

## **Summary of *Violent computer games and aggression – an overview of the research 2000-2011***

This is a short summary of the results from the Swedish Media Council's survey *Violent computer games and aggression – an overview of the research 2000-2011*. The research overview relates only to studies of violent games and aggressive behaviour. Investigations about violence in other media (TV, DVD etc.) or other effects of playing (dependence, obesity, repetitive strain injuries etc.) are therefore not touched upon.

The complete report is available for downloading at [www.statensmedierad.se](http://www.statensmedierad.se).

Through searching research databases, the Swedish Media Council has gathered studies about the effects of violent computer games (hereinafter known as VCG) on aggression published in international research journals during the period from 2000 to 2011. The searches of the literature resulted in 161 articles which altogether contained 106 unique empirical studies. The remaining 55 articles consisted of "meta studies", research overviews, scientific debate articles, method critiques or comments on the articles of others.

### **Investigative methods**

The studies can be divided into the methodological areas: laboratory studies, cross-sectional studies and longitudinal studies.

### **Laboratory studies**

71 of the total 106 investigations (67%) are laboratory studies. Such studies are conducted in a controlled environment, a laboratory, where test subjects are allowed to play computer games and then have their aggression measured. As a rule, the test subjects are divided into two or more groups, where one group plays VCG and other others play non-violent computer games (NVCG) or do something else entirely. A clear majority of the laboratory studies report results that VCG increase aggression among the players. The studies, however, suffer from such obvious methodological and epistemological deficiencies that their relevance may be seriously questioned.

One of the conditions for being able to establish an increase in aggression as a result of VCG is that aggression is measured in the same way both before and after the playing, something that only 7% (5 studies) of the studies did.

Physical aggression in the sense of violence towards people of animals cannot be studied in the laboratory since it is unethically acceptable from a research perspective to attempt to provoke real violent actions. Therefore, other measures of aggression are used in laboratory studies: behaviour that can be accepted as being similar to physical aggression, e.g., aggressive thoughts, attitudes, emotions and associations, or physiological measurement methods.

A laboratory study takes place in an artificial environment, where social norms and rules are taken out of play and the research situation itself is designed to minimize the influence from factors other than those that the study relates to. The laboratory environment differs to such a great extent from social everyday reality that such studies are criticised for simply lacking ecological validity, i.e., that the observations from the laboratory cannot be generalised as having validity outside of the laboratory environment.

Laboratory investigations can only measure the effects of VCG in direct connection to the playing. Studies of how long the different aggression effects measured in the laboratories lasted show that they disappear after 4 to 30 minutes. On the basis of the laboratory studies it is not possible to express how VCG affect the players over a longer period of time.

#### **Cross-sectional studies**

The 23 cross-sectional studies (22% of all studies) that were included in the material are all questionnaire surveys. The questionnaire questions apply to the respondents' playing of computer games and aggressive behaviour in their everyday environment. Since a cross-sectional study only gathers data on one single occasion, it is not possible to express whether the statistical associations found are causal (cause-effect) or not. Approximately the same number of the investigations reported a connection between VCG and aggression as did not.

In general, the studies that did not find such a connection had more comprehensive data about the respondent's background. It was demonstrated that what initially stood out as a connection between VCG and aggression was upon closer analysis possible to explain by the player's mental state and/or family relationships. According to these studies, factors such as low self-esteem, general mental problems and violence within the family cause both an inclination to play VCG and a higher level of aggression amongst the respondents.

#### **Longitudinal studies**

Longitudinal studies (11% of all studies) are usually questionnaire surveys with repeated collection of data. Through repeated measurement occasions, changes over time may be expressed, which is central in being able to chart the cause-effect relationship. 12 such studies are included in the material. Of these studies, 11 demonstrated the connection between VCG and aggression. Only three studies took into account relevant background data on family relationships and mental

well-being. In two of these studies, these background factors were able to explain both preferences for VCG and aggressive behaviour.

### Conclusion

There is an extensive amount of research that demonstrates a statistical relationship between VCG and aggression. Much of this measured aggression related only to mental processes and not to violent behaviour. In addition, there was no evidence for VCG *causing* aggressive behaviour.

A large part of the research on VCG and aggression suffers from serious methodological deficiencies and provides insufficient data to be able to prove or disprove a causal relationship. The three most serious shortcomings can be summarized in the following way:

1. **How was the term aggression used and measured?**

In many studies, aggression was measured through attitudes, thoughts, feelings, associations or behaviour whose connection to actual physical violence was unclear or lacked empirical support.

2. **Do people react like this in normal social environments?**

That a person reacts in a given manner in a laboratory environment does not mean that they would react similarly in an everyday environment. How the behaviour, thoughts, associations etc., which were observed in the laboratory are related to actual behaviour has not been clarified in the research.

3. **Do other causes exist for aggression and computer game preferences?**

The investigations that had the most comprehensive background data demonstrate that both the inclination to play VCG and personal aggression are a result of other factors such as problematic family relationships, mental ill-health and behavioural problems. Consequently, the inclination to play VCG can only be seen as a (relatively weak) symptom of person aggressiveness.

There is, however, a statistical connection between aggression and VCG. In the studies that were included in this overview, four attempts to explain this connection can be identified.

1. **VCG cause violent behaviour.** This assertion is common in the existing research, but is grounded in serious methodological deficiencies and cannot therefore be considered proven.
2. **VCG causes violent behaviour among people with particular personal characteristics.** This hypothesis is altogether too poorly researched to be able to be expressed with certainty. Studies that investigated people with psychological problems gain results that can be interpreted as support for both this hypothesis and hypotheses 3 and 4.
3. **Aggressive people look for VCG to play.** Here, causality is reversed: personal aggression is seen as a cause and the preferences for VCG as the effect. Support for this hypothesis is extensive in the existing research.

4. **Underlying factors affect both aggression and VCG preferences.** This hypothesis is supported by all studies that investigated underlying factors such as mental behavioural problems and the family-social interaction.

The results of this report conform to many other research overviews. During the 2000s, eight similar research overviews have been published by State institutions or non-profit organizations. Seven of them reached the same conclusions as this report. Amongst the publishers are the Swedish National Institute of Public Health, Norwegian Social Research (NOVA), the Australian Government Attorney-General's Department and the British Departments of Education and Culture, Media and Sport. The notion spread by media that the research has proven that VCG gives rise to real violence has not been established in the research in its entirety, but in a selective choice of the studies.

That the research has, up until now, not succeeded in demonstrating with proof that the hypothesis that violent computer games make the players more inclined to violence, does not mean that such an effect may not exist. If such a causal relationship exists, it is, however, weak in relation to the other factors that are known to affect the incidence of violent behaviour among children and youths. This should not be taken as justification for now allowing children to play any type of computer game. Certain games are not for children - as little as certain films, books and artworks are.

When the Swedish Media Council makes decisions about age limits for films to be shown in cinemas, these are not based on considerations about how much violence the film contains. Assessment is made using a formulation from the UN's child convention, about whether the film may harm the child's well-being. The same reasoning should be able to be applied to computer games: a one-sided focus on the violence in the game leads to other issues regarding content being forgotten. Can certain games - or films, literature or theatre productions - create concerns, confusion, terror or anxiousness? If we adults stop focusing all our energy on the incidence of violence in computer games, we can instead begin asking ourselves questions that the research will never be able to answer: what values, norms and ideologies do we want to pass on to our children?