Expenditure Approved

I the Delegate, confirm that the payment is within my delegated financial limit to administer an arrangement and that all appropriate milestones and/or conditions specific to the payment within the relevant arrangement have been met.

Name: **Samantha** s47F - personal priv

Position: Assistant Director

Date: **30/10/2019**

Signature:

Requesting Officer

I certify that the goods or services have been received and/or invoice is correct for payment and to the best of my knowledge has not been previously requested for payment or paid on a departmental credit card.

Name: **Samantha** s47F - personal priv

Date: **30/10/2019**

Phone number: **02 9289 7117**

Signature:

If you work in Arts Division, send the completed form to artsprogramsupport@communications.gov.au. All other divisions, send the completed form to accounts@communications.gov.au. It would be appreciated if you could also please include IMS links in your covering email.

From: s47F - perso Samantha
To: s47F - personal privacy
Subject: RE: Quote to update 2019 literature review [SEC=OFFICIAL]
Date: Thursday, 15 July 2021 11:30:00 AM
Attachments: [image001.png](#)

OFFICIAL

Hi s47F - perso sounds good!

Thanks

Sam

OFFICIAL

From: s47F - personal privacy <s47F - personal privacy@bi.team>
Sent: Thursday, 15 July 2021 9:28 AM
To: s47F - personal privacy Samantha <s47F - personal privacy@classification.gov.au>
Subject: Re: Quote to update 2019 literature review [SEC=OFFICIAL]

Thanks Sam. Our team are working on it now, so will have something through to you early next week, is that okay?

Kind regards,

s47F - perso

On Wed, 14 Jul 2021 at 16:57, s47F - personal privacy Samantha <[s47F - personal privacy@classification.gov.au">Samantha.s47F - personal privacy@classification.gov.au](mailto:Samantha. wrote:

OFFICIAL

Hi s47F - perso I think the latter will be fine.

Thanks

Sam

OFFICIAL

From: s47F - personal privacy <s47F - personal privacy@bi.team>
Sent: Wednesday, 14 July 2021 4:41 PM
To: s47F - personal privacy Samantha <[s47F - personal privacy@classification.gov.au">Samantha.s47F - personal privacy@classification.gov.au](mailto:Samantha.
Subject: Re: Quote to update 2019 literature review [SEC=OFFICIAL]

Thanks Sam, that is helpful.

We will put a quote together and get to you as soon as possible; what level of detail do you require? A full proposal (as per the last RFQ process) or would you be happy with a summary version - our approach & the resource required to complete the update?

Kind regards,

s47F - perso

On Wed, 14 Jul 2021 at 16:26, [REDACTED] Samantha
<[REDACTED]@classification.gov.au> wrote:

OFFICIAL

Hi [REDACTED] ideally we would want it finalised in the next 4-6 weeks.

Yes, the same research questions as in the final review you provided in 2019. I think the list below looks about right with the addition of considering generalisability of international research to Australia. I've attached the final for your reference.

Sam

Samantha [REDACTED]

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

[REDACTED]@infrastructure.gov.au

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

infrastructure.gov.au



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

From: [REDACTED] <[REDACTED]@bi.team>

Sent: Wednesday, 14 July 2021 4:09 PM

To: [REDACTED] Samantha <[REDACTED]@classification.gov.au>

Subject: Re: Quote to update 2019 literature review [SEC=OFFICIAL]

Dear Samantha,

Our team would be delighted to update the literature review from 2019.

When would you like this delivered by?

And just to confirm, these same research questions would be addressed:

Aggression

1. What are the key findings about violent games and aggression emerging from international research?
2. What is the relationship between violent and extremely violent video games and aggression in Australian research?

Attitudes towards women

This message has been issued by the Department of Infrastructure, Transport, Regional Development and Communications. The information transmitted is for the use of the intended recipient only and may contain confidential and/or legally privileged material.

Any review, re-transmission, disclosure, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited and may result in severe penalties.

If you have received this e-mail in error, please notify the Department on (02) 6274-7111

and delete all copies of this transmission together with any attachments.

--

s47F - personal privacy

New Business & Project Manager

Mob: s47F - personal privacy

s47F - personal privacy [bi.team](#) pronouns: she/her/hers



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>



The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network. For more information on how we process personal data, including on how to opt-out of receiving emails from us please see: <https://www.bi.team/privacy-policy>.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

Disclaimer

This message has been issued by the Department of Infrastructure, Transport, Regional Development and Communications. The information transmitted is for the use of the intended recipient only and may contain confidential and/or legally privileged material.

Any review, re-transmission, disclosure, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited and may result in severe penalties.

If you have received this e-mail in error, please notify the Department on (02) 6274-7111 and delete all copies of this transmission together with any attachments.

--

s47F - personal privacy

New Business & Project Manager

Mob: s47F - personal privacy

s47F - personal privacy bi.team pronouns: she/her/hers



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>



The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network. For more information on how we process personal data, including on how to opt-out of receiving emails from us please see: <https://www.bi.team/privacy-policy>.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

Disclaimer

This message has been issued by the Department of Infrastructure, Transport, Regional Development and Communications. The information transmitted is for the use of the intended recipient only and may contain confidential and/or legally privileged material. Any review, re-transmission, disclosure, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited and may result in severe penalties.

If you have received this e-mail in error, please notify the Department on (02) 6274-7111 and delete all copies of this transmission together with any attachments.

--

s47F - personal privacy

New Business & Project Manager

Mob: s47F - personal privacy

s47F - personal privacy bi.team pronouns: she/her/hers



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>



The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network. For more information on how we process personal data, including on how to opt-out of receiving emails from us please see: <https://www.bi.team/privacy-policy>.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

From: [Samantha](#)
To: [Samantha](#)
Subject: RE: Quote to update 2019 literature review [SEC=OFFICIAL]
Date: Thursday, 22 July 2021 2:07:00 PM
Attachments: [image001.png](#)

OFFICIAL

Hi [Samantha](#) thanks for the quote. I will get back to you soon on next steps.
 Sam

Samantha

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

[Samantha](#) [infrastructure.gov.au](#)

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

[infrastructure.gov.au](#)



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

From: [Samantha](#)
Sent: Monday, 19 July 2021 2:12 PM
To: [Samantha](#)
Subject: Re: Quote to update 2019 literature review [SEC=OFFICIAL]

Dear Sam,

I hope you had a nice weekend.

Please see attached our quote for the literature review update.

Please do not hesitate to contact me if you wish to discuss our quote further.

Kind regards,

[Samantha](#)
 On Thu, 15 Jul 2021 at 11:31, [Samantha](#) <[Samantha](#) [classification.gov.au](#)> wrote:

OFFICIAL

Hi [Samantha](#) sounds good!

Thanks

Sam

OFFICIAL

From: [Samantha](#) <[Samantha](#) [bi.team](#)>
Sent: Thursday, 15 July 2021 9:28 AM
To: [Samantha](#) <[Samantha](#) [classification.gov.au](#)>
Subject: Re: Quote to update 2019 literature review [SEC=OFFICIAL]

Thanks Sam. Our team are working on it now, so will have something through to you early next week, is that okay?

Kind regards,

[Samantha](#)
 On Wed, 14 Jul 2021 at 16:57, [Samantha](#)

<Samantha. [REDACTED] classification.gov.au> wrote:

OFFICIAL

Hi [REDACTED] I think the latter will be fine.

Thanks

Sam

OFFICIAL

From: [REDACTED] <[REDACTED] bi.team>

Sent: Wednesday, 14 July 2021 4:41 PM

To: [REDACTED] Samantha <Samantha. [REDACTED] classification.gov.au>

Subject: Re: Quote to update 2019 literature review [SEC=OFFICIAL]

Thanks Sam, that is helpful.

We will put a quote together and get to you as soon as possible; what level of detail do you require? A full proposal (as per the last RFQ process) or would you be happy with a summary version - our approach & the resource required to complete the update?

Kind regards,

[REDACTED]
On Wed, 14 Jul 2021 at 16:26, [REDACTED] Samantha

<Samantha. [REDACTED] classification.gov.au> wrote:

OFFICIAL

Hi [REDACTED] ideally we would want it finalised in the next 4-6 weeks.

Yes, the same research questions as in the final review you provided in 2019. I think the list below looks about right with the addition of considering generalisability of international research to Australia. I've attached the final for your reference.

Sam

Samantha [REDACTED]

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

[Samantha. \[REDACTED\]@infrastructure.gov.au](mailto:Samantha.[REDACTED]@infrastructure.gov.au)

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

infrastructure.gov.au



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

From: [REDACTED] <[REDACTED] bi.team>

Sent: Wednesday, 14 July 2021 4:09 PM

To: [REDACTED] Samantha <Samantha. [REDACTED] classification.gov.au>

Subject: Re: Quote to update 2019 literature review [SEC=OFFICIAL]

Dear Samantha,

Our team would be delighted to update the literature review from 2019.

When would you like this delivered by?

And just to confirm, these same research questions would be addressed:

Aggression

1. What are the key findings about violent games and aggression emerging from international research?
2. What is the relationship between violent and extremely violent video games and

aggression in Australian research?


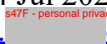
Attitudes towards women

1. What are the key findings about violent games, aggression and attitudes to women emerging from international research?
2. What is the relationship between violent and extremely violent video games and attitudes towards women in Australian research?


Mental Health outcomes

1. What are the key findings of international research on how violent or extremely violent games impact the mental health of young game players?
2. How do violent or extremely violent games impact the mental health of young game players in Australia?

Kind regards,

On Wed, 14 Jul 2021 at 15:36,  Samantha
<classification.gov.au">Samantha.classification.gov.au> wrote:

OFFICIAL

Good afternoon 

In November 2019 Behavioural Insights completed a literature review for our Department on violent video games (DCON1991- under the DSS READ Panel). We are looking to update this literature review with any relevant material since the original was done. The scope of the review (topics covered) would stay the same. We would like BI to provide a quote for this work if possible. Please feel free to contact me if you have any questions.

Kind regards

Samantha 

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

infrastructure.gov.au">Samantha.infrastructure.gov.au

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

infrastructure.gov.au



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

Disclaimer

This message has been issued by the Department of Infrastructure, Transport, Regional Development and Communications. The information transmitted is for the use of the intended recipient only and may contain confidential and/or legally privileged material.

Any review, re-transmission, disclosure, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited and may result in severe penalties.

If you have received this e-mail in error, please notify the Department on (02) 6274-7111

and delete all copies of this transmission together with any attachments.

--

s47F - personal privacy

New Business & Project Manager

Mob: s47F - personal privacy

s47F - personal privacy [bi.team](#) pronouns: she/her/hers



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>



The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network. For more information on how we process personal data, including on how to opt-out of receiving emails from us please see:

<https://www.bi.team/privacy-policy>.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd.

Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

Disclaimer

This message has been issued by the Department of Infrastructure, Transport, Regional Development and Communications. The information transmitted is for the use of the intended recipient only and may contain confidential and/or legally privileged material.

Any review, re-transmission, disclosure, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited and may result in severe penalties.

If you have received this e-mail in error, please notify the Department on (02) 6274-7111

and delete all copies of this transmission together with any attachments.

--

s47F - personal privacy

New Business & Project Manager

Mob: s47F - personal privacy

s47F - personal privacy [bi.team](#) pronouns: she/her/hers



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>



The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network. For more information on how we process personal data, including on how to opt-out of receiving emails from us please see:

<https://www.bi.team/privacy-policy>.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

Disclaimer

This message has been issued by the Department of Infrastructure, Transport, Regional Development and Communications. The information transmitted is for the use of the intended recipient only and may contain confidential and/or legally privileged material.

Any review, re-transmission, disclosure, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited and may result in severe penalties.

If you have received this e-mail in error, please notify the Department on (02) 6274-7111

and delete all copies of this transmission together with any attachments.

--

s47F - personal privacy

New Business & Project Manager

Mob: s47F - personal privacy

s47F - personal privacy [bi.team](https://www.bi.team) pronouns: she/her/hers



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>



The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network. For more information on how we process personal data, including on how to opt-out of receiving emails from us please see: <https://www.bi.team/privacy-policy>.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

Disclaimer

This message has been issued by the Department of Infrastructure, Transport, Regional Development and Communications. The information transmitted is for the use of the intended recipient only and may contain confidential and/or legally privileged material. Any review, re-transmission, disclosure, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited and may result in severe penalties.

If you have received this e-mail in error, please notify the Department on (02) 6274-7111 and delete all copies of this transmission together with any attachments.

--

s47F - personal privacy

New Business & Project Manager

Mob: s47F - personal privacy

s47F - personal privacy [bi.team](#) pronouns: she/her/hers



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000



<https://www.bi.team>



The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network. For more information on how we process personal data, including on how to opt-out of receiving emails from us please see: <https://www.bi.team/privacy-policy>.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

From:  Samantha
To: [Phillips, Lachlan](#)
Cc:  Margaret
Subject: delegate authorisation for update to literature review on violent video games [SEC=OFFICIAL]
Date: Tuesday, 20 July 2021 4:06:00 PM
Attachments: [image001.png](#)
[Quote Literature Review Refresh - 2021.pdf](#)

OFFICIAL

Dear Lachlan

Following discussion about updating a 2019 literature review on violent video games, we have approached the authors of the review, Behavioural Insights Australia, to provide a quote to update their report. They have provided a quote for \$17,450 plus GST to conduct the work and anticipate being able to complete it by the end of August. I have attached the quote for your reference. Behavioural Insights Australia will be procured through the Research Evaluation and Data Panel.

As the amount is greater than \$10,000, we will need to register the procurement, which will first require your approval. If you would like to proceed, can you please reply to this email with approval of this procurement?

Thanks and regards

Samantha 

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

[Samantha. !\[\]\(3cb60d42b10e53f9522bb0b392c1c4cd_img.jpg\)@infrastructure.gov.au](#)

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

[infrastructure.gov.au](#)



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

From: [Phillips, Lachlan](#)
To: [Samantha](#)
Cc: [Margaret](#)
Subject: RE: delegate authorisation for update to literature review on violent video games [SEC=OFFICIAL]
Date: Wednesday, 21 July 2021 9:16:19 AM
Attachments: [image001.png](#)

OFFICIAL

Dear Sam,

Approved.

Kind regards,

Lachlan Phillips

a/g Assistant Secretary • Classification Branch • Online Safety, Media and Platforms Division

lachlan.phillips@classification.gov.au

P +61 2 6271 7941 • M [s47F - personal privacy](#)

GPO Box 594 Canberra, ACT 2601

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

infrastructure.gov.au



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respects to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

From: [Samantha](#) <[Samantha.](#)[s47F - personal privacy](#)[classification.gov.au](#)>
Sent: Tuesday, 20 July 2021 4:07 PM
To: Phillips, Lachlan <[Lachlan.Phillips@Classification.gov.au](#)>
Cc: [Margaret](#) <[Margaret.](#)[s47F - personal privacy](#)[communications.gov.au](#)>
Subject: delegate authorisation for update to literature review on violent video games [SEC=OFFICIAL]

OFFICIAL

Dear Lachlan

Following discussion about updating a 2019 literature review on violent video games, we have approached the authors of the review, Behavioural Insights Australia, to provide a quote to update their report. They have provided a quote for \$17,450 plus GST to conduct the work and anticipate being able to complete it by the end of August. I have attached the quote for your reference. Behavioural Insights Australia will be procured through the Research Evaluation and Data Panel.

As the amount is greater than \$10,000, we will need to register the procurement, which will first require your approval. If you would like to proceed, can you please reply to this email with approval of this procurement?

Thanks and regards

Samantha

s47F - personal

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

Samantha.s47F@infrastructure.gov.au

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

infrastructure.gov.au



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL



Australian Government

Department of Infrastructure, Transport, Regional Development and Communications

Minute

Procurement for update to 2019 literature review on violent video games

Recommendation

That you approve the procurement of Behavioural Insights Australia to update their 2019 literature review on the impacts of violent video games for a fixed fee of \$17,450 excl. GST.

Signed _____ Date: / / 2021

Delegate: Lachlan Phillips, Acting Assistant Secretary, Classification Branch

Issues

The Department is seeking to update a 2019 literature review on impacts of violent and extremely violent video games, with the aim of publishing the final report. The update will assist with informing current policy development including for classification reform and the work of the Classification Board.

The Department procured the 2019 review from the Department of Social Services' Research, Evaluation and Data (READ) panel (SON3385995). The 2019 contract was awarded to Behavioural Insights Australia who completed the review to a high standard and in an efficient manner.

We propose to re-engage Behavioural Insights Australia through the READ panel. We consider Behavioural Insights Australia to be uniquely qualified to conduct the update in an efficient and cost-effective manner, and to a high standard, being the authors of the original literature review. Due to the panel arrangement, the Department is able to make a direct approach.

Behavioural Insights Australia provided a [quote](#) to conduct the update for \$17,450 plus GST. The update will address the same research questions as the 2019 review, incorporating all relevant academic research completed since the original review. We consider this value for money, particularly as Behavioural Insights Australia has advised that it can provide an updated literature review within a short time frame (approximately six weeks from receiving an Official Order).

Contact Officer: Samantha s47f - personal
Assistant Director
Reform Policy, Classification Branch

From: [Phillips, Lachlan](#)
To: [Samantha](#)
Cc: [Margaret](#)
Subject: RE: Procurement minute violent video games literature review update 2021.docx [SEC=OFFICIAL:Sensitive]
Date: Wednesday, 28 July 2021 10:59:11 AM
Attachments: [image001.png](#)

OFFICIAL:Sensitive

Thanks Sam,
 I have signed.
 Cheers,
 Lachlan

OFFICIAL:Sensitive

From: [Samantha](#)
Sent: Wednesday, 28 July 2021 9:48 AM
To: Phillips, Lachlan
Cc: [Margaret](#)
Subject: Procurement minute violent video games literature review update 2021.docx
 [SEC=OFFICIAL:Sensitive]

OFFICIAL:Sensitive

Record [Procurement minute violent video games literature review update](#)
 Title [2021.docx](#)
 Record Number PAD/21/64137

Dear Lachlan

Please find attached a procurement minute regarding the proposed update to the 2019 literature review on violent video games for your approval. I will arrange for Sharon to print a copy for your signature.

Kind regards

Samantha

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

[Samantha](#) [infrastructure.gov.au](#)

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

[infrastructure.gov.au](#)



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL:Sensitive



Australian Government

Department of Infrastructure, Transport, Regional Development and Communications

Minute

Procurement for update to 2019 literature review on violent video games

Recommendation

That you approve the procurement of Behavioural Insights Australia to update their 2019 literature review on the impacts of violent video games for a fixed fee of \$17,450 excl. GST.

Signed

Date: 23 / 07 / 2021

Delegate:

Lachlan Phillips, Acting Assistant Secretary, Classification Branch

Issues




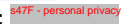
The Department is seeking to update a 2019 literature review on impacts of violent and extremely violent video games, with the aim of publishing the final report. The update will assist with informing current policy development including for classification reform and the work of the Classification Board.

The Department procured the 2019 review from the Department of Social Services' Research, Evaluation and Data (READ) panel (SON3385995). The 2019 contract was awarded to Behavioural Insights Australia who completed the review to a high standard and in an efficient manner.

We propose to re-engage Behavioural Insights Australia through the READ panel. We consider Behavioural Insights Australia to be uniquely qualified to conduct the update in an efficient and cost-effective manner, and to a high standard, being the authors of the original literature review. Due to the panel arrangement, the Department is able to make a direct approach. ✓

Behavioural Insights Australia provided a quote to conduct the update for \$17,450 plus GST. The update will address the same research questions as the 2019 review, incorporating all relevant academic research completed since the original review. We consider this value for money, particularly as Behavioural Insights Australia has advised that it can provide an updated literature review within a short time frame (approximately six weeks from receiving an Official Order).


Contact Officer: Samantha 547F - personal pri
Assistant Director
Reform Policy, Classification Branch

From:  Samantha
To:  bi.team
Cc:  Margaret; 
Subject: Official order for violent videogames literature review update [SEC=OFFICIAL]
Date: Thursday, 29 July 2021 4:35:00 PM
Attachments: [image001.png](#)
[Official Order BIA 10023006.pdf](#)
[Official Order BIA 10023006.docx](#)

OFFICIAL

Dear 

As discussed, please find attached an Official Order to carry out the work as per your quote received on Monday 19 July 2021, to update BI's 2019 literature review on violent video games.

Please sign and return the attached to my manager, Margaret  (copied into this email) by COB tomorrow.

If you have any queries regarding the attached, please contact me this afternoon or Margaret on 02 6271 7070 tomorrow.

Otherwise I will be in touch on Monday to organise a call with the project team/lead.

Kind regards

Samantha 

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

@infrastructure.gov.au">Samantha.@infrastructure.gov.au

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

infrastructure.gov.au



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

Registration no. 10023006

SCHEDULE 5 – OFFICIAL ORDER TEMPLATE – STATEMENT OF WORK

This Official Order is placed on 30 July 2021. The Official Order is placed pursuant and subject to the terms and conditions of the Deed between the Department of Social Services and Behavioural Insights Australia dated 29 March 2017 and with Deed number 6002773 ("Deed").

The Customer placing the Official Order is the Department of Infrastructure, Transport, Regional Development and Communications.

Item A [Services and Subcontractors]

Details of the Services

Services Categories

The Supplier will provide Services in relation to the following Services Category/Categories set out below.

| | | |
|----|---|-------------------------------------|
| 1. | Social Policy Research Services Category | <input checked="" type="checkbox"/> |
| 2. | Evaluation and Program Review Services Category | <input type="checkbox"/> |
| 3. | Investment in Data Services Category | <input type="checkbox"/> |
| 4. | Professional Development Services Category | <input type="checkbox"/> |

Project and objectives

Title: The impacts of violent video games from an Australian perspective: 2021

The Department of Infrastructure, Transport, Regional Development and Communications (the Department) is seeking to update a 2019 literature review it commissioned from Behavioural Insights Australia on impacts of violent and extremely violent video games. The updated literature review will address the same research questions as the 2019 review, incorporating all relevant academic research completed since the original review. The research will focus on the following:

1. In Australian and international research, what is the relationship between violent or extremely violent video games and the following traits in players:
 - a. Aggression
 - b. Negative attitudes to women
 - c. Poor mental health (particularly in young people)?
2. Have there been any significant changes in findings in relation to the above since 2019?

3. Are international research findings from comparable countries still considered generalisable to Australia and is research conducted in other countries still considered useful for policy makers in Australia?

Background

Over recent decades, there has been considerable research on the possible effects of playing violent video games, in particular the extent to which these games cause aggressive behaviour or attitudes. Much of the research relating to the impacts of violent video games on behaviour and attitudes has been conducted in the United States and Europe. While there has been a significant amount of research conducted, findings have continued to be highly contested.

The Department, in consultation with the Department of Health, commissioned a literature review on violent computer games in 2019. The original review considered the impacts of violent computer games in relation to aggression, attitudes to women and youth mental health. The literature review also considered the generalisability of international research findings to an Australian context.

Project Details, objectives and Milestones

The Department is seeking to update a review of academic research literature on the effects of violent computer games completed by Behavioural Insights Australia in 2019. The updated review of academic literature will address the same questions as the original review focussing on material from 2019 to the present.

A high quality draft literature review report, complete with recommendations and appropriate referencing, must be provided to the Department by Friday 20 August 2021. A final version incorporating the Department's comments must be provided by Friday 3 September 2021. All material to be reviewed is to be sourced by the research provider, and any costs incurred in procuring this material are included in the costing given in the quotation provided by Behavioural Insights Australia.

| Action | Date |
|--|--------------------|
| Execution of contract (Official Order) | Friday 30 July |
| Inception meeting | Monday 2 August |
| Provision of draft report to Department | Friday 20 August |
| Provision of Departmental comments following review of draft | Friday 27 August |
| Provision of final report to Department | Friday 3 September |

Skills

Experience performing systematic literature reviews. Ability to apply international insights to the Australian context.

Subcontractors (clause 2.7 of Schedule 4)

Subcontractor 1

Not applicable.

Business Continuity Plan (clause 2.10 of Schedule 4)

The Supplier is not required to maintain a Business Continuity Plan.

Knowledge Transfer (clause 18 of Schedule 4)

The Supplier is required to provide knowledge transfer assistance to the Customer on termination or on expiration of the Contract in accordance with clause 18 of Schedule 4.

Item B [Contract Material]

As specified under **Project Details, objectives and Milestones**.

The final literature review report incorporating any comments from the Department must be of publication quality. All documents are to be submitted in Microsoft Word and must comply with Web Content Accessibility Guidelines 2.0 (see more information under Item N below).

Both draft and final literature review reports are to contain referencing consisting of a full bibliography and citations using a recognised format (for example the American Psychological Association [APA] style).

Item C [Contract Commencement and Timeframe]

Contract Commencement Date (clause 2.1.1 of Schedule 4)

The Contract Commencement Date is Friday 30 July.

Contract Completion Date (clause 2.1.1 of Schedule 4)

The Contract Completion Date is Friday 3 September.

Timeframe (clause 2.2.1(d) of Schedule 4)

The Supplier must perform and deliver the following Services to the Customer:

| No | Description | Requirements or Specifications | Milestone/Due date |
|-----------|---|---|---------------------------|
| 1 | Inception meeting (videoconference) | Background briefing, confirmation of final scope, agreement on key contacts. | Monday 2 August |
| 2 | Provision of draft report to Department | A high quality draft literature review report, addressing each of the points specified in Item A under Project Details, objectives and Milestones and with recommendations and appropriate referencing. | Friday 20 August |
| 3 | Provision of final report to Department | Publication standard final literature review report incorporating comments on Draft received from Department. | Friday 3 September |

Item D [Fees]

The fees do not exceed the pricing set out in Schedule 3 to the Deed.

Milestones (clause 3.1.1(a) of Schedule 4)

The total fees payable to the Supplier by the Customer are \$19,195 (GST inclusive), payable by the following Instalments:

| Milestone | Milestone Achievement Criteria | Milestone Payment Amount | Milestone Due Date |
|------------------|---|---------------------------------|---------------------------|
| MS [3] | Provision of final report to Department | \$19,195 | Friday 3 September |
| Total | | \$19,195 | |

Staffing costs (clause 3.1.1(a) of Schedule 4)

The fees payable to the Supplier by the Customer will be calculated in accordance with the following table, payable in monthly Instalments (in arrears):

| Personnel (by position) | Fees - hourly (GST exclusive)* | Fees – daily rate 7.5 hours (GST exclusive)* | GST component | Time to be spent by Personnel | Total cost (GST inclusive) |
|----------------------------|---|--|------------------|-------------------------------------|----------------------------------|
| Principal Advisor | N/A | \$4,100 | \$410 | 0.5 days | \$2,255 |
| Senior Advisor | N/A | \$3,400 | \$340 | 3 days | \$11,220 |
| Advisor | N/A | \$2,600 | \$260 | 2 days | \$5,720 |
| | | | | | \$19,195 |

* Fees specified are inclusive of on-costs (incorporating workers' compensation, superannuation and leave entitlements).

Item E [Expenses and Costs]

All expenses associated with delivery of the project will be covered by the fees contained in the tender provided by Behavioural Insights Australia.

Item F [Invoices]**Invoices (clause 3 of Schedule 4)**

The Supplier must submit correctly rendered tax invoices to the Customer by either:

Post: Department of Infrastructure, Transport, Regional Development and Communications, GPO Box 594, CANBERRA ACT 2601; or

Email: Invoices@infrastructure.gov.au

A correctly rendered tax invoice is one which includes:

- (a) the Reference / Contract / Purchase Order number;
- (b) the name of the Customer's Contact Officer;
- (c) the Department of Infrastructure, Transport, Regional Development and Communications ABN (86267354017)
- (d) the title of the Services;
- (e) details the fees payable;
- (f) details expenses and costs payable, and attaches original receipts;
- (g) contains written certification in a form acceptable to the Customer that the Supplier has paid all remuneration, fees or other amounts payable to an employee, agent or Subcontractor performing Services under this Contract; and
- (h) meets the requirements of a tax invoice under the GST Act.

The due date for payment by the Customer is 30 days after receipt by the Customer of a correctly rendered invoice.

Payment will be effected by electronic funds transfer (EFT) to the Supplier's bank account specified at Schedule 3 of the Deed.

Item G [Intellectual Property]

MODEL 1— Customer ownership of Intellectual Property in Contract Material with limited license to Supplier.

Item H [Existing Material]

"EAST – Four simple ways to apply behavioural insights". Research framework published by the Behavioural Insights Team in 2014.

Item I [Moral Rights]

None specified.

Item J [Use of Commonwealth Material]

2019 literature review by Behavioural Insights Australia, The impacts of violent video games from an Australian perspective.

Item K [Facilities and Assistance]

None specified.

Item L [Confidential Information]

None specified on the part of the Supplier. On the part of the Department, all matters relating to this procurement, including correspondence, notes from discussions, research plan, draft and final reports, recommendations and other deliverables required to be provided under this Official Order are to remain confidential until advised, in writing, that they are no longer confidential.

Item M [Security Requirements]

The Supplier must comply with the PSPF and ISM.

Item N [Standards and Best Practice]

Standards for Research on Human Subjects (clause 2.9 of Schedule 4)

None specified.

Additional Standards and Guidelines (clause 2.2.1c of Schedule 4)

None specified.

Standards for Accessibility of Services (clause 14.3.3 of Schedule 4)

The Supplier must ensure that all documents, or other deliverables] provided by the Supplier as part of the Services comply with the Web Content Accessibility Guidelines 2.0 as developed by the World Wide Web Consortium (WC3) and endorsed by the Commonwealth's Web Accessibility National Transition Strategy').

In order for the Department to comply with WCAG2.0 requirements, any web-based products (websites and web applications and any documents which are intended to be available on Departmental websites) which include text and images must be provided in a source document. As a minimum:

- Microsoft Office 2007 or higher (this includes Word, Excel, PowerPoint) is required;

- a sematic heading structure (Heading 1, Heading 2, etc.);
- other structural elements (paragraphs, dot points, quotes, emphasised text, etc.);
- images with descriptive text (alt text);
- a linked table of contents;
- correct reading and tab order;
- 2 file formats (ie PDF and Word); and
- summary text that you will publish in HTML to aid document discovery.

Further information regarding policies relating to accessibility, are available on the Department of Finance website ([Web Accessibility National Transition Strategy](#)) and the Digital Transformation Office's Digital Service Standard ([Digital Service Standard](#)).

Indigenous Procurement Policy (clause 14.4 of Schedule 4)

Clauses 14.4.3 to 14.4.5 of Schedule 4 do not apply to the Contract.

As at the Contract Commencement date, the Contract is not a High Value Contract.

Item O [Specified Personnel]

s47F - personal privacy Principal Advisor – Quality Assurance

s47F - personal privacy Senior Research Advisor – Project lead

s47F - personal privacy – Research Advisor- Project Support

Item P [Insurance]

The Supplier is required to maintain minimum levels of professional indemnity, public liability and workers' compensation insurance under both the Deed and the Contract.

No additional insurance is specified.

Item Q [Contact Officers]

The Customer's Contact Officer is the person holding the position of Assistant Director, Reform Policy, currently:

| | |
|------------------|---|
| Name of person | Samantha s47F - personal privacy |
| Postal Address | Locked Bag 3, Haymarket, Sydney NSW 1240 |
| Physical Address | Level 6, 23-33 Mary Street, Surry Hills NSW 2010 |
| Email | Samantha. s47F - personal privacy @classification.gov.au |
| Phone | 02 9289 7117 |
| Facsimile | None |

The Supplier's Contact Officer is the person holding the position of Project Manager, currently:

| | |
|------------------|--|
| Name of person | s47F - personal privacy |
| Postal Address | Suite 3, Level 13, 9 Hunter Street Sydney 2000 |
| Physical Address | As above |
| Email | s47F - personal privacy @bl.team |
| Phone | s47F - personal privacy |

Facsimile n/a

A party may change their Contact Officer or their details by notifying the other party in writing of the changed details.

Item R [Customer and Addresses for Notices]

For the purposes of the Contract the Customer's and Supplier's addresses for notices are as listed in item Q.

A party may change their address for notices by notifying the other party in writing of the changed details.

Item S [Publications]

Publications

The Supplier must not publish the report without permission, in writing, from the Department.

Item T [Limited Liability]

Not applicable.

Item U [Transfer of Information Outside Australia]

Not applicable.

Item V [Cyber Security]

No additional cyber-security requirements.

SIGNED for and on behalf of

THE COMMONWEALTH OF AUSTRALIA as represented by the Department of Infrastructure, Transport, Regional Development and ^{s47F - personal privacy} tions, by:

Margaret ^{s47F - personal pr} [Signature]

Director, Reform Policy, Classification Branch

On: 30/07/2021

[Insert date]

In the presence of:

^{s47F - personal privacy}

^{s47F - personal privacy}

[Insert name of Witness]

[Signature]

SIGNED for and on behalf of Behavioural Insights Australia, ABN 16 613 066 541 by:

s47F - personal privacy

s47F - personal privacy

[Insert name of Signatory]

Operations Manager APAC

[Signature]

[Insert Signatory's work title]

On:

30/07/21

[Insert date]

In the presence of:

s47F - personal privacy

s47F - personal privacy

[Insert name of Witness]

[Signature]

From: [Samantha](#)
To: [s47F - personal privacy](#)
Cc: [s47F - personal privacy](#)
Subject: RE: Official order for violent videogames literature review update [SEC=OFFICIAL]
Date: Monday, 2 August 2021 3:15:00 PM
Attachments: [image001.png](#)

OFFICIAL

Hi [s47F - personal privacy](#). Thanks for getting in touch.

Being a refresh of BIT's previous work I assume a short brief will do – probably 30 mins or so? This afternoon would actually work really well for me. Otherwise how about 10am tomorrow?

Feel free to send me an invite for whichever of those times works best. My preference is Skype (it's what our Department has to use on our laptops) but if needed I can access Teams or Zoom from a personal device.

Sam

Samantha

[s47F - personal](#)

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

[Samantha](#) [s47F - personal](#) [infrastructure.gov.au](#)

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

[infrastructure.gov.au](#)



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

From: [s47F - personal privacy](#) <[s47F - personal privacy](#)@bi.team>
Sent: Monday, 2 August 2021 2:16 PM
To: [s47F - personal](#) Samantha <[Samantha](#) [s47F - personal privacy](#)@classification.gov.au>
Cc: [s47F - personal privacy](#)
Subject: Re: Official order for violent videogames literature review update [SEC=OFFICIAL]

Hi Sam,

I hope you are well.

I wanted to introduce you, by email, to [s47F - personal privacy](#), who will be the main team

working on the literature review refresh.

We are looking forward to our kick off chat to make sure we are aligned and have any additional context before getting started; is there a time that works best for you this week to schedule this?

Kind regards

s47F - perso
[redacted]

On Fri, 30 Jul 2021 at 12:10, s47F - personal privacy <s47F - personal privacy@bi.team> wrote:

Hi Sam & Margaret,

Please find attached the signed work order.

Cheers,

s47F - personal p
[redacted]

s47F - personal privacy
[redacted]

Operations Manager, Australia and Asia-Pacific

PH: +s47F - personal privacy
[redacted]

[Twitter](#) | [LinkedIn](#)

On Thu, 29 Jul 2021 at 16:35, s47F - personal p Samantha
<[Samantha.s47F - personal privacy@classification.gov.au](#)> wrote:

OFFICIAL

Dear s47F - personal p
[redacted]

As discussed, please find attached an Official Order to carry out the work as per your quote received on Monday 19 July 2021, to update BI's 2019 literature review on violent video games.

Please sign and return the attached to my manager, Margaret s47F - personal p (copied into this email) by COB tomorrow.

If you have any queries regarding the attached, please contact me this afternoon or Margaret on 02 6271 7070 tomorrow.

Otherwise I will be in touch on Monday to organise a call with the project team/lead.

Kind regards

Samantha s47F - personal p
[redacted]

Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

[Samantha.s47F - personal privacy@infrastructure.gov.au](#)

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL

Disclaimer

This message has been issued by the Department of Infrastructure, Transport, Regional Development and Communications. The information transmitted is for the use of the intended recipient only and may contain confidential and/or legally privileged material.

Any review, re-transmission, disclosure, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited and may result in severe penalties.

If you have received this e-mail in error, please notify the Department on (02) 6274-7111

and delete all copies of this transmission together with any attachments.

--

s47F - personal privacy

New Business & Project Manager

Mob: s47F - personal privacy

s47F - personal privacy [bi.team](#) pronouns: she/her/hers



Suite 3, Level 13, 9 Hunter Street, Sydney, New South Wales, 2000

<https://www.bi.team>



The Behavioural Insights Team acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to them and their cultures; and to Elders both past and present.

CONFIDENTIALITY NOTICE: This email and any attachments are confidential and may be subject to legal privilege. Any use, copying or disclosure other than by the intended recipient is unauthorised. If you have received this message in error, please notify the sender immediately by email (or to info-aus@bi.team) and delete this message and any copies from your computer and network. For more information on how we process personal data, including on how to opt-out of receiving emails from us please see: <https://www.bi.team/privacy-policy>.

The views expressed in this email are those of the author and do not necessarily reflect the views of Behavioural Insights Ltd. Behavioural Insights Ltd is a limited company registered in England and Wales. Registration number: 08567792. Registered office: 2nd Floor, 4 Matthew Parker Street, London, SW1H 9NP

The impacts of violent video games from an Australian perspective

Literature Review for the Department of Infrastructure,
Transport, Regional Development and Communications

September 2021

Table of contents

| | |
|--|-----------|
| Executive summary | 3 |
| Our recommendations based on the research findings | 4 |
| 01 / Introduction | 6 |
| 1.1 / Generalisability of international findings to the Australian context | 7 |
| 1.2 / Methodology | 10 |
| 02 / The effect of VVGs on aggression | 13 |
| 2.1 / VVGs are unlikely to cause aggression | 13 |
| World | 13 |
| <i>Variable susceptibility to the effects of VVGs</i> | 18 |
| <i>Overall conclusions from international research</i> | 19 |
| Australia | 20 |
| 2.2 / Extremely violent games do not cause more aggression than VVGs | 21 |
| World | 22 |
| Australia | 23 |
| 2.3 / Conclusions | 23 |
| 03 / The effect of VVGs on attitudes towards women | 24 |
| 3.1 / VVGs do not change attitudes towards women | 24 |
| World | 24 |
| Australia | 26 |
| 3.2 / Conclusions | 26 |
| 04 / The effect of VVGs on young people's mental health | 27 |
| 4.1 / VVGs do not cause negative mental health outcomes in young players | 27 |
| World | 27 |
| Australia | 30 |
| 4.2 / Conclusions | 32 |
| 05 / Recommendations | 33 |
| 5.1 / Aggression | 33 |
| 5.2 / Attitudes towards women | 33 |
| 5.3 / Mental health outcomes | 34 |
| Appendix A | 35 |
| Appendix B | 37 |
| Bibliography | 38 |

Executive summary

Playing video games is a popular pastime among Australians, with 2 out of 3 Australians reporting that they play video games.¹ There is ongoing concern internationally that playing violent or extremely violent video games (VVGs) may lead to negative outcomes, including increased aggression, negative attitudes to women and poor mental health outcomes for young players. While decades of research exists attempting to address these questions, there is ongoing controversy on the effects of VVGs. Meanwhile, community concerns continue to grow alongside technological advances and increasingly realistic and immersive player experiences.

The evidence is therefore of interest to policy makers in Australia. The current review of academic research literature on the effects of VVGs seeks to determine whether there are any gaps in this research from an Australian perspective. At the time of publication, only a small number of studies investigating the impacts of VVGs on behaviour and attitudes have been conducted within Australia. The vast majority of research has been carried out in the United States, Europe and Asia. Here, we assess the extent to which findings from international research can be used to inform an understanding of the potential impact of VVGs in an Australian setting.

Research Finding 1: International research is generalisable to the Australian context

Overall, given the small differences between results on the strength of these associations across cultures, international research is highly relevant and sufficient to our understanding of the relationship between VVGs and aggression in the Australian context. Some small effects of culture on the relationship between VVGs and aggression are apparent, with researchers generally finding that effect sizes of the impact of VVGs on aggression tend to be slightly smaller for Eastern and Hispanic cultures than Western cultures.^{2,3,4} However, the magnitude of these effects across all cultures studied is small, and supports the conclusion that they are helpful in understanding the effects of VVGs on Australian players.

Unlike the aggression literature, little research exists on the cross-cultural generalisability of findings concerning the impact of VVGs on youth mental health and attitudes towards women. However, what research does exist does not suggest that violent content results in VVG players having poor attitudes towards women or negative mental health outcomes.

¹ Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: Interactive Games and Entertainment Association.

² Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

³ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁴ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

Research Finding 2: Evidence suggests that exposure to VVGs does not have a negative impact on aggression.

Internationally there is much debate over the nature of the relationship between VVGs and players' behaviours and attitudes. The current review synthesises findings from the last 12 years to draw up-to-date conclusions as to the impact of VVGs.

Interpreting contradictory findings in the research literature is challenging due to widely varying methodologies, the tendency to only measure short-term outcomes, an overreliance on correlational evidence, and inconsistent definitions and measurements of aggression and attitudes towards women. Much of the academic literature on VVGs is dominated by supporters⁵ and opponents⁶ of the hypothesised link between playing VVGs and aggression. Despite the ongoing controversy, high-quality individual studies that use meaningful measures of aggression, and meta-analyses that control for other likely causes of aggression, converge on the same conclusion: VVGs have little to no meaningful impact on real-world aggressive behaviour.

Research Finding 3: Evidence suggests that exposure to VVGs does not have a negative impact on youth mental health or attitudes to women.

There are also fears that VVGs have other negative effects, namely on players' mental health and their attitudes towards women. The high-quality studies that are available support the same general conclusion as the aggression literature: it is unlikely that violent content in video games meaningfully impacts attitudes towards women and the mental health of young players. The effect of VVGs on attitudes towards women and the mental health of young players are less well studied than aggression. At present there are few high-quality studies and meta-analyses available on these outcomes, and drawing conclusions from individual studies is limited by inconsistent definitions and measures.

Our recommendations based on the research findings

We were asked by the Department of Infrastructure, Transport, Regional Development and Communications to conduct a review of academic literature on the impacts of VVGs relating to attitudes to women, child and youth mental health and aggression to identify any gaps in the research from an Australian perspective that would necessitate the conduct of new research in Australia. Based on the above conclusions, we make the following recommendations to the Department of Infrastructure, Transport, Regional Development and Communications:

- **At present, no further Australian research is needed to understand the relationship between VVGs and aggression.** It is unlikely that additional research in Australia on the effect of VVGs on aggression would meaningfully add to the academic literature. Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the

⁵ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

⁶ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

same conclusion - that there is little to no impact of violent video games on aggression.

- **At present, no further research is recommended to understand the relationship between VVGs and attitudes to women in the Australian context.** While there is a lack of Australian evidence addressing this research question, the highest quality international research from the United States and Western Europe finds no strong evidence that violent content in and of itself causes players to develop negative attitudes towards women.
- **At present, no further Australian research is needed to understand the relationship between VVGs and mental health outcomes in young players.** It is unlikely that there is an underlying causal link between violent games and mental health outcomes among young Australian players. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. Some evidence suggests video games more generally have beneficial effects on youth mental health, while other evidence points to a relationship between excessive video game play and poor mental health. However, VVG content does not appear to affect youth mental health over and above general game play.

01 / Introduction

The purported link between violent video games (VVGs) and real-world violent attitudes and behaviours is a controversial and politicised issue. Mass shootings have been linked to VVGs since the infamous Columbine school shooting in 1999, as the perpetrators were avid players of *Doom*, a graphic first-person shooter game. Mass shootings continue to be linked to VVGs by some politicians and public commentators. However, evidence suggests that not all perpetrators are current or former players of VVGs.⁷

The nature of the relationship between violent and extremely violent video games and players' attitudes and behaviours is also contentious amongst academics.^{8,9,10,11} The controversy around VVGs is fuelled by the rapid pace of game development, which outstrips the pace of academic research. VVGs are increasingly complex, social, and graphic, such that academic studies from only 12 years ago may not apply to current games. Advances in video game graphics have greatly enhanced the realism of games, making them more immersive. Some researchers have argued that video game realism¹² and sexualisation of characters¹³ in immersive games might lead to greater negative impacts of playing video games than more traditional, less immersive video game formats. This has broadened community concerns about the effects of VVGs from aggression and violence to include attitudes towards women and mental health, particularly in young players.

The purpose of this review is to determine the relationship between violent and extremely violent video games and aggression, attitudes towards women, and youth mental health in the Australian context. Due to the relative lack of studies in Australian cohorts, this review is also designed to determine to what degree international findings can be generalised to Australia. Finally, in light of the available evidence and generalisability to Australia, we will form recommendations as to whether further research is needed in Australia to cover gaps in the VVG research.

⁷ Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 19 Aug. 2021].

⁸ Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, 12(5), 353-359.

⁹ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

¹⁰ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological Bulletin*, 136(2), 151.

¹¹ Ferguson, C. J., & Kilburn, J. (2010). Much ado about nothing: The misestimation and overinterpretation of violent video game effects in Eastern and Western nations: Comment on Anderson et al. (2010). *Psychological Bulletin*, 136(2), 174-178.

¹² Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.

¹³ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of immersive, sexually objectifying, and violent video games on hostile sexism in males. *Communication Research Reports*, 35(5), 413-423.

1.1 / Generalisability of international findings to the Australian context

The impacts of VVGs on aggression, attitudes to women and youth mental health are questions of global interest. Internationally, a large body of research has been carried out to attempt to understand these associations, in particular relating to impacts on aggression. As with many questions in other policy areas, in order to reach the most robust conclusions we want to draw widely from the findings of international research. This is particularly the case for the Australian context, given that Australian research is currently limited in this space. In order to draw from international research, we need to first think carefully about how and when findings are likely to generalise across countries and cultures; this is a question posed by social scientists in other contexts for decades. There is some consensus that generalising findings across contexts is most appropriate with rigorous quantitative methodologies, and among studies using large samples.¹⁴ Hence, when looking at the international literature, we have given higher weighting to these studies (refer to section 1.3 below on ‘Strength of Evidence’ for more information about the research we have highlighted in this review).

Our criteria for assessing the generalisability of international research to Australia

Most research on the impact of VVGs has been carried out in countries that are, like Australia, industrialised, economically stable and technologically advanced. A common criticism of attempts to generalise from psychological studies is that participants in psychology studies tend to be Western, Educated, Industrialised, Rich and Democratic (WEIRD). While Australians are classified as WEIRD, globally speaking, most people are not.¹⁵ While not all samples discussed in this review are WEIRD, they are predominantly educated, industrialised, rich and democratic. In other words, only countries that are sufficiently developed such that inhabitants have general access to VVGs and high usage characteristics can provide enough data from which to draw robust conclusions.

While effect sizes are very small across cultures, studies on WEIRD samples tend to produce similar effect sizes, confirming that evidence from these culturally, economically and politically similar countries was highly generalisable to Australia. Samples from socio-economically similar but culturally different countries tend to produce smaller effect sizes in relation to VVGs and aggression and therefore we would consider them less generalisable, and non-WEIRD countries with few socio-economic similarities are associated with even smaller effect sizes, indicating they are the least generalisable. However, it is apparent that any cultural factors mediating the relationship between VVGs and aggression and mental health are small, if not trivial, and therefore even studies classed as having medium generalisability are relevant for understanding the relationship between VVGs and behavioural and attitudinal outcomes.

In this review we have divided the research outlined in the review into that carried out in the international context (‘World’) and in an Australian context (‘Australia’).

¹⁴ Generalizability and Transferability, The WAC Clearinghouse. Retrieved from: <https://wac.colostate.edu/resources/writing/guides/gentrans/> [Accessed 19 Aug. 2021].

¹⁵ Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.

Table 1. How we assessed generalisability to Australia

| Low generalisability to the Australian context | Medium generalisability to the Australian context | High generalisability to the Australian context |
|--|--|---|
| <p>Studies that come from developing nations where social, cultural and political factors are contrasting to those of Western nations.</p> <p>In addition, access to games and technologies associated with gaming are markedly low.</p> | <p>Research comes from countries (predominantly Eastern) that have similar socio-economic conditions to the Australian context, and most studies show cross-cultural similarities in relation to Western contexts. However, there are some small differences in effect sizes between rates of game play and effect sizes (e.g. Japan).</p> <p>Countries include: Japan, Singapore, China, and Taiwan. Also included are studies with Latin/Hispanic cultures.</p> | <p>Carried out in countries that have been shown to have similar gaming characteristics and cultural factors to Australia (primarily Western countries with similar patterns seen in the effects of VVGs).</p> <p>We are confident that the studies detailed can be helpful in understanding the Australian context.</p> <p>Countries include: United Kingdom, United States, Germany, Belgium, France, and the Netherlands.</p> |

Many explanations have been proposed for why culture would be a moderating factor on the impacts of VVGs on aggression, including differences in collectivist values and moral discipline,¹⁶ how violence is contextualised in the media, the context in which video games are played,¹⁷ and variation across cultures in the meaning of being a perpetrator and a victim of aggression.¹⁸ These studies predominantly explore the differences between research outcomes in Eastern (non-WEIRD; predominantly Japan, but also Singapore and China) versus Western (WEIRD; predominantly the United States, the United Kingdom, Australia, Germany, and other European countries) cultures.

While some studies suggest that underlying rates of aggression vary across cultures,¹⁹ the size and direction of the association between the two factors (predictor and outcome) generally remains the same.²⁰ More broadly, correlational research looking at the relationship between media violence exposure and aggressive behaviours across cultures has found few cross-cultural differences.^{21, 22} One comparison of the impact of media violence among seven

¹⁶ Jin, Y., & Li, J. (2014). Cultural differences in the effect of violent video games on adolescent aggression cognition: based on the perspective of meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.

¹⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

¹⁸ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹⁹ Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive Behavior*, 38(4), 298-308.

²⁰ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

²¹ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Personality and Social Psychology Bulletin*, 43, 986-998.

²² Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.

countries (Australia, China, Croatia, Germany, Japan, Romania, and the United States) found no significant differences in the strength of the relationship with aggression across cultures.²³

Some small effects of culture are apparent in the violent video game literature, with researchers generally finding that effect sizes of the impact of VVGs on aggression are slightly smaller for Eastern and Hispanic cultures than Western cultures.^{24,25,26} For example, in a cross-cultural comparison of the impacts of VVGs in Eastern (primarily Japan, but also China, Singapore) and Western (primarily United States) cultures, Anderson et al.²⁷ found larger effects of VVGs on aggression in Western than Eastern countries. However, this finding was only marginally significant, and only apparent in longitudinal research studies. However, in these comparisons, cultural differences are often confounded with differences in research design, meaning that variance could in fact be due to different ways of measuring aggression.

This finding is supported by researchers who argue both that VVGs lead to increased aggression, and those who argue that VVGs have no impact on aggression. For example, Ferguson et al.²⁸ found Eastern samples returned smaller effect sizes, as did Latin/Hispanic samples, than Western samples. Given that effect sizes across all studies analysed by Ferguson et al. were generally small, the differences among culture as a moderating variable were also deemed small. It is also important to note that this meta-analysis looked at all video games, both violent and non-violent. However, they do corroborate Anderson et al.'s argument that culture/ethnicity might somewhat moderate the impact on aggression, with Western samples showing greater effect sizes. Similarly, a subsequent meta-analysis from Prescott et al.²⁹ focusing exclusively on the longitudinal outcomes of VVGs on White, Asian and Hispanic samples found the strongest associations between White samples, intermediate associations with Asian samples and the smallest associations with Hispanic samples (acknowledging that only a small number of studies exist that use Hispanic samples).

There are few studies looking at cross-cultural variations in the impacts of VVGs on attitudes towards women and youth mental health. One cross-cultural study looked at the relationship

²³ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Personality and Social Psychology Bulletin*, 43, 986-998.

²⁴ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

²⁵ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

²⁶ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

²⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

²⁸ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

²⁹ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

between the amount of time spent playing VVGs and mental health in young children.³⁰ Comparisons were made across Eastern and Western European countries (Germany, The Netherlands, Lithuania, Romania, Bulgaria, and Turkey). Across cultures, differences were seen in usage patterns, but once these were controlled for, no differences were found in mental health outcomes across countries. Although there is a relative lack of cross-cultural studies investigating the effects of VVGs on attitudes towards women, as we outline in Section 3.1 below, any effects are more likely to be due to the sexist and sexualised content of games, not violence per se.

1.2 / Methodology

This section outlines the methodology for the present review of academic literature on the impact of VVGs, which includes:

- Definitions for 'aggression' and 'violent video games'
- Criteria and search terms for our scan of the literature
- Criteria for inclusion of the literature in our review

Definitions

Aggression: "Any behaviour directed toward another individual that is carried out with the proximate (immediate) intent to cause harm. In addition, the perpetrator must believe that the behaviour will harm the target, and that the target is motivated to avoid the behaviour."³¹

Violent video games: Although the term is not well-defined in the literature, our review included research on video games that contain *strong violence* and *high impact violence*. These terms are used by Australian Classification as follows:

Strong violence - Refers to violence such as shooting with real-life military weapons and some blood and gore. Video games containing strong violence are rated MA15+, meaning they are legally restricted to people aged 15 years and over.

High impact violence - Refers to violence that is frequent and/or realistic, features content such as decapitation and/or dismemberment, and shows detailed wounds and large amounts of blood and gore. Video games containing high impact violence are rated R18+, meaning they are legally restricted to adults only.³²

Search criteria

A computerised literature search was conducted via Google Scholar, PubMed, ScienceDirect, Web of Science, Proquest and PsycINFO, using relevant search terms (see Table 1 in Appendix A) to identify the most relevant literature.

³⁰ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children? *Social Psychiatry and Psychiatric Epidemiology*, 51(3), 349-357.

³¹ Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, 53, 27-51.

³² Department of Infrastructure, Transport, Regional Development and Communications (n.d.). *Does your child play violent video games?* Retrieved from <https://www.classification.gov.au/classification-ratings/whats-ok-for-children/does-your-child-play-violent-video-games#top>

Using the criteria outlined in this section, over 220 original research articles were collected and reviewed, in addition to meta-analyses and systematic reviews. A large number of studies met the search criteria but were not included in this report as they did not meet the inclusion criteria detailed below. Therefore, the attached bibliography does not reflect an exhaustive list of all extant research on the impacts of VGGs. Rather, it reflects research referenced in the body of the literature review, which synthesises and summarises the highest quality research conducted in the past 12 years.

Inclusion criteria

This review synthesises the highest quality research investigating the impacts of VVGs on aggression, attitudes to women and youth mental health. Due to the increased graphic realism, immersive experience and levels of violent content in modern video games only studies conducted in the past 12 years were included. A systematic scan of the literature revealed hundreds of studies investigating the impacts of VVG's on aggression, attitudes towards women and youth mental health. Due to the volume of poor-quality studies identified, the inclusion criteria were restricted to prioritise only the most rigorous research. This was assessed using the criteria outlined in the Strength of Evidence Table (Table 2) below.

Strength of evidence

Strength of evidence was assessed using the criteria in the table below. This review prioritised research conducted in the past 12 years which had the characteristics outlined in the green High column below. Where high-quality evidence was not available, evidence that was categorised as medium or low was included in order to form conclusions and recommendations. Only eight low-quality studies have been included, and only where higher quality studies were not available. Where low-quality research is referred to this is explicitly labelled within this report. The eight studies we labelled low quality are: an international study on the link between VVGs and attitudes towards women (one study), Australian studies on the impacts of VVG on aggression (three studies) and the mental health of young players (six studies, two of which are also referenced in the section on the impact of VVGs on aggression).

Table 2. How we assessed strength of evidence

| Strength of evidence | | |
|--|---|--|
| Low | Medium | High |
| Evidence of research bias or subject to peer-reviewed criticism. | Correlational studies with a small number of known causes of aggression/attitudes towards women/mental health controlled for. | Correlational studies which have controlled for multiple known causes of aggression/attitudes towards women/mental health. |
| Studies with unvalidated measures of aggression/attitudes towards women/mental health. | Studies which rely on self-report measures only. | Longitudinal or retrospective studies which measure attitudes or behaviour over time. |
| Correlational studies where other known causes of aggression/attitudes towards | Studies with small samples with low generalisability. | Studies with large nationally |

| | | |
|--|--|---|
| <p>women/mental health are not controlled for.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with low or undemonstrated association with real life attitudes or behaviour.</p> | <p>Meta-analyses with evidence of research bias, have been subjected to peer-reviewed criticism or have not been independently replicated.</p> | <p>representative samples.</p> <p>Studies or meta-analyses which have been independently replicated.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with high demonstrated association with real-life attitudes or behaviour.</p> <p>Studies which have adopted open science practices such as pre-registration.</p> <p>Studies which include multiple outcome measures such as self-reports, peer-report and validated measurement scales.</p> <p>Studies which have conducted cross-cultural comparisons or have generalised findings across different contexts.</p> |
|--|--|---|

As stated above, each recommendation set out in this review was made using studies that span this spectrum of research quality. We prioritised studies that meet the criteria for *high* quality, and have made stronger recommendations where more high-quality research was available to draw on. In our recommendations, a *high* degree of research quality indicates that additional research is unlikely to meaningfully contribute to the existing literature.

02 / The effect of VVGs on aggression

2.1 / VVGs are unlikely to cause aggression

| Strength of evidence | Generalisability to Australia |
|--|---|
| High | High-quality studies drawn from the United States, the United Kingdom, Germany, China, Singapore and Australia. |
| The results of high-quality international and Australian studies suggest that the effect of VVGs on aggression is small to non-existent. | |



World

Recent high-quality studies indicate that the link between VVGs and aggression is small to non-existent. Studies that properly control for other known causes of aggression, and those that measure real-world behaviour either find no relationship, or a very small effect of VVGs on aggression.

While only a recent phenomenon, recent pre-registered studies have mostly found no link between VVGs and aggression, nor any other negative effects. In a pre-registered trial conducted in the UK, researchers interviewed a large sample of British adolescents and their parents or carers. They found no association between exposure to VVGs over the past month and real-life aggressive behaviour as measured by carer assessment.³³ Similarly, three pre-registered randomised controlled trials conducted in the United States found no effect of VVGs on short-term measures of aggressive inclinations,³⁴ hostility³⁵ or aggressive behaviour.³⁶ Two recent pre-registered trials from New Zealand³⁷ and the United States³⁸ also found no effect of VVGs on aggressive behaviour, even when participants played an immersive violent virtual reality game (which some have argued would be more likely to

³³ Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society Open Science*, 6(2), 171474.

³⁴ McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.

³⁵ Ferguson, C. J., Trigani, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric Quarterly*, 87(1), 49-56.

³⁶ Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337

³⁷ Drummond, A., Sauer, J. D., Ferguson, C. J., Cannon, P. R., & Hall, L. C. (2021). Violent and non-violent virtual reality video games: Influences on affect, aggressive cognition, and aggressive behavior. Two pre-registered experiments. *Journal of Experimental Social Psychology*, 95, 104119.

³⁸ Ferguson, C. J., Gryshyna, A., Kim, J. S., Knowles, E., Nadeem, Z., Cardozo, I., ... & Willis, E. (2021). Video games, frustration, violence, and virtual reality: Two studies. *British Journal of Social Psychology*. DOI: 10.1111/bjso.12471.

produce harmful effects). Additionally, two pre-registered longitudinal studies found no association between VVG exposure and aggression measured at a later time.³⁹ For instance, a study of over 3,000 Singaporean youth found no association between playing VVGs and aggression measured two years later.⁴⁰ The size of the (non-significant) relationship was so small that the authors concluded it would take more hours than exist in a day (27 hours) of playing M-rated games to produce clinically noticeable changes in aggression.

In the past 12 years, seven meta-analyses have been conducted to synthesise the literature investigating the effect of VVGs on aggression.^{41,42,43,44,45,46} Combined, these meta-analyses cover hundreds of correlational, experimental and longitudinal studies involving hundreds of thousands of participants. The findings and interpretations of these meta-analyses diverge across papers. In an attempt to find common ground, one study analysed three prominent meta-analyses and came to the conclusion that VVGs have a small effect on aggression.⁴⁷ However, others have argued that the link is overstated and any effect is so small it is practically meaningless.⁴⁸ We note that the Drummond & Sauer paper is, as at August 2021, available only as a preprint and has yet to undergo peer review.

There are several reasons to question whether any effect of VVGs on aggression in fact exists:

- The meta-analyses conducted include many laboratory experiments with poor methodology. They rely on artificial measures of short-term aggression, with unproven correlation to real-life aggressive behaviour.
- Effect sizes are smaller in studies with outcome measures that are more closely related to real-life aggressive behaviour and in research measuring long-term outcomes.

³⁹ Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric Quarterly*, 1-5.

⁴⁰ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of Youth and Adolescence*, 48(8), 1439-1451.

⁴¹ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological Bulletin*, 136(2), 151.

⁴² Greitemeyer, T., & Mgge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and Social Psychology Bulletin*, 40(5), 578-589.

⁴³ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10(5), 646-666.

⁴⁴ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁴⁵ Ferguson, C. J., Copenhaver, A., & Markey, P. (2020). Reexamining the findings of the American Psychological Association's 2015 task force on violent media: A meta-analysis. *Perspectives on Psychological Science*, 15(6), 1423-1443.

⁴⁶ Drummond, A., Sauer, J. D., & Ferguson, C. J. (2020). Do longitudinal studies support long-term relationships between aggressive game play and youth aggressive behaviour? A meta-analytic examination. *Royal Society Open Science*, 7, 200373.

⁴⁷ Mathur, M. B., & VanderWeele, T. J. (2019). Finding common ground in meta-analysis "wars" on violent video games. *Perspectives on Psychological Science*, 14(4), 705-708.

⁴⁸ Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour (Unpublished manuscript).

- As research methodology and rigour has improved over the past 12 years, evidence of a link between VVGs and aggression has grown weaker.
- When other known risk factors associated with aggression are controlled for (e.g. baseline aggression levels, gender, socioeconomic status), the association between VVGs and aggression diminishes almost entirely, suggesting that VVGs are not an independent cause of aggression.

There is also substantial evidence of bias within this literature (see Appendix B), especially in experimental studies claiming to demonstrate that VVGs cause aggression.⁴⁹ When research bias is corrected for, the strength of evidence supporting a link between VVGs and aggression weakens. Recent re-analysis of a meta-analysis on the effect of VVGs on aggressive cognition,⁵⁰ and another on the effect of VVGs on aggressive behaviour,⁵¹ found that after correcting for research bias, the initially reported effect sizes decreased. We note that the van Aert & Wicherts paper is, as at August 2021, available only as a preprint and has yet to undergo peer review.

As mentioned earlier, emerging research has begun to address these biases by adopting more rigorous methodology. Research which is pre-registered, has been independently replicated, or measures real-life aggressive behaviour reports effects that are small to non-existent. Contrary to these findings, one recent pre-registered cross-sectional study found an association between playing video games and self-reported interpersonal violence in US university students.⁵² However, the study did not address the impact of *violence* in video games, so it does not provide any evidence that violent content in games drives aggression.

While experimental studies are useful to gather evidence about causality, they have mostly relied on short-term measures of aggression. To investigate whether VVGs *cause* aggression over time, researchers conducted a randomised controlled trial in Germany. Participants were assigned to play a VVG, a non-violent video game, or no game at all. There was no difference between the groups across a range of measures of aggression immediately after eight weeks of gameplay, or two months after the experiment ended.⁵³

Experiments with longer-term outcomes than this are limited; most longitudinal studies do not manipulate VVG play. However, they can still provide important information about the relationship between VVG exposure and aggression over time. Overall, these studies do not provide strong evidence that playing VVGs predicts later aggression. Several recent studies

⁴⁹ Hilgard, J., Engelhardt, C. R., & Rouders, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al.(2010). *Psychological Bulletin*, 143(7), 757-774.

⁵⁰ van Aert, R. C., & Wicherts, J. Correcting for outcome reporting bias in a meta-analysis: A meta-regression approach (Unpublished manuscript).

⁵¹ Ferguson, C. J., Copenhaver, A., & Markey, P. (2020). Reexamining the findings of the American Psychological Association's 2015 task force on violent media: A meta-analysis. *Perspectives on Psychological Science*, 15(6), 1423-1443.

⁵² Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29,42-53.

⁵³ Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular Psychiatry*, 24(8), 1220.

from the United States,⁵⁴ Spain,⁵⁵ and the Netherlands⁵⁶ have found no link between VVGs and later aggression. Moreover, a meta-analysis of 28 longitudinal studies concluded that there is no practically meaningful effect of VVGs on later aggressive behaviour.⁵⁷ However, one American study that surveyed participants over a 10-year period found that those who played VVGs at consistently moderate levels throughout the study reported greater aggression at age 23 than those who played at low levels.⁵⁸ Interestingly, though, participants who played VVGs at high levels at age 13 but moderate levels 10 years later also reported lower aggression than consistently moderate players and were no different from low players. These findings suggest that patterns of VVG play over time could have different effects on aggression, but without replication this is not yet clear.

Research investigating the effects of VVGs have used a range of aggression measures, many of which are artificial behaviours in a laboratory setting^{59,60,61,62} (e.g. putting hot sauce into another participant's food), or self-report scales of aggressive thoughts and emotions.^{63,64,65,66,67,68} There is no clear evidence that these measures relate to or predict real-world behaviours,⁶⁹ which are the real concern to the community. One longitudinal study attempted to address this issue by collecting peer reports of adolescents' aggressive

⁵⁴ Greitemeyer, T. (2019). The contagious impact of playing violent video games on aggression: Longitudinal evidence. *Aggressive Behavior*, 45(6), 635-642.

⁵⁵ López-Fernández, F. J., Mezquita, L., Etkin, P., Griffiths, M. D., Ortet, G., & Ibáñez, M. I. (2021). The role of violent video game exposure, personality, and deviant peers in aggressive behaviors among adolescents: A two-wave longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 32-40.

⁵⁶ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2021). A longitudinal social network perspective on adolescents' exposure to violent video games and aggression. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 24-31.

⁵⁷ Drummond, A., Sauer, J. D., & Ferguson, C. J. (2020). Do longitudinal studies support long-term relationships between aggressive game play and youth aggressive behaviour? A meta-analytic examination. *Royal Society Open Science*, 7, 200373.

⁵⁸ Coyne, S. M., & Stockdale, L. (2021). Growing up with Grand Theft Auto: a 10-year study of longitudinal growth of violent video game play in adolescents. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 11-16.

⁵⁹ Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior*, 38, 281-287.

⁶⁰ Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics*, 140(Supplement 2), S142-S147.

⁶¹ Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.

⁶² Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS One*, 9(11), e111790.

⁶³ Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.

⁶⁴ Börsche, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology: Theories, Methods, and Applications*, 22(4), 139-146.

⁶⁵ Bucolo, D. (2010). *Violent video game exposure and physical aggression in adolescence: Tests of the general aggression model*. (Unpublished doctoral dissertation) University of New Hampshire.

⁶⁶ Saleem, M., Anderson, C. A., & Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on college students' affect. *Aggressive Behavior*, 38(4), 263-271.

⁶⁷ Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The Influence of Empathy and Morality of Violent Video Game Characters on Gamers' Aggression. *Frontiers in Psychology*, 8, 1863.

⁶⁸ Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.

⁶⁹ McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).

behaviour and found that exposure to VVGs was unrelated to aggression 1 year later.⁷⁰ If VVGs did in fact cause real-world aggressive behaviours, we would also expect to observe a correlation between violent video game consumption and real-world violent incidents. In four separate analyses,⁷¹ researchers compared patterns of US crime data with measures of VVG consumption over the past 30 years.⁷² They found no evidence of a relationship between VVG consumption and aggressive assaults or homicides. In fact, several measures of VVG consumption were associated with *decreased* crime-rates, a finding supported by other research comparing patterns of VVG consumption and US crime data.^{73,74}

There are several possible explanations as to why VVG consumption would be associated with less violent crime. More aggressive people might prefer to play VVGs, and are therefore occupied by a non-violent activity following VVG releases. Alternatively, VVGs might have a cathartic effect, allowing healthy venting of aggression in a controlled and harmless environment. Findings from a recent study lend support to the cathartic effect of VVGs. Spanish youth aged 13-19 with higher exposure to VVGs exhibited lower rates of child-to-parent violent behaviour, suggesting that VVGs may provide an outlet for youth aggression.⁷⁵ Similarly, a longitudinal study of South Korean adolescents found that playing VVGs was associated with lower physical and verbal aggression 6 months later.⁷⁶ It is important to note that none of these findings are experimental and therefore cannot be used to draw strong causal conclusions.

⁷⁰ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2021). A longitudinal social network perspective on adolescents' exposure to violent video games and aggression. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 24-31.

⁷¹ The analyses compared US data on violent crime with release dates for major VVGs, VVG sales data, and internet searches for VVG guides.

⁷² Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.

⁷³ Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.

⁷⁴ Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.

⁷⁵ Ruiz-Fernández, A., Junco-Guerrero, M., & Cantón-Cortés, D. (2021). Exploring the mediating effect of psychological engagement on the relationship between child-to-parent violence and violent video games. *International Journal of Environmental Research and Public Health*, 18(6), 2845.

⁷⁶ Lee, E. J., Kim, H. S., & Choi, S. (2021). Violent video games and aggression: Stimulation or catharsis or both? *Cyberpsychology, Behavior, and Social Networking*, 24(1), 41-47.

An emerging trend in the VVG literature is a recent proliferation of publications originating from China.^{77,78,79,80,81,82,83} These studies all report findings in support of a relationship between VVGs and aggressive cognition or behaviour, contrary to research concluding that the effects of VVGs on aggression are smaller in Eastern than Western countries.⁸⁴ With few exceptions, these studies were classified as providing low strength of evidence due to methodological weaknesses such as small sample sizes, failing to control for known risk factors of aggression, and the absence of pre-registered study designs. Due to the low strength of this evidence and limited generalisability to the Australian context, these studies have not influenced the overall conclusions of this review. Why Chinese researchers are increasingly interested in this subject matter remains opaque. There is evidence of substantial Chinese state control and influence over domestic academic research⁸⁵ and over the domestic video game industry.⁸⁶ The latter appears to be fuelled by moral concern over the impacts of video games on Chinese citizens. The extent to which these factors may have influenced VVG research conducted in China is beyond the scope of this review.

Variable susceptibility to the effects of VVGs

An area of increasing interest to researchers is whether individuals differ in their susceptibility to the impacts of VVGs. Valkenburg and Peter (2013) propose that individual differences in personality traits, social-context and mental health conditions might determine the size and nature of VVG effects.⁸⁷ However, there is currently a lack of strong evidence that this is the

⁷⁷ Zhang, Q., Cao, Y., & Tian, J. (2021). Effects of violent video games on aggressive cognition and aggressive behavior. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 5-10.

⁷⁸ Yao, M., Zhou, Y., Li, J., & Gao, X. (2019). Violent video games exposure and aggression: The role of moral disengagement, anger, hostility, and disinhibition. *Aggressive Behavior*, 45(6), 662-670.

⁷⁹ Tian, Y., Gao, M., Wang, P., & Gao, F. (2020). The effects of violent video games and shyness on individuals' aggressive behaviors. *Aggressive Behavior*, 46(1), 16-24.

⁸⁰ Zheng, X., Chen, H., Wang, Z., Xie, F., & Bao, Z. (2021). Online violent video games and online aggressive behavior among Chinese college students: The role of anger rumination and self-control. *Aggressive Behavior*. DOI: 10.1002/ab.21967

⁸¹ Zhang, Q., Tian, J., & Chen, L. (2021). Violent video game effects on aggressive behavior among children: the role of aggressive motivation and trait-aggressiveness in China. *Journal of Aggression, Maltreatment & Trauma*, 30(2), 175-192.

⁸² Li, J., Du, Q., & Gao, X. (2020). Adolescent aggression and violent video games: the role of moral disengagement and parental rearing patterns. *Children and Youth Services Review*, 118, 105370.

⁸³ Zhao, H., Zhou, J., Xu, X., Gong, X., Zheng, J., & Zhou, J. (2021). How to be aggressive from virtual to reality? Revisiting the violent video games exposure-aggression association and the mediating mechanisms. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 56-62.

⁸⁴ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

⁸⁵ Han, X., & Appelbaum, R. P. (2018). China's science, technology, engineering, and mathematics (STEM) research environment: A snapshot. *PloS one*, 13(4), e0195347.

⁸⁶ Holmes, O. (2021). No cults, no politics, no ghouls: how China censors the video game world. *The Guardian*. Available at: <https://www.theguardian.com/news/2021/jul/15/china-video-game-censorship-tencent-netease-blizzard> [Accessed 10 Aug. 2021]

⁸⁷ Valkenburg, P. M., & Peter, J. (2013a). The differential susceptibility to media effects model. *Journal of Communication*, 63, 221-43.

case.⁸⁸ While some studies report variable effects on aggression based on peer factors,^{89,90} age,⁹¹ sex,^{92,93} personality traits,^{94,95} and family environment,^{96,97} the evidence is inconsistent. For example, one US correlational study found no evidence that children with mental health symptoms constitute a vulnerable population for VVG effects. In a sample of 377 children with either clinically diagnosed attention or depression symptoms, exposure to VVGs was not associated with increased levels of delinquency or bullying behaviour.⁹⁸ Another 3 year longitudinal study reported that sex, age, history of aggressive behaviour and family environment made no difference to the impact of VVGs on aggressive behaviour.⁹⁹ Where there is evidence of individual differences in susceptibility to VVGs, the effect is small and diminishes over time. For instance, two studies found that parental mediation style¹⁰⁰ and family hostility had a small influence on VVG effects when measured cross-sectionally, however neither had any impact on the relationship between VVGs and aggression when measured longitudinally.^{101,102}

Overall conclusions from international research

The highest quality evidence suggests that playing VVGs does not account for a meaningful proportion of observed aggression, if any at all. Even when the largest possible effect sizes

⁸⁸ Valkenburg, P. M., & Peter, J. (2013b). Five challenges for the future of media-effects research. *International Journal of Communication*, 7, 197-215.

⁸⁹ Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.

⁹⁰ López-Fernández, F. J., Mezquita, L., Etkin, P., Griffiths, M. D., Ortet, G., & Ibáñez, M. I. (2021). The role of violent video game exposure, personality, and deviant peers in aggressive behaviors among adolescents: a two-wave longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 32-40.

⁹¹ Breuer, J., Vogelgesang, J., Quandt, T., & Festl, R. (2015). Violent video games and physical aggression: Evidence for a selection effect among adolescents. *Psychology of Popular Media Culture*, 4(4), 305-328.

⁹² Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through "blood-red tinted glasses": The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.

⁹³ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive Behavior*, 44(3), 257-267.

⁹⁴ Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.

⁹⁵ Greitemeyer, T., & Sagioglou, C. (2017). The longitudinal relationship between everyday sadism and the amount of violent video game play. *Personality and Individual Differences*, 104, 238-242.

⁹⁶ Shao, R., & Wang, Y. (2019). Effect of violent video games on adolescent aggression: moderated mediation effect of family environment and normative beliefs. *Frontiers in Psychology*, 10, 384.

⁹⁷ Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.

⁹⁸ Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among "vulnerable" populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of Youth and Adolescence*, 43(1), 127-136.

⁹⁹ Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA Pediatrics*, 168(5), 450-457.

¹⁰⁰ Measured cross-sectionally, inconsistent restrictive mediation styles were associated with increased adolescent aggression, however no parental mediation styles were longitudinally related to media violence exposure and aggression.

¹⁰¹ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.

¹⁰² Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.

are reported their level barely approaches levels deemed of practical or clinical importance.^{103,104} This is particularly true when the effect of VVGs is compared to other known causal risk factors for aggression such as poverty, family violence and mental health.^{105,106} In a longitudinal study conducted in the UK, childhood symptoms of attention deficit disorder, depression and early conduct disorder predicted adolescent criminal behaviour 8 years later. In contrast, exposure to first-person shooter games in childhood had no relationship with aggressive or criminal adolescent behaviour.¹⁰⁷ Similarly, when studies control for these individual or socio-demographic risk factors the impacts of VVGs on aggression diminish^{108,109} or disappear completely.¹¹⁰



Research on the link between VVGs and aggression conducted in Australia is largely consistent with international findings. Two Australian studies found no effect of violent or ultra-violent games on aggression,¹¹¹ even if the participant was primed to take on a hostile cognitive state.¹¹² However, both studies were classified as providing low strength of evidence (see Table 2).

One 2019 Australian study found that playing VVGs for 5 to 15 minutes impaired players' recognition of anger, enhanced their perception of their fighting ability and perception of a target as weak.¹¹³ However, consistent with international studies, the authors found that gender and baseline aggression mediated the effects of VVGs on these aggression measures. It is also important to note that these aggression measures are based on

¹⁰³ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹⁰⁴ Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour (Unpublished manuscript).

¹⁰⁵ Ferguson, C. J. (2011). Video games and youth violence: A prospective analysis in adolescents. *Journal of Youth and Adolescence*, 40(4), 377-391.

¹⁰⁶ Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of Psychiatric Research*, 46(2), 141-146.

¹⁰⁷ Smith, S., Ferguson, C., & Beaver, K. (2018). A longitudinal analysis of shooter games and their relationship with conduct disorder and self-reported delinquency. *International Journal of Law and Psychiatry*, 58, 48-53.

¹⁰⁸ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

¹⁰⁹ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹¹⁰ Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of Psychiatric Research*, 46(2), 141-146.

¹¹¹ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

¹¹² Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished bachelor's thesis). University of Queensland, Brisbane, Australia.

¹¹³ Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of Men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.

perception, not action. Another 2019 Australian study found that game competition, not violence, increased aggressive emotions.¹¹⁴ Moreover, the authors found that neither competition nor violence increased aggressive behaviour. This is consistent with international studies, which often find larger effects of violent games on aggressive emotions and perceptions than on actual aggressive behaviour.

A recent Australian study found that players find in-game aggression more acceptable than offline aggression.¹¹⁵ This suggests that players perceive in-game and real-world behaviour as governed by different norms, which may explain why acting out violence in a game does not cause real-world aggression. It is important to note that the authors recruited players online, and that only 11.5 per cent of their sample were Australian (the majority were American). The most common games played in their sample were *World of Warcraft* and *World of Tanks*, which have M and PG ratings, respectively, so it is possible that the authors would have obtained different findings if their sample played more violent games.

A study of young Australians found that boys were significantly more likely than girls to play VVGs (or watch other violent media), and to have used physical violence in the past year.¹¹⁶ However, this cross-sectional (and therefore non-causal) study also found that young people who committed acts of aggression were also more likely to have been threatened with physical violence in the community, at home, or at school. This study suggests that factors such as gender may predict VVG gameplay and exposure to experiences that are more likely to directly cause aggression.

An Australian study of male and female VVG players revealed complex reasons for why players are drawn to violent games.¹¹⁷ For example, women in this study reported playing VVGs to be more attractive to romantic partners. This study did not find any relationship between VVG play and aggression or dominance measures. However, as the authors note, their measure of aggression was acts of intimate partner violence, which is a more extreme measure than is typically used in VVG studies. This makes it difficult to relate this study to the wider VVG literature.

2.2 / Extremely violent games do not cause more aggression than VVGs

| Strength of evidence | Generalisability to Australia |
|----------------------|---|
| Medium | High-quality studies largely drawn from Australia, US, Germany and Canada |

¹¹⁴ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

¹¹⁵ Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.

¹¹⁶ Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.

¹¹⁷ Kasumovic, M. M., Blake, K., Dixon, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.

The results of higher quality studies suggest that extremely violent video games do not increase aggression more than VVGs.



World

Video game content can differ on a number of dimensions, including pace, realism, and graphicness. Due to the difficulty in matching games to ensure that the effect of violent content can be measured, most of this research has been conducted in experimental laboratories. Several randomised controlled trials in Germany, Australia, and the United States have compared video games which only differ in the severity of violent content. Overall, they find that higher levels of violence do not affect player aggression.

A trial in Germany varied the amount of displayed violence and the pace of action in a first-person shooter game, ensuring that all other features of the game were otherwise the same. They found that neither pace nor displayed violence had any effect on aggressive behaviour, as measured by willingness to expose another participant to an unpleasant noise blast.¹¹⁸ Similarly, researchers in the United States assigned 275 undergraduates to play a first-person shooter game that was modified to be more or less violent. Neither game difficulty nor violent content was found to affect aggressive behaviour.¹¹⁹ Finally, across seven randomised controlled trials conducted on US university students, researchers found that competence-impeding play increased frustration and aggression, but that levels of violent content had no impact on these outcomes.¹²⁰

The results from these and other studies suggest that other video game variables have a greater influence on aggression. Level of competition^{121,122} and perceived game difficulty¹²³ have been associated with increased player aggression. For instance, a Canadian study which measured patterns of gameplay over 3 years found that increased competitive gameplay was associated with increased self-reported aggressive behaviour.¹²⁴ Similarly, a recent experimental study found that participants became more aggressive after playing a competitive game as opposed to a non-competitive game, while the level of video game

¹¹⁸ Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.

¹¹⁹ Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological Science*, 30(4), 606-616.

¹²⁰ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of Personality and Social Psychology*, 106(3), 441.

¹²¹ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

¹²² Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence?. *Psychology of Violence*, 1(4), 259.

¹²³ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of Personality and Social Psychology*, 106(3), 441.

¹²⁴ Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of Youth and Adolescence*, 42(7), 1090-1104.

violence had no effect on aggression.¹²⁵ On the other hand, increased graphic realism of violence depicted in video games does not appear to increase player aggression.¹²⁶



A series of Australian studies comparing non-violent, violent, and ultra-violent video games found no effect of the level of game violence on aggression,¹²⁷ even if the participant was primed to take on a hostile cognitive state.¹²⁸ The authors did, however, find that ultra-violent games significantly increase players' self-dehumanisation.¹²⁹ This replicates another Australian finding that playing (extremely violent) *Mortal Kombat* diminished players' perceived humanity, but only if they were the target of violence.¹³⁰ This self-dehumanisation effect does not appear to cause aggressive behaviour; in fact the authors argue that participants may have acted prosocially to counteract their feelings of dehumanisation. The above three studies have been classified as providing low strength of evidence (see Table 2).

2.3 / Conclusions

Overall, combined international and Australian evidence suggests the effect of VVGs on aggression in Australia is small to non-existent, with high strength of evidence and high generalisability to Australia. The weight of evidence shows that even if VVGs do cause aggression, they would still only account for a very small proportion of aggressive behaviour, indicating little value in conducting additional research in this area.

Similarly, combined world and Australian evidence suggests that higher levels of violence in VVGs do not affect aggression, with medium strength of evidence and high generalisability to Australia. Extremely violent or ultraviolent games are unlikely to contribute to any increased risk of aggression or violence.

¹²⁵ Hawk, C. E., & Ridge, R. D. (2021). Is it only the violence? The effects of violent video game content, difficulty, and competition on aggressive behavior. *Journal of Media Psychology: Theories, Methods, and Applications*, 33(3), 134-144.

¹²⁶ Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment Computing*, 24, 21-29.

¹²⁷ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

¹²⁸ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished bachelor's thesis). University of Queensland, Brisbane, Australia.

¹²⁹ Self-dehumanisation is defined as the attribution of less human nature or human uniqueness traits to the self and has been regarded as a process that permits delegitimizing beliefs about others

¹³⁰ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

03 / The effect of VVGs on attitudes towards women

| Strength of evidence | Generalisability to Australia |
|--|--|
| Medium | Medium - small number of studies largely drawn from Australia, US, UK, Canada and Germany. |
| The highest quality international evidence finds no relationship between VVGs and attitudes towards women. However, at present there is a lack of high-quality studies on this topic. VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players, although recent high-quality experiments have found no evidence of this link. | |

3.1 / VVGs do not change attitudes towards women



World

Content analyses have revealed that video games contain fewer female protagonists, portray overly sexualised female characters, and games which depict violence can involve aggressive acts towards women.^{131,132} There is growing concern that these representations of female characters normalise the objectification and sexualisation of women.

The highest quality evidence suggests that VVGs do not change attitudes towards women in the long-term for either men or women. A three-year study on a representative sample of German youth found that preference for action or first-person shooter video games was not associated with sexist attitudes. Amount of time spent playing video games also had no association with sexism.¹³³ The study controlled for other known risk factors of negative attitudes towards women such as age and education.

When researchers measure short-term attitudes towards women, the results are more mixed. A correlational study in the UK found that frequency of VVG play was unrelated to sexist attitudes or empathy towards a rape victim in a presented scenario.¹³⁴ However, a correlational study from the United States found that the more violence participants

¹³¹ Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.

¹³² Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.

¹³³ Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games = sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.

¹³⁴ Ferguson, C. J., & Colwell, J. (2020). Sexualised video games, sexist attitudes and empathy towards victims of rape: Correlational evidence for a relationship is minimal in an online study. *Criminal Behaviour and Mental Health*, 30(1), 16-27.

perceived in their favourite video games, the more they endorsed traditional views of masculinity (i.e. a belief that men should be dominant, tough, and not feminine or emotional).¹³⁵ This study did not directly measure negative attitudes towards women, however. A laboratory study conducted in the United States examined attitudes directly and found that playing a violent game increased hostile sexism, but only when the female character was sexualised and players felt immersed in the game.¹³⁶ Sexist content was therefore necessary to change players' attitudes towards women.

Overall, this evidence suggests that if video games do cause negative attitudes towards women, this effect may be driven by sexualised or sexist content, rather than by violent content. This conclusion is supported by some other research. A correlational study found that male US college students who played more sexist games held more sexist attitudes towards women,¹³⁷ and a 2018 systematic review found that women experienced self-objectification and low levels of self-efficacy as a result of exposure to sexist content within video games, compared with video games that do not contain sexist content.¹³⁸ A randomised control trial in Belgium also found that sexualised avatars in an adventure game increased adolescent players acceptance of *rape myths*¹³⁹ compared to non-sexualised avatars.¹⁴⁰ However, recent high-quality experimental evidence has found no effect of sexualised video game content on sexist outcomes. In one pre-registered study from France, playing a sexist sequence from a game (compared with a non-sexist sequence from the same game) had no impact on participants' objectification of women.¹⁴¹ Another pre-registered study out of the United States found that playing a sexualised vs. non-sexualised female avatar had no influence on women's body image or hostility towards a female confederate.¹⁴²

Overall, the high-quality evidence to date suggests that VVG content on its own appears to have no effect on attitudes towards women. While there is some evidence that sexualised content in video games may impact attitudes towards women, recent high-quality studies have cast doubt over this.

¹³⁵ Blackburn, G., & Scharrer, E. (2019). Video game playing and beliefs about masculinity among male and female emerging adults. *Sex Roles*, 80(5), 310-324.

¹³⁶ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of immersive, sexually objectifying, and violent video games on hostile sexism in males. *Communication Research Reports*, 35(5), 413-423.

¹³⁷ Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.

¹³⁸ Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: A systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social Networking*, 21(9), 535-541.

¹³⁹ Rape myth acceptance refers to holding prejudicial, stereotyped and false beliefs about sexual assaults, rapists, and rape victims. These beliefs often serve to excuse sexual aggression, create hostility toward victims, and bias criminal prosecution.

¹⁴⁰ Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games For Health Journal*, 4(2), 91-94.

¹⁴¹ Sarda, E., Zerhouni, O., Gentile, D. A., Bry, C., & Bègue, L. (2021). Some effects of sexist video games on self-masculinity associations. *Information, Communication & Society*, 1-16.

¹⁴² Lindner, D., Tribble, M., Pilato, I., & Ferguson, C. J. (2020). Examining the effects of exposure to a sexualized female video game protagonist on women's body image. *Psychology of Popular Media*, 9(4), 553-560.



An Australian experimental study found that low-skilled male *Halo 3* players were more hostile towards female teammates, particularly when they were performing poorly.¹⁴³ In contrast, high-skilled male players were more *positive* towards female teammates. This study therefore suggests that sexism elicited by gameplay is triggered by the player's sense of their own ability, and not by in-game violence. Moreover, this study did not compare *Halo 3* to a non-violent game. Another Australian study examined the impact of sexualised content in video games. Among both men and women, viewing images of female characters from adult-only games (but not all-ages games) elicited a sexually objectifying gaze as measured by eye-tracking. However, gaze behaviour was not associated with rape myth acceptance, casting doubt over its link to real-world outcomes.¹⁴⁴

3.2 / Conclusions

Overall, combined world and Australian evidence suggests that violent video games don't increase negative attitudes or sexist behaviours towards women with medium strength of evidence and medium generalisability to Australia. While some evidence suggests that VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players, recent high-quality studies have cast doubt on this.

¹⁴³ Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS One*, 10(7), e0131613.

¹⁴⁴ Hollett, R. C., Morgan, H., Chen, N. T., & Gignac, G. E. (2020). Female characters from adult-only video games elicit a sexually objectifying gaze in both men and women. *Sex Roles*, 83(1), 29-42.

04 / The effect of VVGs on young people's mental health

| Strength of evidence | Generalisability to Australia |
|---|---|
| Medium | High - studies largely drawn from Australia, US, UK, Canada |
| The high-quality evidence to date suggests that there is no causal relationship between VVGs and increased depression, anxiety, suicidal ideation, attention problems, or reduced academic achievement. Recent evidence suggests that VVGs could, in fact, increase prosocial outcomes in the short term. | |

4.1 / VVGs do not cause negative mental health outcomes in young players



World

Research into the impact of VVGs on young people's mental health is the most recent form of a long history of concerns about the impact of violent media, particularly as video games become ubiquitous in children's lives. The peak body for the Australian video game industry reported that young Australians play video games for an average of 100 minutes per day.¹⁴⁵ Researchers are increasingly interested in understanding the long-term psychosocial and developmental impacts of playing video games, especially those with extremely violent content. These include impacts on peer relations, internalising problems such as anxiety or depression, and attentional problems such as ADHD.

There is no high-quality evidence to suggest that VVGs increase negative mental health outcomes for young players. A meta-analysis of 101 studies found neither video games nor VVGs had any impact on depression, attention disorders, conduct disorders, prosocial behaviour, or academic achievement for both children and adolescents.¹⁴⁶ The meta-analyses included correlational, experimental, and longitudinal studies measuring both short- and long-term effects. This meta-analysis has been replicated by an independent research team, which is noteworthy given the abovementioned biases and flawed methodology prevalent in this literature.¹⁴⁷

¹⁴⁵ Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

¹⁴⁶ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646–666.

¹⁴⁷ Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877–1892.

Longitudinal research conducted in the United States, Europe, and Singapore has found that VVGs are not associated with negative mental health outcomes for young players. For example, a recent pre-registered study of more than 3,000 Singapore youth found that time spent playing VVGs was unrelated to depression, anxiety, ADHD symptoms, social phobia, or somatic complaints 2 years later.¹⁴⁸ Similarly, a prospective longitudinal study of over 5,000 UK children found no association between preference for first-person shooter games at 8 years of age and depression in adolescence.¹⁴⁹ A longitudinal study on 300 Dutch children reported that preference for VVGs was not associated with mental health outcomes (positive or negative) 1 year later.¹⁵⁰ VVG play was also not associated with depression or anxiety over 1 year of measurement in 10-14 years olds in the United States.¹⁵¹ Moreover, the longest study ever conducted on this issue found in an American sample that frequency of VVG play at age 13 was unrelated to depression and anxiety 10 years later.¹⁵²

Some research in this area even suggests that playing video games could be linked with *improved* wellbeing. A recent high-quality study objectively measured how much time players of two popular (non-violent) video games in the United States, the United Kingdom, and Canada spent playing by using in-game data (instead of relying on people accurately recalling their game-playing time). The more time that participants spent playing each game over a 2-week period, the greater wellbeing they reported.¹⁵³ The association between wellbeing and self-reported time spent playing was weaker. Although the video games studied did not contain violent content, these findings suggest that studies using self-report measures of game play may be underestimating the link between video games and wellbeing.

Contrary to these findings, a recent correlational study of over 5,000 American fifth-grade students (average age of 10 years) reported that playing VVGs for more than 2 hours per day was associated with increased depressive symptoms. However these results compared high daily VVG play to low daily VVG play, and did not compare violent to nonviolent games. When time spent playing video games was matched, there was no relationship between violent content and symptoms of depression.¹⁵⁴

¹⁴⁸ Ferguson, C. J., & Wang, C. J. (2021). Aggressive video games are not a risk factor for mental health problems in youth: A longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 70-73.

¹⁴⁹ Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.

¹⁵⁰ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of Youth and Adolescence*, 46(4), 884-897.

¹⁵¹ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016). Media managing mood: A look at the possible effects of violent media on affect. *Child & Youth Care Forum*, 45(2), 241-258.

¹⁵² Coyne, S. M., & Stockdale, L. (2021). Growing up with Grand Theft Auto: a 10-year study of longitudinal growth of violent video game play in adolescents. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 11-16.

¹⁵³ Johannes, N., Vuorre, M., & Przybylski, A. K. (2021). Video game play is positively correlated with well-being. *Royal Society Open Science*, 8(2), 202049.

¹⁵⁴ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of Youth and Adolescence*, 46(4), 884-897.

Research on suicidal ideation is more mixed. A recent correlational study in the United States found no relationship between VVGs and suicidal ideation.¹⁵⁵ Whilst another study in a nationally representative sample of American high-school students found a correlation between excessive video game use and suicidal ideation,¹⁵⁶ this was not explicitly related to *violent* video games. It is also unclear whether video games cause suicidal ideation, or whether children experiencing suicidal ideation video game play.

Other risk factors such as prior youth depression, anxiety, family, socio-economic status or peer delinquency, are a more reliable predictor of mental health outcomes for children and adolescents. Many studies suggest that compared to other known socio-demographic risk factors, VVGs present minimal danger to the mental health of young players. A 1-year longitudinal study in the United States¹⁵⁷ found that anxiety and depression were predicted by parental aggression, delinquent peers and previous symptoms of depression, whereas exposure to VVGs was not associated with any negative mental health outcomes.¹⁵⁸ Similarly, an American study found that gender, antisocial traits, family environment and prior mental health conditions predicted attention problems in children,¹⁵⁹ whereas attention problems were not related to playing more video games or a preference for VVGs. A study that examined predictors of suicide rates across 92 countries found that countries with higher levels of poverty had higher suicide rates, whereas per capita video game consumption was unrelated to the number of suicides.¹⁶⁰

Evidence suggests that other game characteristics such as competition,¹⁶¹ and excessive gameplay,^{162,163} in particular pathological video-gaming,¹⁶⁴ have a larger effect on mental health outcomes than violent content. Research carried out with 10-14 year olds in the United States over one year found that playing VVGs did not predict depression or anxiety.¹⁶⁵ However, high levels of competitive gaming were associated with negative mental health outcomes such as depression and reduced prosocial behaviour.

¹⁵⁵ Gauthier, J. M., Zuromski, K. L., Gitter, S. A., Witte, T. K., Cero, I. J., Gordon, K. H., Ribeiro, J., Anestis, M., & Joiner, T. (2014). The interpersonal-psychological theory of suicide and exposure to video game violence. *Journal of Social and Clinical Psychology*, 33(6), 512-535.

¹⁵⁶ Messias, E., Castro, J., Saini, A., Usman, M., & Peeples, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.

¹⁵⁷ Sample mostly identified as Hispanic

¹⁵⁸ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016). Media managing mood: A look at the possible effects of violent media on affect. *Child & Youth Care Forum*, 45(2), 241-258.

¹⁵⁹ Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of Psychiatric Research*, 45(6), 808-813.

¹⁶⁰ Ferguson, C. J., & Smith, S. (2021). Examining homicides and suicides cross-nationally: Economic factors, guns and video games. *International Journal of Psychology*. DOI:10.1002/ijop.12760

¹⁶¹ Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.

¹⁶² Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.

¹⁶³ Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

¹⁶⁴ Liao, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.

¹⁶⁵ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016). Media managing mood: A look at the possible effects of violent media on affect. *Child & Youth Care Forum*, 45(2), 241-258.

However? Emerging evidence suggests that video games might sometimes? have a protective effect for children's mental health. In a high-quality correlational study surveying over 3,000 young children across six European nations, increased video game usage (more than 5 hours per week) was not associated with any negative mental health, social or behavioural outcomes. Children who played more video games had lower rates of internalising disorders and fewer thoughts of death, and experienced prosocial and academic benefits, including elevated intellectual functioning, high overall competence, and specific benefits in reading, mathematics and spelling.¹⁶⁶ Similarly, an experiment with 845 Israeli children looking at the effect of violent games found that children were more prosocial after playing a VVG compared with a neutral game, particularly if they had played the game with a classmate.¹⁶⁷ However, a pre-registered study of 3000 Singaporean youth found that playing VVGs was unrelated to youth prosocial behaviour 2 years later, suggesting that any prosocial benefits that exist may not extend beyond the short-term.¹⁶⁸

While beyond the scope of this review, there is also increasing evidence that playing video games more generally provides many benefits for children and adolescents. Researchers have summarised the evidence for various cognitive, social and psychological benefits of video games for young players.¹⁶⁹



To our knowledge, there are no Australian studies that compare mental health outcomes in young people for violent and non-violent games. Australian studies have found that young peoples' mental health¹⁷⁰ and academic performance¹⁷¹ decline as screen time increases. However, there is no evidence from the Australian context that violent game content mediates or exacerbates any negative impacts of playing video games. Below we have separated out Australian findings in relation to mental health outcomes:

Pathological gaming. A study of over 1,200 South Australian high school students found a rate of pathological video gaming - defined as the persistent inability to control excessive

¹⁶⁶ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social Psychiatry and Psychiatric Epidemiology*, 51(3), 349-357.

¹⁶⁷ Shoshani, A., & Krauskopf, M. (2021). The Fortnite social paradox: The effects of violent-cooperative multi-player video games on children's basic psychological needs and prosocial behavior. *Computers in Human Behavior*, 116, 106641.

¹⁶⁸ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of Youth and Adolescence*, 48(8), 1439-1451.

¹⁶⁹ Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American Psychologist*, 69(1), 66.

¹⁷⁰ Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.

¹⁷¹ Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.

gaming habits despite associated social or emotional problems - of less than two per cent.¹⁷² Young people who engaged in pathological video gaming did not meet the criteria for clinical depression or anxiety, although this study did not specifically address video game violence.

Sleep. Some Australian studies have found that playing violent video games before bed disrupts young players' sleep.^{173,174} These studies did not compare sleep quality after playing a non-violent game, and attribute effects on sleep to the arousing nature of the games chosen. These studies also used very small sample sizes (less than 20 participants). They have therefore been classified as providing low strength of evidence (see Table 2). Other Australian studies suggest that the general stimulation of computer use,¹⁷⁵ duration of play,¹⁷⁶ and the tendency of young gamers to enter a flow state¹⁷⁷ while playing¹⁷⁸ disrupt sleep, not necessarily violent content.

Behavioural and emotional problems. Australian studies have found that children who play more video games are more likely to have behavioural and emotional problems,¹⁷⁹ and less ability to self-regulate.¹⁸⁰ However, these studies only measured video game play or media exposure (including all types of video games) overall, and did not distinguish between violent and non-violent games.

Self-dehumanisation.¹⁸¹ Australian studies comparing non-violent, violent and extremely violent games have found that extremely violent games cause players to self-dehumanise.¹⁸² Another Australian study found that an extremely violent game (*Mortal Kombat*) reduced players' perception of their own humanity when they were the target, not the perpetrator, of violence in the game.¹⁸³ However, these studies were conducted with an adult sample, so it is unclear whether young people experience dehumanisation due to game violence. They were also classified as low strength of evidence studies (see Table 2).

¹⁷² King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.

¹⁷³ King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: An experimental study. *Journal of Sleep Research*, 22(2), 137-143.

¹⁷⁴ Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.

¹⁷⁵ Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Pre bedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.

¹⁷⁶ Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep Medicine*, 30, 64-70.

¹⁷⁷ Flow is "an experience of immersion and time distortion" while playing

¹⁷⁸ Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: the roles of game difficulty and flow. *Sleep Medicine*, 39, 70-76.

¹⁷⁹ Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic Pediatrics*, 17(6), 620-624.

¹⁸⁰ Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic Pediatrics*, 18(7), 813-819.

¹⁸¹ Note that these studies were covered in the section on aggression.

¹⁸² Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished bachelor's thesis). University of Queensland, Brisbane, Australia.

¹⁸³ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

Positive social outcomes. A laboratory study conducted in Australia found that playing a violent game (*Left 4 Dead 2*) increased players' positive affect and sense of connection when their teammate was a human-controlled (not computer-controlled) character.¹⁸⁴ This finding is consistent with international research on the prosocial benefits of playing cooperative VVGs. Other Australian studies have found no effect of violent¹⁸⁵ or even prosocial¹⁸⁶ games on prosocial behaviour, although their measures of prosocial behaviour have questionable relevance to real-world behaviour. These studies were classified as providing low strength of evidence (see Table 2). In addition, these studies were conducted in an adult sample, so it is unclear whether young people experience the same benefits.

4.2 / Conclusions

Overall, combined world and Australian evidence suggests that VVGs do not cause negative mental health outcomes for young players with medium strength of evidence and high generalisability to Australia. Some evidence suggests VVGs might have a positive and protective impact on mental health outcomes.

¹⁸⁴ Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology, Queensland, Australia.

¹⁸⁵ Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished bachelor's thesis). University of Queensland, Brisbane, Australia.

¹⁸⁶ Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS one*, 8(7), e68382.

05 / Recommendations

The aim of this literature review was to answer the question:

“What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia?”

Below, we outline our conclusions and recommendations as to whether further research is needed to explore the impacts of VVGs in the Australian context in relation to aggression, attitudes to women or mental health outcomes for young players.

5.1 / Aggression

Research questions:

1. What are the key findings about violent games and aggression emerging from international research?
2. What is the relationship between violent and extremely violent video games and aggression in Australian research?

Conclusions:

- Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the same conclusion: that there is little to no impact of VVGs on aggression.
- To date, limited research has been conducted in Australia. However, the strength of generalisable international research can fill any research gaps in the Australian context. This includes meta-analyses and emerging high-quality research which converge on the conclusion that VVGs cause little or no real-world aggressive behaviour.
- It is unlikely that additional research in Australia would meaningfully add to the academic literature.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and aggression.

5.2 / Attitudes towards women

Research questions:

1. What are the key findings about violent games, aggression and attitudes to women emerging from international research?

2. What is the relationship between violent and extremely violent video games and attitudes towards women in Australian research?

Conclusions:

- The highest quality international evidence finds no relationship between VVGs and attitudes towards women. There is only one Australian study on the effect of a VVG on attitudes towards women, and this study did not compare violent and non-violent video games.
- VVG content on its own appears to have no effect on attitudes towards women. Some studies suggest that video games which contain sexist or sexualised content increase negative attitudes towards women, however high-quality evidence in this area finds no impact of sexualised content on sexist outcomes.

Recommendation: As the available high-quality evidence finds that violent content in VVGs alone has no effect on attitudes towards women, no further research is recommended to understand the relationship between VVGs and attitudes to women in the Australian context.

5.3 / Mental health outcomes

Research questions:

1. What are the key findings of international research on how violent or extremely violent games impact the mental health of young game players?
2. How do violent or extremely violent games impact the mental health of young game players in Australia?

Conclusions:

- There is no evidence in the international literature of a robust causal relationship between VVGs and increased depression, anxiety, suicidal ideation, or attention problems, and lower academic achievement or prosocial outcomes. Other risk factors such as family environment, delinquent peers and prior mental health conditions are much more robust predictors of poor mental health outcomes. Some evidence suggests video game play (and VVGs specifically) can instead have beneficial outcomes.
- It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health, however violent content has not been shown to affect mental health over and above general game play.

Recommendation: At present, no further Australian research is needed to understand the relationship between VVGs and youth mental health.

Appendix A

Table 1: Search Criteria and Search Terms

| | Research Question | Search Criteria | Working Search Terms |
|---|---|---|---|
| 1 | What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia? | Academic research conducted in Australian cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. | "Violent video games" "Violent computer games" "Extremely violent video games" "First-person shooter" "Aggression" "Aggressive behaviour" "Attitudes towards women" "Gendered" "Australia" "Australian" "Causational" "Intervention study" "Randomised controlled trial" "Meta-analysis" "Systematic review" "Longitudinal" "Impacts Behaviour/behaviour" |
| 2 | What is the relationship between violent and extremely violent video games and aggression and/or attitudes towards women in international contexts? | <p>Academic research conducted in overseas contexts and cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. We will give special attention to high-quality systematic reviews or meta-analysis, or research measuring longitudinal outcomes. We will prioritise research conducted in comparable countries to Australia on social, cultural and political dimensions. High-quality research conducted in countries which are not generalisable to the Australian context will supplement this search, however receive lower prioritisation.</p> <p>We will also give consideration to academic research which identifies and operationalises levels of violent content or realism of violence in video games and explores the variance in impact on aggression, and attitudes towards women.</p> | We will use the same core search terms (in Row 1) removing references to Australia, with additional terms to explore levels of violence in games: "MA15+" "R18+ "R" "Very violent" "Extremely violent" "Ultra-violent" "Violent vs extremely violent" "Violent vs ultra-violent" "Violent vs very violent" "Level of violence" "Unrated" |

| | | | |
|---|---|--|---|
| 4 | Do violent or extremely violent games impact the mental health of young game players? | Academic research conducted exploring any link between violent and extremely violent video games and mental health outcomes for young people. We will give special attention to longitudinal research, as well as including both positive and negative mental health impacts. | We will use the same core search terms (in Row 1), with additional terms relevant to mental health: "Mental health" "Young people" "Adolescents" "Suicide" "Anxiety" "Depression" "Cognitive benefits" "Social benefits" "Cognitive development" "Emotional development" "Cognitive impacts" "Social impacts" |
| 3 | How can international and cross-jurisdictional research on the impact of violent games be generalised to the Australian context? | <p>Cross-cultural academic studies on violent video games, especially those involving countries likely to be compared to Australia.</p> <p>Any other research on the generalisability of international findings cross-culturally, and if available, to the Australian context and relating to aggression, attitudes to women and gaming.</p> | <p>"Generalisable" "Generalisability" "Applicability" "Comparable" "Research" "Cross-cultural research" "Violent video games" "Attitudes to women" "Gaming" "Australia" "Australian"</p> <p>(we will also include here names of countries that come up as most comparable to Australia)</p> |

Appendix B

Different types of bias identified by researcher Christopher Ferguson

| Bias | Description | Influence on the debate on whether VVGs cause negative outcomes |
|------------------|--|---|
| Citation bias | Authors selectively reference studies that support their hypotheses, and exclude studies that contradict their hypotheses. | VVG meta-analyses selectively include studies which match the researchers' pre-determined hypotheses. Evidence suggests that scholars who neglect to refer to research which contradicts their hypotheses report higher effect sizes. ¹⁸⁷ |
| Publication bias | Statistically significant effects are more likely to be reported in journals than null effects. | Studies that find an effect of VVGs on aggression, attitudes towards women, and mental health outcomes are over-represented in the literature. ¹⁸⁸ Studies finding no relationship between VVGs and aggression are less likely to be published. This results in a false perception of the amount of evidence in favour of VVGs causing both positive and negative outcomes in players. |
| Inflation bias | Measures of aggression, attitudes towards women, and mental health outcomes are not standardised across studies and there is no consensus on how they should be interpreted. | Study results can be selectively interpreted by authors to support their predetermined hypotheses. The authors of VVG meta-analyses may have biases which influence how they interpret and present evidence from the literature. ¹⁸⁹ |

Greater transparency has been proposed as a way to address research bias and poor methodology.¹⁹⁰ Pre-registration requires scholars to submit their research rationale, hypotheses, design and analytic strategy prior to conducting an experiment. This locks researchers into a pre-specified plan and reduces the opportunity for both explicit and implicit bias creeping into the research process. Publicising research agendas ahead of time also prevents the failure to report results which contradict the original aims of the researchers.

¹⁸⁷ Ferguson, C.J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹⁸⁸ Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International Journal of Law and Psychiatry*, 56, 35-43.

¹⁸⁹ Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.

¹⁹⁰ Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.

Bibliography

- Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development, 87*(6), 1877-1892.
- Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence? *Psychology of Violence, 1*(4), 259.
- Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of Youth and Adolescence, 42*(7), 1090-1104.
- Anderson CA, et al. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin, 136*, 151–173.
- Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Personality and Social Psychology Bulletin, 43*, 986–998.
- Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics, 140*(Supplement 2), S142-S147.
- Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity, 12*, 124-131.
- Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology, 48*(2), 486-491.
- Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research, 7*(1), 2-18.
- Blackburn, G., & Scharrer, E. (2019). Video game playing and beliefs about masculinity among male and female emerging adults. *Sex Roles, 80*(5), 310-324.
- Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 19 Aug. 2019].
- Bösche, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology: Theories, Methods, and Applications, 22*(4), 139–146.
- Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

- Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games= sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.
- Bucolo, D. (2010). Violent video game exposure and physical aggression in adolescence: tests of the general aggression model. (Unpublished doctoral dissertation). University of New Hampshire.
- Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early Childhood Media Exposure and Self-Regulation: Bidirectional Longitudinal Associations. *Academic Pediatrics*, 18(7), 813-819.
- Coyne, S. M., & Stockdale, L. (2021). Growing up with Grand Theft Auto: a 10-year study of longitudinal growth of violent video game play in adolescents. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 11-16.
- Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.
- Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.
- Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.
- Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for Health Journal*, 4(2), 91-94.
- Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour (Unpublished manuscript).
- Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.
- Drummond, A., Sauer, J. D., & Ferguson, C. J. (2020). Do longitudinal studies support long-term relationships between aggressive game play and youth aggressive behaviour? A meta-analytic examination. *Royal Society Open Science*, 7, 200373.
- Drummond, A., Sauer, J. D., Ferguson, C. J., Cannon, P. R., & Hall, L. C. (2021). Violent and non-violent virtual reality video games: Influences on affect, aggressive cognition, and aggressive behavior. Two pre-registered experiments. *Journal of Experimental Social Psychology*, 95, 104119.
- Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.

- Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.
- Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.
- Ferguson, C. J., & Kilburn, J. (2010). Much ado about nothing: The misestimation and overinterpretation of violent video game effects in Eastern and Western nations: Comment on Anderson et al. (2010). *Psychological Bulletin*, 136(2), 174-178.
- Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of Psychiatric Research*, 45(6), 808-813.
- Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.
- Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.
- Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International Journal of Law and Psychiatry*, 56, 35-43.
- Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric Quarterly*, 1-5.
- Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337.
- Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croats. *Computers in Human Behavior*, 27(3), 1195-1200.
- Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.
- Ferguson, C. J., & Colwell, J. (2020). Sexualised video games, sexist attitudes and empathy towards victims of rape: Correlational evidence for a relationship is minimal in an online study. *Criminal Behaviour and Mental Health*, 30(1), 16-27.
- Ferguson, C. J., Copenhaver, A., & Markey, P. (2020). Reexamining the findings of the American Psychological Association's 2015 task force on violent media: A meta-analysis. *Perspectives on Psychological Science*, 15(6), 1423-1443.
- Ferguson, C. J., Gryshyna, A., Kim, J. S., Knowles, E., Nadeem, Z., Cardozo, I., ... & Willis,

- E. (2021). Video games, frustration, violence, and virtual reality: Two studies. *British Journal of Social Psychology*. DOI: 10.1111/bjso.12471.
- Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among “vulnerable” populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of Youth and Adolescence*, 43(1), 127-136.
- Ferguson, C. J., & Smith, S. (2021). Examining homicides and suicides cross-nationally: Economic factors, guns and video games. *International Journal of Psychology*. DOI:10.1002/ijop.12760
- Ferguson, C. J., Trigani, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric Quarterly*, 87(1), 49-56.
- Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: A longitudinal study. *Journal of Youth and Adolescence*, 48(8), 1439-1451.
- Ferguson, C. J., & Wang, C. J. (2021). Aggressive video games are not a risk factor for mental health problems in youth: A longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 70-73.
- Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.
- Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.
- Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The Influence of Empathy and Morality of Violent Video Game Characters on Gamers' Aggression. *Frontiers in Psychology*, 8, 1863.
- Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.
- Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA Pediatrics*, 168(5), 450-457.
- Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social networking*, 21(9), 535-541.

- Granic, I., Lobel, A., & Engels, R. C. (2014). The benefits of playing video games. *American Psychologist*, 69(1), 66.
- Greitemeyer, T. (2019). The contagious impact of playing violent video games on aggression: Longitudinal evidence. *Aggressive Behavior*, 45(6), 635-642.
- Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and Social Psychology Bulletin*, 40(5), 578-589.
- Han, X., & Appelbaum, R. P. (2018). China's science, technology, engineering, and mathematics (STEM) research environment: A snapshot. *PloS one*, 13(4), e0195347.
- Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Pre bedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.
- Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through "blood-red tinted glasses": The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.
- Hawk, C. E., & Ridge, R. D. (2021). Is it only the violence? The effects of violent video game content, difficulty, and competition on aggressive behavior. *Journal of Media Psychology: Theories, Methods, and Applications*, 33(3), 134-144.
- Holmes, O. (2021). No cults, no politics, no ghouls: how China censors the video game world. *The Guardian*. <https://www.theguardian.com/news/2021/jul/15/china-video-game-censorship-tencent-netease-blizzard> [Accessed 10 Aug. 2021]
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.
- Hilgard, J., Engelhardt, C. R., & Rouder, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al. (2010). *Psychological Bulletin*, 143(7), 757-774.
- Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological Science*, 30(4), 606-616.
- Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.
- Hollett, R. C., Morgan, H., Chen, N. T., & Gignac, G. E. (2020). Female characters from adult-only video games elicit a sexually objectifying gaze in both men and women. *Sex Roles*, 83(1), 29-42.
- Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS One*, 9(11), e111790.

- Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.
- Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video Game Use as Risk Exposure, Protective Incapacitation, or Inconsequential Activity Among University Students. *Journal of Media Psychology*, 29, 42-53.
- Gauthier, J. M., Zuromski, K. L., Gitter, S. A., Witte, T. K., Cero, I. J., Gordon, K. H., Ribeiro, J., Anestis, M., & Joiner, T. (2014). The interpersonal-psychological theory of suicide and exposure to video game violence. *Journal of Social and Clinical Psychology*, 33(6), 512-535.
- Jin, Y., & Li, J. (2014). Cultural Differences in the Effect of Violent Video Games on Adolescent Aggression Cognition: Based on the Perspective of Meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.
- Johannes, N., Vuorre, M., & Przybylski, A. K. (2021). Video game play is positively correlated with well-being. *Royal Society Open Science*, 8(2), 202049.
- Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS One*, 10(7), e0131613.
- Kasumovic, M. M., Blake, K., Dixon, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.
- King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.
- King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: an experimental study. *Journal of Sleep Research*, 22(2), 137-143.
- Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social Psychiatry and Psychiatric Epidemiology*, 51(3), 349-357.
- Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.
- Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular Psychiatry*, 24(8), 1220.
- LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of immersive, sexually objectifying, and violent video games on hostile sexism in males. *Communication Research Reports*, 35(5), 413-423.
- Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive Behavior*, 38(4), 298-308.

- Lee, E. J., Kim, H. S., & Choi, S. (2021). Violent video games and aggression: Stimulation or catharsis or both? *Cyberpsychology, Behavior, and Social Networking*, 24(1), 41-47.
- Li, J., Du, Q., & Gao, X. (2020). Adolescent aggression and violent video games: the role of moral disengagement and parental rearing patterns. *Children and Youth Services Review*, 118, 105370.
- Liau, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.
- Lindner, D., Tribble, M., Pilato, I., & Ferguson, C. J. (2020). Examining the effects of exposure to a sexualized female video game protagonist on women's body image. *Psychology of Popular Media*, 9(4), 553-560.
- Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.
- Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of Youth and Adolescence*, 46(4), 884-897.
- López-Fernández, F. J., Mezquita, L., Etkin, P., Griffiths, M. D., Ortet, G., & Ibáñez, M. I. (2021). The role of violent video game exposure, personality, and deviant peers in aggressive behaviors among adolescents: A two-wave longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 32-40.
- Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.
- Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.
- Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.
- Mathur, M. B., & VanderWeele, T. J. (2019). Finding common ground in meta-analysis "wars" on violent video games. *Perspectives on Psychological Science*, 14(4), 705-708.
- McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.
- McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).
- Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016). Media managing mood: A look at the possible effects of violent media on affect. *Child & Youth Care Forum*, 45(2), 241-258.

- Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.
- Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic Pediatrics*, 17(6), 620-624.
- Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.
- Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.
- Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society Open Science*, 6(2), 171474.
- Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of Personality and Social Psychology*, 106(3), 441.
- Rahal, R. M., & Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. *Science*, 349(6251), aac4716.
- Ruiz-Fernández, A., Junco-Guerrero, M., & Cantón-Cortés, D. (2021). Exploring the mediating effect of psychological engagement on the relationship between child-to-parent violence and violent video games. *International Journal of Environmental Research and Public Health*, 18(6), 2845.
- Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior*, 38, 281-287.
- Sarda, E., Zerhouni, O., Gentile, D. A., Bry, C., & Bègue, L. (2021). Some effects of sexist video games on self-masculinity associations. *Information, Communication & Society*, 1-16.
- Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.
- Shao, R., & Wang, Y. (2019). Effect of violent video games on adolescent aggression: moderated mediation effect of family environment and normative beliefs. *Frontiers in Psychology*, 10, 384.
- Shoshani, A., & Krauskopf, M. (2021). The Fortnite social paradox: The effects of violent-cooperative multi-player video games on children's basic psychological needs and prosocial behavior. *Computers in Human Behavior*, 116, 106641.
- Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow

- states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep Medicine*, 30, 64-70.
- Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: The roles of game difficulty and flow. *Sleep Medicine*, 39, 70-76.
- Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.
- Tian, Y., Gao, M., Wang, P., & Gao, F. (2020). The effects of violent video games and shyness on individuals' aggressive behaviors. *Aggressive Behavior*, 46(1), 16-24.
- Tear, M. J. (2015). *Violent video games and social behaviour*. (Unpublished bachelor's thesis). University of Queensland, Brisbane, Australia.
- Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS One*, 8(7), e68382.
- Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.
- Valkenburg PM, Peter J. (2013). The differential susceptibility to media effects model. *Journal of Communication*, 63, 221-43.
- Valkenburg, P. M., & Peter, J. (2013b). Five challenges for the future of media-effects research. *International Journal of Communication*, 7, 197-215.
- Van Aert, R. C., & Wicherts, J. (2021). Correcting for outcome reporting bias in a meta-analysis: A meta-regression approach (Unpublished manuscript). <https://doi.org/10.31222/osf.io/bn8vd>
- Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.
- Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.
- Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive Behavior*, 44(3), 257-267.
- Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2021). A longitudinal social network perspective on adolescents' exposure to violent video games and aggression. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 24-31.
- Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.

- Yao, M., Zhou, Y., Li, J., & Gao, X. (2019). Violent video games exposure and aggression: The role of moral disengagement, anger, hostility, and disinhibition. *Aggressive Behavior*, 45(6), 662-670.
- Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment Computing*, 24, 21-29.
- Zhao, H., Zhou, J., Xu, X., Gong, X., Zheng, J., & Zhou, J. (2021). How to Be Aggressive from Virtual to Reality? Revisiting the Violent Video Games Exposure-Aggression Association and the Mediating Mechanisms. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 56-62.
- Zhang, Q., Cao, Y., & Tian, J. (2021). Effects of violent video games on aggressive cognition and aggressive behavior. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 5-10.
- Zheng, X., Chen, H., Wang, Z., Xie, F., & Bao, Z. (2021). Online violent video games and online aggressive behavior among Chinese college students: The role of anger rumination and self-control. *Aggressive Behavior*. DOI: 10.1002/ab.21967.
- Zhang, Q., Tian, J., & Chen, L. (2021). Violent video game effects on aggressive behavior among children: the role of aggressive motivation and trait-aggressiveness in China. *Journal of Aggression, Maltreatment & Trauma*, 30(2), 175-192.

The impacts of violent video games from an Australian perspective

Literature Review for the Department of Infrastructure,
Transport, Regional Development and Communications

September 2021

Table of contents

| | |
|--|-----------|
| Executive summary | 3 |
| Our recommendations based on the research findings | 4 |
| 01 / Introduction | 6 |
| 1.1 / Generalisability of international findings to the Australian context | 7 |
| 1.2 / Methodology | 10 |
| 02 / The effect of VVGs on aggression | 13 |
| 2.1 / VVGs are unlikely to cause aggression | 13 |
| Australia | 13 |
| World | 14 |
| <i>Variable susceptibility to the effects of VVGs</i> | 19 |
| <i>Overall conclusions from international research</i> | 20 |
| 2.2 / Extremely violent games do not cause more aggression than VVGs | 21 |
| Australia | 21 |
| World | 22 |
| 2.3 / Conclusions | 23 |
| 03 / The effect of VVGs on attitudes towards women | 24 |
| 3.1 / VVGs do not change attitudes towards women | 24 |
| Australia | 24 |
| World | 24 |
| 3.2 / Conclusions | 26 |
| 04 / The effect of VVGs on young people's mental health | 27 |
| 4.1 / VVGs do not cause negative mental health outcomes in young players | 27 |
| Australia | 27 |
| World | 29 |
| 4.2 / Conclusions | 31 |
| 05 / Recommendations | 32 |
| 5.1 / Aggression | 32 |
| 5.2 / Attitudes towards women | 33 |
| 5.3 / Mental health outcomes | 33 |
| Appendix A | 35 |
| Appendix B | 37 |
| Appendix C | 38 |
| Bibliography | 41 |

Executive summary

Playing video games is a popular pastime among Australians, with 2 out of 3 Australians reporting that they play video games.¹ There is ongoing concern internationally that playing violent or extremely violent video games (VVGs) may lead to negative outcomes, including increased aggression, negative attitudes to women and poor mental health outcomes for young players. While decades of research exists attempting to address these questions, there is ongoing controversy on the effects of VVGs. Meanwhile, community concerns continue to grow alongside technological advances and increasingly realistic and immersive player experiences.

The evidence is therefore of interest to policy makers in Australia. The current review of academic research on the effects of VVGs seeks to identify any gaps in the literature from an Australian perspective. At the time of publication, only a small number of studies investigating the impacts of VVGs on behaviour and attitudes have been conducted within Australia. The vast majority of research has been carried out in the United States, Europe and Asia. Here, we assess the extent to which findings from international research can be used to inform an understanding of the potential impact of VVGs in an Australian setting.

Research Finding 1: Evidence suggests that exposure to VVGs does not have a negative impact on aggression.

Internationally there is much debate over the nature of the relationship between VVGs and players' behaviours and attitudes. The current review synthesises findings from the last 12 years to draw up-to-date conclusions as to the impact of VVGs.

Interpreting contradictory findings in the research literature is challenging due to widely varying methodologies, the tendency to only measure short-term outcomes, an overreliance on correlational evidence, and inconsistent definitions and measurements of aggression and attitudes towards women. Much of the academic literature on VVGs is dominated by supporters² and opponents³ of the hypothesised link between playing VVGs and aggression. Despite the ongoing controversy, high-quality individual studies that use meaningful measures of aggression, and meta-analyses that control for other likely causes of aggression, converge on the same conclusion: VVGs have little to no meaningful impact on real-world aggressive behaviour.

Research Finding 2: Evidence suggests that exposure to VVGs does not have a negative impact on youth mental health or attitudes to women.

There are also fears that VVGs have other negative effects, namely on players' mental health and their attitudes towards women. The high-quality studies that are available support

¹ Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: Interactive Games and Entertainment Association.

² Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

³ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

the same general conclusion as the aggression literature: it is unlikely that violent content in video games meaningfully impacts attitudes towards women and the mental health of young players. The effect of VVGs on attitudes towards women and the mental health of young players are less well studied than aggression. At present there are few high-quality studies and meta-analyses available on these outcomes, and drawing conclusions from individual studies is limited by inconsistent definitions and measures.

Research Finding 3: International research is generalisable to the Australian context

Overall, given the small differences between results on the strength of these associations across cultures, international research is highly relevant and sufficient to our understanding of the relationship between VVGs and aggression in the Australian context. Some small effects of culture on the relationship between VVGs and aggression are apparent, with researchers generally finding that effect sizes of the impact of VVGs on aggression tend to be slightly smaller for Eastern and Hispanic cultures than Western cultures.^{4,5,6} However, the magnitude of these effects across all cultures studied is small, and supports the conclusion that they are helpful in understanding the effects of VVGs on Australian players.

Unlike the aggression literature, little research exists on the cross-cultural generalisability of findings concerning the impact of VVGs on youth mental health and attitudes towards women. However, what research does exist does not suggest that violent content results in VVG players having poor attitudes towards women or negative mental health outcomes.

Our recommendations based on the research findings

We were asked by the Department of Infrastructure, Transport, Regional Development and Communications to conduct a review of academic literature on the impacts of VVGs relating to attitudes to women, child and youth mental health and aggression to identify any gaps in the research from an Australian perspective that would necessitate the conduct of new research in Australia. Based on the above conclusions, we make the following recommendations to the Department of Infrastructure, Transport, Regional Development and Communications:

- **At present, it is unlikely that further Australian research would change the overall conclusions of research from comparable countries on the relationship between VVGs and aggression.** It is unlikely that additional research in Australia on the effect of VVGs on aggression would meaningfully add to the academic literature. Correlational, longitudinal, and experimental research from generalisable populations in Europe, North America, and Asia all converge on the same conclusion - that there is little to no impact of violent video games on aggression.
- **At present, it is unlikely that further Australian research would change the overall conclusions of research from comparable countries on the relationship**

⁴ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

⁵ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁶ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

between VVGs and attitudes to women in the Australian context. While there is a lack of Australian evidence addressing this research question, the highest quality international research from the United States and Western Europe finds no strong evidence that violent content in and of itself causes players to develop negative attitudes towards women.

- **At present, it is unlikely that further Australian research would change the overall conclusions of research from comparable countries on the relationship between VVGs and mental health outcomes in young players.** It is unlikely that there is an underlying causal link between violent games and mental health outcomes among young Australian players. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to poor youth mental health outcomes. Some evidence suggests video games more generally have beneficial effects on youth mental health, while other evidence points to a relationship between excessive video game play and poor mental health. However, VVG content does not appear to affect youth mental health over and above general game play.

01 / Introduction

The purported link between violent video games (VVGs) and real-world violent attitudes and behaviours is a controversial and politicised issue. Mass shootings have been linked to VVGs since the infamous Columbine school shooting in 1999, as the perpetrators were avid players of *Doom*, a graphic first-person shooter game. Mass shootings continue to be linked to VVGs by some politicians and public commentators. However, evidence suggests that not all perpetrators are current or former players of VVGs.⁷

The nature of the relationship between violent and extremely violent video games and players' attitudes and behaviours is also contentious amongst academics.^{8,9,10,11} The controversy around VVGs is fuelled by the rapid pace of game development, which outstrips the pace of academic research. VVGs are increasingly complex, social, and graphic, such that academic studies from only 12 years ago may not apply to current games. Advances in video game graphics have greatly enhanced the realism of games, making them more immersive. Some researchers have argued that video game realism¹² and sexualisation of characters¹³ in immersive games might lead to greater negative impacts of playing video games than more traditional, less immersive video game formats. This has broadened community concerns about the effects of VVGs from aggression and violence to include attitudes towards women and mental health, particularly in young players.

The purpose of this review is to determine the relationship between violent and extremely violent video games and aggression, attitudes towards women, and youth mental health in the Australian context. Due to the relative lack of studies in Australian cohorts, this review is also designed to determine to what degree international findings can be generalised to Australia. Finally, in light of the available evidence and generalisability to Australia, we will form recommendations regarding further research.

⁷ Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 19 Aug. 2021].

⁸ Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, 12(5), 353-359.

⁹ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

¹⁰ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological Bulletin*, 136(2), 151.

¹¹ Ferguson, C. J., & Kilburn, J. (2010). Much ado about nothing: The misestimation and overinterpretation of violent video game effects in Eastern and Western nations: Comment on Anderson et al. (2010). *Psychological Bulletin*, 136(2), 174-178.

¹² Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.

¹³ LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of immersive, sexually objectifying, and violent video games on hostile sexism in males. *Communication Research Reports*, 35(5), 413-423.

1.1 / Generalisability of international findings to the Australian context

The impacts of VVGs on aggression, attitudes to women and youth mental health are questions of global interest. Internationally, a large body of research has been carried out to attempt to understand these associations, in particular relating to impacts on aggression. As with many questions in other policy areas, in order to reach the most robust conclusions we want to draw widely from the findings of international research. This is particularly the case for the Australian context, given that Australian research is currently limited in this space. In order to draw from international research, we need to first think carefully about how and when findings are likely to generalise across countries and cultures; this is a question posed by social scientists in other contexts for decades. There is some consensus that generalising findings across contexts is most appropriate with rigorous quantitative methodologies, and among studies using large samples.¹⁴ Hence, when looking at the international literature, we have given higher weighting to these studies (refer to section 1.2 below on ‘Strength of Evidence’ for more information about the research we have highlighted in this review).

Our criteria for assessing the generalisability of international research to Australia

Most research on the impact of VVGs has been carried out in countries that are, like Australia, industrialised, economically stable and technologically advanced. A common criticism of attempts to generalise from psychological studies is that participants in psychology studies tend to be Western, Educated, Industrialised, Rich and Democratic (WEIRD). While Australians are classified as WEIRD, globally speaking, most people are not.¹⁵ While not all samples discussed in this review are WEIRD, they are predominantly educated, industrialised, rich and democratic. In other words, only countries that are sufficiently developed such that inhabitants have general access to VVGs and high usage characteristics can provide enough data from which to draw robust conclusions.

While effect sizes are very small across cultures, studies on WEIRD samples tend to produce similar effect sizes, confirming that evidence from these culturally, economically and politically similar countries was highly generalisable to Australia. Samples from socio-economically similar but culturally different countries tend to produce smaller effect sizes in relation to VVGs and aggression and therefore we would consider them less generalisable, and non-WEIRD countries with few socio-economic similarities are associated with even smaller effect sizes, indicating they are the least generalisable. However, it is apparent that any cultural factors mediating the relationship between VVGs and aggression and mental health are small, if not trivial, and therefore even studies classed as having medium generalisability are relevant for understanding the relationship between VVGs and behavioural and attitudinal outcomes.

In this review we have divided the research outlined in the review into that carried out in an Australian context (‘Australia’) and in the international context (‘World’).

¹⁴ Generalizability and Transferability, The WAC Clearinghouse. Retrieved from: <https://wac.colostate.edu/resources/writing/guides/gentrans/> [Accessed 19 Aug. 2021].

¹⁵ Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.

Table 1. How we assessed generalisability to Australia

| Low generalisability to the Australian context | Medium generalisability to the Australian context | High generalisability to the Australian context |
|--|--|---|
| <p>Studies that come from developing nations where social, cultural and political factors are contrasting to those of Western nations.</p> <p>In addition, access to games and technologies associated with gaming are markedly low.</p> | <p>Research comes from countries (predominantly Eastern) that have similar socio-economic conditions to the Australian context, and most studies show cross-cultural similarities in relation to Western contexts. However, there are some small differences in effect sizes between rates of game play and effect sizes (e.g. Japan).</p> <p>Countries include: Japan, Singapore, China, and Taiwan. Also included are studies with Latin/Hispanic cultures.</p> | <p>Carried out in countries that have been shown to have similar gaming characteristics and cultural factors to Australia (primarily Western countries with similar patterns seen in the effects of VVGs).</p> <p>We are confident that the studies detailed can be helpful in understanding the Australian context.</p> <p>Countries include: United Kingdom, United States, Germany, Belgium, France, and the Netherlands.</p> |

Many explanations have been proposed for why culture would be a moderating factor on the impacts of VVGs on aggression, including differences in collectivist values and moral discipline,¹⁶ how violence is contextualised in the media, the context in which video games are played,¹⁷ and variation across cultures in the meaning of being a perpetrator and a victim of aggression.¹⁸ These studies predominantly explore the differences between research outcomes in Eastern (non-WEIRD; predominantly Japan, but also Singapore and China) versus Western (WEIRD; predominantly the United States, the United Kingdom, Australia, Germany, and other European countries) cultures.

While some studies suggest that underlying rates of aggression vary across cultures,¹⁹ the size and direction of the association between the two factors (predictor and outcome) generally remains the same.²⁰ More broadly, correlational research looking at the relationship between media violence exposure and aggressive behaviours across cultures has found few cross-cultural differences.^{21, 22} One comparison of the impact of media violence among seven

¹⁶ Jin, Y., & Li, J. (2014). Cultural differences in the effect of violent video games on adolescent aggression cognition: based on the perspective of meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.

¹⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

¹⁸ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹⁹ Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive Behavior*, 38(4), 298-308.

²⁰ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

²¹ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Personality and Social Psychology Bulletin*, 43, 986-998.

²² Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.

countries (Australia, China, Croatia, Germany, Japan, Romania, and the United States) found no significant differences in the strength of the relationship with aggression across cultures.²³

Some small effects of culture are apparent in the VVG literature, with researchers generally finding that effect sizes of the impact of VVGs on aggression are slightly smaller for Eastern and Hispanic cultures than Western cultures.^{24,25,26} For example, Anderson et al.²⁷ conducted a cross-cultural comparison of the impacts of VVGs in Eastern (primarily Japan, but also China and Singapore) and Western (primarily United States) cultures. They found that in longitudinal studies, the impact of VVGs on aggression was somewhat smaller in Eastern than in Western contexts, but this difference was only marginally significant. In other study designs, however, Anderson et al. reported conflicting findings, both of which were non-significant: the average effect size in experimental studies was slightly larger in Eastern than in Western contexts, while the average effect size in cross-sectional studies was slightly larger in Western than in Eastern contexts. This suggests that the role of culture as a mediator in the relationship between VVGs and aggression may often be confounded with differences in research design.

This finding is supported by researchers who argue both that VVGs lead to increased aggression, and those who argue that VVGs have no impact on aggression. For example, Ferguson et al.²⁸ found Eastern samples returned smaller effect sizes, as did Latin/Hispanic samples, than Western samples. Given that effect sizes across all studies analysed by Ferguson et al. were generally small, the differences among culture as a moderating variable were also deemed small. It is also important to note that this meta-analysis looked at all video games, both violent and non-violent. However, they do corroborate Anderson et al.'s argument that culture/ethnicity might somewhat moderate the impact on aggression, with Western samples showing greater effect sizes. Similarly, a subsequent meta-analysis from Prescott et al.²⁹ focusing exclusively on the longitudinal outcomes of VVGs on White, Asian and Hispanic samples found the strongest associations between White samples, intermediate associations with Asian samples and the smallest associations with Hispanic samples (acknowledging that only a small number of studies exist that use Hispanic samples).

²³ Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Personality and Social Psychology Bulletin*, 43, 986-998.

²⁴ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

²⁵ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

²⁶ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

²⁷ Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behaviour in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

²⁸ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

²⁹ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

There are few studies looking at cross-cultural variations in the impacts of VVGs on attitudes towards women and youth mental health. One cross-cultural study looked at the relationship between the amount of time spent playing VVGs and mental health in young children.³⁰ Comparisons were made across Eastern and Western European countries (Germany, The Netherlands, Lithuania, Romania, Bulgaria, and Turkey). Across cultures, differences were seen in usage patterns, but once these were controlled for, no differences were found in mental health outcomes across countries. Although there is a relative lack of cross-cultural studies investigating the effects of VVGs on attitudes towards women, as we outline in Section 3.1 below, any effects are more likely to be due to the sexist and sexualised content of games, not violence per se.

1.2 / Methodology

This section outlines the methodology for the present review of academic literature on the impact of VVGs, which includes:

- Search parameters for our scan of the literature
- Criteria for inclusion of the literature in our review
- Criteria for our assessment of the strength of the literature

Definitions of key terms may be found in Appendix C.

Search criteria

A computerised literature search was conducted via Google Scholar, PubMed, ScienceDirect, Web of Science, Proquest and PsycINFO, using relevant search terms (see Table 1 in Appendix A) to identify the most relevant literature.

Using the criteria outlined in this section, over 220 original research articles were collected and reviewed, in addition to meta-analyses and systematic reviews. A large number of studies met the search criteria but were not included in this report as they did not meet the inclusion criteria detailed below. Therefore, the attached bibliography does not reflect an exhaustive list of all extant research on the impacts of VVGs. Rather, it reflects research referenced in the body of the literature review, which synthesises and summarises the highest quality research conducted in the past 12 years.

Inclusion criteria

This review synthesises the highest quality research investigating the impacts of VVGs on aggression, attitudes to women and youth mental health. Due to the increased graphic realism, immersive experience and levels of violent content in modern video games only studies conducted in the past 12 years were included. A systematic scan of the literature revealed hundreds of studies investigating the impacts of VVGs on aggression, attitudes towards women, and youth mental health. Due to the volume of poor-quality studies identified, the inclusion criteria were restricted to prioritise only the most rigorous research.

³⁰ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children? *Social Psychiatry and Psychiatric Epidemiology*, 51(3), 349-357.

This was assessed using the criteria outlined in the Strength of Evidence Table (Table 2) below.

Strength of evidence

Strength of evidence was assessed using the criteria in the table below. This review prioritised research conducted in the past 12 years which had the characteristics outlined in the green High column below. Where high-quality evidence was not available, evidence that was categorised as medium or low was included in order to form conclusions and recommendations. Only eight low-quality studies have been included, and only where higher quality studies were not available. Where low-quality research is referred to this is explicitly labelled within this report. The eight studies we labelled low quality are: an international study on the link between VVGs and attitudes towards women (one study), Australian studies on the impacts of VVG on aggression (three studies) and the mental health of young players (six studies, two of which are also referenced in the section on the impact of VVGs on aggression).

Table 2. How we assessed strength of evidence

| Strength of evidence | | |
|---|--|---|
| Low | Medium | High |
| <p>Evidence of research bias or subject to peer-reviewed criticism.</p> <p>Studies with unvalidated measures of aggression/attitudes towards women/mental health.</p> <p>Correlational studies where other known causes of aggression/attitudes towards women/mental health are not controlled for.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with low or undemonstrated association with real life attitudes or behaviour.</p> | <p>Correlational studies with a small number of known causes of aggression/attitudes towards women/mental health controlled for.</p> <p>Studies which rely on self-report measures only.</p> <p>Studies with small samples with low generalisability.</p> <p>Meta-analyses with evidence of research bias, have been subjected to peer-reviewed criticism or have not been independently replicated.</p> | <p>Correlational studies which have controlled for multiple known causes of aggression/attitudes towards women/mental health.</p> <p>Longitudinal or retrospective studies which measure attitudes or behaviour over time.</p> <p>Studies with large nationally representative samples.</p> <p>Studies or meta-analyses which have been independently replicated.</p> <p>Studies with artificial measures of aggression/attitudes towards women/mental health with high demonstrated association with real-life attitudes or behaviour.</p> <p>Studies which have adopted open science practices such as pre-registration.</p> <p>Studies which include multiple outcome measures such as self-reports, peer-report and validated measurement scales.</p> |

| | | |
|--|--|---|
| | | Studies which have conducted cross-cultural comparisons or have generalised findings across different contexts. |
|--|--|---|

As stated above, each recommendation set out in this review was made using studies that span this spectrum of research quality. We prioritised studies that meet the criteria for *high* quality, and have made stronger recommendations where more high-quality research was available to draw on.

02 / The effect of VVGs on aggression

2.1 / VVGs are unlikely to cause aggression

| Strength of evidence | Generalisability to Australia |
|--|---|
| High | High-quality studies drawn from the United States, the United Kingdom, Germany, China, Singapore and Australia. |
| The results of high-quality international and Australian studies suggest that the effect of VVGs on aggression is small to non-existent. | |



Research on the link between VVGs and aggression conducted in Australia indicate that the link between VVGs and aggression is small to non-existent. One 2019 Australian study found that playing VVGs for 5 to 15 minutes impaired players' recognition of anger, enhanced their perception of their fighting ability, and encouraged them to perceive their target as weak.³¹ However, consistent with international studies, the authors found that gender and baseline aggression mediated the effects of VVGs on these aggression measures. It is also important to note that these aggression measures are based on perception, not action.

Another 2019 Australian study found that game competition, not violence, increased aggressive emotions.³² Moreover, the authors found that neither competition nor violence increased aggressive behaviour. This is consistent with international studies, which often find larger effects of violent games on aggressive emotions and perceptions than on actual aggressive behaviour.

A recent Australian study found that players find in-game aggression more acceptable than offline aggression.³³ This suggests that players perceive in-game and real-world behaviour as governed by different norms, which may explain why acting out violence in a game does not cause real-world aggression. It is important to note that the authors recruited players online, and that only 11.5 per cent of their sample were Australian (the majority were American). The most common games played in their sample were *World of Warcraft* and

³¹ Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of Men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.

³² Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

³³ Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.

World of Tanks, which have M and PG ratings, respectively, so it is possible that the authors would have obtained different findings if their sample played more violent games.

A study of young Australians found that boys were significantly more likely than girls to play VVGs (or watch other violent media), and to have used physical violence in the past year.³⁴ However, this cross-sectional (and therefore non-causal) study also found that young people who committed acts of aggression were also more likely to have been threatened with physical violence in the community, at home, or at school. This study suggests that factors such as gender may predict VVG gameplay and exposure to experiences that are more likely to directly cause aggression.

An Australian study of male and female VVG players revealed complex reasons for why players are drawn to violent games.³⁵ For example, women in this study reported playing VVGs to be more attractive to romantic partners. This study did not find any relationship between VVG play and aggression or dominance measures. However, as the authors note, their measure of aggression was acts of intimate partner violence, which is a more extreme measure than is typically used in VVG studies. This makes it difficult to relate this study to the wider VVG literature.



World

Recent high-quality studies conducted internationally are largely consistent with Australian findings. Studies that properly control for other known causes of aggression, and those that measure real-world behaviour, either find no relationship, or a very small effect of VVGs on aggression.

While only a recent phenomenon, recent pre-registered studies have mostly found no link between VVGs and aggression, nor any other negative effects. In a pre-registered trial conducted in the UK, researchers interviewed a large sample of British adolescents and their parents or carers. They found no association between exposure to VVGs over the past month and real-life aggressive behaviour as measured by carer assessment.³⁶ Similarly, three pre-registered randomised controlled trials conducted in the United States found no effect of VVGs on short-term measures of aggressive inclinations,³⁷ hostility,³⁸ or aggressive

³⁴ Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research*, 7(1), 2-18.

³⁵ Kasumovic, M. M., Blake, K., Dixon, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.

³⁶ Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society Open Science*, 6(2), 171474.

³⁷ McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.

³⁸ Ferguson, C. J., Trigan, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric Quarterly*, 87(1), 49-56.

behaviour.³⁹ Two recent pre-registered trials from New Zealand⁴⁰ and the United States⁴¹ also found no effect of VVGs on aggressive behaviour, even when participants played an immersive violent virtual reality game (which some have argued would be more likely to produce harmful effects). Additionally, two pre-registered longitudinal studies found no association between VVG exposure and aggression measured at a later time.⁴² For instance, a study of over 3,000 Singaporean youth found no association between playing VVGs and aggression measured two years later.⁴³ The size of the (non-significant) relationship was so small that the authors concluded it would take more hours than exist in a day (27 hours) of playing M-rated games to produce clinically noticeable changes in aggression.

In the past 12 years, seven meta-analyses have been conducted to synthesise the literature investigating the effect of VVGs on aggression.^{44,45,46,47,48,49} Combined, these meta-analyses cover hundreds of correlational, experimental and longitudinal studies involving hundreds of thousands of participants. The findings and interpretations of these meta-analyses diverge across papers. In an attempt to find common ground, one study analysed three prominent meta-analyses and came to the conclusion that VVGs have a small effect on aggression.⁵⁰ However, others⁵¹ have argued that the link is overstated and any effect is so small it is practically meaningless.⁵²

³⁹ Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337

⁴⁰ Drummond, A., Sauer, J. D., Ferguson, C. J., Cannon, P. R., & Hall, L. C. (2021). Violent and non-violent virtual reality video games: Influences on affect, aggressive cognition, and aggressive behavior. Two pre-registered experiments. *Journal of Experimental Social Psychology*, 95, 104119.

⁴¹ Ferguson, C. J., Gryshyna, A., Kim, J. S., Knowles, E., Nadeem, Z., Cardozo, I., ... & Willis, E. (2021). Video games, frustration, violence, and virtual reality: Two studies. *British Journal of Social Psychology*. DOI: 10.1111/bjso.12471.

⁴² Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric Quarterly*, 1-5.

⁴³ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of Youth and Adolescence*, 48(8), 1439-1451.

⁴⁴ Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., ... & Saleem, M. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in Eastern and Western countries: A meta-analytic review. *Psychological Bulletin*, 136(2), 151.

⁴⁵ Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and Social Psychology Bulletin*, 40(5), 578-589.

⁴⁶ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10(5), 646-666.

⁴⁷ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

⁴⁸ Ferguson, C. J., Copenhaver, A., & Markey, P. (2020). Reexamining the findings of the American Psychological Association's 2015 task force on violent media: A meta-analysis. *Perspectives on Psychological Science*, 15(6), 1423-1443.

⁴⁹ Drummond, A., Sauer, J. D., & Ferguson, C. J. (2020). Do longitudinal studies support long-term relationships between aggressive game play and youth aggressive behaviour? A meta-analytic examination. *Royal Society Open Science*, 7, 200373.

⁵⁰ Mathur, M. B., & VanderWeele, T. J. (2019). Finding common ground in meta-analysis "wars" on violent video games. *Perspectives on Psychological Science*, 14(4), 705-708.

⁵¹ Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour (Unpublished manuscript).

⁵² We note that the Drummond & Sauer paper is, as at August 2021, available only as a preprint and has yet to undergo peer review.

There are several reasons to question whether any effect of VVGs on aggression in fact exists:

- The meta-analyses conducted include many laboratory experiments with poor methodology. They rely on artificial measures of short-term aggression, with unproven correlation to real-life aggressive behaviour.
- Effect sizes are smaller in studies with outcome measures that are more closely related to real-life aggressive behaviour and in research measuring long-term outcomes.
- As research methodology and rigour has improved over the past 12 years, evidence of a link between VVGs and aggression has grown weaker.
- When other known risk factors associated with aggression are controlled for (e.g. baseline aggression levels, gender, socioeconomic status), the association between VVGs and aggression diminishes almost entirely, suggesting that VVGs are not an independent cause of aggression.

There is also substantial evidence of bias within this literature (see Appendix B), especially in experimental studies claiming to demonstrate that VVGs cause aggression.⁵³ When research bias is corrected for, the strength of evidence supporting a link between VVGs and aggression weakens. Recent re-analysis of a meta-analysis on the effect of VVGs on aggressive cognition,⁵⁴ and another on the effect of VVGs on aggressive behaviour,⁵⁵ found that after correcting for research bias, the initially reported effect sizes decreased.⁵⁶

As mentioned earlier, emerging research has begun to address these biases by adopting more rigorous methodology. Research which is pre-registered, has been independently replicated, or measures real-life aggressive behaviour reports effects that are small to non-existent. Contrary to these findings, one recent pre-registered cross-sectional study found an association between playing video games and self-reported interpersonal violence in US university students.⁵⁷ However, the study did not address the impact of *violence* in video games, so it does not provide any evidence that violent content in games drives aggression.

While experimental studies are useful to gather evidence about causality, they have mostly relied on short-term measures of aggression. To investigate whether VVGs *cause* aggression over time, researchers conducted a randomised controlled trial in Germany. Participants were assigned to play a VVG, a non-violent video game, or no game at all.

⁵³ Hilgard, J., Engelhardt, C. R., & Rouders, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al.(2010). *Psychological Bulletin*, 143(7), 757-774.

⁵⁴ van Aert, R. C., & Wicherts, J. Correcting for outcome reporting bias in a meta-analysis: A meta-regression approach (Unpublished manuscript).

⁵⁵ Ferguson, C. J., Copenhaver, A., & Markey, P. (2020). Reexamining the findings of the American Psychological Association's 2015 task force on violent media: A meta-analysis. *Perspectives on Psychological Science*, 15(6), 1423-1443.

⁵⁶ We note that the van Aert & Wicherts paper is, as at August 2021, available only as a preprint and has yet to undergo peer review.

⁵⁷ Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video game use as risk exposure, protective incapacitation, or inconsequential activity among university students. *Journal of Media Psychology*, 29,42-53.

There was no difference between the groups across a range of measures of aggression immediately after eight weeks of gameplay, or two months after the experiment ended.⁵⁸

Experiments with longer-term outcomes than this are limited; most longitudinal studies do not manipulate VVG play. However, they can still provide important information about the relationship between VVG exposure and aggression over time. Overall, these studies do not provide strong evidence that playing VVGs predicts later aggression. Several recent studies from the United States,⁵⁹ Spain,⁶⁰ and the Netherlands⁶¹ have found no link between VVGs and later aggression. Moreover, a meta-analysis of 28 longitudinal studies concluded that there is no practically meaningful effect of VVGs on later aggressive behaviour.⁶² However, one American study that surveyed participants over a 10-year period found that those who played VVGs at consistently moderate levels throughout the study reported greater aggression at age 23 than those who played at low levels.⁶³ Interestingly, though, participants who played VVGs at high levels at age 13 but moderate levels 10 years later also reported lower aggression than consistently moderate players and were no different from low players. These findings suggest that patterns of VVG play over time could have different effects on aggression, but without replication this is not yet clear.

Research investigating the effects of VVGs have used a range of aggression measures, many of which are artificial behaviours in a laboratory setting^{64, 65, 66, 67} (e.g. putting hot sauce into another participant's food), or self-report scales of aggressive thoughts and

⁵⁸ Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular Psychiatry*, 24(8), 1220.

⁵⁹ Greitemeyer, T. (2019). The contagious impact of playing violent video games on aggression: Longitudinal evidence. *Aggressive Behavior*, 45(6), 635-642.

⁶⁰ López-Fernández, F. J., Mezquita, L., Etkin, P., Griffiths, M. D., Ortet, G., & Ibáñez, M. I. (2021). The role of violent video game exposure, personality, and deviant peers in aggressive behaviors among adolescents: A two-wave longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 32-40.

⁶¹ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2021). A longitudinal social network perspective on adolescents' exposure to violent video games and aggression. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 24-31.

⁶² Drummond, A., Sauer, J. D., & Ferguson, C. J. (2020). Do longitudinal studies support long-term relationships between aggressive game play and youth aggressive behaviour? A meta-analytic examination. *Royal Society Open Science*, 7, 200373.

⁶³ Coyne, S. M., & Stockdale, L. (2021). Growing up with Grand Theft Auto: a 10-year study of longitudinal growth of violent video game play in adolescents. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 11-16.

⁶⁴ Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior*, 38, 281-287.

⁶⁵ Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics*, 140(Supplement 2), S142-S147.

⁶⁶ Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.

⁶⁷ Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS One*, 9(11), e111790.

emotions.^{68,69,70,71,72,73} There is no clear evidence that these measures relate to or predict real-world behaviours,⁷⁴ which are the real concern to the community. One longitudinal study attempted to address this issue by collecting peer reports of adolescents' aggressive behaviour and found that exposure to VVGs was unrelated to aggression 1 year later.⁷⁵ If VVGs did in fact cause real-world aggressive behaviours, we would also expect to observe a correlation between violent video game consumption and real-world violent incidents. In four separate analyses,⁷⁶ researchers compared patterns of US crime data with measures of VVG consumption over the past 30 years.⁷⁷ They found no evidence of a relationship between VVG consumption and aggressive assaults or homicides. In fact, several measures of VVG consumption were associated with *decreased* crime rates, a finding supported by other research comparing patterns of VVG consumption and US crime data.^{78,79}

There are several possible explanations as to why VVG consumption would be associated with fewer violent crimes. More aggressive people might prefer to play VVGs, and are therefore occupied by a non-violent activity following VVG releases. Alternatively, VVGs might have a cathartic effect, allowing healthy venting of aggression in a controlled and harmless environment. Findings from a recent study lend support to the cathartic effect of VVGs. Spanish youth aged 13-19 with higher exposure to VVGs exhibited lower rates of child-to-parent violent behaviour, suggesting that VVGs may provide an outlet for youth aggression.⁸⁰ Similarly, a longitudinal study of South Korean adolescents found that playing VVGs was associated with lower physical and verbal aggression 6 months later.⁸¹ It is

⁶⁸ Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.

⁶⁹ Börsche, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology: Theories, Methods, and Applications*, 22(4), 139-146.

⁷⁰ Bucolo, D. (2010). *Violent video game exposure and physical aggression in adolescence: Tests of the general aggression model*. (Unpublished doctoral dissertation) University of New Hampshire.

⁷¹ Saleem, M., Anderson, C. A., & Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on college students' affect. *Aggressive Behavior*, 38(4), 263-271.

⁷² Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The influence of empathy and morality of violent video game characters on gamers' aggression. *Frontiers in Psychology*, 8, 1863.

⁷³ Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.

⁷⁴ McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).

⁷⁵ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2021). A longitudinal social network perspective on adolescents' exposure to violent video games and aggression. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 24-31.

⁷⁶ The analyses compared US data on violent crime with release dates for major VVGs, VVG sales data, and internet searches for VVG guides.

⁷⁷ Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.

⁷⁸ Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247-1265.

⁷⁹ Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.

⁸⁰ Ruiz-Fernández, A., Junco-Guerrero, M., & Cantón-Cortés, D. (2021). Exploring the mediating effect of psychological engagement on the relationship between child-to-parent violence and violent video games. *International Journal of Environmental Research and Public Health*, 18(6), 2845.

⁸¹ Lee, E. J., Kim, H. S., & Choi, S. (2021). Violent video games and aggression: Stimulation or catharsis or both? *Cyberpsychology, Behavior, and Social Networking*, 24(1), 41-47.

important to note that none of these findings are experimental and therefore cannot be used to draw strong causal conclusions.

An emerging trend in the VVG literature is a recent proliferation of publications originating from China.^{82,83,84,85,86,87,88} These studies all report findings in support of a relationship between VVGs and aggressive cognition or behaviour, contrary to research concluding that the effects of VVGs on aggression are smaller in Eastern than Western countries.⁸⁹ With few exceptions, these studies were classified as providing low strength of evidence due to methodological weaknesses such as small sample sizes, failing to control for known risk factors of aggression, and the absence of pre-registered study designs. Due to the low strength of this evidence and medium generalisability to the Australian context, these studies have not influenced the overall conclusions of this review. Why Chinese researchers are increasingly interested in this subject matter remains opaque. There is evidence of substantial Chinese state control and influence over domestic academic research⁹⁰ and over the domestic video game industry.⁹¹ The latter appears to be fuelled by moral concern over the impacts of video games on Chinese citizens. The extent to which these factors may have influenced VVG research conducted in China is beyond the scope of this review.

Variable susceptibility to the effects of VVGs

An area of increasing interest to researchers is whether individuals differ in their susceptibility to the impacts of VVGs. In 2013, Valkenburg and Peter proposed that individual differences in personality traits, social-context and mental health conditions might determine the size and nature of VVG effects.⁹² However, there is currently a lack of strong evidence that this is the

⁸² Zhang, Q., Cao, Y., & Tian, J. (2021). Effects of violent video games on aggressive cognition and aggressive behavior. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 5-10.

⁸³ Yao, M., Zhou, Y., Li, J., & Gao, X. (2019). Violent video games exposure and aggression: The role of moral disengagement, anger, hostility, and disinhibition. *Aggressive Behavior*, 45(6), 662-670.

⁸⁴ Tian, Y., Gao, M., Wang, P., & Gao, F. (2020). The effects of violent video games and shyness on individuals' aggressive behaviors. *Aggressive Behavior*, 46(1), 16-24.

⁸⁵ Zheng, X., Chen, H., Wang, Z., Xie, F., & Bao, Z. (2021). Online violent video games and online aggressive behavior among Chinese college students: The role of anger rumination and self-control. *Aggressive Behavior*. DOI: 10.1002/ab.21967

⁸⁶ Zhang, Q., Tian, J., & Chen, L. (2021). Violent video game effects on aggressive behavior among children: the role of aggressive motivation and trait-aggressiveness in China. *Journal of Aggression, Maltreatment & Trauma*, 30(2), 175-192.

⁸⁷ Li, J., Du, Q., & Gao, X. (2020). Adolescent aggression and violent video games: the role of moral disengagement and parental rearing patterns. *Children and Youth Services Review*, 118, 105370.

⁸⁸ Zhao, H., Zhou, J., Xu, X., Gong, X., Zheng, J., & Zhou, J. (2021). How to be aggressive from virtual to reality? Revisiting the violent video games exposure-aggression association and the mediating mechanisms. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 56-62.

⁸⁹ Ferguson, C. J. (2015) Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.

⁹⁰ Han, X., & Appelbaum, R. P. (2018). China's science, technology, engineering, and mathematics (STEM) research environment: A snapshot. *PloS one*, 13(4), e0195347.

⁹¹ Holmes, O. (2021). No cults, no politics, no ghouls: how China censors the video game world. *The Guardian*. Retrieved from: <https://www.theguardian.com/news/2021/jul/15/china-video-game-censorship-tencent-netease-blizzard> [Accessed 10 Aug. 2021]

⁹² Valkenburg, P. M., & Peter, J. (2013a). The differential susceptibility to media effects model. *Journal of Communication*, 63, 221-43.

case.⁹³ While some studies report variable effects on aggression based on peer factors,^{94, 95} age,⁹⁶ sex,^{97, 98} personality traits,^{99, 100} and family environment,^{101, 102} the evidence is inconsistent. For example, one US correlational study found no evidence that children with mental health symptoms constitute a vulnerable population for VVG effects. In a sample of 377 children with either clinically diagnosed attention or depression symptoms, exposure to VVGs was not associated with increased levels of delinquency or bullying behaviour.¹⁰³ Another 3 year longitudinal study reported that sex, age, history of aggressive behaviour and family environment made no difference to the impact of VVGs on aggressive behaviour.¹⁰⁴ Where there is evidence of individual differences in susceptibility to VVGs, the effect is small and diminishes over time. For instance, two studies found that parental mediation style¹⁰⁵ and family hostility had a small influence on VVG effects when measured cross-sectionally, however neither had any impact on the relationship between VVGs and aggression when measured longitudinally.^{106, 107}

Overall conclusions from international research

The highest quality evidence suggests that playing VVGs does not account for a meaningful proportion of observed aggression, if any at all. Even when the largest possible effect sizes

⁹³ Valkenburg, P. M., & Peter, J. (2013b). Five challenges for the future of media-effects research. *International Journal of Communication*, 7, 197-215.

⁹⁴ Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.

⁹⁵ López-Fernández, F. J., Mezquita, L., Etkin, P., Griffiths, M. D., Ortet, G., & Ibáñez, M. I. (2021). The role of violent video game exposure, personality, and deviant peers in aggressive behaviors among adolescents: a two-wave longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 32-40.

⁹⁶ Breuer, J., Vogelgesang, J., Quandt, T., & Festl, R. (2015). Violent video games and physical aggression: Evidence for a selection effect among adolescents. *Psychology of Popular Media Culture*, 4(4), 305-328.

⁹⁷ Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through "blood-red tinted glasses": The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.

⁹⁸ Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive Behavior*, 44(3), 257-267.

⁹⁹ Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.

¹⁰⁰ Greitemeyer, T., & Sagioglou, C. (2017). The longitudinal relationship between everyday sadism and the amount of violent video game play. *Personality and Individual Differences*, 104, 238-242.

¹⁰¹ Shao, R., & Wang, Y. (2019). Effect of violent video games on adolescent aggression: moderated mediation effect of family environment and normative beliefs. *Frontiers in Psychology*, 10, 384.

¹⁰² Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.

¹⁰³ Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among "vulnerable" populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of Youth and Adolescence*, 43(1), 127-136.

¹⁰⁴ Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA Pediatrics*, 168(5), 450-457.

¹⁰⁵ Measured cross-sectionally, inconsistent restrictive mediation styles were associated with increased adolescent aggression, but no parental mediation styles were longitudinally related to media violence exposure and aggression.

¹⁰⁶ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.

¹⁰⁷ Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.

are reported their level barely approaches levels deemed of practical or clinical importance.^{108, 109} This is particularly true when the effect of VVGs is compared to other known causal risk factors for aggression such as poverty, family violence and mental health.^{110, 111} In a longitudinal study conducted in the UK, childhood symptoms of attention deficit disorder, depression and early conduct disorder predicted adolescent criminal behaviour 8 years later. In contrast, exposure to first-person shooter games in childhood had no relationship with aggressive or criminal adolescent behaviour.¹¹² Similarly, when studies control for these individual or socio-demographic risk factors the impacts of VVGs on aggression diminish^{113, 114} or disappear completely.¹¹⁵

2.2 / Extremely violent games do not cause more aggression than VVGs

| Strength of evidence | Generalisability to Australia |
|---|--|
| Medium | High-quality studies largely drawn from Australia, US, Germany, and Canada |
| The results of higher quality studies suggest that extremely violent video games do not increase aggression more than VVGs. | |



VVG content can differ on a number of dimensions, including pace, realism, and graphicness. Very few Australian studies exist that examine the relationship between aggression and differing levels of violence in video games. A 2012 Australian study found that playing the extremely violent game *Mortal Kombat* diminished players' perceptions of

¹⁰⁸ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹⁰⁹ Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour (Unpublished manuscript).

¹¹⁰ Ferguson, C. J. (2011). Video games and youth violence: A prospective analysis in adolescents. *Journal of Youth and Adolescence*, 40(4), 377-391.

¹¹¹ Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of Psychiatric Research*, 46(2), 141-146.

¹¹² Smith, S., Ferguson, C., & Beaver, K. (2018). A longitudinal analysis of shooter games and their relationship with conduct disorder and self-reported delinquency. *International Journal of Law and Psychiatry*, 58, 48-53.

¹¹³ Anderson CA, et al. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136, 151-173.

¹¹⁴ Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Metaanalysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.

¹¹⁵ Ferguson, C. J., San Miguel, C., Garza, A., & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of Psychiatric Research*, 46(2), 141-146.

both their own humanity and the humanity of their opponent in the game.¹¹⁶ In a follow-up experiment in which participants played with a co-player, diminished perceptions of their co-player's humanity were found when the co-player was the target of in-game violence, but not the perpetrator. A more recent Australian study found that the level of violence present in a video game (ultra-violent, violent, or non-violent) had no significant effect on two measures of prosocial behaviour (how much participants donated to a hypothetical charity and the difficulty of a task they were asked to set for a hypothetical person).¹¹⁷ Both studies have been classified as providing low strength of evidence (see Table 2), meaning that substantive conclusions about the relationship between extremely violent games and aggression in the Australian context cannot be drawn.



Several randomised controlled trials in Germany, Australia, and the United States have compared video games which only differ in the severity of violent content. Overall, they find that higher levels of violence do not affect player aggression.

A trial in Germany varied the amount of displayed violence and the pace of action in a first-person shooter game, ensuring that all other features of the game were otherwise the same. They found that neither pace nor displayed violence had any effect on aggressive behaviour, as measured by willingness to expose another participant to an unpleasant noise blast.¹¹⁸ Similarly, researchers in the United States assigned 275 undergraduates to play a first-person shooter game that was modified to be more or less violent. Neither game difficulty nor violent content was found to affect aggressive behaviour.¹¹⁹ Finally, across seven randomised controlled trials conducted on US university students, researchers found that competence-impeding play increased frustration and aggression, but that levels of violent content had no impact on these outcomes.¹²⁰

The results from these and other studies suggest that other video game variables have a greater influence on aggression. Level of competition^{121,122} and perceived game difficulty¹²³ have been associated with increased player aggression. For instance, a Canadian study which measured patterns of gameplay over 3 years found that increased competitive

¹¹⁶ Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology*, 48(2), 486-491.

¹¹⁷ Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.

¹¹⁸ Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.

¹¹⁹ Hilgard, J., Engelhardt, C. R., Rouders, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological Science*, 30(4), 606-616.

¹²⁰ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of Personality and Social Psychology*, 106(3), 441.

¹²¹ Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22-27.

¹²² Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence?. *Psychology of Violence*, 1(4), 259.

¹²³ Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of Personality and Social Psychology*, 106(3), 441.

gameplay was associated with increased self-reported aggressive behaviour.¹²⁴ Similarly, a recent experimental study found that participants became more aggressive after playing a competitive game as opposed to a non-competitive game, while the level of video game violence had no effect on aggression.¹²⁵ On the other hand, increased graphic realism of violence depicted in video games does not appear to increase player aggression.¹²⁶

2.3 / Conclusions

Overall, combined international and Australian evidence suggests the effect of VVGs on aggression in Australia is small to non-existent, with high strength of evidence and high generalisability to Australia. The weight of evidence shows that VVGs are very unlikely to cause real-life violent behaviour or to have sustained impacts on aggressive attitudes.

Similarly, combined world and Australian evidence suggests that higher levels of violence in VVGs do not affect aggression, with medium strength of evidence and high generalisability to Australia. Extremely violent or ultraviolent games are unlikely to contribute to any increased risk of aggression or violence.

¹²⁴ Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of Youth and Adolescence*, 42(7), 1090-1104.

¹²⁵ Hawk, C. E., & Ridge, R. D. (2021). Is it only the violence? The effects of violent video game content, difficulty, and competition on aggressive behavior. *Journal of Media Psychology: Theories, Methods, and Applications*, 33(3), 134-144.

¹²⁶ Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment Computing*, 24, 21-29.

03 / The effect of VVGs on attitudes towards women

| Strength of evidence | Generalisability to Australia |
|--|--|
| Medium | Medium - small number of studies largely drawn from Australia, US, UK, Canada and Germany. |
| The highest quality international evidence finds no relationship between VVGs and attitudes towards women. However, at present there is a lack of high-quality studies on this topic. VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players, although recent high-quality experiments have found no evidence of this link. | |

3.1 / VVGs do not change attitudes towards women



There are few Australian studies on the effect of VVGs on attitudes towards women. One Australian experimental study found that low-skilled male *Halo 3* players were more hostile towards female teammates, particularly when they were performing poorly.¹²⁷ In contrast, high-skilled male players were more *positive* towards female teammates. This study therefore suggests that sexism elicited by gameplay is triggered by the player's sense of their own ability, and not by in-game violence, although this study did not compare *Halo 3* to a non-violent game.

Another Australian study examined the impact of sexualised content in video games. Among both men and women, viewing images of female characters from adult-only games (but not all-ages games) elicited a sexually objectifying gaze as measured by eye-tracking. However, gaze behaviour was not associated with the acceptance of rape myths (i.e. prejudicial, stereotyped, and false beliefs about the perpetrators, victims, and nature of sexual assaults), casting doubt over its link to real-world outcomes.¹²⁸



The highest quality international evidence suggests that VVGs do not change attitudes towards women in the long-term for either men or women. A three-year study on a

¹²⁷ Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PloS One*, 10(7), e0131613.

¹²⁸ Hollett, R. C., Morgan, H., Chen, N. T., & Gignac, G. E. (2020). Female characters from adult-only video games elicit a sexually objectifying gaze in both men and women. *Sex Roles*, 83(1), 29-42.

representative sample of German youth found that preference for action or first-person shooter video games was not associated with sexist attitudes. Amount of time spent playing video games also had no association with sexism.¹²⁹ The study controlled for other known risk factors of negative attitudes towards women such as age and education.

When researchers measure short-term attitudes towards women, the results are more mixed. A correlational study in the UK found that frequency of VVG play was unrelated to sexist attitudes or empathy towards a rape victim in a presented scenario.¹³⁰ However, a correlational study from the United States found that the more violence participants perceived in their favourite video games, the more they endorsed traditional views of masculinity (i.e. a belief that men should be dominant, tough, and not feminine or emotional).¹³¹ This study did not directly measure negative attitudes towards women, however. A laboratory study conducted in the United States examined attitudes directly and found that playing a violent game increased hostile sexism, but only when the female character was sexualised and players felt immersed in the game.¹³² Sexist content was therefore necessary to change players' attitudes towards women.

Overall, this evidence suggests that if video games do cause negative attitudes towards women, this effect may be driven by sexualised or sexist content, rather than by violent content. This conclusion is supported by some other research. A correlational study found that male US college students who played more sexist games held more sexist attitudes towards women,¹³³ and a 2018 systematic review found that women experienced self-objectification and low levels of self-efficacy as a result of exposure to sexist content within video games, compared with video games that do not contain sexist content.¹³⁴ A randomised control trial in Belgium also found that sexualised avatars in an adventure game increased adolescent players' acceptance of rape myths compared to non-sexualised avatars.¹³⁵ However, recent high-quality experimental evidence has found no effect of sexualised video game content on sexist outcomes. In one pre-registered study from France, playing a sexist sequence from a game (compared with a non-sexist sequence from the same game) had no impact on participants' objectification of women.¹³⁶ Another pre-registered study out of the United States found that playing a sexualised vs. non-sexualised

¹²⁹ Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games = sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197-202.

¹³⁰ Ferguson, C. J., & Colwell, J. (2020). Sexualised video games, sexist attitudes and empathy towards victims of rape: Correlational evidence for a relationship is minimal in an online study. *Criminal Behaviour and Mental Health*, 30(1), 16-27.

¹³¹ Blackburn, G., & Scharrer, E. (2019). Video game playing and beliefs about masculinity among male and female emerging adults. *Sex Roles*, 80(5), 310-324.

¹³² LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of immersive, sexually objectifying, and violent video games on hostile sexism in males. *Communication Research Reports*, 35(5), 413-423.

¹³³ Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.

¹³⁴ Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: A systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social Networking*, 21(9), 535-541.

¹³⁵ Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games For Health Journal*, 4(2), 91-94.

¹³⁶ Sarda, E., Zerhouni, O., Gentile, D. A., Bry, C., & Bègue, L. (2021). Some effects of sexist video games on self-masculinity associations. *Information, Communication & Society*, 1-16.

female avatar had no influence on women's body image or hostility towards a female confederate.¹³⁷ Content analyses have revealed that video games contain fewer female protagonists, portray overly sexualised female characters, and games which depict violence can involve aggressive acts towards women.^{138, 139} There is growing concern that these representations of female characters normalise the objectification and sexualisation of women.

Overall, the high-quality evidence to date suggests that VVG content on its own appears to have no effect on attitudes towards women. While there is some evidence that sexualised content in video games may impact attitudes towards women, recent high-quality studies have cast doubt over this.

3.2 / Conclusions

Overall, combined world and Australian evidence suggests that violent video games do not increase negative attitudes or sexist behaviours towards women with medium strength of evidence and medium generalisability to Australia. While some evidence suggests that VVGs which include sexualised or sexist content may increase negative sexist attitudes for some players, recent high-quality studies have cast doubt on this.

¹³⁷ Lindner, D., Triple, M., Pilato, I., & Ferguson, C. J. (2020). Examining the effects of exposure to a sexualized female video game protagonist on women's body image. *Psychology of Popular Media*, 9(4), 553–560.

¹³⁸ Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640–2649.

¹³⁹ Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564–584.

04 / The effect of VVGs on young people's mental health

| Strength of evidence | Generalisability to Australia |
|----------------------|---|
| Medium | High - studies largely drawn from Australia, US, UK, Canada |

The high-quality evidence to date suggests that there is no causal relationship between VVGs and increased depression, anxiety, suicidal ideation, attention problems, or reduced academic achievement. Recent evidence suggests that VVGs could, in fact, increase prosocial outcomes in the short term.

4.1 / VVGs do not cause negative mental health outcomes in young players



Research into the impact of VVGs on young people's mental health is the most recent form of a long history of concerns about the impact of violent media, particularly as video games become ubiquitous in children's lives. The peak body for the Australian video game industry reported that young Australians play video games for an average of 100 minutes per day.¹⁴⁰ Researchers are increasingly interested in understanding the long-term psychosocial and developmental impacts of playing video games, especially those with extremely violent content. These include impacts on peer relations, internalising problems such as anxiety or depression, and attentional problems such as attention deficit hyperactivity disorder (ADHD).

To our knowledge, there are no Australian studies that compare mental health outcomes in young people for violent and non-violent games. Australian studies have found that young peoples' mental health¹⁴¹ and academic performance¹⁴² decline as screen time increases. However, there is no evidence from the Australian context that violent game content mediates or exacerbates any negative impacts of playing video games. Below we have separated out Australian findings in relation to mental health outcomes:

¹⁴⁰ Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.

¹⁴¹ Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity*, 12, 124-131.

¹⁴² Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.

Pathological gaming. A study of over 1,200 South Australian high school students found a rate of pathological video gaming - defined as the persistent inability to control excessive gaming habits despite associated social or emotional problems - of less than two per cent.¹⁴³ Young people who engaged in pathological video gaming did not meet the criteria for clinical depression or anxiety, although this study did not specifically address video game violence.

Behavioural and emotional problems. Australian studies have found that children who play more video games are more likely to have behavioural and emotional problems¹⁴⁴ and less ability to self-regulate.¹⁴⁵ However, these studies only measured video game play or media exposure (including all types of video games) overall, and did not distinguish between violent and non-violent games.

Positive social outcomes. A laboratory study conducted in Australia found that playing a violent game (*Left 4 Dead 2*) increased players' positive affect and sense of connection when their teammate was a human-controlled (not computer-controlled) character.¹⁴⁶ This finding is consistent with international research on the prosocial benefits of playing cooperative VVGs. Other Australian studies have found no effect of violent or even prosocial¹⁴⁷ games on prosocial behaviour, although their measures of prosocial behaviour have questionable relevance to real-world behaviour. These studies were classified as providing low strength of evidence (see Table 2). In addition, these studies were conducted in an adult sample, so it is unclear whether young people experience the same benefits.

Other issues. Some low-quality Australian studies have found that playing VVGs before bed disrupts young players' sleep.^{148, 149} Other Australian studies suggest that the general stimulation of computer use,¹⁵⁰ duration of play,¹⁵¹ and the tendency of young gamers to enter a flow state while playing¹⁵² disrupt sleep, not necessarily violent content.

¹⁴³ King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.

¹⁴⁴ Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic Pediatrics*, 17(6), 620-624.

¹⁴⁵ Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early childhood media exposure and self-regulation: bidirectional longitudinal associations. *Academic Pediatrics*, 18(7), 813-819.

¹⁴⁶ Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology, Queensland, Australia.

¹⁴⁷ Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS one*, 8(7), e68382.

¹⁴⁸ King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: An experimental study. *Journal of Sleep Research*, 22(2), 137-143.

¹⁴⁹ Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.

¹⁵⁰ Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Pre bedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.

¹⁵¹ Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep Medicine*, 30, 64-70.

¹⁵² Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: the roles of game difficulty and flow. *Sleep Medicine*, 39, 70-76.



World

Internationally, there is currently no high-quality evidence to suggest that VVGs increase negative mental health outcomes for young players. A meta-analysis of 101 studies found neither video games nor VVGs had any impact on depression, attention disorders, conduct disorders, prosocial behaviour, or academic achievement for both children and adolescents.¹⁵³ The meta-analyses included correlational, experimental, and longitudinal studies measuring both short- and long-term effects. This meta-analysis has been replicated by an independent research team, which is noteworthy given the abovementioned biases and flawed methodology prevalent in this literature.¹⁵⁴

Longitudinal research conducted in the United States, Europe, and Singapore has found that VVGs are not associated with negative mental health outcomes for young players. For example, a recent pre-registered study of more than 3,000 Singapore youth found that time spent playing VVGs was unrelated to depression, anxiety, ADHD symptoms, social phobia, or somatic complaints 2 years later.¹⁵⁵ Similarly, a prospective longitudinal study of over 5,000 UK children found no association between preference for first-person shooter games at 8 years of age and depression in adolescence.¹⁵⁶ A longitudinal study on 300 Dutch children reported that preference for VVGs was not associated with mental health outcomes (positive or negative) 1 year later.¹⁵⁷ VVG play was also not associated with depression or anxiety over 1 year of measurement in 10-14 years olds in the United States.¹⁵⁸ Moreover, the longest study ever conducted on this issue found in an American sample that frequency of VVG play at age 13 was unrelated to depression and anxiety 10 years later.¹⁵⁹

In contrast, a recent correlational study of over 5,000 American fifth-grade students (average age of 10 years) reported that playing VVGs for more than 2 hours per day was associated with increased depressive symptoms. However, these results compared high daily VVG play to low daily VVG play, and did not compare violent to non-violent games. When time spent playing video games was matched, there was no relationship between violent content and symptoms of depression.¹⁶⁰ Another study in a nationally representative sample of American

¹⁵³ Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646–666.

¹⁵⁴ Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development*, 87(6), 1877–1892.

¹⁵⁵ Ferguson, C. J., & Wang, C. J. (2021). Aggressive video games are not a risk factor for mental health problems in youth: A longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 70–73.

¹⁵⁶ Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.

¹⁵⁷ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of Youth and Adolescence*, 46(4), 884–897.

¹⁵⁸ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016). Media managing mood: A look at the possible effects of violent media on affect. *Child & Youth Care Forum*, 45(2), 241–258.

¹⁵⁹ Coyne, S. M., & Stockdale, L. (2021). Growing up with Grand Theft Auto: a 10-year study of longitudinal growth of violent video game play in adolescents. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 11–16.

¹⁶⁰ Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of Youth and Adolescence*, 46(4), 884–897.

high-school students found a correlation between excessive video game use and suicidal ideation,¹⁶¹ but this was not explicitly related to *violent* video games. A subsequent correlational study in the United States found no relationship between VVGs and suicidal ideation.¹⁶²

Many studies suggest that compared to other known sociodemographic risk factors (e.g. a previous history of mental health problems, socioeconomic status, and peer delinquency), VVGs present minimal danger to the mental health of young players. A 1-year longitudinal study in the United States¹⁶³ found that anxiety and depression were predicted by parental aggression, delinquent peers and previous symptoms of depression, whereas exposure to VVGs was not associated with any negative mental health outcomes.¹⁶⁴ Similarly, an American study found that gender, antisocial traits, family environment, and prior mental health conditions predicted attention problems in children,¹⁶⁵ whereas attention problems were not related to playing more video games or a preference for VVGs. A study that examined predictors of suicide rates across 92 countries found that countries with higher levels of poverty had higher suicide rates, whereas per capita video game consumption was unrelated to the number of suicides.¹⁶⁶

Evidence suggests that other game characteristics, such as competition¹⁶⁷ and excessive gameplay,^{168, 169} especially pathological video-gaming,¹⁷⁰ have a larger effect on mental health outcomes than violent content. Research carried out with 10-14-year-olds in the United States over one year found that playing VVGs did not predict depression or anxiety.¹⁷¹ However, high levels of competitive gaming were associated with negative mental health outcomes such as depression and reduced prosocial behaviour.

Similarly, an experiment with 845 Israeli children looking at the effect of violent games found that children were more prosocial after playing a VVG compared with a neutral game,

¹⁶¹ Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.

¹⁶² Gauthier, J. M., Zuromski, K. L., Gitter, S. A., Witte, T. K., Cero, I. J., Gordon, K. H., Ribeiro, J., Anestis, M., & Joiner, T. (2014). The interpersonal-psychological theory of suicide and exposure to video game violence. *Journal of Social and Clinical Psychology*, 33(6), 512-535.

¹⁶³ Sample mostly identified as Hispanic

¹⁶⁴ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016). Media managing mood: A look at the possible effects of violent media on affect. *Child & Youth Care Forum*, 45(2), 241-258.

¹⁶⁵ Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of Psychiatric Research*, 45(6), 808-813.

¹⁶⁶ Ferguson, C. J., & Smith, S. (2021). Examining homicides and suicides cross-nationally: Economic factors, guns and video games. *International Journal of Psychology*. DOI:10.1002/ijop.12760

¹⁶⁷ Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.

¹⁶⁸ Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.

¹⁶⁹ Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

¹⁷⁰ Liao, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.

¹⁷¹ Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016). Media managing mood: A look at the possible effects of violent media on affect. *Child & Youth Care Forum*, 45(2), 241-258.

particularly if they had played the game with a classmate.¹⁷² However, a pre-registered study of 3,000 Singaporean youth found that playing VVGs was unrelated to youth prosocial behaviour 2 years later, suggesting that any prosocial benefits that exist may not extend beyond the short-term.¹⁷³

While slightly beyond the scope of this review, there is also evidence that playing video games more generally could be linked with improved wellbeing. A recent high-quality study objectively measured how much time players of two popular (non-violent) video games in the United States, the United Kingdom, and Canada spent playing by using in-game data (instead of relying on people accurately recalling their game-playing time). The more time that participants spent playing each game over a 2-week period, the greater wellbeing they reported.¹⁷⁴ The association between wellbeing and self-reported time spent playing was weaker. Although the video games studied did not contain violent content, these findings suggest that studies using self-report measures of game play may be underestimating the link between video games and wellbeing. Similarly, in a high-quality correlational study surveying over 3,000 young children across six European nations, children who played more video games had lower rates of internalising disorders and fewer thoughts of death, and experienced prosocial and academic benefits, including elevated intellectual functioning, high overall competence, and specific benefits in reading, mathematics and spelling.¹⁷⁵

4.2 / Conclusions

Overall, combined world and Australian evidence suggests that VVGs do not cause negative mental health outcomes for young players with medium strength of evidence and high generalisability to Australia.

¹⁷² Shoshani, A., & Krauskopf, M. (2021). The Fortnite social paradox: The effects of violent-cooperative multi-player video games on children's basic psychological needs and prosocial behavior. *Computers in Human Behavior*, 116, 106641.

¹⁷³ Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: a longitudinal study. *Journal of Youth and Adolescence*, 48(8), 1439-1451.

¹⁷⁴ Johannes, N., Vuorre, M., & Przybylski, A. K. (2021). Video game play is positively correlated with well-being. *Royal Society Open Science*, 8(2), 202049.

¹⁷⁵ Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social Psychiatry and Psychiatric Epidemiology*, 51(3), 349-357.

05 / Recommendations

The aim of this literature review was to answer the questions:

1. In Australian and international research, what is the relationship between violent or extremely violent video games and the following traits in players:
 - a. aggression
 - b. negative attitudes to women
 - c. poor mental health, particularly in young people?
2. Are international research findings from comparable countries considered generalisable to Australia and is research conducted in other countries considered useful for policy makers in Australia?

Below, we outline our conclusions and recommendations as to whether further research is needed to explore the impacts of VVGs in the Australian context in relation to aggression, attitudes to women or mental health outcomes for young players.

5.1 / Aggression

Research questions:

1. What are the key findings about violent games and aggression emerging from international research?
2. What is the relationship between violent and extremely violent video games and aggression in Australian research?

Conclusions:

- Correlational, longitudinal and experimental research from generalisable populations in Europe, North America and Asia all converge on the same conclusion: that there is little to no impact of VVGs on aggression.
- To date, limited research has been conducted in Australia. However, the strength of generalisable international research can fill any research gaps in the Australian context. This includes meta-analyses and emerging high-quality research which converge on the conclusion that VVGs cause little or no real-world aggressive behaviour.

Recommendation: We are satisfied on the whole with the level of evidence available, but this does not preclude the emergence of new data or research methods that may reveal new insights.

5.2 / Attitudes towards women

Research questions:

1. What are the key findings about violent games, aggression and attitudes to women emerging from international research?
2. What is the relationship between violent and extremely violent video games and attitudes towards women in Australian research?

Conclusions:

- The highest quality international evidence finds no relationship between VVGs and attitudes towards women. There is only one Australian study on the effect of a VVG on attitudes towards women, and this study did not compare violent and non-violent video games.
- VVG content on its own appears to have no effect on attitudes towards women. Some studies suggest that video games which contain sexist or sexualised content increase negative attitudes towards women, however high-quality evidence in this area finds no impact of sexualised content on sexist outcomes.

Recommendation: We are satisfied on the whole with the level of evidence available, but this does not preclude the emergence of new data or research methods that may reveal new insights. The intersection of sexist or sexualised content with differing levels of violence in VVGs is a potential avenue for further exploration.

5.3 / Mental health outcomes

Research questions:

1. What are the key findings of international research on how violent or extremely violent games impact the mental health of young game players?
2. How do violent or extremely violent games impact the mental health of young game players in Australia?

Conclusions:

- There is no evidence in the international literature of a robust causal relationship between VVGs and increased depression, anxiety, suicidal ideation, or attention problems, and lower academic achievement or prosocial outcomes. Other risk factors such as family environment, peer delinquency, and prior mental health conditions are much more robust predictors of poor mental health outcomes. Some evidence suggests video game play (and VVGs specifically) can instead have beneficial outcomes.
- It is unlikely that there is an underlying causal link between violent games and mental health outcomes to be investigated in Australia. International research from North America, Europe and Asia does not support the hypothesis that VVGs are related to

poor youth mental health outcomes. There is some evidence to suggest that excessive video game play is related to poor mental health. However, violent content has not been shown to affect mental health over and above general game play.

Recommendation: We are satisfied on the whole with the level of evidence available, but this does not preclude the emergence of new data or research methods that may reveal new insights. In particular, further research into the relationship between video games more generally and mental health outcomes could strengthen the existing evidence base.

Appendix A

Table 1: Search Criteria and Search Terms

| | Research Question | Search Criteria | Working Search Terms |
|---|---|---|---|
| 1 | What are the main gaps in our understanding of the link between playing violent video games, and aggression and attitudes towards women, in Australia? | Academic research conducted in Australian cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. | "Violent video games" "Violent computer games" "Extremely violent video games" "First-person shooter" "Aggression" "Aggressive behaviour" "Attitudes towards women" "Gendered" "Australia" "Australian" "Causational" "Intervention study" "Randomised controlled trial" "Meta-analysis" "Systematic review" "Longitudinal" "Impacts Behaviour/behaviour" |
| 2 | What is the relationship between violent and extremely violent video games and aggression and/or attitudes towards women in international contexts? | <p>Academic research conducted in overseas contexts and cohorts on any link between violent and extremely violent video games and aggression, and attitudes towards women. We will give special attention to high-quality systematic reviews or meta-analysis, or research measuring longitudinal outcomes. We will prioritise research conducted in comparable countries to Australia on social, cultural and political dimensions. High-quality research conducted in countries which are not generalisable to the Australian context will supplement this search, however receive lower prioritisation.</p> <p>We will also give consideration to academic research which identifies and operationalises levels of violent content or realism of violence in video games and explores the variance in impact on aggression, and attitudes towards women.</p> | We will use the same core search terms (in Row 1) removing references to Australia, with additional terms to explore levels of violence in games: "MA15+" "R18+ "R" "Very violent" "Extremely violent" "Ultra-violent" "Violent vs extremely violent" "Violent vs ultra-violent" "Violent vs very violent" "Level of violence" "Unrated" |

| | | | |
|---|---|--|---|
| 4 | Do violent or extremely violent games impact the mental health of young game players? | Academic research conducted exploring any link between violent and extremely violent video games and mental health outcomes for young people. We will give special attention to longitudinal research, as well as including both positive and negative mental health impacts. | We will use the same core search terms (in Row 1), with additional terms relevant to mental health: "Mental health" "Young people" "Adolescents" "Suicide" "Anxiety" "Depression" "Cognitive benefits" "Social benefits" "Cognitive development" "Emotional development" "Cognitive impacts" "Social impacts" |
| 3 | How can international and cross-jurisdictional research on the impact of violent games be generalised to the Australian context? | <p>Cross-cultural academic studies on violent video games, especially those involving countries likely to be compared to Australia.</p> <p>Any other research on the generalisability of international findings cross-culturally, and if available, to the Australian context and relating to aggression, attitudes to women and gaming.</p> | <p>"Generalisable" "Generalisability" "Applicability" "Comparable" "Research" "Cross-cultural research" "Violent video games" "Attitudes to women" "Gaming" "Australia" "Australian"</p> <p>(we will also include here names of countries that come up as most comparable to Australia)</p> |

Appendix B

Different types of bias identified by researcher Christopher Ferguson

| Bias | Description | Influence on the debate on whether VVGs cause negative outcomes |
|------------------|--|---|
| Citation bias | Authors selectively reference studies that support their hypotheses, and exclude studies that contradict their hypotheses. | VVG meta-analyses selectively include studies which match the researchers' pre-determined hypotheses. Evidence suggests that scholars who neglect to refer to research which contradicts their hypotheses report higher effect sizes. ¹⁷⁶ |
| Publication bias | Statistically significant effects are more likely to be reported in journals than null effects. | Studies that find an effect of VVGs on aggression, attitudes towards women, and mental health outcomes are over-represented in the literature. ¹⁷⁷ Studies finding no relationship between VVGs and aggression are less likely to be published. This results in a false perception of the amount of evidence in favour of VVGs causing both positive and negative outcomes in players. |
| Inflation bias | Measures of aggression, attitudes towards women, and mental health outcomes are not standardised across studies and there is no consensus on how they should be interpreted. | Study results can be selectively interpreted by authors to support their predetermined hypotheses. The authors of VVG meta-analyses may have biases which influence how they interpret and present evidence from the literature. ¹⁷⁸ |

¹⁷⁶ Ferguson, C.J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspect Psychol Sci*, 10:646–666.

¹⁷⁷ Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International Journal of Law and Psychiatry*, 56, 35-43.

¹⁷⁸ Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.

Appendix C

Aggression: Any behaviour directed toward another individual that is carried out with the proximate (i.e. immediate) intent to cause harm. In addition, the perpetrator must believe that the behaviour will harm the target, and that the target is motivated to avoid the behaviour.¹⁷⁹

Correlational study: A *non-experimental* research design in which the researcher measures two or more variables and assesses their statistical relationship (i.e. the *correlation*). Researchers use correlational studies to see whether these relationships exist, but the variables themselves are not manipulated by the researchers. While correlational research can demonstrate a relationship between variables, it cannot prove that changing one variable will change another.¹⁸⁰

Cross-sectional study: A *non-experimental* research design in which the researcher collects data from a sample at a specified point in time. As with correlational studies, the variables are not manipulated by the researchers, nor can the results be used to prove that one variable causes another.¹⁸¹

Effect size: A numeric measure of the size or strength of a relationship between two variables. The larger the effect size, the stronger the relationship.¹⁸²

Experimental study: A study in which the researcher manipulates an independent variable to determine its effect on an outcome, randomly assigns participants to particular conditions, or both. Experimental studies are used to determine causal relationships.¹⁸³

Flow state: An experience of immersion and time distortion while engaged in a task.¹⁸⁴

Generalisability: The extent to which the results of a study can be applied to other contexts or circumstances. Also called *external validity* or *applicability*.¹⁸⁵

Longitudinal study: A research design in which the researcher repeatedly collects data from a sample over an extended period of time. A longitudinal study may be *experimental* or *non-experimental*.¹⁸⁶

¹⁷⁹ Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, 53, 27-51.

¹⁸⁰ Price, P. C., Jhangiani, R., Chiang, I-C. A., Leighton, D. C., & Cuttler, C. (2017). *Research Methods in Psychology (3rd American Edition)*.

¹⁸¹ Bethlehem, J. (1999). Cross-sectional research. In: Ader, H. J., & Mellenbergh, G. J. (Eds.), *Research Methodology in the Social, Behavioural and Life Sciences*. SAGE Publications.

¹⁸² Sullivan, G. M., & Feinn, R. (2012). Using effect size - or why the p value is not enough. *Journal of Graduate Medical Education*, 4(3), 279-282.

¹⁸³ Price, P. C., Jhangiani, R., Chiang, I-C. A., Leighton, D. C., & Cuttler, C. (2017). *Research Methods in Psychology (3rd American Edition)*.

¹⁸⁴ Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. New York: Harper & Row.

¹⁸⁵ Murad, M. H., Katabi, A., Benkhadra, R., & Montori, V. M. (2018). External validity, generalisability, applicability and directness: a brief primer. *BMJ Evidence-Based Medicine*, 23(1), 17-19.

¹⁸⁶ Molenaar, P. C. M. (1999). Longitudinal analysis. In: Ader, H. J., & Mellenbergh, G. J. (Eds.), *Research Methodology in the Social, Behavioural and Life Sciences*. SAGE Publications.

Meta-analysis: The analysis of a group of individual study results with the aim of deriving conclusions about that body of research as a whole.¹⁸⁷ Together with *systematic reviews*, meta-analyses are considered the strongest form of evidence on a topic.

Non-experimental study: A study in which the researcher does not manipulate an independent variable to determine its effect on an outcome, does not randomly assign participants to particular conditions, or both. Instead, participants and/or outcomes are measured as they naturally occur. Non-experimental studies cannot prove causal relationships between variables.¹⁸⁸

Pre-registration: The public specification of a researcher's research plan in advance of a study. Pre-registration aims to improve research integrity by preventing selective analysis and reporting of results that support the researcher's own biases.¹⁸⁹

Prosocial: An attitude or behaviour that is oriented toward helping or benefiting others.¹⁹⁰

Randomised controlled trial (RCT): An *experimental* research design in which participants are randomly assigned to either receive the intervention that is being tested (the experimental or treatment group) or not (the control group). Members of each group are then followed up to see whether there are any differences in outcome. RCTs are considered the gold-standard method of determining whether there is a cause-effect relationship between the intervention and the outcome.¹⁹¹

Replication: The ability of other researchers to repeat an experiment or observation under the same or similar conditions as the original research and obtain the same findings. Also called *reproducibility*.¹⁹²

Systematic review: A synthesis of the results from all available studies in a particular topic area that provides a thorough analysis of the studies' collective results, strengths, and weaknesses. They seek to answer a clearly formulated question and use a pre-determined, explicitly defined search strategy to identify studies for inclusion.¹⁹³ Together with *meta-analyses*, systematic reviews are considered the strongest form of evidence on a topic.

¹⁸⁷ Deeks, J. J., Higgins, J. P. T., & Altman, D. G. (2019). Analysing data and undertaking meta-analyses. In Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M.J., & Welch, V. A. (Eds.) *Cochrane Handbook for Systematic Reviews of Interventions version 6.2 (updated February 2021)*. Cochrane, 2021. Retrieved from www.training.cochrane.org/handbook

¹⁸⁸ Price, P. C., Jhangiani, R., Chiang, I-C. A., Leighton, D. C., & Cuttler, C. (2017). *Research Methods in Psychology (3rd American Edition)*.

¹⁸⁹ Nosek, B. A., & Lakens, D. (2014). Registered reports: A method to increase the credibility of published results. *Social Psychology*, 45(3), 137-141.

¹⁹⁰ Bekkers, R., & Wittek, R. (2015). Sociobiology of altruism and prosocial behavior. In: Wright, J. D. (Ed.) *International Encyclopedia of the Social & Behavioral Sciences (2nd Edition)*. Elsevier.

¹⁹¹ Gamble, T., Haley, D., Buck, R., & Sista, N. (2015). Designing randomized controlled trials (RCTs). *Public Health Research Methods* (pp. 223-250). SAGE Publications.

¹⁹² Rosenthal, R. (1990). Replication in behavioral research. *Journal of Social Behavior and Personality*, 5(4), 1.

¹⁹³ Uman, L. S. (2011). Systematic reviews and meta-analyses. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 20(1), 57-59.

Violent and very violent video games: Although the term is not well-defined in the literature, our review included research on video games that contain strong violence and high impact violence. These terms are used by Australian Classification¹⁹⁴ as follows:

Strong violence - Refers to violence such as shooting with real-life military weapons and some blood and gore. Video games containing strong violence are rated MA15+, meaning they are legally restricted to people aged 15 years and over.

High impact violence - Refers to violence that is frequent and/or realistic, features content such as decapitation and/or dismemberment, and shows detailed wounds and large amounts of blood and gore. Video games containing high impact violence are rated R18+, meaning they are legally restricted to adults only.

¹⁹⁴ Department of Infrastructure, Transport, Regional Development and Communications (n.d.). Does your child play violent video games? Retrieved from <https://www.classification.gov.au/classification-ratings/whats-ok-for-children/does-your-child-play-violent-video-games#top>

Bibliography

- Adachi, P. J. C., & Willoughby, T. (2016). The longitudinal association between competitive video game play and aggression among adolescents and young adults. *Child Development, 87*(6), 1877-1892.
- Adachi, P. J., & Willoughby, T. (2011). The effect of video game competition and violence on aggressive behavior: Which characteristic has the greatest influence? *Psychology of Violence, 1*(4), 259.
- Adachi, P. J., & Willoughby, T. (2013). Demolishing the competition: The longitudinal link between competitive video games, competitive gambling, and aggression. *Journal of Youth and Adolescence, 42*(7), 1090-1104.
- Anderson, C. A., et al. (2010). Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin, 136*, 151-173.
- Anderson, C. A., Suzuki, K., Swing, E. L., Groves, C. L., Gentile, D. A., Prot, S., et al. (2017). Media violence and other aggression risk factors in seven nations. *Personality and Social Psychology Bulletin, 43*, 986-998.
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology, 53*, 27-51.
- Anderson, C. A., Bushman, B. J., Bartholow, B. D., Cantor, J., Christakis, D., Coyne, S. M., ... & Huesmann, R. (2017). Screen violence and youth behavior. *Pediatrics, 140*(Supplement 2), S142-S147.
- Babic, M. J., Smith, J. J., Morgan, P. J., Eather, N., Plotnikoff, R. C., & Lubans, D. R. (2017). Longitudinal associations between changes in screen-time and mental health outcomes in adolescents. *Mental Health and Physical Activity, 12*, 124-131.
- Bastian, B., Jetten, J., & Radke, H. R. (2012). Cyber-dehumanization: Violent video game play diminishes our humanity. *Journal of Experimental Social Psychology, 48*(2), 486-491.
- Baxendale, S., Lester, L., Johnston, R., & Cross, D. (2015). Risk factors in adolescents' involvement in violent behaviours. *Journal of Aggression, Conflict and Peace Research, 7*(1), 2-18.
- Bekkers, R., & Wittek, R. (2015). Sociolology of altruism and prosocial behavior. In: Wright, J. D. (Ed.) *International Encyclopedia of the Social & Behavioral Sciences (2nd Edition)*. Elsevier.
- Bethlehem, J. (1999). Cross-sectional research. In: Ader, H. J., & Mellenbergh, G. J. (Eds.), *Research Methodology in the Social, Behavioural and Life Sciences*. SAGE Publications.
- Blackburn, G., & Scharrer, E. (2019). Video game playing and beliefs about masculinity among male and female emerging adults. *Sex Roles, 80*(5), 310-324.

- Bogost, I. (2019). Video-Game Violence Is Now a Partisan Issue. *The Atlantic*. Available at: <https://www.theatlantic.com/technology/archive/2019/08/video-game-violence-became-partisan-issue/595456/> [Accessed 19 Aug. 2019].
- Bösche, W. (2010). Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology: Theories, Methods, and Applications*, 22(4), 139–146.
- Brand, J. E., Jervis, J., Huggins, P., & Wilson, T. (2019). *Digital Australia 2020*. Eveleigh, NSW: IGEA.
- Breuer, J., Kowert, R., Festl, R., & Quandt, T. (2015). Sexist games = sexist gamers? A longitudinal study on the relationship between video game use and sexist attitudes. *Cyberpsychology, Behavior, and Social Networking*, 18(4), 197–202.
- Bucolo, D. (2010). Violent video game exposure and physical aggression in adolescence: tests of the general aggression model. (Unpublished doctoral dissertation). University of New Hampshire.
- Cliff, D. P., Howard, S. J., Radesky, J. S., McNeill, J., & Vella, S. A. (2018). Early childhood media exposure and self-regulation: bidirectional longitudinal associations. *Academic Pediatrics*, 18(7), 813–819.
- Coyne, S. M., & Stockdale, L. (2021). Growing up with Grand Theft Auto: a 10-year study of longitudinal growth of violent video game play in adolescents. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 11–16.
- Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. New York: Harper & Row.
- Cunningham, S., Engelstätter, B., & Ward, M. R. (2016). Violent video games and violent crime. *Southern Economic Journal*, 82(4), 1247–1265.
- Deeks, J. J., Higgins, J. P. T., & Altman, D. G. (2019). Analysing data and undertaking meta-analyses. In Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M.J., & Welch, V. A. (Eds.) *Cochrane Handbook for Systematic Reviews of Interventions version 6.2 (updated February 2021)*. Cochrane, 2021. Retrieved from www.training.cochrane.org/handbook
- Denson, T. F., Dixon, B. J., Tibubos, A. N., Zhang, E., Harmon-Jones, E., & Kasumovic, M. M. (2019). Violent video game play, gender, and trait aggression influence subjective fighting ability, perceptions of men's toughness, and anger facial recognition. *Computers in Human Behavior*, 106175.
- Department of Infrastructure, Transport, Regional Development and Communications (n.d.). Does your child play violent video games? Retrieved from <https://www.classification.gov.au/classification-ratings/whats-ok-for-children/does-your-child-play-violent-video-games#top>
- Dowsett, A., & Jackson, M. (2019). The effect of violence and competition within video games on aggression. *Computers in Human Behavior*, 99, 22–27.
- Driesmans, K., Vandenbosch, L., & Eggermont, S. (2015). Playing a videogame with a sexualized female character increases adolescents' rape myth acceptance and tolerance toward sexual harassment. *Games for Health Journal*, 4(2), 91–94.

- Drummond, A., & Sauer, J. D. (2019). Divergent meta-analyses do not present uniform evidence that violent video game content increases aggressive behaviour (Unpublished manuscript).
- Drummond, A., & Sauer, J. D. (2020). Timesplitters: Playing video games before (but not after) school on weekdays is associated with poorer adolescent academic performance. A test of competing theoretical accounts. *Computers & Education*, 144, 103704.
- Drummond, A., Sauer, J. D., & Ferguson, C. J. (2020). Do longitudinal studies support long-term relationships between aggressive game play and youth aggressive behaviour? A meta-analytic examination. *Royal Society Open Science*, 7, 200373.
- Drummond, A., Sauer, J. D., Ferguson, C. J., Cannon, P. R., & Hall, L. C. (2021). Violent and non-violent virtual reality video games: Influences on affect, aggressive cognition, and aggressive behavior. Two pre-registered experiments. *Journal of Experimental Social Psychology*, 95, 104119.
- Elson, M., Breuer, J., Van Looy, J., Kneer, J., & Quandt, T. (2015). Comparing apples and oranges? Evidence for pace of action as a confound in research on digital games and aggression. *Psychology of Popular Media Culture*, 4(2), 112.
- Engelhardt, C. R., Bartholow, B. D., Kerr, G. T., & Bushman, B. J. (2011). This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure. *Journal of Experimental Social Psychology*, 47(5), 1033-1036.
- Etchells, P. J., Gage, S. H., Rutherford, A. D., & Munafò, M. R. (2016). Prospective investigation of video game use in children and subsequent conduct disorder and depression using data from the Avon longitudinal study of parents and children. *PLoS One*, 11(1), e0147732.
- Ferguson, C. J., & Kilburn, J. (2010). Much ado about nothing: The misestimation and overinterpretation of violent video game effects in Eastern and Western nations: Comment on Anderson et al. (2010). *Psychological Bulletin*, 136(2), 174-178.
- Ferguson, C. J. (2011). The influence of television and video game use on attention and school problems: A multivariate analysis with other risk factors controlled. *Journal of Psychiatric Research*, 45(6), 808-813.
- Ferguson, C. J. (2014). Does media violence predict societal violence? It depends on what you look at and when. *Journal of Communication*, 65(1), E1-E22.
- Ferguson, C. J. (2015). Do angry birds make for angry children? A meta-analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior, and academic performance. *Perspectives on Psychological Science*, 10, 646-666.
- Ferguson, C. J. (2018). The problem of false positives and false negatives in violent video game experiments. *International Journal of Law and Psychiatry*, 56, 35-43.
- Ferguson, C. J. (2019). A preregistered longitudinal analysis of aggressive video games and aggressive behavior in Chinese youth. *Psychiatric Quarterly*, 1-5.

- Ferguson, C. J., Colon-Motas, K., Esser, C., Lanie, C., Purvis, S., & Williams, M. (2017). The (not so) evil within? Agency in video game choice and the impact of violent content. *Simulation & Gaming*, 48(3), 329-337.
- Ferguson, C. J., Colwell, J., Mlačić, B., Milas, G., & Mikloušić, I. (2011). Personality and media influences on violence and depression in a cross-national sample of young adults: Data from Mexican-Americans, English and Croatians. *Computers in Human Behavior*, 27(3), 1195-1200.
- Ferguson, C. J., & Colwell, J. (2017). Understanding why scholars hold different views on the influences of video games on public health. *Journal of Communication*, 67(3), 305-327.
- Ferguson, C. J., & Colwell, J. (2020). Sexualised video games, sexist attitudes and empathy towards victims of rape: Correlational evidence for a relationship is minimal in an online study. *Criminal Behaviour and Mental Health*, 30(1), 16-27.
- Ferguson, C. J., Copenhaver, A., & Markey, P. (2020). Reexamining the findings of the American Psychological Association's 2015 task force on violent media: A meta-analysis. *Perspectives on Psychological Science*, 15(6), 1423-1443.
- Ferguson, C. J., Gryshyna, A., Kim, J. S., Knowles, E., Nadeem, Z., Cardozo, I., ... & Willis, E. (2021). Video games, frustration, violence, and virtual reality: Two studies. *British Journal of Social Psychology*. DOI: 10.1111/bjso.12471.
- Ferguson, C. J., & Olson, C. K. (2014). Video game violence use among "vulnerable" populations: The impact of violent games on delinquency and bullying among children with clinically elevated depression or attention deficit symptoms. *Journal of Youth and Adolescence*, 43(1), 127-136.
- Ferguson, C. J., & Smith, S. (2021). Examining homicides and suicides cross-nationally: Economic factors, guns and video games. *International Journal of Psychology*. DOI:10.1002/ijop.12760
- Ferguson, C. J., Trigani, B., Pilato, S., Miller, S., Foley, K., & Barr, H. (2016). Violent video games don't increase hostility in teens, but they do stress girls out. *Psychiatric Quarterly*, 87(1), 49-56.
- Ferguson, C. J., & Wang, J. C. (2019). Aggressive video games are not a risk factor for future aggression in youth: A longitudinal study. *Journal of Youth and Adolescence*, 48(8), 1439-1451.
- Ferguson, C. J., & Wang, C. J. (2021). Aggressive video games are not a risk factor for mental health problems in youth: A longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 70-73.
- Fikkers, K. M., Piotrowski, J. T., Lugtig, P., & Valkenburg, P. M. (2016). The role of perceived peer norms in the relationship between media violence exposure and adolescents' aggression. *Media Psychology*, 19(1), 4-26.
- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2016). Beyond the lab: Investigating early adolescents' cognitive, emotional, and arousal responses to violent games. *Computers in Human Behavior*, 60, 542-549.

- Fikkers, K. M., Piotrowski, J. T., & Valkenburg, P. M. (2017). A matter of style? Exploring the effects of parental mediation styles on early adolescents' media violence exposure and aggression. *Computers in Human Behavior*, 70, 407-415.
- Fikkers, K., Piotrowski, J., Weeda, W., Vossen, H., & Valkenburg, P. (2013). Double dose: High family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies*, 3(3), 280-292.
- Gao, X., Weng, L., Zhou, Y., & Yu, H. (2017). The influence of empathy and morality of violent video game characters on gamers' aggression. *Frontiers in Psychology*, 8, 1863.
- Gamble, T., Haley, D., Buck, R., & Sista, N. (2015). Designing randomized controlled trials (RCTs). *Public Health Research Methods* (pp. 223-250). SAGE Publications.
- Gentile, D. A., Swing, E. L., Lim, C. G., & Khoo, A. (2012). Video game playing, attention problems, and impulsiveness: Evidence of bidirectional causality. *Psychology of Popular Media Culture*, 1(1), 62.
- Gentile, D. A., Li, D., Khoo, A., Prot, S., & Anderson, C. A. (2014). Mediators and moderators of long-term effects of violent video games on aggressive behavior: Practice, thinking, and action. *JAMA Pediatrics*, 168(5), 450-457.
- Gestos, M., Smith-Merry, J., & Campbell, A. (2018). Representation of women in video games: a systematic review of literature in consideration of adult female wellbeing. *Cyberpsychology, Behavior, and Social Networking*, 21(9), 535-541.
- Greitemeyer, T. (2019). The contagious impact of playing violent video games on aggression: Longitudinal evidence. *Aggressive Behavior*, 45(6), 635-642.
- Greitemeyer, T., & Mügge, D. O. (2014). Video games do affect social outcomes: A meta-analytic review of the effects of violent and prosocial video game play. *Personality and Social Psychology Bulletin*, 40(5), 578-589.
- Han, X., & Appelbaum, R. P. (2018). China's science, technology, engineering, and mathematics (STEM) research environment: A snapshot. *PloS one*, 13(4), e0195347.
- Harbard, E., Allen, N. B., Trinder, J., & Bei, B. (2016). What's keeping teenagers up? Pre bedtime behaviors and actigraphy-assessed sleep over school and vacation. *Journal of Adolescent Health*, 58(4), 426-432.
- Hasan, Y., Bègue, L., & Bushman, B. J. (2012). Viewing the world through "blood-red tinted glasses": The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48(4), 953-956.
- Hawk, C. E., & Ridge, R. D. (2021). Is it only the violence? The effects of violent video game content, difficulty, and competition on aggressive behavior. *Journal of Media Psychology: Theories, Methods, and Applications*, 33(3), 134-144.
- Holmes, O. (2021). No cults, no politics, no ghouls: how China censors the video game world. *The Guardian*. <https://www.theguardian.com/news/2021/jul/15/china-video-game-censorship-tencent-netease-blizzard> [Accessed 10 Aug. 2021]

- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.
- Hilgard, J., Engelhardt, C. R., & Rouder, J. N. (2017). Overstated evidence for short-term effects of violent games on affect and behavior: A reanalysis of Anderson et al. (2010). *Psychological Bulletin*, 143(7), 757-774.
- Hilgard, J., Engelhardt, C. R., Rouder, J. N., Segert, I. L., & Bartholow, B. D. (2019). Null effects of game violence, game difficulty, and 2D: 4D digit ratio on aggressive behavior. *Psychological Science*, 30(4), 606-616.
- Hilvert-Bruce, Z., & Neill, J. T. (2020). I'm just trolling: The role of normative beliefs in aggressive behaviour in online gaming. *Computers in Human Behavior*, 102, 303-311.
- Hollett, R. C., Morgan, H., Chen, N. T., & Gignac, G. E. (2020). Female characters from adult-only video games elicit a sexually objectifying gaze in both men and women. *Sex Roles*, 83(1), 29-42.
- Hollingdale, J., & Greitemeyer, T. (2014). The effect of online violent video games on levels of aggression. *PLoS One*, 9(11), e111790.
- Ivory, A. H., & Kaestle, C. E. (2013). The effects of profanity in violent video games on players' hostile expectations, aggressive thoughts and feelings, and other responses. *Journal of Broadcasting & Electronic Media*, 57(2), 224-241.
- Ivory, A. H., Ivory, J. D., & Lanier, M. (2017). Video game use as risk exposure, protective incapacitation, or inconsequential activity among university students. *Journal of Media Psychology*, 29, 42-53.
- Gauthier, J. M., Zuromski, K. L., Gitter, S. A., Witte, T. K., Cero, I. J., Gordon, K. H., Ribeiro, J., Anestis, M., & Joiner, T. (2014). The interpersonal-psychological theory of suicide and exposure to video game violence. *Journal of Social and Clinical Psychology*, 33(6), 512-535.
- Jin, Y., & Li, J. (2014). Cultural differences in the effect of violent video games on adolescent aggression cognition: based on the perspective of meta-analysis. *Advances in Psychological Science*, 22(8), 1226-1235.
- Johannes, N., Vuorre, M., & Przybylski, A. K. (2021). Video game play is positively correlated with well-being. *Royal Society Open Science*, 8(2), 202049.
- Kasumovic, M. M., & Kuznekoff, J. H. (2015). Insights into sexism: Male status and performance moderates female-directed hostile and amicable behaviour. *PLoS One*, 10(7), e0131613.
- Kasumovic, M. M., Blake, K., Dixson, B. J., & Denson, T. F. (2015). Why do people play violent video games? Demographic, status-related, and mating-related correlates in men and women. *Personality and Individual Differences*, 86, 204-211.
- King, D. L., Delfabbro, P. H., Zwaans, T., & Kaptsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological Internet and video game users. *Australian & New Zealand Journal of Psychiatry*, 47(11), 1058-1067.

- King, D. L., Gradisar, M., Drummond, A., Lovato, N., Wessel, J., Micic, G., ... & Delfabbro, P. (2013). The impact of prolonged violent video-gaming on adolescent sleep: an experimental study. *Journal of Sleep Research*, 22(2), 137-143.
- Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., ... & Otten, R. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children?. *Social Psychiatry and Psychiatric Epidemiology*, 51(3), 349-357.
- Krcmar, M., Farrar, K., & McGloin, R. (2011). The effects of video game realism on attention, retention and aggressive outcomes. *Computers in Human Behavior*, 27(1), 432-439.
- Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular Psychiatry*, 24(8), 1220.
- LaCroix, J. M., Burrows, C. N., & Blanton, H. (2018). Effects of immersive, sexually objectifying, and violent video games on hostile sexism in males. *Communication Research Reports*, 35(5), 413-423.
- Lansford, J. E., Skinner, A. T., Sorbring, E., Giunta, L. D., Deater-Deckard, K., Dodge, K. A., ... & Uribe Tirado, L. M. (2012). Boys' and girls' relational and physical aggression in nine countries. *Aggressive Behavior*, 38(4), 298-308.
- Lee, E. J., Kim, H. S., & Choi, S. (2021). Violent video games and aggression: Stimulation or catharsis or both? *Cyberpsychology, Behavior, and Social Networking*, 24(1), 41-47.
- Li, J., Du, Q., & Gao, X. (2020). Adolescent aggression and violent video games: the role of moral disengagement and parental rearing patterns. *Children and Youth Services Review*, 118, 105370.
- Liau, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: a prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301-308.
- Lindner, D., Tribble, M., Pilato, I., & Ferguson, C. J. (2020). Examining the effects of exposure to a sexualized female video game protagonist on women's body image. *Psychology of Popular Media*, 9(4), 553-560.
- Lobel, A., Engels, R. C., Stone, L. L., & Granic, I. (2019). Gaining a competitive edge: Longitudinal associations between children's competitive video game playing, conduct problems, peer relations, and prosocial behavior. *Psychology of Popular Media Culture*, 8(1), 76.
- Lobel, A., Engels, R. C., Stone, L. L., Burk, W. J., & Granic, I. (2017). Video gaming and children's psychosocial wellbeing: A longitudinal study. *Journal of Youth and Adolescence*, 46(4), 884-897.
- López-Fernández, F. J., Mezquita, L., Etkin, P., Griffiths, M. D., Ortet, G., & Ibáñez, M. I. (2021). The role of violent video game exposure, personality, and deviant peers in aggressive behaviors among adolescents: A two-wave longitudinal study. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 32-40.

- Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). Sexy, strong, and secondary: A content analysis of female characters in video games across 31 years. *Journal of Communication*, 66(4), 564-584.
- Markey, P. M., Markey, C. N., & French, J. E. (2015). Violent video games and real-world violence: Rhetoric versus data. *Psychology of Popular Media Culture*, 4(4), 277.
- Markey, P. M., & Markey, C. N. (2010). Vulnerability to violent video games: A review and integration of personality research. *Review of General Psychology*, 14(2), 82-91.
- Mathur, M. B., & VanderWeele, T. J. (2019). Finding common ground in meta-analysis "wars" on violent video games. *Perspectives on Psychological Science*, 14(4), 705-708.
- McCarthy, R. J., Coley, S. L., Wagner, M. F., Zengel, B., & Basham, A. (2016). Does playing video games with violent content temporarily increase aggressive inclinations? A pre-registered experimental study. *Journal of Experimental Social Psychology*, 67, 13-19.
- McCarthy, R. J., & Elson, M. (2018). A conceptual review of lab-based aggression paradigms. *Collabra: Psychology*, 4(1).
- Merritt, A., LaQuea, R., Cromwell, R., & Ferguson, C. J. (2016). Media managing mood: A look at the possible effects of violent media on affect. *Child & Youth Care Forum*, 45(2), 241-258.
- Messias, E., Castro, J., Saini, A., Usman, M., & Peebles, D. (2011). Sadness, suicide, and their association with video game and internet overuse among teens: results from the youth risk behavior survey 2007 and 2009. *Suicide and Life-Threatening Behavior*, 41(3), 307-315.
- Molenaar, P. C. M. (1999). Longitudinal analysis. In: Ader, H. J., & Mellenbergh, G. J. (Eds.), *Research Methodology in the Social, Behavioural and Life Sciences*. SAGE Publications.
- Mundy, L. K., Canterford, L., Olds, T., Allen, N. B., & Patton, G. C. (2017). The association between electronic media and emotional and behavioral problems in late childhood. *Academic Pediatrics*, 17(6), 620-624.
- Murad, M. H., Katabi, A., Benkhadra, R., & Montori, V. M. (2018). External validity, generalisability, applicability and directness: a brief primer. *BMJ Evidence-Based Medicine*, 23(1), 17-19.
- Nosek, B. A., & Lakens, D. (2014). Registered reports: A method to increase the credibility of published results. *Social Psychology*, 45(3), 137-141..
- Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). Meta-analysis of the relationship between violent video game play and physical aggression over time. *Proceedings of the National Academy of Sciences*, 115(40), 9882-9888.
- Price, P. C., Jhangiani, R., Chiang, I-C. A., Leighton, D. C., & Cuttler, C. (2017). *Research Methods in Psychology (3rd American Edition)*.
- Przybylski, A. K. (2014). Electronic gaming and psychosocial adjustment. *Pediatrics*, 134(3), e716-e722.

- Przybylski, A. K., & Weinstein, N. (2019). Violent video game engagement is not associated with adolescents' aggressive behaviour: evidence from a registered report. *Royal Society Open Science*, 6(2), 171474.
- Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players' aggressive feelings, thoughts, and behaviors. *Journal of Personality and Social Psychology*, 106(3), 441.
- Rosenthal, R. (1990). Replication in behavioral research. *Journal of Social Behavior and Personality*, 5(4), 1.
- Ruiz-Fernández, A., Junco-Guerrero, M., & Cantón-Cortés, D. (2021). Exploring the mediating effect of psychological engagement on the relationship between child-to-parent violence and violent video games. *International Journal of Environmental Research and Public Health*, 18(6), 2845.
- Saleem, M., Anderson, C. A. and Gentile, D. A. (2012). Effects of prosocial, neutral, and violent video games on children's helpful and hurtful behaviors. *Aggressive Behavior*, 38, 281–287.
- Sarda, E., Zerhouni, O., Gentile, D. A., Bry, C., & Bègue, L. (2021). Some effects of sexist video games on self-masculinity associations. *Information, Communication & Society*, 1-16.
- Sestir, M. A., & Bartholow, B. D. (2010). Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology*, 46(6), 934-942.
- Shao, R., & Wang, Y. (2019). Effect of violent video games on adolescent aggression: moderated mediation effect of family environment and normative beliefs. *Frontiers in Psychology*, 10, 384.
- Shoshani, A., & Krauskopf, M. (2021). The Fortnite social paradox: The effects of violent-cooperative multi-player video games on children's basic psychological needs and prosocial behavior. *Computers in Human Behavior*, 116, 106641.
- Smith, L. J., Gradisar, M., King, D. L., & Short, M. (2017). Intrinsic and extrinsic predictors of video-gaming behaviour and adolescent bedtimes: the relationship between flow states, self-perceived risk-taking, device accessibility, parental regulation of media and bedtime. *Sleep Medicine*, 30, 64-70.
- Smith, L. J., King, D. L., Richardson, C., Roane, B. M., & Gradisar, M. (2017). Mechanisms influencing older adolescents' bedtimes during videogaming: The roles of game difficulty and flow. *Sleep Medicine*, 39, 70-76.
- Stermer, S. P., & Burkley, M. (2015). SeX-Box: Exposure to sexist video games predicts benevolent sexism. *Psychology of Popular Media Culture*, 4(1), 47-55.
- Sullivan, G. M., & Feinn, R. (2012). Using effect size - or why the p value is not enough. *Journal of Graduate Medical Education*, 4(3), 279-282.
- Tian, Y., Gao, M., Wang, P., & Gao, F. (2020). The effects of violent video games and shyness on individuals' aggressive behaviors. *Aggressive Behavior*, 46(1), 16-24.

- Tear, M. J., & Nielsen, M. (2013). Failure to demonstrate that playing violent video games diminishes prosocial behavior. *PloS One*, 8(7), e68382.
- Tear, M. J., & Nielsen, M. (2014). Video games and prosocial behavior: A study of the effects of non-violent, violent and ultra-violent gameplay. *Computers in Human Behavior*, 41, 8-13.
- Uman, L. S. (2011). Systematic reviews and meta-analyses. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 20(1), 57-59.
- Valkenburg PM, Peter J. (2013). The differential susceptibility to media effects model. *Journal of Communication*, 63, 221-43.
- Valkenburg, P. M., & Peter, J. (2013b). Five challenges for the future of media-effects research. *International Journal of Communication*, 7, 197-215.
- Van Aert, R. C., & Wicherts, J. (2021). Correcting for outcome reporting bias in a meta-analysis: A meta-regression approach (Unpublished manuscript). <https://doi.org/10.31222/osf.io/bn8vd>
- Van Reijmersdal, E. A., Jansz, J., Peters, O., & Van Noort, G. (2013). Why girls go pink: Game character identification and game-players' motivations. *Computers in Human Behavior*, 29(6), 2640-2649.
- Vella, K. (2016). *The social context of video game play: Relationships with the player experience and wellbeing* (Unpublished doctoral dissertation). Queensland University of Technology. Queensland, Australia.
- Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2018). Friendly fire: Longitudinal effects of exposure to violent video games on aggressive behavior in adolescent friendship dyads. *Aggressive Behavior*, 44(3), 257-267.
- Verheijen, G. P., Burk, W. J., Stoltz, S. E., van den Berg, Y. H., & Cillessen, A. H. (2021). A longitudinal social network perspective on adolescents' exposure to violent video games and aggression. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 24-31.
- Weaver, E., Gradisar, M., Dohnt, H., Lovato, N., & Douglas, P. (2010). The effect of presleep video-game playing on adolescent sleep. *Journal of Clinical Sleep Medicine*, 6(02), 184-189.
- Yao, M., Zhou, Y., Li, J., & Gao, X. (2019). Violent video games exposure and aggression: The role of moral disengagement, anger, hostility, and disinhibition. *Aggressive Behavior*, 45(6), 662-670.
- Zendle, D., Kudenko, D., & Cairns, P. (2018). Behavioural realism and the activation of aggressive concepts in violent video games. *Entertainment Computing*, 24, 21-29.
- Zhao, H., Zhou, J., Xu, X., Gong, X., Zheng, J., & Zhou, J. (2021). How to Be Aggressive from Virtual to Reality? Revisiting the Violent Video Games Exposure-Aggression Association and the Mediating Mechanisms. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 56-62.

- Zhang, Q., Cao, Y., & Tian, J. (2021). Effects of violent video games on aggressive cognition and aggressive behavior. *Cyberpsychology, Behavior, and Social Networking*, 24(1), 5-10.
- Zheng, X., Chen, H., Wang, Z., Xie, F., & Bao, Z. (2021). Online violent video games and online aggressive behavior among Chinese college students: The role of anger rumination and self-control. *Aggressive Behavior*. DOI: 10.1002/ab.21967.
- Zhang, Q., Tian, J., & Chen, L. (2021). Violent video game effects on aggressive behavior among children: the role of aggressive motivation and trait-aggressiveness in China. *Journal of Aggression, Maltreatment & Trauma*, 30(2), 175-192.

**TAX INVOICE**

07 October 2021

Tax Invoice No: 000000000028

Due Date: 06 November 2021

Project ID: AU000139.000

Project Manager

s47F - personal privacy

Department of Infrastructure, Transport, Regional
Development and Communications

Samantha

Locked Bag 3

Haymarket, NSW 1240

Impacts of Violent Video Games - Literature review refresh

Project: The impacts of violent video games from an Australian perspective: 2021

Deed number: 6002773

| Milestones | Percent Complete | Previously Invoiced | Amount |
|--------------------------------|------------------|---------------------|--------------------|
| Final Literature Review Report | 100.00 | 0.00 | 17,450.00 |
| Total Fee | | 0.00 | 17,450.00 |
| | | | \$17,450.00 |
| GST 10% | | | \$1,745.00 |
| | | Amount Due | \$19,195.00 |

Payment Details

A/C Name: s47F - personal privacy

BSB:

A/C Number:

SWIFT:

Bank:

s47F - personal privacy

Contact Details

Finance Team

accounts.apac@bi.team

Behavioural Insights (Australia) Pty Ltd

Level 13, 9 Hunter St

Sydney NSW 2000

ABN: 16 613 066 541

From: [REDACTED] Samantha
To: Hyles, Andrew
Cc: [REDACTED] Margaret; [REDACTED] Amy
Subject: RE: Procurement re-approval for Violent Video Games literature review [SEC=OFFICIAL]
Date: Wednesday, 13 October 2021 2:54:00 PM
Attachments: image001.png

OFFICIAL

Thanks Andrew.

Sam

OFFICIAL

From: Hyles, Andrew <andrew.hyles@classification.gov.au>
Sent: Wednesday, 13 October 2021 2:53 PM
To: [REDACTED] Samantha <Samantha.[REDACTED]@classification.gov.au>
Cc: [REDACTED] Margaret <Margaret.[REDACTED]@communications.gov.au>; [REDACTED] Amy <Amy.[REDACTED]@classification.gov.au>
Subject: RE: Procurement re-approval for Violent Video Games literature review [SEC=OFFICIAL]

OFFICIAL

Thanks Sam, I have approved this in the system

Andrew

Andrew Hyles

Assistant Secretary • Classification • Online Safety, Media & Platforms

Andrew.Hyles@classification.gov.au

P +61 2 6271 7707 • [REDACTED] s47F - personal privacy

OFFICIAL

From: [REDACTED] Samantha <[REDACTED]@classification.gov.au>
Sent: Wednesday, 13 October 2021 12:34 PM
To: Hyles, Andrew <andrew.hyles@classification.gov.au>
Cc: [REDACTED] Margaret <[REDACTED]@communications.gov.au>; [REDACTED] Amy <[REDACTED]@classification.gov.au>
Subject: Procurement re-approval for Violent Video Games literature review [SEC=OFFICIAL]

OFFICIAL

Hi Andrew

I'm processing the invoice for Behavioural Insights Team for the recent Violent Video Games

literature review. Unfortunately in registering the procurement back in July I put an end date on the procurement that was too early and need to change it to allow payment processing to occur. This requires a new approval form to be raised in SAP for your approval (it was originally approved by Lachlan Phillips and the signed hard copy procurement minute is attached).

You will receive a system email requesting the approval shortly. I apologise for the inconvenience and if you want to discuss the procurement please feel free to get in touch.

Thanks and apologies again.

Samantha



Assistant Director • Reform Policy / Classification • Online Safety, Media and Platforms Division

Samantha.s47F@infrastructure.gov.au

P +61 2 9289 7117

Locked Bag 3 Haymarket NSW 1240

Department of Infrastructure, Transport, Regional Development and Communications

CONNECTING AUSTRALIANS • ENRICHING COMMUNITIES • EMPOWERING REGIONS

infrastructure.gov.au



I would like to acknowledge the traditional custodians of this land on which we meet, work and live. I recognise and respect their continuing connection to the land, waters and communities. I pay my respect to Elders past and present and to all Aboriginal and Torres Strait Islanders.

OFFICIAL