



Ministry of  
**JUSTICE**

**The evidence of harm to adults relating to exposure to  
extreme pornographic material:  
a rapid evidence assessment (REA)**

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# Executive summary

## Background

This document reports on a rapid evidence assessment (REA) of the evidence of harm to adults relating to exposure to extreme pornographic materials. It was conducted for the Home Office and Department of Health as part of a programme of research being conducted by the Department of Health on the health and mental health effects of prostitution, pornography and trafficking, rape and sexual assault, and sexual offending. This REA was commissioned by the Home Office before the Ministry of Justice was formed.

## Terms of reference of the REA

The terms of reference of the REA were to 'examine the possibility of a relationship between exposure to extreme pornographic material and subsequent commission of sexual and violent offences'.

Extreme pornographic material was defined as 'actual scenes or realistic depictions of: explicit intercourse or oral sex with an animal, explicit sexual interference with a human corpse, explicit serious violence in a sexual context and explicit serious sexual violence'.

The REA addressed three research questions:

- i. What effects does viewing extreme pornographic material have on those adults who access it?
- ii. In particular is there any evidence that it causes or contributes to sexual or violent offending?
- iii. Is there any evidence that those adults who participate in making extreme pornographic material are harmed by their involvement?

## Summary of key findings

- The REA supports the existence of some harmful effects from extreme pornography on some who access it. These included increased risk of developing pro-rape attitudes, beliefs and behaviours, and committing sexual offences. Although this was also true of some pornography which did not meet the extreme pornography threshold, it showed that the effects of extreme pornography were more serious.
- Men who are predisposed to aggression, or have a history of sexual and other aggression were more susceptible to the influence of extreme pornographic material. This was corroborated by a number of different studies using different methods and different samples.
- The REA found no formal research studies of the effects on those who participate in making extreme pornography.

## Description of included studies

The majority of research on pornography effects has been experimental studies conducted under laboratory conditions. This report is based on five correlational meta-analyses identified in the REA which covered this literature and included the effects on individuals of sexually violent pornography. Two of these also covered non-experimental studies. The five meta-analyses (in chronological order) covered:

- aggression after exposure to pornography in the laboratory (1995);
- exposure to pornography and acceptance of rape myths - including both experimental and non-experimental studies (1995);
- reactions of criminal sex offenders to pornography (1999);

- research on the effects of pornography published between 1962-1995 (2000);
- pornography consumption and attitudes supporting violence in non-experimental studies (2006).

Meta-analysis involves using statistical summarising techniques to provide an aggregation of existing evidence. The goal is to provide a quantitative summary of comparable data and show the homogeneity of the averages obtained. This increases the sample size to a level from which it is possible to generalise from the findings obtained. One hundred and twenty-four individual studies are included within these five meta-analyses.

This report is also based on 48 primary studies identified in the REA. Sixteen of these were also included in one or more of the meta-analyses. Thirty-two were not included in any of the meta-analyses and are unique to the REA. This report comprises a collation of descriptive summaries of selected studies and a summary of the findings, highlighting gaps in knowledge.

To address the second REA question of extreme pornographic material as a contributing or causal factor in sexual or violent offending, the report also summarises and critically assesses theoretical and conceptual models of the role of pornography in the aetiology and processes of sexual offending. Emphasis is placed on more complex conceptual frameworks which move away from simplistic cause and effect formulations.

## Findings

The findings of the meta-analyses indicated an increased susceptibility to the influence of pornographic material on men who are measured as having a combination of high predisposing aggression levels, past histories of sexual and other aggression, self-reported likelihood to rape and sexual arousal to rape depictions.

The findings of the meta-analyses were corroborated by other studies included in the REA, specifically: 22 additional experimental studies involving primarily male students; two additional surveys conducted with men; one case series study comparing known (male) sex offenders to other men (assumed non-offenders); four surveys of women (on their experience of being victimised through men's use of pornographic material that meets the REA definition of being extreme); two qualitative studies of the effects of such pornography on women and one qualitative study of serial sexual killers.

With regard to the effects on those involved in the making of extreme pornographic material, no formal research was identified by the REA to evidence this. However, other sources of information have been drawn upon to illustrate the nature of the harm experienced by those involved – such as documentary evidence of visible harm, and testimony given by victims in legal evidence.

This real life experience complements the findings from the REA that found harmful effects of extreme pornographic material on some of those who access it. This includes effects on those who have been convicted of sexual and violent offending.

All five of the meta-analyses also found harm effects for some material that does not meet the criteria of 'extreme' pornography. However, they found that harm effects are most negative for pornography that depicts or enacts explicit serious sexual violence, explicit serious violence in a sexual context, or explicit intercourse or oral sex with an animal (bestiality).

No relevant research was identified in the REA that investigated the effects of pornographic material depicting explicit sexual interference with a human corpse.

## Value of the REA

The REA has been able to benefit from and build on the findings of five high quality meta-analyses. It has also been able to consider 32 studies not previously reviewed in the meta-analyses. These include surveys of women and qualitative studies with both victims and offenders. Altogether by reporting on the meta-analyses, the REA effectively covers the one hundred and sixty-one studies listed in Annex E.

The findings of the REA are a significant step in clarifying the position in an area subject to previous academic dispute about the findings of specific studies, and the status of the experimental – and other – research as evidence of harm.

Use of the REA definitions of extreme pornographic material, of inclusion and exclusion criteria and methodological appraisals has provided consistency in the selection of studies, and helped to assure the quality of the studies selected.

The statistical methods employed in meta-analyses and the triangulation of methods and samples in the REA have also addressed some of the issues concerning external validity of experimental studies.

## Gaps in knowledge identified by the REA

There were a number of significant gaps in knowledge identified in the process of conducting the REA. These include:

- the psycho-social and physical effects of extreme pornographic material on victims who are used in its making, or exposed to it, or victimised as a result of some men's exposure to it;
- the effects of exposure to extreme pornographic material on young people, both as (a) de facto sex education, and the implications of this for their sexual and psychological health, and (b) its influence on young people who sexually abuse;
- the links between prostitution and pornography, and the trade and traffic in women and children and adolescents of both sexes for these purposes;
- the extent of extreme pornographic material and its content across the media, and in particular the internet; and
- the lack of studies which sample from the general population, including public perceptions of extreme pornographic material.

## Conclusions

Pornography raises complex moral and political issues and strong feelings amongst those with opposing views. Taken together, however, the methodologies employed and the findings of studies reported in the REA provide a scientific basis on which to consider the harm effects on victims, including the damage it does to the attitudes, beliefs, fantasies, desires and behaviour of some of those who use it.



# 1. Background and methodology

## Introduction

This document reports on a rapid evidence assessment (REA) of the pornography effects literature (Home Office, 2006). The REA was conducted for the Home Office and the Department of Health as part of a programme of research being undertaken by the Department of Health on the health and mental health effects of domestic and sexual violence and abuse, including prostitution, pornography and trafficking, rape and sexual assault, and sexual offending (Itzin, 2006). The review covers international, as well as UK, literature. This REA was commissioned by the Home Office before the Ministry of Justice was formed.

## HO tender specification for a Rapid Evidence Assessment (REA)

The REA requirements set out in the tender specification were to identify, review and assess any evidence of harm associated with extreme pornographic material.

The definition of extreme pornographic material (EPM) for purposes of the REA covered only material involving 'actual scenes or realistic depictions of:

- explicit intercourse or oral sex with an animal;
- explicit sexual interference with a human corpse;
- explicit serious violence in a sexual context;
- explicit serious sexual violence.'

'Explicit' was further defined as 'intended to cover activity which can be clearly seen and is not hidden, disguised or implied'; serious violence as 'will involve or will appear to involve serious bodily harm in a context or setting which is sexual – for example, images of suffocation or hanging with sexual references in the way the scenes are presented' and serious sexual violence as 'will involve or will appear to involve serious bodily harm where the violence is sexual.' (Home Office, 2005, pp 20-25).

The terms of reference for the REA specified three research questions to be addressed.

- What effects does viewing extreme pornographic material have on those adults who access it?
- In particular, is there any evidence that it causes or contributes to sexual or violent offending?
- Is there any evidence that those adults who participate in making extreme pornographic material are harmed by their involvement?

## Methodological issues

Over the years there have been apparently conflicting reviews of the pornography effects literature. This is reflected in various government inquiries conducted in the US (1970, 1986), Australia (1988), New Zealand (1989), and Canada (1985). Their conclusions have varied, with some finding evidence of harm and others finding the evidence equivocal. In the UK, the Williams Committee on Film and Theatre Censorship (1979) had concerns about the nature of some of the extreme pornographic material they had seen, but recommended restrictions on its display rather than its availability (Williams Committee 1979). The Home Office review commissioned in 1990 identified studies showing extreme pornographic material as a contributing factor in sexual offending and violence against women, but concluded that 'a causal influence cannot be substantiated from the evidence' (Howitt and Cumberbatch, 1990, pp.84-85).

The differing views have continued to fuel the debate about the potential harmful effects of pornography. In this context, a number of methodological issues have been raised as potential obstacles to making comparisons or generalisations, or to drawing unequivocal conclusions. These include:

- the large number of primary studies – totalling hundreds – conducted over a period of more than 30 years;
- inconsistency in the terminology used to describe the material being researched;
- sometimes insufficient information about the pornographic material being studied;
- problems with the representativeness of subject populations in the experimental research;
- uncertainty about the validity and reliability of the methods used to measure attitudinal, cognitive and behavioural effects, and the extent to which experimental effects can be extrapolated from research into real life;
- the exclusion – for ethical reasons – in many of the experimental designs of types of material which fall within the Home Office definition of extreme pornographic material;
- the large number of reviews of the pornography effects literature which vary in quality and coverage, with findings and conclusions that appear to conflict; and
- uncertainty in the scientific community about how to assess the impact of pornography consumption on behaviour in the absence of robust – and comparable – theories of aetiology and causality.

Given these factors, the efficacy of the research methods, the status of the research as evidence, and the conclusions that can be drawn have been uncertain. The REA methodology was designed to be transparent in addressing these methodological complexities, and sufficiently robust to command the respect of the international research community. Together the meta-analyses – and the REA – have addressed a number of the methodological problems identified when designing the REA. These are set out below.

### ***The power of meta-analysis***

The REA benefited from the availability of five high quality meta-analyses. Meta-analysis offers a methodology that provides explicit standards for the judgements and conclusions and permits others to replicate, and verify the accuracy and validity of any conclusions offered. It involves using statistical summarising techniques to provide an aggregation of existing literature, and a quantitative summary of comparable data. The statistical procedures employed enable the averaging of effects across studies, with the resulting average simulating the effect of increasing the available sample size, and therefore providing more robust results. This increases the statistical significance of effects that are tested and observed. Significance is a statistical term that tells how confident one can be that a difference or relationship exists and that that relationship is not a result of chance. The sample sizes in the five meta-analyses reported in the REA are (chronologically): 2011, 4268, 4642, 12,323 and 3368.

Stringent quality criteria are applied to the selection of scientifically robust and comparable quantitative studies for inclusion in meta-analyses. Findings are statistically significant provided there is homogeneity between studies of participants, interventions, comparators and outcomes (see Allen, D'Alessio and Brezgel, 1995a pp 264-265; Allen *et al.*, 1995b p 12).

### ***Statistical significance of included findings***

All findings reported in the REA from the meta-analyses were based on homogeneous results and statistically significant effects. All findings reported from individual primary quantitative studies included in the REA and summarised in this report were based on statistically significant effects. No findings that were not statistically significant have been reported except for studies with nil findings (see below).

## **External validity**

A major unresolved issue concerning the pornography effects literature has been the external validity of the experimental studies. This includes the representativeness of North American university samples, the reliability of information provided by sexual offenders, and the ability to generalise from laboratory studies.

## **Uncertainty about experimental research methods**

Some of the concerns about validity and reliability have been addressed by the statistical methods employed in the meta-analyses (see above).

## **The representativeness of North American male university student samples**

The North American male students studied in the 1980s represent a demographically homogeneous group whose characteristics would have varied little by institution or geographical setting, and the material to which they were exposed would have been similarly of that period. Malamuth, Addison and Koss (2000) have argued that 'the use of college students as subjects would actually result in 'serious under-estimation of pornography-induced harm' in the general population' (p 57). However, the findings of studies with male students are corroborated by the behaviour of men reported in the victimised women surveys.

## **The reliability of information provided by convicted sexual offenders**

Critics have argued that information obtained from sexual offenders cannot be taken as reliable. However, Allen, D'Alessio and Emmers-Sommers (1999) point out that 'convicted sex offenders have [in self reports] an incentive to under-estimate their frequency of use, either intentionally or unintentionally'. For 'physiological measures, however,' they argue that 'the reverse is true: convicted sex offenders would have every incentive to demonstrate minimal reactions, yet they fail to do so'. This indicates, in their view, that 'the effects may, in fact, understate the link between sexual practices of criminal offenders and their reactions to sexual material' (p 158).

## **The ability to generalise from laboratory studies**

Allen, D'Alessio and Brezgel (1995a) identified a number of concerns about the ability to generalise from laboratory studies as a 'systematic factor occurring across all the investigations'. These factors include 'the distinctions between aggression and sexual aggression that are not made, likewise the differences between anger associated with sexual as distinct from other aggression, and the laboratory context as distinct from the social context' (p 18). The 'central question' wrote Allen, D'Alessio and Emmers-Sommers (1999), given their meta-analysis of the non-experimental studies had not replicated their findings from the experimental research, is 'whether the findings of laboratory experiments indicate anything about the world outside the laboratory' (pp 156-157). This question has been significantly addressed by the meta-analysis of the non-experimental studies conducted by Hald *et al.* (2006) which found similar effects for pornographic material depicting explicit serious sexual violence, explicit serious violence in a sexual context and bestiality consumed outside the laboratory.

## **Other methodological issues**

### **The large number of primary studies**

The use of inclusion criteria in the REA helped to reduce the numbers and to assure the quality of the studies selected for analysis and assessment.

### **The large number of reviews, which vary in quality and coverage, and draw different apparently conflicting conclusions**

The quality issue has been addressed within the REA by excluding all reviews except systematic reviews (none was found) and meta-analyses, by methodological appraisal of all studies and by exclusion of studies that did not meet the quality standard. The inclusion in the REA of only studies of effects on individuals has identified a consistency in the findings of this body of research.

### The status of studies finding nil effects or conflicting findings

The findings from individual studies reporting nil effects need to be judged now in the context of the findings of the meta-analytic study by Oddone-Paolucci, Genuis and Violato (2000) which calculated that it would take a further 284 studies with a null result before the findings of their meta-analysis of 46 studies could be reasonably ascribed to sampling bias (p 51).

### Inconsistency in the terminology used to describe pornographic material

Using the REA definition of extreme pornographic material has contributed to greater consistency in the findings reported from studies selected for assessment in the REA.

### Insufficient information in the studies about the nature of the material employed

The REA addressed this by contacting the authors for clarification where possible, and then including relevant studies, and excluding those which did not meet the REA definition of extreme pornographic material. However, given the age of some studies, it is not possible to wholly resolve these issues.

Contrary to expectations, it was found that in 30 of the 48 primary studies included, the content of the extreme pornographic material used was described in graphic detail. Direct quotes of these explicit descriptions have not been repeated in this report because the nature of the material was 'too extreme'. Instead it has been described in more neutral terms. This has been done to avoid the risk that these descriptions would function as extreme pornographic material for the reader, producing sexual arousal and orgasm to material that depicts or enacts serious sexual violence, explicit serious violence in a sexual context or explicit intercourse or oral sex with an animal (bestiality).

In all cases in the REA, the nature of the pornographic material employed is specified in each of the summaries. Two considerations should be noted: (i) that the pornographic material used in laboratory studies is likely – for ethical reasons – to be less extreme than that accessed outside, and (ii) the pornographic material accessible now, in particular on the internet, is likely to be more extreme than that available in the 1980s. This would suggest that the REA findings are an under-estimate of the harm effects.

## Rapid Evidence Assessment (REA): Study design

Within the timescales and resources available, a full systematic review was not possible. Instead, the design drew on aspects of systematic review methodology. The inclusion and exclusion criteria (in Annex A) were established with the Home Office.

Only correlational studies involving measurement at the level of the individual were included. Correlational studies at group or population level were not included. These studies were excluded in view of the inability of such designs to allow any detailed exploration of hypotheses in relation to causality, and the danger of ecological fallacy – the bias that may occur because an association observed between variables on an aggregate level does not necessarily represent an association that exists at an individual level (see for example, Greenland and Robins 1994).

Papers reporting literature reviews were only included if they were systematic literature reviews or meta-analyses. Other reviews of the pornography effects literature which did not meet these methodological standards were not included.

The inclusion and exclusion criteria were applied to each study by one of four reviewers based on the abstract.<sup>1</sup> A random sample consisting of the first 20 decisions for each reviewer was checked for agreement.

<sup>1</sup> The REA resources did not allow for independent review of the abstracts of each study identified. There was complete agreement on the assessment of the abstracts randomly selected for checking.

Full papers were ordered for all studies that met the inclusion criteria on the basis of the abstract, and for any where it was unclear from the abstract whether the study met the criteria or not.

Methodological appraisal criteria for quantitative and qualitative studies were developed based on a modified version of the Critical Appraisal Skills Programme (CASP) tools. For *qualitative* studies the Cabinet Office framework consists of ten questions covering rigour, credibility and relevance of the studies<sup>2</sup>. For *quantitative* studies, suitably modified versions of the CASP tools for critical appraisal of study methodologies were used<sup>3</sup>, supplemented by other relevant approaches. The methodological appraisal evaluation tables employed are included in Annex B.

Methodological appraisals were conducted on the following categories of study.

- Qualitative studies.
- Quantitative studies including:
  - cohort studies both with and without a comparison group;
  - correlational studies at the level of individuals (rated as cohort or comparison group studies as appropriate);
  - meta-analyses.

Each study subject to methodological appraisal was scored as a percentage of the maximum score available for that type of study design. This allowed comparisons across studies with different designs, assessed against different criteria (Feder *et al.*, 2006). Study quality and strength of design were independently assessed by one of four reviewers. A random sample of 22 methodological appraisals was checked, and the concordance rate was 92 per cent<sup>4</sup>.

Data extraction was conducted by the four reviewers on studies scoring over 50 per cent, using the table in Annex C. A number of first authors of included articles were asked to clarify data or for missing data, about the pornographic material employed in their study.

## Summary of studies identified and included

The Department of Health Library online database, supplemented by studies from hand searching relevant bibliographies, identified 3,325 studies<sup>5</sup>. Contact with the authors of the meta-analyses produced an additional meta-analysis submitted for publication in 2006.

Full papers were requested for 310 studies<sup>6</sup>, all of which were subject to methodological appraisal using the criteria in Annex B. Two hundred and fifty-seven studies were excluded which:

- did not employ extreme pornographic material; or
- directly address the REA research questions; or

2 The unmodified tool is shown in NHS Learning and Development Public Health Resource Unit. CASP appraisal tool for Qualitative Research. <http://www.phru.nhs.uk/casp/qualitat.htm>

3 <http://www.phru.nhs.uk/casp/appraisa.htm>

4 The REA resources did not allow for parallel independent blind ratings of the methodological appraisals. The concordance rate was based on random checks.

5 Online databases included Medline, ASSIA, ABBS, CSA, CJA, PAIS International (Public Affairs Information Services), IBSSm, Psychinfo, NCJRS (The National Criminal Justice Reference Service), C2-SPECTR, SwetsWise. Print sources included: journals, textbooks, hand searching (e.g. British Library, BPLES, Home Office library). Search terms were: *Violence/ pornography/ violent pornography/ explicit pornography/ sexual violence/ sex offences/ internet-pornography/ psychosexual behaviour/ rape/ extreme pornography/ necrophilia/ X-rated, hard-porn/ obscenity/ male violence/ bestiality/ zoophilia/ hardcore/ exposure/ effect/ damage/ psychological/ mental/ depraved/ torture/ harm/ murder/ evidence/ behaviour aggression/ gratification/ incest/ erotomania/ sexual dysfunction/ erotica/ rape/ sadomasochism*. The total number of studies identified included some duplication which the search procedure had not been able to eliminate.

6 If there was any doubt about inclusion based on the abstract, the full paper was requested.

- scored zero on the first two methodological appraisal screening questions; or
- scored under 50 per cent in the methodological appraisals.

Five meta-analyses and 48 papers reporting on primary studies (53 in total) met the REA selection and quality criteria. Sixteen of the primary studies are also included in one or more of the meta-analyses and 32 are unique to the REA. The meta-analyses identified in the REA were correlational. No randomised control trials (RCTs) or systematic reviews were identified. All studies included in the REA were conducted in North America (US and Canada).

The REA brings together for the first time the findings of the five following meta-analyses.

- Allen, D'Alessio and Brezgel (1995a) Aggression after exposure to pornography in the laboratory;
- Allen *et al.*, (1995b) Exposure to pornography and acceptance of rape myths (including both experimental and non-experimental studies);
- Allen, D'Alessio and Emmers-Sommers (1999) Reactions of criminal sex offenders to pornography;
- Oddone-Paolucci *et al.*, (2000) Published research on the effects of pornography 1962-1995;
- Hald *et al.*, (2006) Pornography consumption and attitudes supporting violence (in non-experimental studies).

These – and the 48 primary studies – comprise all of the studies that were identified in the REA search which involved pornographic material depicting or enacting explicit serious sexual violence, explicit serious violence in a sexual context, or explicit intercourse or oral sex with an animal (bestiality) and which addressed the REA research questions.

All of the meta-analyses and 40 of the 48 primary studies also involved pornographic material that did not meet these definitions, but provided comparisons with or illustrated its relationship to extreme pornographic material. These findings are included in the summaries.

No studies involving only pornographic material that did not meet the REA definition have been included. No studies were identified in the REA search which investigated the effects of pornographic material depicting explicit sexual interference with a human corpse.

The findings of the REA assessment are structured around the three research questions. Following the hierarchy of evidence, the relevant meta-analyses are summarised in full first, followed by brief summaries of all 48 individual primary studies relevant to the particular research question, presented in chronological order, which:

- complement and extend the findings of the meta-analyses; or
- illustrate the issues to be addressed in the REA questions.

The five meta-analyses and 48 included primary studies fell into the following quality rating bands.

- 70 –100 per cent – 28 papers (including the meta-analyses).
- 50 – 69 per cent – 25 papers.

All studies scoring 70 per cent or over were judged to be high quality and have been included if they met the REA criteria. Studies scoring between 50 and 69 per cent were judged to be good quality. These have also been included in order to ensure that:

- the findings of all of the meta-analyses have been elaborated in a sufficient and a balanced way;
- the report included all studies involving pornographic material that met the definition of explicit intercourse or oral sex with an animal (bestiality);
- the report included studies with nil effects, as the REA would be vulnerable to criticisms of bias if none of these studies were included; and
- the REA was able to report on the effects of extreme pornographic material on women, and its use in the victimisation of women.

Full summaries for all 48 primary studies included in the REA are provided in Annex D with their methodological appraisal scores and (for quantitative studies) effect sizes. This represents the full body of evidence identified in the REA and used to reach the conclusions in this report.

Whether a summarised study is in the REA only or also in a meta-analysis is clearly indicated in the annex to avoid double counting. Excluded studies are marked with an asterisk in the references.

The table in Annex E lists 161 studies. These comprise the five meta-analyses and all of the primary studies included in one or more of them, together with all of the primary studies included in the REA. By reporting on each of the five meta-analyses as well as the 32 studies unique to the REA, the report covers the findings of all 161 studies.



## 2. Summary of REA studies

### Research Question 1: What effects does viewing extreme pornographic material have on those adults who access it?

Two of the meta-analyses identified in the REA search analysed experimental studies employing comparison groups. Both included studies involving pornographic material depicting explicit serious sexual violence, explicit serious violence in a sexual context or explicit intercourse or oral sex with an animal (bestiality) on adults who access it.<sup>7</sup> Their findings are summarised below with relevant points drawn from individual studies in the meta-analyses and from primary studies identified in the REA.

#### Experimental studies under laboratory conditions

##### *Meta-analytic study one – The effects of pornography: aggression after exposure*

Allen, D'Alessio, and Brezgel (1995a) examined the effects that exposure to pornography produced on aggressive behaviour under laboratory conditions. It included 30 papers, three of which reported two studies each, involving 2 011 individuals in total. The studies are listed in Annex E.

Pornography was defined in this review as: 'media material used or intended to increase sexual arousal, which generally has verbal or visual images of exposed sexual organs and depictions of sexual behaviours' (p 259). It considered three categories of pornography which were analysed separately and findings reported comparing the effects for each of the following.

- Nudity (a single person depicted with minimal or a complete lack of clothing but not engaged in a sexual activity).
- Non-violent sexual behaviour (including petting, autoerotica, and fondling of genitals as well as oral, vaginal or anal intercourse).
- Violent sexual behaviour (with the intent to injure or against a person's agreement) (p 267).<sup>8</sup>

In these studies, behavioural aggression involved an attempt by one person to injure another person physically, materially or psychologically. The design of most of the studies compared the level or amount of aggression of an experimental group (viewing sexually arousing material) to a comparison group (viewing material containing no sexually arousing material).

A variety of possible moderating conditions were considered including: level of sexual arousal, level of prior anger, type of pornography, gender of subject, gender of the target of aggression and medium used to convey the material. This meta-analysis found a homogeneous set of statistically significant effects showing that for the categories of material as defined above.

- Pictorial nudity reduced subsequent aggressive behaviour;
- consumption of material depicting non-violent sexual activity increased aggressive behaviour; and
- media depictions of violent sexual activity generated more aggression than those of non-violent sexual activity' (p 258)

<sup>7</sup> Experimental studies involving sex offenders are summarised with the meta-analysis on criminal sexual offender reactions to pornography under Research Question 2 p 42.

<sup>8</sup> Correspondence with the author confirmed that the material met the REA definition of extreme pornographic material.

### Examples of laboratory studies on aggression following exposure to extreme pornographic material

Four primary studies identified in the REA and also included in this meta-analysis illustrate the methodologies employed and the nature of the findings of the early experimental research exploring aggression after exposure to extreme pornographic material, as defined by the REA, comparing the effects with non-violent material.

Donnerstein (1980) conducted an experiment designed to examine the effects of aggressive-erotic stimuli on male aggression towards females. The study involved 120 male students and the extreme pornographic material employed involved a graphic depiction of the rape of a woman at gunpoint (p 271). This study found statistically significant increases in aggression towards women following exposure to depictions of sexual aggression (p 274). Even non-angered subjects were aggressive towards the woman when she was depicted as enjoying the experience of being raped.

Zillmann, Bryant and Carveth (1981) conducted a study on pornography and aggression involving 40 male students which employed graphically explicit exposure to sadomasochism and bestiality (p 155). This study found a statistically significant increase in retaliatory aggression following exposure relative to no exposure.

Donnerstein and Berkowitz (1981) reported on two studies involving 160 male students, both designed 'to investigate whether the behavioural characteristics of the people in erotic films and the nature of the targets available for aggression afterward can affect subsequent aggression'. Pornographic material involved gang rape with physical violence, with the woman portrayed as 'smiling' in one, and in the other as 'suffering' (p 713). They found statistically significant effects in the shocks administered by the male to the female following exposure to sexually aggressive pornography (pp 19-20). The authors concluded that 'the addition of aggression to the sex in pornographic materials is probably more dangerous (in terms of possible aggressive consequences) than the display of "pure erotica" [and] could stimulate aggressively disposed men with weak inhibitions to assault available women' (p 722).

### Meta-analytic study two – Exposure to pornography and acceptance of rape myths (RMA) in experimental studies

Allen *et al.*, (1995b) reviewed 24 studies with a total sample size of 4,268 (listed in Annex E). These aimed to test whether exposure to violent pornography under laboratory conditions was associated with increased acceptance of rape myths.

As with the previous meta-analysis, the definition of pornography used was 'material intended or expected to create sexual arousal for the receiver' and included both violent and non-violent pornography with findings reported comparing the effects of each.

Included studies had to involve the use of a measure of some type of rape myth acceptance (RMA), i.e. an examination of attitudes toward rape or the use of force against women in a sexual context. Examples of RMA scales used in included studies were:

- 'sexual callousness;
- attitudes towards inter-personal violence;
- adversarial sexual beliefs;
- perceptions of rape harm to victim;
- willingness to rape; or
- combinations of such scales' (p 13).

This meta-analysis found that for the included experimental studies:

- violent pornography increased the acceptance of rape myths consistently in experimental settings across all included studies;
- non-violent pornography also increased rape myth acceptance; but violent pornography increased rape myth acceptance more than non-violent pornography (p 19).

These increases were statistically significant. The authors concluded that there ‘exists an association in those studies using an experimental methodology between exposure to sexually violent material and acceptance of rape myths’ (p 22).

### **Examples of laboratory studies on the association between extreme pornographic material and rape**

A number of the primary studies identified in the REA found significant correlations between exposure to pornographic material depicting explicit serious sexual violence, explicit serious violence in a sexual context, or explicit intercourse or oral sex with an animal (bestiality), and the effects of this on the attitudes, beliefs and behaviours of male students with regard to rape and rape victims.

#### ***The effects of sexual arousal to extreme pornographic material on force-oriented or high aggression men***

Six primary studies on the effects of pornography involving explicit serious sexual violence and explicit serious violence in a sexual context on male students with a predisposition to aggression, which compared these with the effects of non-extreme material were identified in the REA. These studies, which scored on methodological appraisal respectively 83, 65, 65, 77.5 and 87.5 per cent, are unique to the REA, and are summarised here to elaborate the findings of the meta-analysis.

Malamuth (1981a) investigated rape fantasies as a function of exposure to sexually violent pornography with 29 male students who were initially classified on the basis of questionnaire responses as sexually force oriented or non-force oriented, then randomly assigned to exposure to rape or mutually consenting sexual material and subsequently asked to create their own fantasies. Self-reported sexual arousal during the fantasy period indicated that those who had been classified as force-oriented created more arousing fantasies after having been exposed to the rape material, while those classified as non-force oriented created fantasies associated with the consensual sexual material. These findings were statistically significant. They also reported greater likelihood to commit rape and an increase in rape fantasies as measured by penile tumescence and self-report, irrespective of their force orientation (p 33).

Two studies conducted by Barnes, Malamuth and Check (1984a, 1984b) examined the association between ‘psychoticism’ and rape proclivity in a ‘normal’ population of 145 male college students. This study found that males with high P scores were more sexually aroused by rape depictions compared to non-rape depictions than low P scorers based on both self-reports and penile tumescence (pp. 170-172). These findings were statistically significant.

Ceniti and Malamuth (1984) investigated the effects of repeated exposure to sexually violent or non-violent stimuli on sexual arousal to rape and non-rape depictions on 69 male students (p 537). Force-oriented subjects, when compared with control subjects, displayed a statistically significant increase in sexual arousal when exposed to sexually violent stimuli.

The two studies reported by Lohr, Adams and Davis (1997) involved heterosexual activity that ranged from consenting sexual activity to sadistic rape involving extreme physical as well as sexual violence with the raped woman resisting, but becoming physiologically aroused (p 232). Both studies involved 24 male

college students divided into two groups, one identified as 'sexually coercive' based on a rating scale and the other a 'control' group of non-sexually coercive males. It used both phallogometric indices to measure penile tumescence and subjective indices of arousal and erection. The studies found that the sexually coercive group showed statistically significant greater physiological arousal than did those in the control group in response to the rape scenarios involving verbal pressure, verbal threats, physical force and sadistic rape, and that coercive males had a lower threshold for sexual arousal, i.e. easily triggered to the consenting sex and all four of the rape scenarios.

### ***Extreme pornographic material exposure and self-reported likelihood to rape***

Three studies identified in the REA investigated the relationship between exposure to explicit serious sexual violence and explicit serious violence in a sexual context, and self-reported likelihood to rape, and made comparisons between this and non-extreme pornographic material when it was also employed.

Malamuth, Haber and Feshbach (1980) explored the effects of exposure to sexual violence on 53 male and 38 female students' reactions to rape by exposing them first to either a sadomasochistic or a non-violent version of the same sexual passage and then to a portrayal of rape at knife point with threats to cut the victim (p 124). The study found a statistically significant 'proclivity to rape' amongst male subjects based on their perceptions of the victim's pain. There was a significant correlation between self-reported tendency to commit rape and sexual arousal to both the sado masochism and the rape depictions. Fifty-one per cent of the male subjects said there was some likelihood they would do what was depicted if they could be sure of getting away with it, and 17 per cent would do so without that assurance (p 121).

Malamuth and Check (1983) reported on a study involving 145 male students exposed to depictions of sexually violent material in which the victim was either consenting or not consenting (p 57). They found that those who had scored high on likelihood to rape experienced greater arousal to the non-consenting sexual violence, both on the self-report measure and on the penile tumescence measure. These findings were statistically significant and showed that a minority of the population who were high scorers for likelihood to rape were more sexually aroused to...rape depictions (p 65).

Check and Guloien (1989) compared the effects of exposure to pornography defined as sexually explicit material which is violent (woman portrayed as enjoying rape) or non-violent but dehumanising and degrading, or non-violent and non-degrading on 117 male college students and 319 male non-student city residents. Statistically significant differences were found between subjects exposed to violent, and dehumanising pornography and subjects in the no-exposure condition, in terms of reported likelihood of rape and likelihood of forcing a woman into unwanted sex acts, with more than twice as many men in the exposure group reporting this. Interaction tests revealed that these effects occurred primarily for high P [psychoticism] scorers. High P scorers in general were also found to be 'more accepting of rape myths, have higher reported likelihoods of raping and forcing women into unwanted sex acts, and reported actually committing more acts of sexual aggression than did low P scorers' (p 177).

### ***Effects of exposure to extreme pornographic material depicting women's sexual arousal and display of pleasure during rape***

A number of experiments have been conducted to identify the specific characteristics of the rape depictions that influence sexual arousal. Seven studies identified in the REA compared men's sexual arousal to consenting sex and to rape depicting women's sexual arousal, and display of either pleasure or pain during the rape.

Malamuth and Check (1980a) investigated sexual arousal to rape as a function of the victim's perceived reactions with 75 male students. A rape portrayal in which the assailant perceived that the victim became sexually aroused was found to result in high sexual arousal (as indicated by penile tumescence) in

comparison to a rape emphasising the victim's abhorrence of the assault. These findings were statistically significant with sixty-eight per cent of the sample reporting 'they would act as the rapist did if they could be assured of not being punished (p 540)'.

Statistically significant findings were also reported by Malamuth and Check (1980b) in a study on the importance of women's arousal in sexual arousal to rape and consenting sex depictions. One hundred and forty-three male and female students were exposed to a range of depictions with the victim displaying arousal or disgust. The study found higher levels of subjects' arousal to the depiction of the rape victim's arousal.

Malamuth, Heim and Feshbach (1980) found that when the rape victim was depicted experiencing an involuntary orgasm the 135 male college students reported relatively high levels of sexual arousal. They concluded that 'the elicitation of sexual arousal within a violent context may result in a conditioning process whereby violent acts become associated with sexual pleasure, a highly powerful unconditioned stimulus and reinforcer which could possibly lead to changes in behaviour' (p 407).

Malamuth and Check (1985) reported additional findings from their study of 145 college males, that those exposed to a non-consenting woman's rape arousal depiction subsequently believed that a greater percentage of women would both enjoy being raped and enjoy being forced to do something sexual than subjects who were exposed to a non-consenting woman's rape disgust depiction. These findings were statistically significant. They also found that men with relatively higher inclinations to aggress against women were particularly likely to be affected by...depictions of rape myths' (p 299).

Ohbuchi, Ikeda and Takeuchi (1994) found in a sample of 72 male students that those with a high rape proclivity strongly believed rape myths such as women desire to be raped and enjoy it. A study by Norris *et al.* (1999) involving 119 males recruited from the local community found that a combination of 'hyper-masculinity' and alcohol consumption under laboratory conditions interacted with a rape myth text of a woman portrayed consuming alcohol and experiencing pleasure being raped. This combination of factors acted to reduce subjects' empathy for the rape victim. In both of these studies the effects were statistically significant.

### ***Desensitisation, habituation and satiation effects of non-extreme pornographic material on the consumption and effects of extreme pornographic material***

The two meta-analyses by Allen *et al.* (1995a and 1995b) found statistically significant negative effects associated with both sexually violent and non-violent material including sexual callousness, adversarial sexual beliefs, perceptions of harm to rape victims and self-reported willingness to rape (Allen, D'Alessio and Brezgel 1995a, p 271; Allen *et al.*, 1995b, p 21). This was also found in the three further meta-analyses summarised later in this report: Allen, D'Alessio and Emmers-Sommers, 1999 pp. 42-44) on sex offenders; Oddone-Paolucci *et al.* (2000 pp 52-53) on all pornography published between 1962 and 1995; and Hald *et al.*, (2006 p 36) on non-experimental studies.

Three studies identified in the REA complement and extend the findings of these meta-analyses by examining the desensitisation, habituation and satiation effects of non-violent pornography and illustrating its relationship to material involving explicit intercourse or oral sex with an animal (bestiality) or to explicit serious sexual violence (rape). (Zillmann and Bryant, 1982, pp 13-14; Zillmann and Bryant, 1986, p 560; Milburn, Mather and Conrad, 2000, p 645.)

Zillmann and Bryant (1982) found in a sample of 80 male and 80 female students, a statistically significant association between exposure to pornographic material and the trivialisation of rape (recommendations of significantly shorter prison terms for rapists) and a process of desensitisation resulting in increased male sexual callousness towards women. Milburn, Mather and Conrad (2000) examined the effects of exposure to non-violent pornographic material on the effects of exposure to sexually violent pornographic material with

137 male and female students and found that males who previously viewed the sexually objectifying material felt that the victim in the date rape scenario experienced pleasure and 'got what she wanted' (p 645). These findings were statistically significant.

The studies by Zillmann and Bryant (1982, pp 15-18) found normalisation of 'uncommon' sexual acts (e.g. anal sex, group sex, bestiality, sadomasochism), and that following 'considerable prior exposure to non-violent pornography, male subjects from both a university and city population of 160 'lost interest in it and elected to watch uncommon pornography involving bondage, sadomasochism and bestiality' (1986, p 572). These findings were statistically significant. Similar patterns were found in both student and city population samples.

### **Exposure to extreme pornographic material in laboratory studies with nil effects or conflicting findings**

Five experimental studies identified in the REA did not find negative effects from exposure to the sexually violent pornographic material employed. All drew comparisons between exposure to extreme pornographic material (defined as 'sexually aggressive') and non-extreme pornographic material. Malamuth and Ceniti (1986) found that neither 'violent nor non-violent material affected laboratory aggression' (p 131). Fisher and Grenier (1994) found that 'no male subject in their first experiment produced a sexually aggressive fantasy' and in their second, 'subjects discontinued their participation' (p 35). Bauserman (1998) found that 'subjects responded most positively to egalitarian scenes and most negatively to the sexually aggressive scenes' (p 244).

Fisher and Grenier (1994) reported their nil effects findings in a paper challenging the findings of key experimental studies which had reported harm effects, claiming that previous findings had been selectively reported, when in their view, 'a highly inconsistent pattern of empirical findings emerged' (p 25).

Malamuth, Addison and Koss (2000) responded with concern that the Fisher and Grenier claims were being 'cited as ostensive proof that research in this area has not yielded any reliable effects'. They argued that 'most of the studies noted by Fisher and Grenier as failing to confirm effects of violent pornography actually reveal considerable evidence to the contrary' (p 87). Their paper included a critical analysis of the disputed experimental studies addressing the issues raised by Fisher and Grenier (1994). This is reproduced in Annex F for the clarification it provides about how the findings of experimental studies should be interpreted. They also argued that Fisher and Grenier's own study was 'seriously lacking in many areas [and regarded] its methodological shortcomings to be at least as serious as the weakest studies in this literature' (p 32). The second study they claimed to be of 'little scientific validity' as the investigators had failed to complete it (p 40).

## **Findings from non-experimental studies**

### **Meta-analytic study three – exposure to pornography and acceptance of rape myths (RMA) in non-experimental studies**

The meta-analysis conducted by Allen *et al.* (1995b) included both experimental and non-experimental studies. Their findings about rape myth acceptance in the 15 experimental studies were not replicated in their meta-analysis of eight non-experimental studies (pp 18-19). Hald *et al.* (2006) conducted a meta-analysis of nine non-experimental studies involving 3,368 subjects listed in Annex E. Four of these involved a re-analysis (and correction) of studies included in Allen *et al.*, (1995b) and five were additional studies. This meta-analysis found a statistically significant relationship between pornography consumption and Attitudes Supporting Violence (ASV) against women in non-experimental studies. In a sensitivity analysis based on type of pornography consumed, they found the strongest association was between violent pornography and ASV (Hald *et al.*, p 19).

### Surveys of extreme pornography effects on male students

The REA identified five surveys of a total of 3786 male students, all of which involved at least some extreme pornographic material. Three compared the effects between pornographic material depicting explicit serious sexual violence and explicit serious violence in a sexual context, and non-extreme material.

In these studies extreme pornographic material included: rape involving both physical and sexual violence (Garcia, 1986, pp 379-380); violent [material] (which included bondage, torture and mutilation, and whipping, spanking or beating) and sexually violent rape and gang rape (Demaré, Briere and Lips, 1988, pp 143-144); and 'material depicting bondage, whipping and spanking without an explicit lack of consent [and] ... rape in which force is used and there is an explicit lack of consent' (Boeringer, 1994, p 291).

These studies found statistically significant correlations between exposure to sexually violent material of this nature amongst these samples and pro-rape attitudes and rape proclivity. Garcia (1986) found in a sample of 115 male students that 'correlations with the attitude towards rape measures were statistically significant and consistent with the idea that subjects with greater exposure to violent sexual materials endorsed beliefs that can be classified as a pro-rape orientation to a greater extent than subjects not exposed as much to these stimuli' (p 383).

Demaré, Briere and Lips (1988) found in a sample of 222 male students that 27 per cent reported a likelihood of raping or using force against a woman, and that 'the use of sexually violent pornography and acceptance of interpersonal violence against women were uniquely associated with self-reported likelihood of using force or rape' (p 140). These findings were statistically significant.

In the retrospective self-completion questionnaire survey conducted by Boeringer (1994) subjects included 477 male students. This study found 48 per cent reporting self-reported likelihood of rape. It also found that the majority had previously used verbal coercion to obtain sex, one-quarter had used alcohol or drugs to do this, and nearly one in ten had used force or threats of force (p 293)...with the group reporting high exposure to extreme pornographic material being six times more likely to report rape behaviour (p 297). The study concluded that 'overall exposure to sexually explicit materials appears to be a significant correlate with sexual aggression and rape proclivity...Higher exposure to pornography depicting violent rape behaviour appeared to be significantly related to both engaging in sexual aggression and believing oneself capable or likely to engage in sexual aggression...Violent pornography was also correlated with coercive sexuality and use of rape pornography was correlated with use of drugs or alcohol to obtain sex'. These findings were statistically significant.

Taken together these surveys provide some evidence that the real life experience of men's exposure to extreme pornographic material corroborates the findings of the experimental studies, and vice versa.

The two studies in which extreme pornography was only a small element of the material consumed nonetheless found that force-oriented men in a sample of 2972 college males who were frequent users were 'much more likely to have engaged in sexual aggression than their counterparts who consume pornography less frequently' (Malamuth, Addison and Koss, 2000, pp 79-80).

Hald *et al.* (2006) found 'an overall significant relationship between ASV (Attitudes Supporting Violence Against Women) and pornography consumption', with the strongest association between pornography consumption and attitudes supporting sexual violence against women occurring with those known to be already at high risk of sexual aggression' (p 19).

## Extreme pornography effects on women

### *Experimental exposure involving women*

There were very few studies identified in the REA that examined the effects of pornography on women. Some of the experimental studies involved female as well as male subjects. For example, the study by Malamuth, Haber and Feshbach (1980) found that, compared to male subjects, women felt more frustrated, offended, embarrassed, angered and negative following exposure to the rape stories (p 121). One experimental study involved only women exposed to both non-violent and violent pornography (at least some of which would meet the REA definition of extreme). This found that 'ratings for violent pornography were most negative, ratings for non-violent pornography were negative but less so than for violent pornography' (Senn and Radtke, 1990 p 146).

### *Qualitative studies of sexually violent pornography effects on women*

Unlike the meta-analyses, the REA included qualitative research and identified two studies which involved the effects of extreme pornographic material on women. In one, words such as "terrified", "scared" or "disgusted" were used to describe their feelings when looking at this material (Shaw, 1999, p 203). In the other, women described the 'traumatic and devastating' effects they experienced on discovering the extreme nature of some of the pornographic material their partners were accessing' (Bergner and Bridges, 2002, pp 198-199).

## Research Question 2: Is there any evidence that exposure to extreme pornographic material causes or contributes to sexual or violent offending?

There were three categories of research identified in the REA that addressed the question of evidence that exposure to extreme pornographic material causes or contributes to sexual or violent offending.

- Sexual offender research (including experimental and case study material).
- Findings from non-experimental studies.
- Surveys of women whose victimisation had involved the use of pornographic material depicting explicit serious sexual violence.

## Research with male sexual offenders

### *Meta-analytic study four – reactions of criminal sex offenders to pornography*

Allen, D'Alessio and Emmers-Sommers (1999) conducted a meta-analysis of 45 studies with a sample size of 4642 (listed in Annex E) on reactions of criminal sex offenders to pornography that specifically addressed research question two.

This used a definition consistent with the previous meta-analyses, i.e. 'material that intends to increase or has the effect of increasing sexual arousal', the 'lowest common denominator' of which generally involves 'explicit sexual descriptions or depictions of sexual behaviour or reproductive body parts' (pp 140-141). The material covered included both sexually violent and non-violent pornography and considered three basic types of dependent measures: a) frequency of use, b) age at first exposure to sexual material, and c) use of sexual material prior to or as part of some form of sexual behaviour (masturbation, consensual sex, coercive sex, or criminal sexual behaviour).

Based on studies involving self-report methods, this meta-analysis did not find substantial evidence that criminal sex offenders use pornography more often or at an earlier age than non-criminal comparisons (p 148)<sup>9</sup>. However, it did find that criminal sex offenders were more likely to perform sexual acts (masturbation, consensual or criminal sex) after viewing the material than control group men. The authors concluded that it is not the frequency of use of pornography that differentiates criminal sex offenders from comparisons but the behavioural actions subsequent to exposure (p 139).

In addition, criminal sex offenders reported higher levels of sexual arousal when viewing depictions of rape. The average effect indicated that sex offenders were much more aroused by sexual materials depicting coercion than were non-offender comparisons (p 155). These findings were statistically significant.

The authors tested a 'matching hypothesis' that 'the content of the material should match the interests of the participants', i.e. that rapists might experience arousal to consensual sex scenes, but would generally be more aroused by rape scenes. This was assessed using 23 estimates and found an average effect almost three times as large as the general average, indicating 'that there are correspondences among the content of the material, the sexual practices or preferences of the person, and the degree of sexual arousal generated by exposure to that material' (p 155). These findings were statistically significant.

The authors concluded that physiological measures of arousal indicate that 'sex offenders are generally more aroused by sexually explicit material than non-offenders', and that 'the correlation increased dramatically when the content of the material is matched to the crime committed by the individual' (p 139).

### Findings from experimental studies with sexual offenders

Six primary studies identified in the REA reported on sexual offender use of pornographic material. Abel *et al.* (1977) compared 20 rapists' and non-rapists' sexual arousal to rape (at knife point involving physical as well as sexual violence) and non-rape pornography (p 898). They found that rapists were sexually aroused to rape depictions, and non-rapists were not. The method discriminated those rapists with the highest frequency of rape, those who had injured their victim, and those who chose children as victims' (p 895). The findings were statistically significant.

Quinsey, Chaplin and Varney (1981) conducted a study with a sample of 60 rapists and ten non-sex offenders in a maximum psychiatric institution in Canada with a control group of 20 non-patients, involving five rape narratives in which significant force and degradation were used with an unwilling female stranger (p 131). The study found that the rapists were the only group to respond more to the rape than the consenting sex. These findings were statistically significant.

Quinsey, Chaplin and Upfold (1984) compared the response of twenty sex offenders (two of whom had been charged with murder that occurred as part of a sexual assault) with ten non-sex offenders and ten men from the local community, using material depicting rape with extreme physical violence (p 653). The study found that rapists showed more sexual arousal to rape depictions and less to consenting sex stories than the control subjects. These findings were statistically significant. The authors concluded that the amount of violence in the rape descriptions is critical in differentiating rapists from non-sex-offenders (p 651).

Quinsey and Chaplin (1984) compared the sexual arousal of 15 rapists and 15 non-sexual offenders involving consenting sexual material and rape depicting victim experiencing pain or pleasure (p 169). This study found that 'non-rapists responded less to the victim suffer variable than to the victim enjoy variable, whereas the rapists showed no significant difference' (p 174).

<sup>9</sup> Strictly speaking, the comparisons should be described as men who are not known to be offenders, as it is quite possible for such groups to contain undetected or previously convicted offenders. The comparisons then are between men who are convicted offenders and those whose offending/conviction status is unknown. Such a comparison is likely to be an under-estimate of the difference between offenders and non-offenders

Marshall (1988) combined experimental exposure in the laboratory to measure sexual arousal to rape and consenting sex depictions with self-reports taken from in-depth interviews about current and pubescent pornography use with 89 non-incarcerated sexual offenders in a treatment clinic and a control group of men not known to be offenders (p 274). The study found statistically significant differences with regard to whether the material served to instigate sexual offences. High frequency masturbators were far more likely to be current users and to use the material to instigate their crimes (p 283). Moreover, when compared to control groups, these offenders reported substantially greater use of sexually explicit material, and that current use was significantly related to the chronicity of their sexual offending (p 267).

Beauregard, Lussier and Proulx (2004) explored the developmental factors related to deviant sexual preferences among 118 adult rapists, employing rape depictions with physical violence and humiliation. The study found that arousal to both rape depictions was positively correlated with incest, use of pornography and deviant sexual fantasies (pp 151-161). The findings were statistically significant.

### Sexual offender case series findings

The REA identified a high-scoring qualitative study by Jensen (1995) of 13 interviews with sex offenders. These are summarised in Annex D and provide comparisons between the content of the different kinds of pornography they use, the relationship between their pornography use and their offending, and how over time they progressed to using increasingly extreme pornographic materials (Jensen, 1995, pp 35-36).

### Studies of victimised women

The majority of research on the effects of pornographic material depicting explicit serious sexual violence and explicit serious violence in a sexual context on sexual and violent offending has been with rapists in the criminal justice system. However, a further source of evidence of harm associated with pornographic material of this nature comes from research with women who have been victimised through their partners' use of this material.

The REA identified three studies involving such women. Sommers and Check (1987) surveyed 21 battered women from a shelter and a comparison group of 21 women from the university to investigate the role of pornography in the physical abuse of women. They found the partners of the battered women read or viewed significantly greater amounts of pornographic materials than the partners of the comparison group, and the 'battered women experienced significantly more sexual aggression at the hands of their partners than did women in the comparison group' (p 189).

Cramer *et al.* (1998) conducted a prospective cohort study of 198 women attending a public clinic who were pregnant and reported having been abused by their male partner in the year prior to or during pregnancy. Almost 41 per cent indicated that their abusers used sexually violent pornography, and the severity of violence used against women was highest for those women who reported that the abuser asked or forced them to look at, act out or pose for pornographic pictures (p 329).

Cramer and McFarlane (1994) conducted a survey of 87 'battered women filing charges against their male partner at the district attorney's office in a large metropolitan city' (pp 268-272). Pornographic material involved rape with physical violence. The study found a statistically significant association between men's use of violent pornography and physical [and sexual] abuse of women (p 271).

Silbert and Pines (1984) conducted a survey with 200 street prostitutes. Pornographic material included snuff (i.e. sexual murder) and rape with extreme physical and sexual violence. Out of 193 cases of rape, 24 per cent of victims mentioned allusions to pornographic material on the part of the rapist [who typically] referred to pornographic materials he had seen or read and then insisted that the victims not only enjoyed the rape but also the extreme violence.

These studies of women's real life victimisation associated with men's use of sexually violent pornography corroborate the findings of the experimental studies and the case study with sex offenders about the role of pornography in their offending behaviour. The difference is that the men in these studies were not a sample of convicted sex offenders, but partners of women purposively sampled through community settings.

### **Non-offender case series findings**

The paper by Jensen (1995 above) also included case study data from 11 men who were not known or convicted sex offenders, but in a treatment programme for problematic pornography use. One he described as:

*'...in many ways more dangerous to himself and others than most of the men in the sex offenders' group. It was clear from his statements that pornography had been a part of a lifetime of his sexual victimisation and sexual abuse of women. He had difficulty disengaging from the fantasy world of pornography and often imposed the narratives of pornography on his own life. The anger he felt toward women because of events in his life has been reinforced by the misogyny in pornography'*

(Jensen 1995, p 46).

This finding, together with the findings of the surveys of men, demonstrate how the real-life experience of victimised women is corroborated by some men's real life (as distinct from the laboratory) use of sexual and physical violence associated with extreme pornographic material.

## **Research Questions 1 and 2: Effects on users and links with sexual and violent offending**

A fifth meta-analysis identified in the REA included studies addressing both research question one (the effects of extreme pornographic material on those adults who access it) and research question two (whether this material contributes to sexual and violent offending).

### **Meta-analytic study five – published research on the effects of pornography 1962-1995**

The meta-analysis by Oddone-Paolucci, Genuis and Violato (2000) reviewed 46 studies (listed in Annex E) with a sample size of 12 or greater (providing a total sample size of 12,323), which involved the use of a contrast or comparison group. The studies were published between 1962 and 1995 in academic journals (pp 48-50). Its aim was to determine the effects of pornography on: sexual deviancy, sexual perpetration, attitudes regarding intimate relationships and attitudes regarding rape myths. Pornographic material covered included:

- mild pornography of sexual activity without genitalia visible;
- erotica or explicit pornography of sexual activity with genitalia visible;
- violent pornography including depictions of rape, degradation, sexual aggression or sadism.

The paper did not analyse the data by category of pornography. However, given the overlap of studies within this and the previous meta-analyses and the studies included in the REA, it is clear that pornographic material depicting explicit serious sexual violence was found in each of the areas covered by this meta-analysis.

The authors described these results as 'clear and consistent [that] exposure to pornography puts one at increased risk for developing sexually deviant tendencies, committing sexual offences, experiencing difficulties in one's intimate relationships and accepting rape myths' (p 54).

Moreover, the authors computed ‘an estimate of the fail safe N to determine the number of [new] studies with clear findings in the opposite direction required to refute the present findings’ and reported that:

- 46 additional studies would be required to refute the results for sexual deviancy;
- 142 additional studies would be required to refute the results for sexual perpetration;
- 49 additional studies would be required to refute the results for intimate relationships; and
- 47 additional studies would be required to contradict the rape myth findings.

The authors concluded that ‘overall, 284 [as yet] unreported studies averaging a null result would be required before the present meta-analytic findings could be reasonably ascribed to sampling bias. Accordingly, the results of the meta-analysis are stable and generalisable’ (p 51). They argued that ‘these results suggest that the research in this area can move beyond the question of whether pornography has an influence on violence and family functioning’ (p 48).

The findings of this meta-analysis confirm those of the previous meta-analyses and the REA with regard to the experimental research and to the non-experimental surveys with men. Taken together they constitute a substantial body of mutually corroborative evidence of the harm effects of extreme – and other – pornographic material.

### **Research Question 3: Is there any evidence that those adults who participate in making extreme pornographic material are harmed by it?**

The REA search did not identify any research studies that directly addressed the question of harm to those adults who participate in making pornography. However, there were a number of other sources that it is relevant to highlight and collate including:

- descriptions and content analyses reporting on the nature of extreme pornographic material;
- official inquiries to which women have given evidence of their abuse in pornography; and
- studies of serial sexual killers who have recorded the sexual violence, abuse and torture of their victims.

#### **Documentary evidence**

There is a strong argument that the content of extreme pornographic material is itself evidence of harm to those who have participated – or were used – in its making (Itzin 1992b). The status of these depictions as evidence has been regarded as ambiguous because it can be claimed that:

- it is not absolutely possible to prove that the violence is real and not performed or staged; or
- it is claimed that the violence was consensual; or
- that the woman was a willing victim.

However, testimony given by victims to official inquiries corroborates the documentary evidence of what is seen in extreme pornographic material. “This pornography has also been submitted as evidence of abuse or obscenity in court proceedings (Edwards 2000) and a government inquiry in the UK. (Williams Committee 1979).”

## Victim evidence

In the US, Public Hearings were held by the City of Minneapolis in 1983 to support the introduction of civil rights legislation. Testimony was given by 57 individuals, the majority of them female victims of pornography. They included Linda Marciano known as Linda Lovelace, the 'star' of the film *Deep Throat*.

She described being seduced by a pimp and initiated into prostitution through a forced gang rape, held prisoner for two years, beaten physically, and forced at gunpoint to perform the sexual acts in the film. She was forced to smile in the film 'so' (as she testified) 'I look as though I am really enjoying myself...No one ever asked me how those bruises got on my body'. She said: 'Virtually every time someone watches that film, they are watching me being raped' (MacKinnon, and Dworkin, 1998, p 124). Linda Marciano was also used in the making of extreme pornographic material involving bestiality (Village Books *et al.*, v City of Bellingham, 1989, pp 21-22).

## Perpetrator evidence

### *Sadistic sexual killers*

Records kept by serial sexual killers of the sexual torture and murder they perpetrate on their victims include audio/video tape recordings of the rape, torture and murder of these victims. These constitute extreme pornographic material as produced by the perpetrators. As such, they provide evidence of the harm experienced by the victims in the making of such material, including in the case of serial sexual killers, of sexual murder (Dietz, Hazelwood and Warren, 1990).



## 3. Discussion

### Summary of REA findings

This assessment of the pornography effects literature has identified evidence from different kinds of research conducted over a period of 30 years of harm associated with the use of extreme pornographic material that met the Home Office definition of explicit serious sexual violence, explicit serious violence in a sexual context, and explicit oral sex or intercourse with an animal (bestiality).

This includes the physiological, psychological, attitudinal, affective, cognitive and behavioural effects of this material on:

- populations of 'normal' (largely) male students in US and Canadian universities, and other men identified in the surveys of victimised women;
- (entirely) men convicted of sexual and/or violent offending; and
- (largely) female victims of sexual and violent acts perpetrated by users of such material, or used in its making.

The evidence of harm has come from psychological and social science research, including experimental studies conducted under laboratory conditions; surveys of men and women sampled from different settings; qualitative material including case studies and legal evidence given by victims; and the documentary evidence of sexual violence in the actual material of extreme pornography.

The summaries of the meta-analyses and primary studies identified in the REA provide clear evidence from the experimental research of a correlation between sexual arousal to sexually violent pornography and increases in sexually aggressive attitudes, beliefs and behaviours. These studies show that:

- sexually explicit materials which are produced to be arousing are in fact arousing, both to those known to be offenders and to (assumed) non-offenders.
- rapists are aroused by both forced and consenting sexual depictions, but they are much more aroused by depictions of coercion than non-criminal controls (Allen, D'Alessio and Emmers-Sommers, 1999, p 155). This correlation increased three-fold when the content of the material matched their crime (p 139).
- one-third of rapists report using forced sexual depictions as part of their deliberate pre-offence preparation (Marshall, 1988, p 280).
- men who are not known to be offenders are more aroused by consensual depictions than rapists, and less aroused by depictions of sexual aggression. However, when the victim is portrayed as 'enjoying' the rape, the depictions elicit higher arousal levels for both groups.
- statistically significant correlations were found between sexual arousal to rape depictions, rape fantasies, self-reported likelihood to rape or to use of force and past sexual aggression, in particular for men with a predisposition to aggression. All of these measures correlate with aggression towards women in the laboratory.

The findings from experimental research of pornography effects with both offender and non-offender (or offender status not known, presumed to be non-offender) men are corroborated by non-experimental studies. Surveys of men found correlations between exposure to violent sexual materials and:

- pro-rape attitudes;
- self-reported likelihood to rape or to use force;
- acceptance of rape myths;

- acceptance of interpersonal violence against women; and
- actual rape in previous acts of sexual aggression, including rape with physical aggression.

The effects were most adverse for men with a predisposition to aggression.

The findings of the laboratory studies and surveys of men are further corroborated by triangulation with the other research designs and samples evidenced in this report: by case study data from known sexual offenders and other men (whose offender status is unknown) and the findings of qualitative studies with women. What is found from research with men about pornography's influence on sexual aggression is corroborated by surveys of women whose victimisation was associated with men's use of sexually violent pornography, by qualitative studies with women, and the testimony of women given in legal proceedings. Laboratory research is corroborated by the real life experience of both victims and perpetrators.

Taken together, this triangulation of data points in the same direction: towards the harmful effects associated with exposure to extreme pornographic material, in particular for men with a predisposition towards, or a history of, sexual aggression.

## In summary

The disputes in the academic literature about the accuracy and status of the findings from experimental research have been addressed to some extent now by the use of meta-analytical methods. Further clarity has been provided by the terms of reference and approach adopted by the REA, and its ability to triangulate findings from studies with different methodologies and samples. Inevitably there are limitations to what research can achieve, and in particular what research on pornography can achieve within the bounds of ethical practice and available methodologies. However, the findings of the meta-analyses and the REA provide a basis for developing shared understandings within the research community about the effects of pornography on individuals who use it, and its contribution to sexual and violent offending.

## 4. Conclusions and conceptual models

### REA study conclusions

The REA has identified a large body of different kinds of research with findings of different kinds of harm associated with exposure to pornographic material depicting or enacting explicit serious sexual violence, explicit serious violence in a sexual context and/or explicit intercourse or oral sex with an animal (bestiality). This assessment has been able to draw on a series of high quality meta-analyses brought together and summarised for the first time in this report. Altogether the REA covers the:

- thirty-three studies in Allen, D'Alessio and Brezgel (1995a);
- twenty-four studies in Allen *et al.*, (1995b);
- forty-five studies in Allen, D'Alessio and Emmers-Sommers (1999);
- forty-six studies in Oddone-Paolucci, Genuis and Violato (2000); and
- nine studies in Hald *et al.*, (2006).

Taking account of the primary studies that are included in more than one of the meta-analyses, there are a total of 124 independent studies in the five meta-analyses covering both experimental laboratory studies and non-experimental studies.

A further 32 studies not included in any of the five meta-analyses above are included in the REA. These include:

- twenty-two additional experimental studies involving mainly student populations, including one study of women only;
- two additional non-experimental studies, both surveys of male students;
- one case series study of men including known sexual offenders and other men, not known to be sexual offenders;
- one qualitative study of serial sexual killers;
- two qualitative studies of pornography effects on women; and
- four studies of women's experience of men's sexual and violent offending associated with extreme pornographic material (as defined).

In addition, documentary and legal evidence of victims' experience of making such material is summarised.

Annex E shows which studies are included in each of the meta-analyses and in the REA. Altogether the REA covers the total 161 studies listed in this annex (including the five meta-analyses).

There were a number of gaps in knowledge identified in the process of conducting the REA. These include:

- the psycho-social and physical effects of extreme pornographic material on victims who are used in its making, or exposed to it, or victimised as a result of men's exposure to it;
- the effects of exposure to extreme pornographic material on young people both as:
  - de facto sex education, and the implications of this for their sexual and psychological health; and
  - its influence on young people who sexually abuse;
- the links between prostitution and pornography, and the trade and traffic in women and children and adolescents of both sexes for these purposes;
- the extent of extreme pornographic material and its content across the media, and in particular the internet; and

- the lack of studies which sample from the general population including public perceptions of extreme pornographic material.

Altogether the research reviewed in this report provides evidence of the negative psychological, attitudinal and behavioural effects on adults who access this material. These include (for men):

- physiological arousal (which conditions desire and orgasm to the content of the extreme pornographic material involved);
- psychological desensitisation, habituation and satiation leading to:
  - beliefs that women enjoy or desire rape;
  - lack of empathy with rape victims;
  - a preference for more extreme material;
- attitudinal effects:
  - rape myth acceptance;
  - pro-rape attitudes;
  - self-reported likelihood to use force or to rape;
- behavioural effects such as:
  - aggression in the laboratory after exposure;
  - using pornographic materials to prepare for sexual offences (for convicted rapists);
  - actual real life rape and sexual aggression (disclosed by men in surveys of (presumed to be) non-offenders, and identified in surveys of women who have been victimised by such men).

The research shows a proportion of the male population to be vulnerable to the effects of extreme pornographic material including those with a high predisposition to aggression, those reporting a likelihood of using force or committing rape, and those who report already having used force to obtain sex. Research testing theoretical models has identified a mutually-reinforcing relationship between extreme pornography as a causal factor in instigating sexual aggression, and a predisposition to sexual aggression creating an interest in extreme pornographic material.

The effects of pornographic material depicting explicit serious sexual violence and bestiality for women include:

- physiological arousal;
- largely negative emotional effects such as disgust and anger;
- psychological effects such as fear and anxiety; and
- as a result of men's use of or the making of such material:
  - physical assault;
  - sexual assault and rape;
  - death.

Between them, the meta-analyses and the REA are a significant step in clarifying the position in an area subject to previous academic dispute. For example, there has been progress in addressing the external validity of experimental studies, with findings of similar effects from the meta-analyses of non-experimental studies surveying college men.

## Discussion of theoretical perspectives on the role of extreme pornography in the aetiology and processes of sexual offending

REA Research Question 2 asked: Is there any evidence that extreme pornographic material causes or contributes to sexual offending? The critical issue for public policy has been whether the findings of harm effects can be said to be 'causal' in the aetiology and processes of sexual and violent offending.

Howitt and Cumberbatch (1990) in their review of some of the research on the effects of pornography for the Home Office reported on studies that showed harm effects, but concluded that ‘a causal link has yet to be clearly established’ between pornography and sexual offending or violence against women (p 95).

The problem with the experimental research according to Malamuth, Addison and Koss (2000) is that ‘cross-sectional correlational data cannot fully disentangle cause and effect relationships no matter how many statistical controls are applied’. This has led them to ‘explore pornography consumption as a risk factor...for sexual aggression,’ and they have argued for an approach that brings together and builds on ‘the cumulative weight of evidence pertaining to different models’ (pp 58-59).

This is possible now given the advances in conceptualising and theorising aetiology and causality that have taken place. The most recent formulations are of multiple, complex and inter-related factors in time and over time in the life of an individual, with pornography operating instrumentally in a number of ways in both creating a predisposition to and in triggering specific offences.

Clinical work with sex offenders has offered some insights into these processes. Building on the work of Finkelhor (1984), Wyre (1992) has developed a *14-stage model of sexual offending*. In this cycle of offending, the use of extreme – and other – pornographic material has been found to ‘play a part at every stage’: in predisposing some adolescent and adult males to commit abuse; in legitimising and normalising abuse; in creating and reinforcing fantasy, distorted thinking and false beliefs about victims of abuse; in reducing internal and external inhibitions to abuse; and in initiating and carrying out abuse’ (Wyre 1992). These findings are supported by other clinicians working in this field (Bailey 2000; Print and Morrison 2000; Eldridge 2000).

In the treatment and management of sexual offenders, Marshall (2000) has found extreme – and other – pornographic material functioning in four ways.

- ‘Pornography images having antisocial effects on sex offenders;
- pornography use counteracting the efforts of sex offenders to alter their pro-offending attitudes;
- pornography use making it that much harder for sex offenders to reduce their deviant interests; and
- sex offenders’ continued use of pornography putting them at risk to re-offend’ (p 62).

Marshall’s recommendation of ‘counselling [for] sex offenders about the wisdom of continued use of pornography and its relationship to their future risk’... emphasises concerns about the harmful effects of pornography and its role in the processes of offending (p 62).

Malamuth (1998) has developed a model of sexual aggression – the ‘*cumulative-conditional-probability confluence model*’. This conceptualises causality based on findings from research which have identified a combination of factors contributing to sexual aggression. These include childhood experiences of parental violence and child abuse together with high scores on rating scales on Sexual Promiscuity, Hostile Masculinity and Coercion Against Women measured in terms of sexual aggression using the Sexual Experience Survey and non-sexual aggression using the Conflict Tactic Scale (Malamuth *et al.*, 1991).

Testing for the role of pornography in the confluence model, Malamuth, Addison and Koss (2000) found that:

- ‘...even with all of the other previously identified “risk” predictors included or controlled for, the pornography variable add[ed] significantly to the statistical prediction of individual differences in sexual aggression;
- pornography use was comparable to several of the other predictors in the magnitude of its contribution to the equation as a significant statistical contributor; and (p 73)

- a bi-directional relationship exists between ‘both a) pornography as a contributing cause to aggression against women, and b) aggressiveness as a cause of interest in pornography’ (pp 58-59).<sup>10</sup>

The authors concluded that pornography was ‘a distinctive and uniquely causal factor amongst the other risk factors for sexual aggression’ (p 73).

Marshall and his colleagues have outlined ‘a comprehensive theory of the aetiology and maintenance of sexual offending that includes the childhood development of vulnerability which, in turn, leads to a variety of problems [with] conditioning processes resulting from both overt experiences and fantasies, shap[ing] and direct[ing] the developing offender’s beliefs, perceptions, rationalisations, and sexual interest’.<sup>11</sup> Marshall (2000) has described ‘the effects of any factor (including pornography use) being variable across individuals...because the occurrence of the factor is embedded in both an historical developmental sequence as well as various current states (for example, moods, desires, feelings of entitlement, stress)’ (p 72).

Itzin (2000b) has argued that this combination of factors creates a ‘*direction of causality*’ (although by no means inevitability) in the aetiology of sexual offending for some boys from experiences of childhood abuse and neglect, through complex developmental pathways. These involve both ‘predisposing’ and ‘trigger’ factors and a combination of individual and environmental factors, including in both cases, the effects of extreme – and other – pornographic material.

Marshall (2000) concluded that there is ‘some truth to both the proposition that pornography use directly instigates sexual offending and that it conveys messages that create pro-offending attitudes’ (p 71). He highlighted what he regarded as ‘pornography’s most insidious influence; namely the acceptance of the attitudes (some obvious, some more subtle) expressed in pornography. Pornographic depictions [he argued] distort the truth about the desires and sexuality of women and children, and legitimise men’s sense of entitlement, and the use of force, violence and degrading acts by the male actors’ (p 71). Marshall (2000) concluded on this basis that ‘pornography exposure may influence...the development of sexual offending in some men’, but ‘*not solely cause [it]*’ (p 74).<sup>12</sup> Similarly, Itzin (2002) has argued that whilst pornography cannot be regarded as solely causal in the aetiology of offending, nor is it incidental or circumstantial, and – taking account of all the motivating and mediating factors over time in the life of an individual – has conceptualised pornography as ‘instrumentally causal in the aetiology and processes of sexual offending’ (p 26).

Fundamental to this understanding is the role of extreme pornographic material in ‘predisposing some males to desire rape, or intensifying such desires’ (Russell 1992 p 323). Malamuth (1993) concluded from the research that: ‘... the type of messages conveyed within the portrayals (for example, violent, degrading) is crucial to the impact of the materials. Sexual explicitness *per se* [he argued] does not have harmful effects... However, when a message is presented within a sexually explicit context, it may have different effects than when presented within a non-explicit context, because the content is perceived differently and *because arousal is generated*’ (p 573).<sup>13</sup> Malamuth (2003) described this process as:

*... a kind of feedback loop [which] makes the connection between image and sexual arousal (satisfaction) a series of behaviours that become “hardwired” into both the emotional and physiological state of the person’ (pp 33-58).*

10 See also Allen *et al.*, (1999) *op. cit.* who also employ the concept of bi-directional causality thus defined p 140.

11 Marshall, W. L. (2000) *op. cit.* See also Marshall, W. L. (1989) Pornography and Sex Offenders. In Zillmann, D. and Bryant, J. (Eds.) *Pornography: Research Advances and Policy Considerations*. Hillsdale, NJ: Erlbaum Publishers. Marshall, W. L. and Barbaree, H. E. (1990) An Integrated Theory of the Etiology of Sexual Offending. In Marshall, W. L. *et al.*, (Eds.) *Handbook of Sexual Assault*. *Op. cit.* 257-275; and Laws and Marshall (1990) *op. cit.*

12 Emphasis added.

13 Emphasis added.

This perspective is elaborated by the view expressed by Allen, D'Alessio and Brezgel (1995a) that the social learning processes involved in pornography consumption 'operate at a cognitive but not necessarily conscious level' (p 18). Itzin (2000b) has conceptualised these subconscious processes in terms of how 'the messages of pornography become *embodied* (and engendered) through arousal and orgasm and, having been thus conditioned, live on in feelings and fantasies in ways that are deeply embedded, highly salient and difficult to dislodge' (pp 419-424). Itzin (2002) concluded that:

*'the problem of pornography is that it corrupts not morals, but desire. It is the fusion of sexual arousal and orgasm with physical and/or sexual violence against women, and their objectification, commoditisation, dehumanisation, degradation and subordination which is both **intrinsically** and **instrumentally** the harm of pornography'* (p 23).

With regard to 'pornography's ...role in inciting sexual offences', Marshall (2000) concluded that 'it is the association between sexual arousal induced in the viewer and the depiction of specific sexual acts that facilitates a sexual interest in offending...consistent with...conditioning theory' (p 67). Laws and Marshall (1990) illustrated their conditioning theory on the role of pornography in the aetiology and maintenance of sexual offending with the case study in Annex F.

## In summary

Pornography raises complex moral and political issues and strong feelings amongst those with opposing views. Advances in the available analytical methodologies have made it possible to evaluate the pornography effects research independent of these issues. Taken as a whole, the empirical and theoretical evidence of harmful effects associated with extreme pornographic material suggest a need to focus on those who are harmed by it, including the damage it does to the attitudes, beliefs, fantasies, desires and behaviour of those who use it.



## Annex A. Inclusion and exclusion criteria

*Table 1: Inclusion criteria for REA studies by review questions*

Inclusion criteria	I	I	III
<b>Participants</b>			
Adults both genders	√	√	√
Children both genders	X	X	√
People who have participated/are participating in making EPM <sup>14</sup>	X	X	√
<b>Settings</b>			
All geographical/national/social settings	√	√	√
<b>Study designs</b>			
Randomised controlled studies, non randomised parallel group studies, interrupted time series studies, before-and-after studies	√	√	√
Cohort studies	√	√	√
Case control studies	√	√	√
Cross sectional studies	√	√	√
Case studies	√	√	√
Qualitative designs	√	√	√
Questionnaire surveys	√	√	√
Systematic reviews/meta-analyses	√	√	√
<b>Aims of studies included</b>			
Interventions aimed at reducing sexual or violent offending	√	√	X
Studies of the making of EPM	X	X	√
Studies of viewing/use of EPM in natural or experimental settings	√	√	√
Studies of women/children/men in contact with users of EPM	√	√	X
<b>Included outcomes</b>			
Attitudes, beliefs and behaviours of viewers/users of EPM	√	√	X
Health (psychosocial* and physical**) of those who have participated in making EPM	X	X	√
Sexual and violent offending	X	√	√
Health (psychosocial and physical) of those in contact with users of EPM	√	√	X
<b>Included reporting formats</b>			
Studies published in peer-reviewed journals and in books by academic publishers	√	√	√
Funder published research reports	√	√	√
Grey literature	√	√	√
Notes:			
√ = inclusion criterion;			
X = not an inclusion criterion			
* Psychosocial health includes depression, anxiety, post-traumatic stress, self-efficacy, self-esteem, quality of life, perceived social support			
** Physical health includes deaths, physical injuries, including harm, chronic health disorders, sexual health, general measures of physical health.			

14 EPM stands for extreme pornographic material.

**Table 2: Exclusion criteria for REA studies****Exclusion criteria****Participants**

Studies that do not distinguish between the following groups:

- Users of EPM
- Makers of EPM
- Those used in the making of EPM

**Settings**

No exclusion criteria based on settings

**Study aims excluded**

Studies of the effects of viewing/use of EPM by children

**Excluded outcomes**

No exclusion criteria based on outcomes

**Excluded reporting formats**

Abstract not available in English

Self-published research reports

PhD theses, Masters and undergraduate dissertations

## Annex B. Methodological appraisal of included studies

### Methodological appraisal of qualitative studies<sup>15</sup>

Screening questions		Comments	Score		
Question	0		1	2	
1	Was there a clear statement of the aims of the research? And is it related to the REA topic?				
2	Is a qualitative methodology appropriate? <i>Does the research set out to interpret or illuminate the actions and/or subjective experiences of research participants?</i>				
<b>Continue only if score on <u>each</u> of questions 1 and 2 is one or more</b>					
<b>Detailed questions – appropriate research design</b>					
3a	Was the research design appropriate to address the aims of the research?				
b	Have the reasons for the particular elements of the design been discussed and justified? Especially choice of data collection methods (interviews, focus groups, diaries, etc.)				
<b>Detailed questions – sampling</b>					
4a	Was the recruitment strategy appropriate to the aims of the research?				
b	Has the researcher explained how the participants were selected and recruited?				
c	Have the researchers explained why the participants included were the most appropriate to provide information sought?				
d	Were there any issues with recruitment? – e.g. response rate/ineligibility				
<b>Detailed questions – data collection</b>					
5a	Were the data collected in a way that addressed the research issues?				
b	Was the setting for data collection justified?				
c	Is it clear how data was collected? i.e. who by and over what time period				
d	Is the form of data clearly specified? (tape, notes)				
e	Is there a description of the method of data collection (e.g. in interviews, was topic guide used etc.)				
f	Have they justified methods chosen? (for example why audio taping, why notes)				
g	Is saturation of data discussed?				
h	If methods were modified during the study, has it been explained how and why? (if methods were not modified score 2)				

15 The questions are based on those that have been developed by the national CASP collaboration for qualitative methodologies. © Milton Keynes Primary Care Trust 2002. All rights reserved. The modifications to CASP original questions and the scoring system used is based on that used by Feder *et al.*, 2006.

Question	Comments	Score		
		0	1	2
<b>Reflexivity (research partnership relations/recognition of researcher bias)</b>				
6a	Has the relationship between researcher and participants been adequately considered?			
b	Has the researcher critically examined their role, potential bias and influence during: <ul style="list-style-type: none"> <li>• formulation of research questions</li> <li>• data collection, including sample recruitment and choice of location?</li> </ul>			
<b>Ethical Issues</b>				
7a	Have ethical issues been taken into consideration?			
b	Are there sufficient details of how study was explained to participants for the reader to assess if ethical standards were maintained?			
c	Has the researcher discussed issues raised like informed consent, confidentiality and any potential effects of study on participants?			
d	Approval from an ethics committee? (score 1 for unsure)			
<b>Data Analysis</b>				
8a	Was the data analysis sufficiently rigorous?			
b	Is there a reasonably full description of analysis process?			
c	If thematic analysis used, is it clear how themes were developed from the data? (score 2 if thematic analysis not used)			
d	Is it clear how the data presented were selected from the sample? (e.g. selection of quotes used)			
e	Is sufficient data presented to support the findings?			
f	What extent is contradictory data taken into account/discussed?			
g	Did the researcher examine own role, potential bias and influence during analysis and selection of data for presentation?			
<b>Findings</b>				
9a	Is there a clear statement of findings?			
b	Is there adequate discussion of the evidence both for and against the researcher's arguments?			
c	Has the researcher discussed credibility of findings? (e.g. triangulation, respondent validation, more than one researcher)			
d	Are the findings discussed in relation to the original research question?			

## Methodological appraisal of quantitative studies – cohort study<sup>16</sup>

Screening questions		Comments	Score		
Question	0		1	2	
1	Did the study address a clearly focused issue? <i>HINT: A question can be focused in terms of: - the population studied - the risk factors studied - the outcomes considered - is it clear whether the study tried to detect harmful effects?</i>				
2	Did the authors use an appropriate method to answer their question? <i>HINT: Consider - Is a cohort study a good way of answering the question under the circumstances? – Did it address the study question?</i>				
<b>Continue only if score on <u>each</u> of questions 1 and 2 is one or more</b>					
<b>Detailed questions</b>					
3a	Was the cohort recruited in an acceptable way? <i>HINT: We are looking for selection bias which might compromise the generalisability of the findings.</i>				
b	Was the cohort representative of a defined population?				
c	Was there something special about the cohort? (score 2 for answer no)				
d	Was everybody included who should have been included?				
4a	Was the exposure to PM accurately measured to minimize bias? <i>HINT: We are looking for measurement or classification bias: -</i>				
b	Did they use objective measurements?				
c	Do the measures truly reflect what you want them to (have they been validated)?				
d	Were all the subjects classified into exposure groups using the same procedure?				
5a	Were the outcome(s) accurately measured to minimize bias? <i>HINT: We are looking for measurement or classification bias.</i>				
b	Did they use objective measurements?				
c	Do the measures truly reflect what was wanted (have they been validated)?				
d	Has a reliable system been established for measuring outcomes?				
e	Were the measurement methods similar across different groups in the cohort? -				
f	Were the outcome assessors blinded to exposure to PM?				
6a	Have the authors identified all important confounding factors? List the ones you think might be important, that the authors missed. <i>HINT: - Look for restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors</i>				
b	Have they taken account of the confounding factors in the design and/or analysis?				

16 The questions are drawn from those that have been developed by the national CASP collaboration. The scoring system used is based on that used by Feder *et al.*, 2006.

Question	Comments	Score		
		0	1	2
7a Was the follow-up of subjects complete enough? <i>HINT: -The persons that are lost to follow-up may have different outcomes than those available for assessment</i>				
b Was the follow-up of subjects long enough? <i>HINT: - The effects should have had long enough to reveal themselves. In an open or dynamic cohort, was there anything special about the outcome of the people leaving, or the exposure of the people entering the cohort?</i>				

## Methodological appraisal of quantitative studies – study with a comparison group<sup>17</sup>

Screening questions		Score		
Question	Comments	0	1	2
1 Did the study address a clearly focused issue? <i>HINT: A question can be focused in terms of: - the population studied - the risk factors studied - the outcomes considered - is it clear whether the study tried to detect harmful effects?</i>				
2 Did the authors use an appropriate method to answer their question? <i>HINT: Consider</i>				
- <i>Is a case control study an appropriate way of answering the question under the circumstances? (Is the outcome rare or harmful?)</i>				
- <i>Did it address the study question?</i>				
<b>Continue only if score on <u>each</u> of questions 1 and 2 is one or more</b>				
Detailed questions				
3a Were the cases (those exposed to PM) recruited in an acceptable way? <i>HINT: We are looking for selection bias which might compromise the generalisability of the findings:</i>				
b Are the cases defined precisely?				
c Were the cases representative of a defined population (geographically and/or temporally)?				
d Was there an established reliable system for selecting all the cases?				
e Is the time-frame of the study relevant to the outcomes measured?				
f Were a sufficient number of cases selected?				
g Was there a power calculation?				
4a Were the controls selected in an acceptable way? <i>HINT: We are looking for selection bias which might compromise the generalisability of the findings</i>				
b Were the controls representative of a defined population (geographically and/or temporally)				

<sup>17</sup> The questions are drawn from those that have been developed by the national CASP collaboration. The scoring system used is based on that used by Feder *et al.*, 2006.

Question	Comments	Score		
		0	1	2
c	Was there something special about the controls?			
d	Was the non-response high?			
e	Are they matched, population based or randomly selected? [score 0 for no answer, 2 for explanation that satisfies, 1 for unclear explanation]			
f	Were there a sufficient number of controls selected?			
5a	Was the exposure to PM clearly defined and accurately measured to minimize bias? HINT: We are looking for measurement or classification bias: -			
b	Did they use objective measurements?			
c	Do the measures truly reflect what you want them to (have they been validated)?			
d	Were all the subjects classified into exposure groups using the same procedure?			
6a	Were the outcome(s) accurately measured to minimize bias? HINT: We are looking for measurement or classification bias.			
b	Did they use objective measurements?			
c	Do the measures truly reflect what was wanted (have they been validated)?			
d	Has a reliable system been established for measuring outcomes?			
e	Were the measurement methods similar across different groups in the cases and controls? -			
f	Were the outcome assessors blinded to exposure to PM?			
7a	Have the authors accounted all relevant confounding factors? List any you think might be important, that the authors missed (genetic, environmental and socio-economic) <i>HINT:</i> - <i>Look for restriction in design.</i>			
b	Have the authors taken account of the potential confounding factors in the design and/or in their analysis? <i>HINT:</i> - <i>Look for restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors.</i>			

## Methodological appraisal of quantitative studies – correlational study<sup>18</sup>

For studies described as correlational, establish what level measurement was carried out in the study.

- If measures are carried out at the level of the individual person, then the study can be assessed using the checklist for cohort study or study with comparison group as appropriate.
- If measures are carried out only at the level of a group and the data cannot be related to individuals, then the study is to be excluded from further consideration. It should be assigned a score of 0 per cent.<sup>19</sup>

18 The questions are drawn from those that have been developed by the national CASP collaboration. The scoring system used is based on that used by Feder *et al.* 2006.

19 As discussed and agreed with REA steering group at Home Office, 5th December 2005.

## Methodological appraisal of quantitative studies – systematic review/meta-analysis<sup>20</sup>

Screening questions		Score		
Question	Comments	0	1	2
1	Did the study ask a clearly focused question? <i>Consider if the question is 'focused' in terms of:</i> – <i>the population studied</i> – <i>the intervention given or exposure</i> – <i>the outcomes considered</i>			
2	Did the review include the right type of study? <i>Consider if the included studies:</i> – <i>address the review's question</i> – <i>have an appropriate study design</i>			
<b>Continue only if score on <u>each</u> of questions 1 and 2 is one or more</b>				
<b>Detailed questions</b>				
3a	Did the reviewers try to identify all relevant studies? <i>Consider:</i> – <i>which bibliographic databases were used</i> – <i>if there was follow-up from reference lists</i> – <i>if there was personal contact with experts</i>			
b	Did the reviewers search for unpublished studies?			
c	Did the reviewers search for non-English language studies?			
4a	Did the reviewers assess the quality of the included studies? <i>Consider:</i> – <i>if a clear, pre-determined strategy was used to determine which studies were included.</i>			
b	Was a scoring system used?			
c	Was each paper assessed by more than one assessor?			
5	If the results of the studies have been combined, was it reasonable to do so? [Score 2 if combination was not carried out] <i>Consider whether:</i> – <i>the results of each study are clearly displayed</i> – <i>the results were similar from study to study (look for tests of heterogeneity)</i> – <i>the reasons for any variations in results are discussed.</i>			
6a	Were the findings reported clearly?			
b	Is a confidence interval <u>or</u> p value reported?			
7	Were the strengths and weaknesses of the studies discussed?			

20 The questions are drawn from those that have been developed by the national CASP collaboration. The scoring system used is based on that used by Feder *et al.* 2006.

## Annex C. Data extraction table for included studies

### Extraction table

1. Publication details
2. Country/ies
3. Setting
4. Pub year
5. Data collection year
6. Main aims (as specified in paper)
7. Study design
8. Structure of data collected
9. Participants
10. Type of pornography studied
11. Match of type of pornography studied with EPM definition<sup>21</sup>
12. Eligibility criteria for participants
13. How participants recruited
14. Payment for participation?
15. Number of participants approached
16. Number of participants who took part in the study
17. Response rate
18. Lowest age
19. Upper age
20. Mean age
21. Ethnicity
22. Socio-economic status
23. Marital status
24. Where did data collection take place
25. Data collection method
26. How saturation was reached (qualitative studies)
27. What effects of pornography were studied (and on who)
28. Major themes identified in study
29. Findings about effects on those who access PM
30. Findings about effects of PM on sexual or violent offending
31. Findings about effects of the making of PM on those who participate in making
32. Strengths of papers (as author states)
33. Limitations of the paper (as author states)
34. Conclusions of the author

21 EPM defined as “actual scenes or realistic depictions of:

- a) explicit intercourse or oral sex with an animal;
- b) explicit sexual interference with a human corpse;
- c) explicit serious violence in a sexual context; d) explicit serious sexual violence”.

Explicit is further defined as “intended to cover activity which can be clearly seen and is not hidden, disguised or implied”; serious violence as “will involve or will appear to involve serious bodily harm in a context or setting which is sexual – for example, images of suffocation or hanging with sexual references in the way the scenes are presented” and serious sexual violence as “will involve or will appear to involve serious bodily harm where the violence is sexual”.



## Annex D. Index of five meta-analyses and summaries of 48 primary studies included in the REA with methodological appraisal scores and (for experimental studies) effect sizes

This annex follows the order and structure of the report around the REA research questions with study summaries listed under each based on the hierarchy of evidence: meta-analyses, followed by experimental studies, non-experimental quantitative studies and qualitative studies. It lists the five meta-analyses with methodological appraisal scores and effect sizes. Full summaries of the meta-analyses are in the text of the report. This annex contains full summaries of the 48 primary studies that met the REA quality and inclusion criteria with effect sizes. All entries clearly indicate whether the study is unique to the REA or also in one or more of the meta-analyses. Altogether this annex comprises the body of empirical evidence identified in the REA on which the summary of its findings and conclusions are based.

### Experimental studies under laboratory conditions

#### *Aggression after exposure to extreme pornographic material*

##### Meta Analysis One

Allen, D'Alessio, Brezgel (1995a) *The Effects of Pornography: Aggression After Exposure*. Score 91.5 per cent 30 studies with a sample size of 2011.

Consumption of material depicting non-violent sexual activity increased aggressive behaviour: the observed average correlation was positive ( $r=.171$ ,  $k=24$ ,  $n=1,229$ ) from a homogenous grouping ( $X^2(23) = 33.71$ ,  $p>.05$ ). "The effect indicates that exposure to non-violent pornography increased the subsequent aggressive behaviour. The observed correlation is significantly different from zero." (p 271).

Exposure to violent pornography exhibited the largest positive correlation ( $r=.216$ ,  $k=7$ ,  $n=353$ ) and was significantly different from zero  $t(351)=4.13$ . "The violent pornography group exhibited the largest positive correlation... this is significantly different from zero" (p 271).

##### Study 1

Donnerstein (1980) *Aggressive erotica and violence against women*. Score 50 per cent REA and meta-analysis.

Donnerstein (1980) conducted an experiment designed to examine the effects of aggressive-erotic stimuli on male aggression towards females. The study involved 120 male students and the extreme pornographic material employed involved a graphic depiction of the rape of a woman at gunpoint (p 271). Students were angered or treated in a neutral manner by a male or female confederate, and then shown either a neutral, erotic or aggressive-erotic film and given the opportunity to aggress against the male or the female via the delivery of electric shocks. The results indicated that the aggressive-erotic film was effective in increasing aggression against the female. Subjects who watched the aggressive-erotic film displayed increased aggression towards the female confederate,  $F(1, 108) = 33.51$ ,  $p < 0.01$ . Even non-angered subjects showed an increase in aggression toward the female after viewing the aggressive film,  $F(1, 108) = 4.63$ ,  $p < .05$ . (p 269) Displays of aggression were higher towards female confederates, when compared to male confederates, after viewing the aggressive-erotic film,  $F(1, 108) = 10.23$ ,  $p < 0.01$ . A  $2 \times 2 \times 3$  ANOVA on the mean shock intensity administered to the confederate revealed significant effects (p 274).

## Study 2

Zillmann, Bryant and Carveth (1981) *The Effect of Erotica Featuring Sadomasochism and Bestiality on Motivated Intermale Aggression*. Score 67.5 per cent REA and meta-analysis.

The REA identified a study conducted by Zillmann, Bryant and Carveth (1981) on pornography and aggression involving exposure to sadomasochism and bestiality (the latter falling within the HO definition of extreme pornographic material). In this experiment forty male subjects 'were provoked by a same-sex peer, exposed to (1) comparatively non-arousing, pleasant erotica (girlie fare), (2) arousing, displeasing and non-aggressive erotica (bestiality), (3) arousing, displeasing and aggressive erotica (sadomasochism), or (4) not exposed to erotica'. Following exposure, subjects were then provided with an opportunity to retaliate against their annoyer. Aggression was measured by inflicting deliberate pain in taking blood pressure rather than electric shocks. Exposure to the bestiality and sadomasochism condition increased retaliatory aggression relative to no exposure: Pressure-time for the no exposure condition (23.2a); non-arousing, pleasing, non-aggressive condition (15.7a); arousing, displeasing, non-aggressive condition (73.6b); arousing, displeasing, aggressive condition (68.0b); provided an F value of  $F(3,36) = 3.77, p < .05$ . "Retaliatory behaviour was significantly affected by exposure to communication." (p 157). The authors conclude that 'if exposure to such erotic fare as bestiality or sadomasochism proves disturbing (and it apparently has this effect on many young men), this exposure further aggravates the provoked individual and thus promotes motivated aggression'(p 158).

## Studies 3 and 4

Donnerstein and Berkowitz (1981) *Victim reactions in aggressive erotic films as a factor in violence against women*. Score 59 per cent REA and meta-analysis.

Donnerstein and Berkowitz (1981) report on two studies both designed 'to investigate whether the behavioural characteristics of the people in erotic films and the nature of the targets available for aggression afterward can affect subsequent aggression' (p 710). Pornographic material involved gang rape with physical violence, with the woman portrayed as 'smiling' in one, and in the other as 'suffering' (p 713). In experiment one 80 male students were 'angered' by a male or female confederate followed by viewing one of the four films and then being allowed to aggress against the confederate by giving an electric shock. The results showed that the pornographic material had no affect on shocks given to the male, but that both types of aggressive films increased aggression towards the female (p 710).

Experiment two replicated experiment one with a different group of 80 male students, half of whom were angered and half not. Results indicated that angered male subjects were more aggressive towards the female after viewing either sexually aggressive film. "A 2 x 4 ANOVA on the mean intensity of the shocks administered to the female confederates revealed significant effects for anger,  $F(1,72) = 28.26, p < 0.01$ ; films  $F(3,72) = 36.16, p < 0.01$ ; and anger x films,  $F(3,72) = 4.76, p < 0.01$ ." (pp 719-720). Non-angered subjects were aggressive towards the female when she was depicted as enjoying the experience of being raped. The authors concluded that 'the addition of aggression to the sex in pornographic materials is probably more dangerous (in terms of possible aggressive consequences) than the display of "pure erotica" [and] could stimulate aggressively disposed men with weak inhibitions to assault available women' (p 722).

## Associations between exposure to extreme pornographic material and rape beliefs, attitudes and behaviour

### Meta-analysis Two

Allen, Emmers-Sommers, Gebhardt and Giery (1995b) *Exposure to Pornography and Acceptance of Rape Myths*. Score 79 per cent 24 studies with a sample size of 4268.

Violent pornography increased the acceptance of rape myths consistently in experimental settings across all included studies (ave  $r = .112$ ,  $k=5$ ,  $n=719$ ) and produced homogenous results ( $X^2(4) = 8.33$ ,  $p > .05$ ); non-violent pornography also increased rape myth acceptance (ave  $r = .125$ ,  $k=7$ ,  $n=1048$ ) and produced homogenous results ( $X^2(6)=0.00$ ,  $p > .05$ ). Violent pornography increased rape myth acceptance more so than non-violent pornography (ave  $r = .163$ ,  $k=8$ ,  $n=762$ ) and produced homogenous results ( $X^2(7)=9.99$ ,  $p > .05$ ). The results highlight an “average positive correlation between exposure to pornography and the acceptance of rape myth” (p 18).

## Extreme pornography effects on force-oriented, high aggression males

### Study 1

Malamuth (1981a) *Rape Fantasies as a Function of Exposure to Violent Sexual Stimuli*. Score 83 per cent REA Only.

Malamuth (1981a) investigated rape fantasies as a function of exposure to sexually violent pornography with 29 male students who were initially classified on the basis of questionnaire responses as sexually force oriented or non-force oriented, then randomly assigned to exposure to rape or mutually consenting sexual material and subsequently asked to create their own fantasies. Penile tumescence and self-reports of arousal indicated that relatively high levels of sexual arousal were generated by all of the sexual material. Self-reported sexual arousal during the fantasy period indicated that those who had been classified as force-oriented created more arousing fantasies after having been exposed to the rape material, while those classified as non-force oriented created fantasies associated with the consensual sexual material. There was an interaction between the level of pornographic exposure and the orientation variable  $F(1,12)=9.75$ ,  $p < 0.0009$ . ‘Most significantly’ according to the author, ‘those exposed to the rape version, irrespective of their force orientation, created more violent sexual fantasies than those exposed to the mutually consenting sex ( $X = 51\%$ ) and ( $X = 47.5\%$ )’ (p 33).

### Studies 2 and 3

Barnes, Malamuth and Check (1984a) *Psychoticism and Sexual Arousal to Rape Depictions*. Score 65 per cent REA Only.

The initial correlational phase of the research conducted by Barnes, Malamuth and Check (1984a) found high scores for psychoticism (P scores)<sup>22</sup> associated with: a greater tendency to fantasise about the use of force, less favourable attitudes towards conventional sexual activities, greater perceived likelihood of participating in a variety of unconventional sexual activities including rape and paedophilia, and more positive reactions to pornography depicting rape. In the second experimental phase of the research, they examined the association between ‘psychoticism’ and rape proclivity in a ‘normal’ population of 145 male college students (Barnes, Malamuth and Check 1984b). This study found that males with high P scores were more sexually aroused by rape depictions compared to non-rape depictions than low P scorers based on both self-reports and penile tumescence. “Analysis yielded the expected significant Psychoticism x Violence interaction effect to self-reported sexual arousal ( $p < 0.02$ ), and penile tumescence ( $p < 0.03$ ).” (p 276) The authors concluded that findings for high P scorers in the normal population were similar to findings reported by Abel *et al.*, (1977) for a sample of rapists (pp 159-172)<sup>23</sup>.

### Study 4

Ceniti and Malamuth (1984) *Effects of Repeated Exposure to Sexually Violent or Non Violent stimuli on Sexual Arousal to rape and Nonrape Depictions*. Score 77.5 per cent REA Only.

22 Psychoticism’ measured by Eysenk’s P Score Scale in this context refers to aggression and force orientation traits rather than the American Psychiatric Association DSM IV classification of psychotic illness.

23 See Abel *et al.* (1977) Score 62.5 per cent REA and meta-analysis.

Ceniti and Malamuth (1984) investigated the effects of repeated exposure to sexually violent or non-violent stimuli on sexual arousal to rape and non-rape depictions on 69 male students (p 537). Pornographic materials employed included heterosexual intercourse, group sex, lesbianism and sexual violence – including written and pictorial material portraying rape (p 538). “Force-oriented subjects, when compared with control subjects, displayed a significant increase in sexual arousal when exposed to sexually violent stimuli  $F(1,59)=5.15, p<0.03.$ ” (p 543) The authors concluded that ‘the pattern of the data clearly suggests that repeated exposure to sexually violent or non-violent pornography resulted in satiation in sexual arousal to rape themes for force-oriented subjects (i.e. those who prior to any exposure had shown relatively high levels of arousal to rape stimuli)’ (p 544).

### Studies 5 and 6

Lohr, Adams and Davis (1997) *Sexual arousal to erotic and aggressive stimuli in sexually coercive and noncoercive men*. Score 87.5 per cent REA Only.

Lohr, Adams and Davis (1997) reported on two studies. The first used audio tapes and slides. The second replicated the first, but without the slides. Pornographic material depicted ‘heterosexual activity that ranged from consenting sexual activity to sadistic rape’ involving extreme physical as well as sexual violence including the raped woman becoming physiologically aroused at the end of the script while continuing to resist sexual advances...’(p 232).

Both studies involved 24 male college students divided into two groups, one identified as ‘sexually coercive’ based on a rating scale and the other a ‘control’ group of non-sexually coercive males. It used both phallometric indices to measure penile tumescence and subjective indices of arousal and erection. The first of the studies found that:

- the sexually coercive group showed significantly greater physiological arousal than did those in the control group in response to the rape scenarios involving verbal pressure  $F(1,22)=15.76, p<.01$ , verbal threats  $F(1,22)=11.20, p<.01$ , physical force  $F(1,22)=10.94, p<.01$ . and sadistic rape  $F(1,22)=5.63, p<.05$ ;
- controls exhibited a decline or no significant increase in tumescence on the introduction of force, but the sexually coercive group maintained or increased tumescence  $F(1,22) = 36.43, p, .01$ ; and
- coercive males had a lower threshold for sexual arousal – i.e. easily triggered to the consenting sex and all four of the rape scenarios.

The second of the studies found that without the slides, controls exhibited no significant initial or later sexual arousal to any of the force scripts, supporting the authors’ hypothesis that more salient visual stimuli have more negative effects (p 239).

## Extreme pornography exposure and self-reported likelihood to rape

### Study 1

Malamuth, Haber and Feshbach (1980) *Testing Hypothesis regarding Rape-Exposure to Sexual Violence, Sex Differences and the Normality of Rapists*. Score 67.5 per cent REA and meta-analysis.

In this study Malamuth, Haber and Feshbach (1980) explored the effects of exposure to sexual violence on 53 male and 38 female students’ reactions to rape by exposing them first to either a sadomasochistic or a non-violent version of the same sexual passage and then to a portrayal of rape at knife point with threats to cut the victim (p 124). They found that males exposed to the sadomasochism were more sexually aroused to the rape depiction (p 121). The authors found ‘a relatively large number of significant correlations’ (p 130) supporting the high proclivity to rape found amongst male subjects in relation to their perceptions of victims’

pain,  $F(1,83)=12.84$ ,  $p<.001$ ; trauma  $F(1,83)=6.8$   $p<.01$ ; resistance  $F(1,83)=7.55$   $p<.01$  and identification with the victim  $F(1,83)=3.47$ ,  $p<.07$ . The investigators did not use the word rape. However, in response to a description of rape, 51 per cent of the male subjects said there was some likelihood they would do what was described if they could be sure of getting away with it, and even without that assurance 17 per cent said they might emulate the rapist's behaviour. In addition there was a significant correlation between self-reported tendency to commit rape and sexual arousal to sexual violence, both as portrayed in the sadomasochism and the rape depiction. Within the violent condition, the correlations were [found to be] significant' ( $0.36 = p<.01$ ) (p 132). The authors concluded that 'this self report and general attitudes towards rape revealed a pattern that bears striking similarity to the callous attitudes often held by convicted rapists' (p 130).

### Study 2

Malamuth and Check (1983) *Sexual Arousal to rape Depictions: Individual Differences*. Score 60 per cent REA Only.

Malamuth and Check (1983) reported on a study involving 145 male students exposed to depictions of sexually violent material in which the victim was either consenting or not consenting (p 57). They found that those who had scored high on likelihood of rape showed greater arousal to non-consenting depictions than consenting depictions on both the self report measure, ( $F(1,114) = 4.06$ ,  $p<.05$ ) and on the penile tumescence measure ( $F(1,114) = 3.80$ ,  $p<.054$ ) (p 61). Subject volunteers exposed to pornographic scenes of forced sexuality were more likely to have had subsequent thoughts about forcing a woman into sexual acts ( $p<.01$ ). "The phase 1 analysis yielded a significant interaction of pain, sex of experimenter and likelihood of rape multivariate" (p 61). They concluded that 'the general pattern of the relationships between sexual arousal to rape depictions and measures of aggression provides support for the assertion that arousal to rape depictions may serve as one index to proclivity to rape'. They thought 'the findings show that a minority of the population (high scorers for likelihood to rape) are more sexually aroused to...rape depictions...than to similar consenting portrayals' (p 65).

### Study 3

Check and Guloien (1989) *Reported Proclivity for Coercive Sex Following Repeated Exposure to Sexually Violent Pornography, Nonviolent Dehumanising Pornography and Erotica*. Score 85 per cent REA Only.

Check and Guloien (1989) compared the effects of exposure to pornography defined as sexually explicit material which is violent or non-violent but dehumanising and degrading, or non-violent and non-degrading. Subjects were 117 male college students and 319 male non-student city residents. The sexually violent material used in this study was primarily rape suggesting the woman enjoyed the experience. For the dehumanising and degrading category the 'woman was portrayed as hysterically responsive to male sexual demands, was verbally abused and dominated, and portrayed as enjoying whatever abuse she experienced' (p 163).

The study found that by comparison with subjects in the no exposure condition, 'exposure to both sexually violent pornography and to non-violent, dehumanising pornography fostered the perception in subjects' minds that they might rape and force women into unwanted sex acts'. More than twice as many men who had been exposed to sexually violent or to non-violent dehumanising pornography reported that there was some likelihood that they would rape compared to the men in the no-exposure condition. Significant differences were found between subjects exposed to non-violent, dehumanising pornography and subjects in the no-exposure condition, in terms of reported likelihood of rape ( $p<.013$ ) and likelihood of forcing a woman into unwanted sex acts ( $p<.05$ ). Significance was also found between subjects exposed to violent pornography and those with no exposure on reported likelihood of rape ( $p<.018$ ) and likelihood of forcing a woman into unwanted sex acts ( $p<.027$ ). "The analyses revealed significant differences between subjects exposed to sexually violent pornography and subjects in the no-exposure condition" (p 171).

Moreover, interaction tests revealed that these effects occurred primarily for high P [psychoticism] scorers.' High P scorers in general were also found to be 'more accepting of rape myths, have higher reported likelihoods of raping and forcing women into unwanted sex acts, and reported actually committing more acts of sexual aggression than did low P scorers' (p 177). Students reported a greater likelihood of raping than did the non-students, however the city residents reported actually committing more acts of sexual aggression (p 170).

## Effects of extreme pornographic material portraying raped women displaying pleasure

### Study 1

Malamuth and Check (1980a) *Penile Tumescence and Perceptual Responses to rape as a Function of Victims Perceived Reactions*. Score 77.5 per cent REA Only.

Malamuth and Check (1980a) investigated sexual arousal to rape as a function of the victim's perceived reactions with 75 male students. A rape portrayal in which the assailant perceived that the victim became sexually aroused was found to result in high sexual arousal (as indicated by penile tumescence) in comparison to a rape emphasising the victim's abhorrence of the assault ( $p < .05$ ) (p 528). "A 3 x 2 ANOVA calculated on penile tumescence to the rape-criterion story yielded a significant effect for prior exposure  $F(2,63) = 4.46, p < .02$ ." (p 536) It was also found that exposure which 'portrayed rape in a relatively negative or positive manner affected subsequent reactions to rape' (p 528). The authors concluded that: (i) 'undesirable cognitive-perceptual changes occurred as a result of exposure to a rape depiction portraying the victim as sexually aroused, leading for example to 68 per cent of the sample reporting 'they would act as the rapist did if they could be assured of not being punished;' and (ii) that the '[s]elf-reported possibility of engaging in rape was found to correlate with callous attitudes to rape similar to the reported attitudes of many convicted rapists' (p 540).

### Study 2

Malamuth and Check (1980b) *Sexual Arousal to Rape and Consenting Depictions: The Importance of the Woman's Arousal*. Score 73 per cent REA and meta-analysis.

Similar findings were reported by Malamuth and Check (1980b) in a study on the importance of women's arousal in sexual arousal to rape and consenting sex depictions. One hundred and forty-three male and female students were exposed to a range of depictions with the victim displaying arousal or disgust. Ratings of sexual arousal were affected only by outcome,  $F(1, 127) = 9.35, p < .004$ , with higher levels to the arousal outcome ( $M = 41.9\%$ ) than to the disgust outcome ( $M = 29.3\%$ ). "The outcome dimension was the only variable that significantly affected subjects' sexual arousal." (p 763)

### Studies 3 and 4

Malamuth, Heim and Feshbach (1980) *Sexual responsiveness of college students to rape depictions: inhibitory and disinhibitory effects*. Score 77.5 per cent REA Only.

Malamuth, Heim and Feshbach (1980) conducted two experiments to identify the specific dimensions in portrayals of sexual violence that inhibit or disinhibit sexual responsiveness in 135 male and 159 female college students. The first experiment replicated earlier findings that 'normals' are less sexually aroused by portrayals of sexual assault than by depictions of mutually consenting sex. Subjects who read the non-rape versions of the erotic story reported being more sexually aroused ( $M = 2.84, n = 145$ ) than those who had read rape versions ( $M = 2.35, n = 149$ ). "The results yielded an effect for the consent variable that was only a trend on the sexual arousal item, but was significant on both the sexually tantalised or sensuous and the sexual composite measures" (p 402).

In the second experiment, it was shown that when the rape victim was depicted experiencing an involuntary orgasm subjects reported relatively high levels of sexual arousal ( $F(1,119) = 17.46, p < .001$ ) (p 405). Male subjects were most aroused when the victim experienced an orgasm and pain (p 406). The authors conclude that 'the elicitation of sexual arousal within a violent context may result in a conditioning process whereby violent acts become associated with sexual pleasure, a highly powerful unconditioned stimulus and reinforcer which could possibly lead to changes in behaviour' (p 407).

### Study 5

Malamuth and Check (1985) *The effects of aggressive pornography on beliefs in rape myths: Individual differences*. Score 85 per cent REA and meta-analysis.

In this paper, Malamuth and Check (1985) reported additional findings from their study of 145 college males. This compared the effects of a non-consensual forcible rape depiction with a depiction of mutually consenting sex following previous exposure to the myth that rape results in the victim's sexual arousal. They found that previous exposure to the rape myth contributed to men's belief that the woman enjoyed being raped. In particular they found that males exposed to a non-consenting woman's rape arousal depiction subsequently believed that a greater percentage of women would both enjoy being raped and enjoy being forced to do something sexual than subjects who were exposed to a non-consenting woman's rape disgust depiction. Participants who initially heard the non-consenting woman's arousal depictions perceived more victim pleasure in the rape criterion depiction than subjects who heard non-consenting woman's disgust ( $M=2.0, t(109)=1.9, p < .03$ ). "Follow up simple effects tests revealed that this difference between the arousal vs. disgust non-consenting conditions was significant." (p 309). They also found that men with relatively higher inclinations to aggress against women were particularly likely to be affected by...depictions of rape myths' (p 299). Tests revealed that the Consent x Outcome interaction was significant for high LR subjects only, for both the women enjoy rape item  $F(1,125)=7.5, p < .007$  and the women enjoy forced sex item  $F(1,125)=5.8, p < .02$ . The authors concluded that 'on the whole, the findings strongly support the hypothesis that a depiction portraying the myth that a rape victim becomes sexually aroused increases males' belief in such a rape myth' (p 313).

### Study 6

Ohbuchi, Ikeda and Takeuchi (1994) *Effects of violent pornography upon viewers' rape myth beliefs: a study of Japanese males*. Score 55 per cent REA Only.

Ohbuchi, Ikeda and Takeuchi (1994) compared consenting sex depictions with 'positive' rape (a woman displaying pleasure in being raped) and 'negative' rape (the woman displaying pain). Subjects were 72 male students. The study found that participants who were exposed to 'positive' rape film expressed the belief that women (i) enjoy being raped and make false allegations of rape, and that (ii) 'those with a high rape proclivity strongly believed rape myths such as women desire to be raped and enjoy it' (p 78). Univariate analyses revealed that the high rape proclivity subjects believed more strongly in women's desire to be raped than the low rape proclivity subjects ( $F = 9.68, p < 0.01; M = 4.38$  and  $3.56$ ). Authors conclude, "the effect of rape proclivity was significant" (p 77).

### Study 7

Norris, George, Davis, Martell and Leonesio (1999) *Alcohol and hypermasculinity as determinants of men's empathic responses to violent pornography*. Score 83 per cent REA and meta-analysis.

A study by Norris *et al.*, (1999) involving 119 males recruited from the local community found that a combination of 'hyper-masculinity' and alcohol consumption under laboratory conditions interacted with a rape myth text of a woman portrayed consuming alcohol and experiencing pleasure being raped. This combination of factors acted to reduce subjects' empathy for the rape victim (p 695). When hyper-masculinity

was low participants in the pleasure/water conditions rated the victim as significantly more upset than those in the other conditions. At the moderate hyper-masculinity level those in the pleasure condition rated the victim as significantly less upset; however at the high level hyper-masculinity there were no significant differences ( $R^2$  cha=.113,  $p < .01$ ). Intoxicated participants rated the character as less significantly distressed than the sober participants ( $M_s = 5.85$  vs.  $5.79$ ); ( $R^2$  cha=.308,  $p < .0001$ ). “For the Physiological Alcohol Contrast x Hypermasculinity interaction, intoxicated participants rated the victim as significantly less disgusted with herself than sober participants at the low level of Hypermasculinity” (p 694).

## Desensitisation, habituation and satiation effects of non-extreme pornographic material on the consumption and effects of extreme pornographic material

### Study 1

Zillmann and Bryant (1982) *Pornography, Sexual Callousness, and the Trivialization of Rape*. Score 74 per cent REA and meta-analyses.

In a study by Zillmann and Bryant (1982) 80 male and 80 female students were randomly assigned to three comparison groups: massive exposure, intermediate exposure and nil exposure to pornographic material that did not meet the definitions of extreme. In the first and second weeks following exposure, subjects ‘served in two experimental sessions in which habituation effects were assessed. In the third week they returned to the laboratory and tested for perceptions of sexuality ‘estimating the percentage of sexually active adults practicing sadomasochism and bestiality’ (p 14). They were then ‘introduced to a rape case’ and their perceptions of the rapist and rape victim were measured. Findings on the effects of ‘massive exposure’ in this study included:

- a process of habituation whereby pornography was considered less objectionable and less offensive by those with most exposure to it;
- females found pornography more objectionable than males;
- a strong association between exposure to pornographic material and the trivialisation of rape (recommendations of significantly shorter prison terms for rapists ( $F(3,152) = 3.61$ ,  $p < .05$ ), and loss of compassion for victims of rape);
- a process of desensitisation resulting in increased male sexual callousness towards women ( $F(3,76) = 14.79$ ,  $p < .05$ ; and
- normalisation of ‘uncommon’ sexual acts (e.g. anal sex, group sex, bestiality, sadomasochism). (pp 15-18)

The authors conclude, “massive exposure to pornography significantly increased men’s sexual callousness toward women” (p 18).

### Study 2

Zillmann and Bryant (1986) *Shifting preferences in pornography consumption*. Score 63 per cent REA Only.

A subsequent study by Zillmann and Bryant (1986) involving 160 male and female subjects from a university and a city population both randomly sampled, explored the habituation effects of common non-violent pornography on the consumption of pornographic material depicting explicit serious sexual violence and bestiality (p 560). They found that males with considerable prior exposure to non-X (G+ R rated) material, lost interest in it and elected to watch uncommon-X pornography involving bondage, sadomasochism and bestiality ( $6.78$  vs.  $4.18$   $F(1, 152) = 21.77$ ,  $p < .001$ ), and that given the choice they consumed the uncommon pornography almost exclusively. “Bondage, sadomasochism and bestiality were all consumed to a significantly higher degree by the pre-exposed than by the control subjects.” (p 572). Similar patterns were found in both student and city population samples (p 572).

### Study 3

Millburn, Mather and Conrad (2000) *The effects of viewing R-rated movie scenes that objectify women on perceptions of date rape*. Score 87.5 per cent REA Only.

The study by Millburn, Mather and Conrad (2000) examined the effects of exposure to non-violent pornographic material on the effects of exposure to sexually violent pornographic material. For this purpose they tested the effects on 137 male and female students of viewing scenes from R-rated [non-EPM] films on perceptions of female responsibility for and enjoyment of either a date rape or a stranger rape. Initially, they viewed either non-violent scenes described as objectifying and degrading women sexually or non-sexual, non-violent material (p 651). They were then exposed to material depicting rape. Males who previously viewed the sexually objectifying material felt that the victim in the date rape scenario experienced pleasure ( $F = 11.291, p < .001$ ) and 'got what she wanted' (p 645). A multivariate analysis of variance on a 2 x 2 x 2 design of Sex x Video X Rape uncovered a significance value in relation to victim pleasure ( $F = 11.291, p < .001$ ) and perception of what the victim deserved ( $F = 3.937, p < .05$ ). "An examination of the tests of individual dependent variables indicated that there were significant effects primarily on two variables: the participants' perception that the victim derived pleasure from the sexual intercourse and participants' judgement of whether the victim "really got what she wanted in the end" (p 655).

## Studies with nil effects or conflicting findings

### Study 1

Malamuth and Ceniti (1986) *Repeated exposure to violent and nonviolent pornography: Likelihood of raping ratings and laboratory aggression against women*. Score 51 per cent REA and meta-analysis.

Malamuth and Ceniti (1986) randomly assigned 42 male subjects (recruited from 69 subjects who participated in a 1984 experiment on sexual responsiveness to sexually violent and non-violent stimuli) to sexually violent, sexually non-violent or control exposure conditions. Those in the first two groups were exposed over a four-week period to filmed, written and pictorial depictions. About a week subsequent to exposure subjects participated in what they were led to believe was a totally unrelated experiment in which aggression was assessed in the laboratory. Exposure to the violent or non-violent pornographic material was not found to affect laboratory aggression. "Results revealed no significance for the exposure variable nor any interaction" (p 134). The authors conclude that the findings 'appear to be inconsistent with previous data showing that exposure to violent pornography may increase males' laboratory aggression toward women' (p 135)<sup>24</sup>.

### Studies 2 and 3

Fisher and Grenier (1994) *Violent pornography, antiwoman thoughts, and antiwoman acts: In search of reliable effects*. Score 60 per cent REA Only.

Fisher and Grenier (1994) conducted two experiments intended to replicate previous studies. In the first, 65 male students were exposed to neutral, erotic or violent pornographic stimuli, and compared the effects of these on the men's fantasies, attitudes and behaviour towards women were examined (p 28). The findings of experiment one were that:

- subjects in the three sexually explicit stimulus conditions were significantly more sexually aroused than subjects in the neutral condition;
- the violent pornography negative outcome [victim distress evident] stimulus was perceived as more violent than the neutral or erotic or violent pornography positive outcome [victim becomes a willing participant] stimulus and the violent pornography positive outcome stimulus was perceived as more violent than the neutral stimulus ( $F(3,58)=18.56, p < .0001$ );

24 Likelihood of rape scores obtained before and after exposures to the various pornographic stimuli revealed no significance for the exposure variable, nor any interaction.

- no male subject in this experiment produced a sexually aggressive fantasy (p 30).

The second experiment involved 22 male students provoked by a female confederate and asked to administer shocks in the laboratory (p 32). The findings of experiment two were that:

- exposure to the violent pornography stimulus with the woman becoming aroused and willing produced a significant increase in the subjects' sexual arousal ( $F(1,13)=60.39, p<.001$ );
- effects of this material on behaviour towards the provocation by a female: nine (64%) chose to proceed to the debriefing without administering shocks, three (21%) chose to speak with the female rather than administer shocks, and two (14%) chose to send shocks – so they 'decided to terminate the experiment without running the remaining conditions' (p 35).

*"A one way analysis of variance of responses to the Self-Report of Sexual-Physiological Reactions by stimulus condition revealed that subjects in the three sexually explicit conditions were significantly more sexually aroused than were subjects in the neutral stimulus condition"* (p 30).

### Studies 4 and 5

Bauserman (1998) *Egalitarian, sexist, and aggressive sexual materials: Attitude effects and viewer responses*. Score 65 per cent REA Only.

Bauserman (1998) reported on two studies. The first used 20 male students tasked with rating a range of sexually explicit material categorised as 'egalitarian, sexist and aggressive material' (p 247). In the second study 115 male students were exposed to material depicting egalitarian (oral sex and intercourse with no dialogue), sexist (seemingly consensual intercourse with the male verbally abusing the female) and sexually aggressive (raped female ends up apparently a willing participant) sexual activity. Four measures were used to assess attitudes before and after exposure to the sexual scenes (p 248). The study found that 'there was minimal evidence for different attitudinal effects for any of [this pornography] on measures of sexist beliefs and beliefs about sexual aggression [and that] subjects responded most positively to egalitarian scenes and most negatively to the sexually aggressive scenes' (p 244). "No significant effect of exposure category on any measure was found  $F(3,103)=1.37, p=.26$ ; from attraction to sexual aggression scale  $F(3,109)=1.25, p=.29$  to rape myth acceptance (RMA) scale  $F(3,111)=1.05, p=.37$ ." (p 249). The author concluded that 'such portrayals may have minimal impact on viewers' (pp 252-253).

## Findings of non-experimental studies

### Meta Analysis Three

Hald, Yuen, Pitpitan and Malamuth (2006). *Exposure to pornography and acceptance of rape myths (RMA) in non-experimental studies*. Score 83 per cent. Nine studies with a sample size of 3,368.

Overall sample correlation analysis between pornographic consumption and attitudes supporting violence showed significance ( $r=.12, n=2,676, p<.01$ ).

### Surveys of pornography effects with males

#### Study 1

Garcia (1986) *Exposure to pornography and attitudes about women and rape: A correlational study*. Score 73 per cent REA and meta-analysis.

The survey conducted by Garcia (1986) involved the use of a three-part questionnaire completed by 115 male students (p 379). The first part asked about frequency of reading *Playboy* and/or *Penthouse*. The

second asked about subjects' exposure to depictions involving a) a nude woman, b) sexual intercourse between a man and a woman, c) oral sex, d) a man forcing a woman to have sex, e) sexual activity which included physical sexual violence. Thirdly, subjects completed an 'Attitude Towards Rape Scale' (pp 379-380). The study found that the percentage of subjects who had been exposed to magazine, book and film depictions of sexual violence were as follows.

- Forced sex (50.9% in magazines; 71.9% in books; and 68.7% in films);
- Sexual activity including physical sexual violence (61.4% in magazines; 54.4% in books; and 50.4% in films) (p 381).

The study also found 'correlations with the attitude towards rape measures were statistically significant and consistent with the idea that subjects with greater exposure to violent sexual materials endorsed beliefs that can be classified as a pro-rape orientation to a greater extent than subjects not exposed as much to these stimuli' (p 383).

Subjects with a greater degree of exposure to sexual materials tended to believe that women were largely responsible for the prevention of rape ( $0.08=p<.05$ ), participants believed women should not resist a man's sexually coercive advances ( $-0.10= p<.05$ ), and most notably participants believed rapists should not be punished ( $-0.07= p<.05$ ).

### Study 2

Demaré, Briere and Lips (1988) *Violent pornography and self-reported likelihood of sexual aggression*. Score 55 per cent REA and meta-analysis.

Demaré, Briere and Lips (1988) conducted an attitudes survey with 222 male students examining pornography use, attitudes and self-reported likelihood of rape (LR) or of using sexual force (LF) (p 140). This involved and compared the effects of three categories of pornographic material: non-violent, violent (which included bondage, torture and mutilation, and whipping, spanking or beating) and sexually violent (involving rape and gang rape). Attitudes surveyed covered rape myth acceptance, interpersonal violence against women, adversarial sexual beliefs, attitudes towards women) and self-reported likelihood of rape (LR) or using sexual force (LF) (pp 143-144). The study found that:

- non-violent pornography was used by 81 per cent of the sample, violent pornography by 41 per cent, and sexually violent pornography by 35 per cent;
- twenty-seven per cent reported a likelihood of raping or using force against a woman;
- 'the use of sexually violent pornography and acceptance of interpersonal violence against women were uniquely associated with self-reported likelihood of using force or rape' (p 140).

Self reported likelihood of rape and likelihood of force were significantly correlated with use of sexually violent pornographic material  $F(2,195)=12.25, p<.0001$  and the acceptance of interpersonal violence against women  $F(2,195)=10.89, p<.0001$ . "The final discriminant function, containing the four attitude scales and the sexually violent pornography variable, was highly significant" (p 148). The authors concluded that it is the combination of sex and aggression in pornography and attitudes towards women supportive of violence that produces a proclivity toward sexual violence, 'a tendency that may interact with other variables to result in actual sexual aggression' (p 150).

### Study 3

Boeringer (1994) *Pornography and Sexual Aggression: Associations of Violent and Nonviolent Depictions with Rape and Rape Proclivity*. Score 97.5 per cent REA and meta-analysis.

In the retrospective self-completion questionnaire survey conducted by Boeringer (1994) subjects included 477 male students (p 291). Pornographic material included: i) exposure to soft-core (*Playboy*, *Penthouse* and *Hustler*), ii) exposure to hard-core (graphic sex shown/described), iii) exposure to media depicting bondage, whipping, and spanking without an explicit lack of consent, iv) exposure to media depicting rape in which force is used and there is an explicit lack of consent. Findings included:

- Forty-eight reported some likelihood of 'using force' to obtain sex (prior to exposure), when the word 'rape' was used this became 15 per cent; the majority had engaged in the use of coercive verbal tactics to obtain sex, one quarter used alcohol/drugs to obtain sex, and slightly under nine per cent reported use of force or threats of force in obtaining sex (p 293).
- The group reporting higher exposure to violent pornography was about six times more likely to report rape behaviour than the low exposure group (13.8% vs. 2.4%) (p 297).
- 'Overall exposure to sexually explicit materials appears to be a significant correlate with sexual aggression and rape proclivity...Higher exposure to pornography depicting violent rape behaviour appeared to be significantly related to both engaging in sexual aggression and believing oneself capable or likely to engage in sexual aggression...violent pornography was also correlated with coercive sexuality (0.179= $p < .01$ ) and use of rape pornography was correlated with use of drugs or alcohol to obtain sex (0.133= $p < .01$ )' (pp 298-299).

*"The high-exposure groups display significantly higher mean values on all dependent variables, indicating higher average rape proclivity and higher average incidence of sexual coercion and assault"* (p 297).

#### Study 4

Malamuth, Addison and Koss (2000) *Pornography and sexual aggression: are there reliable effects and can we understand them?* Score 90 per cent REA Only.

A study conducted by Malamuth, Addison and Koss (2000) involved a large national survey of 2,972 of college males at 32 institutions described as 'the closest approximation to a random sample of the college population that can be obtained within the constraints imposed by the topic's sensitivity' (p 61). The aim of the study was to: 'conduct statistical analysis on a large representative sample to determine if there is a link between pornography use and sexual aggression' (p 26). The pornographic material studied was *Playboy*, *Penthouse*, *Chic*, *Club*, *Forum*, *Gallery*, *Genesis*, *Oui* and *Hustler* (p 63)<sup>25</sup>. The study distinguished between men at low and high risk of aggression (measured by standard scales) and found that:

- 'Among men who are classified as being at relatively low risk of sexual aggression, based on their levels of Hostile Masculinity (HM) and Sexual Promiscuity (SP) there is only a relatively minor difference (though statistically significant) in sexual aggression between those who report different levels of pornography use...'
- 'In some circumstances, pornography use is indeed a very good 'marker' of higher sexual aggression levels. When we considered men who were previously determined to be at high risk for sexual aggression (based on the risk factors of HM and SP), we found that those who are additionally very frequent users of pornography were much more likely to have engaged in sexual aggression than their counterparts who consume pornography less frequently (pp 79-80). Simple correlations between pornography use, sexual promiscuity ( $r = .17$ ), hostile masculinity ( $r = .17$ ) and sexual aggression ( $r = .17$ ) displayed significance ( $p < .0001$ ). "It was found that violent pornography resulted in significantly greater increase in attitudes supporting aggression than did non-violent pornography" (p 44).

25 When asked to clarify the pornographic material employed, the lead author replied: that the 'vast majority of the content of these magazines does not meet your definition of serious sexual violence, although a small percentage may meet this definition'. The study has been included on the grounds that (a) some material may meet the EPM definition and that (b) it complements and extends the findings of the meta-analysis on non-experimental studies by Allen *et al.* (1995b) concerning the influence on force-oriented men of pornography that does not meet the REA definition of extreme pornographic material.

## Study 5

Hald, Yuen, Pitpitan and Malamuth (2006) *Pornography Consumption and Attitudes Supporting Violence: Revisiting the Relationship*. Score 83 per cent.

Hald *et al.*, (2006 submitted for publication) conducted a survey using the sample of 2972 college males previously surveyed by Malamuth, Addison and Koss (2000) in the study summarised above. It employed a 330-question questionnaire using measures for pornography consumption, attitudes supporting violence and sexual aggression. The study found 'an overall significant relationship between ASV (Attitudes Supporting Violence Against Women) and pornography consumption', (p 14) with the strongest association between pornography consumption and attitudes supporting sexual violence against women occurring with those known to be already at high risk of sexual aggression) ( $r = .116$ ,  $N = 884$ ,  $p < .001$ ) (p 19).

## Extreme pornography effects on women

### Experimental Study

Senn and Radtke (1990) *Women's Evaluations of and Affective Reactions to Mainstream Violent Pornography, Nonviolent Pornography, and Erotica*. Score 80 per cent REA Only.

Senn and Radtke (1990) conducted a study with 96 women of their evaluations of and affective reactions to mainstream violent pornography, non-violent pornography and erotica. This involved two 60-minute questionnaire sessions (including Sexual Experiences Survey, Rape Myth Acceptance, Adversarial Sexual Beliefs, Attitudes towards Feminism, Hostility towards Men and Coercive Use of Pornography scales) and two 30-minute sessions involving exposure to erotica, non-violent pornography, violent pornography and a control group. In comparing the effects of the different categories of pornographic material, the study found that 'ratings for violent pornography were most negative, ratings for non-violent pornography were negative but less so than for violent pornography (pp 143-156)<sup>26</sup>. Correlations between pre-exposure to violent pornography (2.29) and post-exposure mood disturbance (23.48) displayed significance  $p < .05$ ; as did pre-exposure non-violent pornography (6.52) and post-exposure mood disturbance (18.00) =  $p < .05$ . "The two pornographic conditions showed significant increases in mood disturbance from pre- to post-exposure" (p 149).

## Qualitative studies with women

### Study 1

Shaw, S.M. (1999) *Men's Leisure and Women's Lives: The Impact of Pornography on Women Leisure Studies* Vol. 18 (1) pp. 197-212. Score 71 per cent REA Only.

Shaw (1999) conducted semi-structured interviews with 32 women who were shown pornographic material and asked to group it. The first group consisted of pictures of sexual violence involving 'pain, dominance and sexual coercion, as well as images where violence was implied rather than explicit, such as a picture of a woman wearing chains'. The women's reactions to the sexually explicit violence were consistently negative... and words such as "terrified", "scared" or "disgusted" were used to describe their feelings when looking at them' (p 203).

### Study 2

Bergner, R.M. and Bridges, A.J. (2002) The Significance of Heavy Pornography Involvement for Romantic Partners: Research and Clinical Implications *Journal of Sex and Marital Therapy* Vol. 28 (3) pp. 193-206 Score 57.5 per cent REA Only.

26 The authors state that 'all the pornographic stimuli were obtained from mainstream magazines *Playboy*, *Penthouse* and *Hustler*' (p 146). As with the study by Malamuth, Addison, & Koss (2000) only some of this would be likely to meet the REA definition of extreme pornographic material.

Bergner and Bridges (2002) analysed 100 letters posted to four internet message boards by spouses, fiancées and girlfriends of men perceived to be heavily involved in pornography. These were analysed for themes. Findings were that:

- the discovery was traumatic, devastating, confusing and incomprehensible;
- the women reported feeling sexually degraded and feelings of betrayal, shame and worthlessness;
- they reported perceiving their partners as perverts, sex addicts and sexual degenerates on the discovery that he is involving himself in increasingly “sicker” material (e.g. sadism, children) (pp 198-199).

## Experimental studies with sexual offenders

### Meta Analysis Four

Allen, D'Alessio, and Emmers-Sommers (1999) *Reactions of criminal sex offenders to pornography*. Score 79 per cent 45 studies with a sample size of 4,642.

There was little difference in the use of explicit sexual materials for criminals and non-criminals (ave.  $r=.062$ ,  $n=2543$ ,  $\text{variance}=.0307$ ); however sex offenders were more likely than controls to perform sexual acts after viewing pornographic material (ave.  $r=.234$ ,  $k=7$ ,  $n=1,261$ ,  $\text{variance}=.0307$ ,  $X^2=43.39$ ,  $p<.05$ ) “the average effect was positive” (p 154).

### Study 1

Abel, Barlow, Blanchard and Guild (1977) *The Components of Rapists' Sexual Arousal*. Score 62.5 per cent REA and meta-analysis.

Abel *et al.*, (1977) compared 20 rapists' and non-rapists' sexual arousal to rape (at knife point involving physical as well as sexual violence) and non-rape pornography, (p 898). They found that ‘rapists were separated from non-rapists in that the former developed erections to rape descriptions while the latter did not. The method also discriminated those rapists with the highest frequency of rape, those who had injured their victim, and those who chose children as victims’ (p 895).

Non-rapists had significantly less erections and reported lower sexual arousal for rape depictions than for non-rape depictions ( $p<.05$ ); rapists showed the same degree of erections for both depictions. Significance was found between interaction of groups x stimulus material ( $F=4.31$ ,  $df=3.36$ ,  $p<.01$ ). “The analysis yielded a significant main effect of stimulus content and a significant interaction of group x stimulus” (p 898).

### Study 2

Quinsey, Chaplin and Varney (1981) *A Comparison of Rapists' and Non-Sex Offenders' Sexual Preference for Mutually Consenting Sex, Rape, and Physical Abuse of Women*. Score 65 per cent REA Only.

Quinsey, Chaplin and Varney (1981) conducted a study with a sample of 60 rapists and ten non-sex offenders in a maximum psychiatric institution in Canada with a control group of 20 non-patients. This measured penile tumescence in response to depictions of consenting sex, rape and physical violence towards women. Pornographic material included five rape narratives in which significant force and degradation were used with an unwilling female stranger (p 131). The study found that the rapists were the only group to respond more to the rape than the consenting sex ( $F(1, 56) = 5.88$ ,  $p<.025$ ). Rapists were less responsive to the consenting sex narrations than the community subjects with altered instructions, ( $F(1,138) = 3.97$ ,  $p<.05$ ). The results highlight “there was a strong effect of stimulus category respectively; and a significant group by stimulus category interaction” (p 132).

### Study 3

Quinsey, Chaplin and Upfold (1984) *Sexual Arousal to Non-sexual Violence and Sado-masochistic Themes Among Rapists and Non-Sex offenders*. Score 55.5 per cent REA Only.

Quinsey, Chaplin and Upfold (1984) compared the response of 20 sex offenders (two of whom had been charged with murder that occurred as part of a sexual assault) with ten non-sex offenders and ten men from the local community. The study found that rapists showed more sexual arousal to rape depictions and less to consenting sex stories than the control subjects. "In the first analysis (group x sex x category) all effects and their interactions were significant" (p 654).

Rapists responded less to the consenting sex with a female partner category than control subjects ( $F(1,103) = 37.52, p < .001$ ), but more to the rape with a female victim category ( $F(1,103) = 20.70, p < .001$ ) and the nonsexual violence with a female victim category ( $F(1,103) = 55.52, p < .001$ ), with the reason given by the authors that these 'descriptions resemble violence in a sexual context'. The authors concluded that the amount of violence in the rape descriptions is critical in differentiating rapists from non-sex-offenders (p 651).

### Study 4

Quinsey and Chaplin (1984) *Stimulus control of rapists' and non-sex offenders' sexual arousal*. Score 50 per cent REA Only.

Not all research with sexual offenders has found rapists more aroused by rape pornography than consenting sexual activity. Quinsey and Chaplin (1984) compared the sexual arousal of 15 rapists and 15 non-sexual offenders to material which included 'neutral scenes, consenting heterosexual activity in which the female partner was active or passive, and rape scenes which varied according to whether the female victim resisted and displayed either pleasure or pain'. Non-sex offenders responded most to consenting sex, whereas the rapists' responses did not vary over the various categories of consenting and non-consenting heterosexual activity (p 169). "The Group x Consent variable revealed a z score of (78.04,  $p < .01$ ); showing that rapists respond more to rape cues in relation to consenting cues. Non-rapists responded less to the victim suffer variable than to the victim enjoy variable ( $F(1,28) = 9.19, p < .01$ ) whereas the rapists showed no significant difference ( $F < 1$ )" (p 174).

### Study 5

Marshall (1988) *The use of sexually explicit stimuli by rapists, child molesters, and non-offenders*. Score 67 per cent REA and meta-analysis.

Marshall (1988) combined experimental exposure in the laboratory to measure sexual arousal to rape and consenting sex depictions with self-reports taken from in-depth interviews about current and pubescent pornography use with 89 non-incarcerated sexual offenders in a treatment clinic and a control group of men not known to be offenders. The study found that 67 per cent of the child molesters and 83 per cent of rapists were current users of either hard core and/or rape and/or child pornography (p 274). There were no significant differences between the groups on arousal to forced sex, but rapists were more frequently exposed to pornography during pubescence. "Chi-squared analysis revealed significant differences between groups in terms of exposure during pubescence." (p 280) ( $\chi^2(4, N = 25) = 40.63, p < .001$ ) and were more likely to entertain deviant sexual fantasies during masturbation. (p 277) The study found significant differences with regard to whether the material served to instigate sexual offences ( $\chi^2(4, N = 29) = 13.53, p < .01$ ). Thirty-three per cent of the rapists said they 'intentionally viewed forced sex material as part of their deliberate pre-offence preparation' (p 280). In addition nearly half of the rapists used hard-core pornography to incite rape fantasies. High frequency masturbators were far more likely to be current users and to use the material to instigate their crimes (p 283). Moreover, when compared to control groups, these offenders reported substantially greater use of sexually explicit material, and that current use was significantly related to the chronicity of their sexual offending (p 267).

## Study 6

Beauregard, Lussier and Proulx (2004) *An Exploration of Developmental Factors Related to Deviant Sexual Preferences Among Adult Rapists*. Score 72 per cent REA Only.

The study by Beauregard, Lussier and Proulx (2004) explored the developmental factors related to deviant sexual preferences among adult rapists. Initially it measured sexual arousal to rape depictions involving rape with physical violence and rape with humiliation for 118 incarcerated rapists. Semi-structured interviews were then used to assess use of pornography in childhood and adolescence. The study found that arousal to both rape depictions was positively correlated with incest, use of pornography and deviant sexual fantasies ( $p < .05$  and  $p < .01$ ) (pp 151-161).

## Qualitative Sexual Offender Case Study

Jensen, R. (1995) *Pornographic Lives Violence Against Women Vol.1 (1)* pp 32-54. Score 92.5 per cent REA Only pp. 35-36.

### Excerpts from interviews with two sexual offenders are summarised here

'Craig began heavy pornography consumption at age 18 when he joined the marines. He described experiencing a "rush" from violent pornography like he got from drugs. Shortly after that he also began using prostitutes, sometimes paying a high price to be allowed to tie up the women and whip them. He later repeated [this] with women who were not prostitutes, beating them up "because towards the last [before his arrest] that was the only way I could get aroused." In a long-term relationship he "used a lot of force, a lot of direct demands that in the movies women would just cooperate. And I would demand stuff from her. And if she didn't, I'd start slapping her around".

'Kevin was convicted of the sexual abuse of two six-year-old girls, and he said he had committed several other rapes and acts of sexual abuse. He was a heavy user of pornography and had started with the discovery at age 11 of a friend's father's *Playboy* magazines. He described various pornographic films that excited him: 'slapping and hair pulling', 'women tied to beds with men using whips and handcuffs and men penetrating them with objects such as pop bottles', stuff he thought was 'kind of sick' but he got into it more. He described one of those movies involving 'pistol whipping', and a woman 'chained up like a dog in a doghouse' and a 'guy would come out and stick her head in the dog bowl and then have sex with her from behind...at first I thought it was disgusting, but then as time wore on I did get into it more. I got excited by it more.' His view was: 'The pornography actually helped me work into my abuse, I feel. It accelerated that appetite for more... Because if I wouldn't have been introduced to a lot of this, and got my appetite whetted, then I don't think I'd thought of half the deviant things I've done' (pp 40-48).

## Surveys of victimised women

### Study 1

Sommer and Check (1987) *An Empirical Investigation of the Role of Pornography in the Verbal and Physical Abuse of Women*. Score 59.2 per cent REA Only.

Sommers and Check (1987) conducted a survey of 21 'battered women drawn from a shelter' and 21 women in a comparison group drawn from the university to investigate the role of pornography in the verbal and physical abuse of women (pp 189-209). The study found that:

- the partners of the battered women read or viewed significantly greater amounts of pornographic materials than the partners of the comparison group;
- thirty-nine per cent of the battered women in contrast to three per cent of the comparison group had been asked to do what was portrayed in the pornography; and

- the 'battered women experienced significantly more sexual aggression at the hands of their partners than did women in the comparison group' (p 189).

### Study 2

Cramer and McFarlane (1994) *Pornography and Abuse of Women*. Score 62 per cent REA Only.

Cramer and McFarlane (1994) conducted a survey of 87 'battered women filing charges against their male partner at the district attorney's office in a large metropolitan city' (pp 268-272). Pornographic material involved rape with physical violence. The study found 'a strong association between men's use of violent pornography and physical [and sexual] abuse of women' (p 271) and specifically that:

- forty per cent of the battered women reported that the men used sexually violent material, and 26 per cent said this was referred to during their abuse;
- fifty-three per cent of those women had been shown pornography and then asked or forced to re-enact the scene or to pose for pornographic pictures; and
- forty-one per cent reported being raped, with nearly three-quarters of these saying the rapist used pornographic material.

### Study 3

Cramer, McFarlane, Parker, Soeken, Silva and Reel (1998) *Violent Pornography and Abuse of Women: Theory to Practice* (pp 319-332). Score 65 per cent REA Only.

Cramer *et al.*, (1998) conducted a prospective cohort study of 198 women attending a public clinic who were pregnant and reported having been abused by their male partner in the year prior to or during pregnancy. They were assessed for severity of abuse and their partners' use of pornography and then assigned to a control group and followed until the baby was 12 months of age. Pornography was defined as 'sexually violent scenes where a woman is being hurt, e.g. held or tied down' (p 326). The study found that:

- 40.9 per cent indicated that their abusers used sexually violent pornography;
- one-quarter of abusive men forced their partner to participate with them in their use of sexually violent pornography; and
- the severity of violence used against women was highest for those women who reported that the abuser asked or forced them to look at, act out or pose for pornographic pictures (p 329).

### Study 4

Silbert and Pines (1984) *Pornography and Sexual Abuse of Women* (pp 857-869). Score 55 per cent REA Only.

The sample in the study conducted by Silbert and Pines (1984) comprised 200 current street prostitutes (70% under 21, almost 60% under 16). Pornographic material included snuff (i.e. sexual murder) and extreme violence. The study found that: 'Out of 193 cases of rape, 24 per cent of victims mentioned allusions to pornographic material on the part of the rapist [who typically] 'referred to pornographic materials he had seen or read and then insisted that the victims not only enjoyed the rape but also the extreme violence'.

In 12 per cent of the 193 cases, the victims told the rapists they were prostitutes and received more violent abuse with rapists referring to prostitutes in specific pornographic films. One rapist was quoted as saying: 'you were in that movie... You know you want me to kill you after this rape just like [in that film]'. That woman was raped at knifepoint with threats to kill' (pp 364-365).

This study did not set out to research pornography, and all of this information was provided without the subjects having been asked any explicit question about pornography. This suggests that the levels of rape and physical and sexual assault involving extreme pornographic material may have been considerably higher if the question had been asked. The authors concluded that: ‘many of the references to pornography indicated that the rapists were imitating abusing males in pornographic materials, and believed that, as the victims of pornography, their victims must enjoy the abuse’.

### **Effects on users and links with sexual and violent offending**

#### **Meta Analysis Five**

Oddone-Paolucci, Genuis and Violato (2000) *A Meta-Analysis of the Published Research on the Effects of Pornography*. Score 87.5 per cent 46 studies with a sample size of 12,323.

A positive d indicates exposure to pornography has a negative outcome; a negative d indicates a positive outcome to pornography exposure in relation to sexual deviancy, sexual perpetration, intimate relationships and rape myth acceptance. “No negative d’s emerged in the current meta-analysis, thereby indicating the consistent negative effect of exposure to pornography in each of these four areas” (p 51).

#### **Qualitative Study**

##### **Records of serial sexual killers**

Dietz, P. E., Hazelwood, R. R. and Warren, J. (1990) *The Sexually Sadistic Criminal and His Offences*. Score 50 per cent REA Only.

Dietz, Hazelwood and Warren (1990) conducted a study of the case files of 30 sexually sadistic criminals drawn from a pool of cases referred to the National Centre for the Analysis of Violent Crime based on police investigative reports, crime scene photographs, victim statements, reports of interviews with family members, confessions, psychiatric reports, grand jury or trial transcripts, pre-sentencing reports, prison records, and manuscripts, diaries, photographs, sketches, audio tapes, videotapes and threatening letters produced by the criminals. They found that the following sexual offences occurred: rape with extreme physical and sexual violence, torture and murder. In 53 per cent of cases these sexual assaults were tape recorded (p 170).

## Annex E. Table of studies reviewed in five meta-analyses and REA

This table lists the 161 studies covered by the REA. It comprises the five meta-analyses identified in the REA, all of the primary studies included in one or more of them, and all of the primary studies identified in the REA.

### Key to Annex E table

1 = Allen, D'Alessio, Brezgel 1995a

2 = Allen, Emmers, Gebhardt & Giery 1995b

3 = Allen, D'Alessio, Emmers-Sommers 1999

4 = Oddone- Paolucci, Genius & Violato 2000

5 = Hald, Yuen, Pitpitan & Malamuth 2006

6 = Itzin, Taket & Kelly REA 2007

Study Author/s	Date	1	2	3	4	5	6
Abel, Barlow, Blanchard & Guild	1977	√	√	√	√	√	√
Allen, D'Alessio, Brezgel	1995a						√
Allen, D'Alessio, Emmers-Sommers	1999						√
Allen, Emmers, Gebhardt & Giery	1995b						√
Barbaree & Marshall	1989			√			
Barbaree, Marshall & Lanthier	1979			√			
Barak, Fisher, Belfry & Lashambe	1999					√	
Barnes, Malamuth & Check	1984a						√
Barnes, Malamuth & Check	1984b						√
Baron	1974a	√			√		
Baron	1974b	√			√		
Baron	1978	√					
Baron	1979	√			√		
Baron	1990				√		
Baron & Bell	1973	√					
Baron & Bell	1977	√			√		
Bauserman – study 1	1998						√
Bauserman – study 2	1998						√
Baxter, Barbaree & Marshall	1986			√			
Beauregard, Lussier & Proulx	2004						√
Becker & Stein	1991			√			
Bergner & Bridges	2002						√

Study Author/s	Date	1	2	3	4	5	6
Boeringer	1994				√	√	√
Briere, Henschel & Smiljanich	1992				√		
Briere, Malamuth, & Check	1985				√		
Burgess, Hartman, McCausland & Powers	1984				√		
Burt	1980		√				
Cantor, Zillmann & Einsiedel	1978	√			√		
Carter, Prentky, Knight, Vanderveer & Boucher	1987			√			
Ceniti & Malamuth	1984						√
Check – study 1	1985		√			√	
Check – study 2	1985		√				
Check & Guloien	1989						√
Condrun & Nutter	1988			√			
Cook & Fosen	1971a			√			
Cook & Fosen	1971b			√			
Corne, Briere & Esses	1992				√		
Cramer & McFarlane	1994						√
Cramer, McFarlane, Parker, Soeken, Silva & Reel	1998						√
Davis & Braucht	1971			√	√		
Demaré, Briere, & Lips	1988		√		√		√
Demaré, Lips & Briere	1993				√	√	
Dietz, Hazelwood & Warren	1990						√
Donnerstein	1980	√			√		√
Donnerstein & Barrett	1978	√			√		
Donnerstein & Berkowitz – study one	1981	√					√
Donnerstein & Berkowitz – study two	1981	√	√		√		√
Donnerstein & Hallam	1978	√			√		
Donnerstein, Donnerstein, and Evans	1985	√					
Earls & Proulx	1986			√			
Emerick & Dutton	1993			√	√		
Emmers-Sommer & Burns	2005					√	
Fedora, Reddon & Yeudall	1986			√			
Fedora, Reddon, Morrison, Pascoe & Yeudall	1992			√			

Study Author/s	Date	1	2	3	4	5	6
Fisher & Byrne	1978				√		
Fisher & Grenier – study 1	1994						√
Fisher & Grenier – study 2	1994						√
Fisher, Cook & Shirkey	1994				√		
Ford & Linney	1995				√		
Frenzel & Lang	1989			√			
Freund & Langevin	1976			√			
Freund, Chan & Coulthard	1979			√			
Freund, Scher, Racansky, Campbell & Heasman	1986			√			
Garcia	1986		√			√	√
Garcia, Brennan, DeCarlo & McGlennon	1984						
Gentry	1991				√		
Glass, McGaw & Smith	1981				√		
Goldstein	1973			√			
Hald, Yuen, Pitpitan & Malamuth - meta-analysis	2006						√
Hald, Yuen, Pitpitan & Malamuth - primary study	2006						√
Hall, Proctor & Nelson	1988			√			
Harris	1995				√		
Herret	1993		√				
Hinton, O'Neill & Webster	1980			√			
Jaffe & Berger	1977	√			√		
Jaffe, Malamuth, Feingold, & Feshbach	1974	√			√		
Jensen	1995						√
Johnson & Moore	1993				√		
Johnson, Kupperstein & Peters	1971			√			
Kolarsky & Madlafousek	1972			√			
Kolarsky & Madlafousek	1983			√			
Krafka	1985		√				
Krafka & Prentky	1992			√			
Lang, Black, Frenzel & Checkley	1988			√			
Langevin, Lang, Wright, Handy, Frenzel & Black	1988			√			

Study Author/s	Date	1	2	3	4	5	6
Langevin, Ben-Aron, Coulthard, Heasman, Purins, Handy, Hucker, Russon, Day, Roper, Bain, Worzman & Webster	1985			√			
Leonard & Taylor	1983	√			√		
Linder	1953			√			
Linz	1985		√				
Lohr, Adams & Davis – study 1	1997						√
Lohr, Adams & Davis – study 2	1997						√
Lopez & George	1995				√		
Malamuth	1981a						√
Malamuth	1986		√				
Malamuth & Ceniti	1984	√					
Malamuth & Ceniti	1986		√				√
Malamuth & Check	1980a						√
Malamuth & Check	1980b		√				√
Malamuth & Check	1981		√				
Malamuth & Check	1983						√
Malamuth & Check – study 1	1985		√			√	√
Malamuth & Check – study 2	1985		√				
Malamuth, Addison & Koss	2000						√
Malamuth, Haber & Feshbach	1980		√				√
Malamuth, Heim & Feshbach – study 1	1980						√
Malamuth, Heim & Feshbach – study 2	1980						√
Marques	1981			√			
Marshall	1988			√			√
Marshall, Barbaree & Butt	1982			√			
Marshall, Barbaree & Christophe	1986			√			
Mayerson & Taylor	1987		√				
McKenzie-Mohr & Zanna	1990				√		
Meyer	1972	√			√		
Milburn, Mather & Conrad	2000						√
Monto & Hotaling	2001					√	
Mosher	1988		√				
Mosher & Katz	1971	√					
Mueller & Donnerstein – study one	1981	√			√		

Study Author/s	Date	1	2	3	4	5	6
Mueller & Donnerstein – study two	1981	√			√		
Murphy, Haynes, Stalgaitis & Flanagan	1986			√			
Norris, George, Davis, Martell & Leonesio	1999						√
Nutter & Kearns	1993			√			
Oddone-Paolucci, Genuis & Violato	2000						√
Ohbuchi, Ikeda & Takeuchi	1994						√
Padgett, Brislin-Slutz & Neal – study 1	1989		√		√		
Padgett, Brislin-Slutz & Neal – study 2	1989		√				
Padgett, Brislin-Slutz & Neal - study 3	1989		√				
Proulx, Aubut, McKibben & Cote	1994			√			
Quinsey & Chaplin	1984			√			√
Quinsey & Chaplin	1988b			√			
Quinsey, Chaplin & Carrigan	1979			√			
Quinsey, Chaplin & Upfold	1984						√
Quinsey, Chaplin & Varney	1981			√			√
Quinsey, Chaplin, Bergersen & Holmes	1975			√			
Ramirez, Bryant, & Zillmann	1982	√					
Rosene	1971	√					
Sapolsky & Zillmann – study one	1981	√			√		
Sapolsky & Zillmann – study two	1981	√			√		
Saunders & Naus	1993				√		
Senn & Radtke	1990						√
Seto & Barbaree	1993			√			
Seto & Walker	1996			√			
Shaw	1999						√
Silbert & Pines	1984						√
Smeaton & Byrne	1987		√				
Sommers & Check	1989						√
Stock	1983		√				
Tannenbaum	1971	√					
Tascher	1983	√					
Vega & Malamuth	2006					√	
Walker	1971			√			
White	1979	√			√		

Study Author/s	Date	1	2	3	4	5	6
Wolf	1986				√		
Wydra, Marshal, Earls & Barbaree	1983			√			
Zillmann	1971	√			√		
Zillmann & Bryant	1982		√		√		√
Zillmann & Bryant	1986						√
Zillmann & Sapolsky	1977	√			√		
Zillmann, Bryant & Carveth	1981	√			√		√
Zillmann, Hoyt & Day	1974	√			√		
Zillmann, Bryant, Comisky, & Medoff	1981	√			√		

## Annex F. Critical analysis of disputed experimental studies

Critical Analysis of Studies Listed by Fisher and Grenier (1994) as Failing to Confirm that Violent Pornography is Associated with Antiwoman Thoughts and Acts from Malamuth, N. M., Addison, T. and Koss, M. (2000) Pornography and Sexual Aggression: Are there Reliable Effects and Can We Understand them? *Annual Review of Sex Research*.

### Study – Linz, Donnerstein and Penrod (1988)

#### Fisher and Grenier’s Summary –

“Exposure to sexually violent films had no effect on men’s rape myth acceptance” (p.25).

#### Malamuth *et al.*, (2000) Discussion of the Findings –

The primary focus of this research was on the effects of exposure to ‘slasher films’ depicting much suffering to the victim on the audience’s emotional desensitisation and not on attitudes such as rape myth acceptance. There was no condition that included the type of depiction most often shown in experimental research to affect attitudes of this type, such as depictions showing that women derive pleasure from being aggressed against (e.g., Malamuth and Check 1981). There were several types of dependant measures included. Although Fisher and Grenier are correct in noting that there were no significant effects on rape myth acceptance (which, as noted, would appear unlikely with this type of exposure), significant predicted effects were found on measures assessing emotional and sympathetic reactions to rape victims. The findings did show ‘subjects exposed to R-rated film violence against women showed a tendency to be less sympathetic to the victim of rape portrayed in the trial.... More robust was the finding that the R-rated violent film subjects were less able to empathise with rape victims in general when compared with no exposure control subjects and subjects exposed to other types of films. Level of film exposure, however, affected specific sympathy and general empathy differently: Longer film exposure was necessary to affect the general empathic response. In this regard, the findings are similar to other investigations that have found less sensitivity for rape victims following exposure to violent pornography’ (p.766).

### Study – Malamuth and Ceniti (1986)

#### Fisher and Grenier’s Summary –

“Exposure to sexually violent films had no effects on men’s self-reported likelihood to rape...Exposure to sexually violent films and sexually violent written stimuli, compared to equivalent exposure to sexually non-violent materials, had no effect on aggression by men against a female confederate” (p.25).

#### Malamuth *et al.*, (2000) Discussion of the Findings –

There are two important considerations here that Fisher and Grenier fail to note. First, seldom have previous researchers found that exposure to any type of pornography affected the self-reported, ‘likelihood of raping’ dependent measure. This measure appears to reflect a relatively stable attraction to sexual aggression (Malamuth, 1989a, 1989b) that is not changed by short-term exposures, as implemented in experimental studies. (As noted later in this article, such reported likelihood had been consistently found to correlate with long-term pornography exposure with this type of dependent measure, and these were quite limited. Check and Guloien (1989) found the effect only for high psychoticism participants and not for others, a moderating variable not assessed by Malamuth and Ceniti. The only other experiment that could be found reporting such an effect was never published, but was briefly described within a chapter by Donnerstein (1984). It differed considerably from Malamuth and Ceniti’s study in several respects, including the lack of neutral or no-exposure control group comparison. Second, Malamuth and Ceniti assessed only long-term

effects (several days to two weeks after exposure). Such effects were not assessed in the other studies in the literature. Therefore, the fact that in the Malamuth and Ceniti study long-term effects were not found on reported likelihood of raping or on laboratory aggression is not inconsistent with the experimental literature as a whole, where the findings have shown short-term effects on laboratory aggression. These have typically been explained by short-term activation or priming of aggressive tendencies (Malamuth 1989, Malamuth and Ceniti 1986). Taken as a whole then, the Malamuth and Centini study does reveal the boundaries of the effects reported in the literature but does not reflect inconsistencies in the findings (as suggested by Fisher and Grenier).

## Study – Malamuth, Haber and Feshbach (1980)

### Fisher and Grenier's Summary –

"Exposure to sexually violent materials decreased men's acceptance of violence against women" (p.25).

### Malamuth *et al.*, (2000) Discussion of the Findings –

Malamuth *et al.* assessed the impact of exposure to a sadomasochistic portrayal on reactions to a rape story. ~~There was no direct measure of men's acceptance of violence against women, but one of the measures assessed punitiveness towards the rapist. It was found that males who had read the sadomasochistic version of the first story were more severe in their punitiveness towards the rapist than those had read the non-violent version. In addition, there were actually effects that may be considered negative effects of exposure to the sadomasochistic portrayals, but these were moderated by individuals' levels of aggression-anxiety. Men who were relatively low in anxiety about aggression and were exposed to the sadomasochistic version of the story tended to perceive that the rape victim experienced less pain and trauma and resisted the rape less. High aggression-anxious males, on the other hand, tended to become more conscious of the plight of the rape victim and the pain she experienced. Finally, for males exposed to the sadomasochistic portrayal of pain infliction as a source of pleasure, greater perception of pain was associated with greater sexual arousal, in contrast to the reverse for males who were not exposed to such a sadomasochistic portrayal. Taken together, the findings of this study are not very accurately described by Fisher and Grenier.~~

## Study – Demaré, Briere and Lips (1988)

### Fisher and Grenier's Summary –

Self-reported use of sexually violent materials uncorrelated with rape myth acceptance, endorsement of interpersonal violence against women, adversarial sexual beliefs, or attitudes towards women.

### Malamuth *et al.*, (2000) Discussion of the Findings –

This is indeed what was found in this study on these attitudes (and as shown in the meta-analyses discussed later it is the only segment of the research where reliable effects have been found). Fisher and Grenier then listed three studies which they claimed show that "sex offenders were no more likely than controls to use sexually violent materials" (p 25). The three studies are those by Langevin *et al.*, (1988), Marshall (1988) and Goldstein (1973). The authors believe that only the findings of the first of these are described accurately by Fisher and Grenier and, therefore, will discuss the other two studies next.

## Study – Marshall (1988)

### Fisher and Grenier's Summary –

"Sex offenders were no more likely than controls to use sexually violent materials" (p.25).

### Malamuth et al., (2000) Discussion of the Findings –

Marshall compared rapists, child incest molesters, non-incest child molesters and non-offenders in their use of 'hard-core' sexually explicit materials. He found that when comparing the "use of any type of 'hard-core' sexual stimuli," most groups of sexual offenders generally did use pornography more than non-offenders. For example, in terms of current use, 67 per cent of heterosexual child molesters and 83 per cent of rapists, as compared to 29 per cent of non-offenders, reported currently using pornography. As well, offenders often reported using pornography "as an instigator" to their crimes (35% of rapists).

Marshall collapsed his presentation of the results across different types of hard-core pornography and did not report the details of an actual separation by type of pornography. The only reference in his article to what may be labelled violent pornography is as follows: "child molesters do not have remarkably higher access to 'kiddy porn' than do other subjects nor do rapists show particularly greater use of forced sex material than do other subjects" (p 278). Therefore, Marshall indicated that rapists used pornography of various types more than non-offenders but there was not a "particularly greater" use of violent pornography (although it certainly appears that they also used this type of pornography more than non-offenders). Marshall further noted that a substantial number of rapists used consenting sex depictions to "incite rape images in the process of preparing himself to attack a woman" (p 280). In considering the implications of his findings on the various types of sexually explicit media, Marshall concluded that any treatment programme for these men must include consideration, not just of the rate and intensity of deviant thoughts, but also the possible functional relationship between exposure to sexually explicit materials and these deviant thoughts. Similarly, treatment programmes should attend to the possible link between exposure to such stimuli and the actual offensive acts of these men. Furthermore, the way in which sexually explicit depictions may encourage, or at least support, negative attitudes towards women and children, particularly in sexual matters must also be considered (p 285).

It is surprising, therefore, that Fisher and Grenier would present this study as providing data that violent pornography is not associated with sexually aggressive characteristics. The only conclusion that appears justified from these data is that violent pornography was not found to be more highly associated with offender status, but both types of pornography were often used by rapists.



## Annex G. Conditioning theory sexual offender case study

### Case Study Illustrating a Conditioning Theory of the Aetiology and Maintenance of Sex Offending

**Laws, D. R., Marshall, W, L. (1990) A conditioning Theory of the Etiology and Maintenance of Deviant Sexual Preference and Behaviour. *Handbook of Sexual Aggression*. (pp 218-220, 222, 225-226)**

As an illustrative example [of a conditioning theory] which we will continue to use throughout the balance of the chapter, let us consider how... a man might become a forcible rapist of adult females.

This is an elaboration of a case history from our files. The male in question experienced a conventional childhood until, at the age of 13 years'; he viewed a commercial film which contained very strong elements of sex and violence. In this film, the beautiful wife of a young professional is brutally abused and raped. As is typical of these films, it was difficult for the viewer to determine if the wife was actually resisting and fighting her assaulters or whether she was possibly enjoying the abuse. Our subject found the actress portraying the wife to be very sexually attractive, and during the rape scenes he produced a full erection.

The young male thought about the film for some time. Whenever he thought about the wife, he remembered the look on her face as she was being raped, but he could not remember if it was one of pain or pleasure. In his fantasy, she was provocative, inviting, and welcoming. He fantasised that she could not resist him, he was powerful, he could force himself upon her and, although she might resist, ultimately she gave in to him. As he imagined a variety of sexual activities with this woman, he began to develop strong sexual arousal and attraction to forceful sex with adult females by means of Pavlovian conditioning. He began to masturbate to these fantasies and, through the combination of genital stimulation and ejaculation, the Pavlovian associations were further reinforced by operant conditioning. Eventually, he broadened his masturbatory fantasies to include similar sexual activities with other adult females.

At the age of 14 years he began to date females of his own age. Although he was strongly attracted to female peers, he did not have age-appropriate social-skills. He wanted all females to be as sexually inviting as the woman in his fantasies and to expect frank sexual overtures, and he was surprised when he was repeatedly rebuffed by these young women. And the more he tried, it seemed, the more he was refused. He returned to masturbating while fantasising about being powerful in sexual relations with adult women.

At this time the content of his masturbatory fantasies began to increasingly involve elements of sexual violence, first about the rape scenes from the film, then about rape and violence in general, all directed toward adult females. Fantasies about consenting sex with females were arousing but not as much as those which contained rape. After a time, he no longer thought much about consenting sexual relationships with women.

At age 16 he forcibly raped a 38-year-old woman in the parking garage of an apartment building. He was very excited as he forced himself upon her, and when she fought with him and pleaded with him to stop, he thought momentarily about the actress in the film who, as he remembered it, first struggled, then enthusiastically submitted. After that, he did not think about the film any more.

In this initial example, we see [the conditioning] process at work. The subject had experienced a conventional heterosexually oriented childhood and was 'prepared' for sexual relationships with females. Unfortunately, the initial sexually arousing experience in his teenage years was the sex and violence film. This is exactly the sort stimulus to which Donnerstein, Linz and Penrod (1987) refer when they assert that it is not the sex or the violence alone that is dangerous in the development of sexual preferences; rather, it is the juxtaposition of sexual images with violence that creates tendencies toward sexual aggression and negative attitudes toward women.

The basic sexual arousal pattern of this client was established through Pavlovian and operant conditioning and further reinforced by masturbatory fantasy. In these fantasies, differential reinforcement, chaining and generalisation came into play as he imagined a variety of sexual behaviours with the woman in the film and other women. Those elements of the fantasies that produce and maintained arousal were incorporated into these imaginary chains, and those that did not were eliminated by differential extinction.

In early adolescence the subject made inappropriate attempts to establish conventional sexual relationships with same-aged females. These behaviours were punished or extinguished through lack of reinforcement. When he returned to his masturbatory activities, the Pavlovian and operant processes (differential reinforcement, chaining, and generalisation) were back at work, this time creating a deviant variation as a result of the introduction of elements of sexual violence in the fantasies.

The activities described in this example are not that unusual in the histories of sexual offenders. A single series of events, only slightly off the centre of a dimension of appropriate sexual behaviour, over time and almost by happenstance, creates all the necessary conditions for a very strong proclivity to engage in deviant sexual behaviour. As Van Wyk and Geist (1984) have shown in their extensive study of thousands of cases of early sexual experience, it is (in this case, regrettably) just as simple as that.

In this example of a young male learning to become a rapist, the influence of basic conditioning and differential consequences is described. Interwoven with these fundamental processes were strong social learning influences.

Learning to rape is rarely taught by participant modelling, although examples are available (e.g., performing a sexual assault to gain membership in a gang, participating in gang rapes). Vicarious symbolic modelling, however, plays an important role.

Before our subject performed his first rape, he gained access to pornographic materials in the form of videotapes and magazines which depicted adult women bound, gagged, and being sexually humiliated. Similar to his experience with the violent film, he often could not discriminate whether the expressions on the women's faces were of pain or pleasure. The pornography seemed to reinforce and legitimise rape, and thus reinforced his masturbatory fantasies as well. He did not question any of this.

Symbolic modelling was evident in his masturbatory fantasies. At first they were confined to relatively conventional fantasies about the women in the film, which generalised to other females. Later, the content shifted to more violent sexual activities with women, and finally to fantasies of rape.

As for self-labelling, he did not deceive himself after the first rape at age 16. Up to that point he was well aware of his failure with same-aged females, but he dismissed it as part of the price of growing up. When he was fully adult, he felt he would be able to perform with female peers. After the rape, however, when he compared his early social experiences with young females to his current violent masturbatory fantasies, he admitted to himself that sexual violence was far more arousing and satisfying. Although he did not use the word just yet, he believed he was probably a rapist.

By the age of 20, our subject had raped several women. He had no girlfriends and formed no close relationships with females. On occasion he had conventional sexual encounters with women he picked up in bars, or with prostitutes. He could initiate sex with these women, but he could only maintain his arousal if he imagined that he was raping them, torturing them, or even killing them. His masturbation fantasies centred around torture and murder, and he became increasingly interested in different varieties of violent pornography. Only during his rapes did he feel powerful and competent and fully engaged with the woman. He drank a lot, took drugs, and was angry most of the time. He thought a lot about raping and developing many plans for assaults he might perform.

Here we can see that the maintenance processes have done their work, firmly entrenching an elaborate behavioural repertoire of rape-oriented sexual preference. We also see the earlier processes acting - new conditioned associations being formed and the selective operation of differential reinforcement at work - as the subject moved almost completely away from conventional sexual intercourse to a distinct preference for forced sex. Sex with any female was no longer possible without accompanying rape-related imagery. The centrality of violent imagery was clearly reflected in his masturbatory fantasies, which shifted over time from relatively simple forced sexual encounters to images of torture, dismemberment and murder. As he narrowed the focus in these fantasies to more and more violent images, they became more exciting. Vicarious learning was still evident, as he sought increasingly bizarre and violent forms of pornography. Symbolic modelling became more elaborate, as he developed a variety of scenarios for potential future rapes. Both of these activities stimulated even further variations of his masturbatory fantasies.

Finally, the entire complex was fixed in place by intermittent reinforcement. As we indicated above, due to their socially disapproved nature, the overall likelihood of successfully accomplishing deviant sexual activities is relatively low. This low likelihood, however, is modified by the requirements for accomplishment of the particular deviant act. Thus, we would expect the incidence of easily performed deviant behaviours such as exhibitionism or voyeurism to be relatively high, while rape would occur at a relatively low frequency. In the present case, the requirements for successful accomplishment would be quite elaborate and hence, the frequency low. Thus, and this is extremely important, our subject's rape proclivity was very strongly reinforced on a highly intermittent schedule of long and variable intervals; this all but guarantees that, in the absence of effective therapeutic intervention, it would be maintained as a permanent disposition.



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This document reports on a rapid evidence assessment of the evidence of harm relating to exposure to extreme pornographic material. In particular, the review considered whether there is any evidence that exposure causes, or contributes to, sexual or violent offending.

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3 Summary Introduction and aims This rapid evidence assessment (REA) of the published research literature provides a specific Home Office focus after previous independent reviews on the effects of pricing and taxation on alcohol consumption and alcohol-associated harms. It looks specifically at the effects on crime-related outcomes.Â Criminal damage: The evidence was mainly from several modelling studies that project that tax and price increases would reduce criminal damage offences. Only one older observational study was located, with findings consistent with the modelling studies. The evidence base was weaker than for overall and violent crime. Robbery: The evidence on whether robbery rates were responsive to alcohol price changes was inconclusive.