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The Content of Contemporary, Mainstream Pornography: A Literature Review of Content

Analytic Studies

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Abstract

This paper provides a narrative review of recent studies (2005-2020) into the content of contemporary, mainstream pornography. Sex acts such as vaginal sex, fellatio and external ejaculation are ubiquitous within mainstream pornography. Cunnilingus, solo masturbation, or masturbation of a partner are all also relatively common. Condom use is infrequently depicted. While extreme sexual violence (e.g., rape) is rare, acts which some would consider to be violent (e.g., spanking) are common. Women in pornography typically enthusiastically engage in all sexual requests. Findings around the degradation of women are mixed. On some measures, men in pornography are more agentic than women; on other measures, the reverse is true.

Keywords: Pornography; Sexually Explicit Material; Content Analysis; Violence; Objectification

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Introduction

There is a growing recognition among sex educators that pornography has the potential to “teach” consumers (Albury, 2014). The lessons learnt from pornography may be harmful (e.g., when pornography models risky sexual behaviors) or positive in nature (e.g., assisting individuals to better understand their sexual identity; Attwood et al., 2018). Pornography may be an especially influential “teacher” of younger people, who may seek out pornography to fill gaps in their knowledge of sex and relationships that have not been addressed by formal sex education (Albury, 2014; Rothman et al., 2021). The idea that porn teaches consumers is a sentiment shared by many pornography effects researchers. Various theoretical frameworks are employed within the pornography effects literature (see Hald et al., 2014 for an overview), for example, radical feminist theory, social learning theory, and sexual script theory. While these frameworks were developed within different academic traditions, they are unified in their core assumption: that if pornography is able “teach” consumers, shaping their attitudes and behaviors (for better or for worse), it does so as a result of the kind of behaviors and relational dynamics which it routinely depicts.

Social learning theory (later expanded into social cognitive theory) asserts that much human behavior is learnt vicariously, by observing the consequences of others’ behavior (Bandura, 1971). If the behavior of an exemplary model is met with positive reactions, this can lead the viewer to come to expect the same positive reactions for engaging in said behavior. Modelling can be direct (directly observing someone’s behavior) or symbolic (observing behavior via media). Mass media models may be especially influential in that mass media often represent the consequences of modelled behaviors in vivid and unambiguous ways (Bandura, 2001, 2004). Modelling not only demonstrates new behaviors for the viewer, but may also weaken inhibitions against previously learned behaviors. Applying social learning theory to pornography, pornography may create positive

expectancies around engaging in certain behaviors (e.g., condomless sex, clitoral self-stimulation during sex) when these behaviors are shown to have an unambiguously positive outcome for the model (e.g., sexual pleasure for oneself and/or one's partner).

First proposed in the 1970s by Gagnon and Simon, sexual script theory posits that human sexual behavior is guided by “organized cognitive schema[s]” or “scripts” (Gagnon, 1990, p. 6). Wright's (2011) *acquisition, activation, and application model of media sexual socialization* (3AM) is a notable extension of sexual script theory and is frequently discussed in the pornography effects literature. The 3AM posits that sexual media plays an important role in the creation of schemas (schema acquisition), priming extant schemas (schema activation), and the utilisation of schemas to inform attitudes and behaviors (schema application). The 3AM proposes that scripting effects may be specific or abstract. A specific scripting effect would involve taking a script and directly applying it to a judgement or behaviour—for example, engaging in unprotected sex with a casual partner following use of pornography which depicts unprotected, causal sex (as demonstrated in Wright et al., 2016), or engaging in clitoral self-stimulation during partnered sex following pornography depicting this behaviour (as demonstrated in Kohut & Fisher, 2013). Abstract scripting involves inferring the worldview guiding a media model's behaviors and then using these worldviews to inform one's own behaviors or attitudes (see Hald et al., 2014 for a discussion of the association between pornography use and various attitudinal measures).

As can be seen, a core assumption of pornography effects theories is that if pornography shapes the beliefs and behaviours of consumers, it will do so in a way which reflects the messages contained within pornography. This raises an important question: What kind of messages are consumers exposed to through their consumption of pornography? This paper aims to answer this question, by providing a narrative review of recent studies (2005-2020) assessing the content of mainstream pornography, as well reviewing analyses of

pornographic website metadata (e.g., common search terms and content descriptors). It is hoped that this will be of use to sex educators—whether they are adopting a “porn as pedagogy” or “pedagogy on porn” approach (Albury, 2014)—when developing programs or working with individuals in a counselling capacity.

Method

Inclusion Criteria

The following inclusion criteria were established for the review: to be included studies must a) be written in English, b) have been published between 2005 and the time of the final search (November, 2020), and c) report a quantitative content analysis of mainstream image- or video-based pornography or a systematic review of such analyses.

The 2005 start date was selected to coincide with the shift from dial-up to broadband Internet in the home and the move toward Web 2.0 more generally (Ryan, 2010). Journal articles which were accessible at the time of the search but had not yet been assigned a volume or issue number (i.e., the article was an “advanced online publication”), were included (three of these articles have since been assigned a volume number and thus have a publication date of 2021).

Given our aim to assess the content of “mainstream” pornography (that is, the kind of pornography that the *average* consumer might engage with), content analyses of pornography that was judged (by the first author) to fall outside of the mainstream (e.g., analyses of videos from websites or production studios dedicated to a particular fetish/sub-genre) were excluded.¹ Studies of text-based pornography were also excluded (as there are relatively few such studies and it was reasoned that text-based pornography may qualitatively differ from

¹ Fritz and Paul (2017) content analysed videos from two specialized feminist pornography websites. However, they then compared this material to a sample of mainstream videos from Pornhub.com, so this study was included in the analysis.

image- or video-based content).² Studies that were excluded for these reasons are listed in Table 1. Studies of pornographic films were included for two reasons. First, although the Internet is the most utilised medium for accessing pornography, physical media are still used by some to consume pornography (see Miller et al., 2020). Second, it is now possible to download or stream feature length pornographic films via the Internet, blurring the distinction between film and Internet pornography.

Search Procedure

Studies for this review were initially identified through a search of Scopus conducted as part of separate literature review (see Miller et al., 2020). The search phrase used was constructed to return any studies with *pornography* or a derivative (using *porn* followed by the * wildcard) or *sexually explicit* in the title, abstract or keywords. The search phrase was constructed to be broad, and Scopus was chosen as it indexes articles from the sciences, technology, medicine, social sciences, and the arts and humanities. The search was carried out in 2017 and again in 2019. For the 2005 to 2019 period, this search returns just under 6000 references.

Subsequent to our initial searches, Carrotte et al. (2020) published a systematic review of 23 content analyses of pornography (published between 1986 and 2017), with a particular focus on violence and the sexual behaviors depicted in pornography. The reference list of this review was probed for any pertinent articles which may have been overlooked by our initial search. The authors report the search term they used to search the Medline database: (*porn** or "*sexually explicit*" or *erotic**) OR *Erotica*/ AND (*content ADJ2 analy** OR *content ADJ2 review** OR "*descriptive study*" OR *descri* ADJ2 content* OR *evaluat* ADJ2 content* OR *map* ADJ2 content*). Unlike our original search term, Carrotte and colleagues' search term

² A study analyzing DVD covers (Jensen, 2010) and a study analyzing written performer profiles (Brennan, 2018) were included. Although these studies are analyzing text, their aim is to provide insight into the content of video-based pornography. Thus, these studies were included.

would return articles which do not include the phrase *pornography* but are categorized under the index term *erotica*. We conducted an additional search of the databases Scopus, PsychINFO, and Medline (Pubmed) using a similar search phrase to Carrotte et al. (2020). This search was conducted in November, 2020 and limited to studies published since 2017 (this being when Carrotte and colleagues completed their final search). The exact phrase used to search Scopus was *((porn*) OR ("sexually explicit") OR (erotic*)) OR INDEXTERMS(Erotica) AND ((content W/2 analy*) OR (content W/2 review*) OR ("descriptive study") OR (descri* W/2 content) OR (evaluat* W/2 content) OR (map* W/2 content)) AND (LIMIT-TO(PUBYEAR, 2020) OR LIMIT-TO(PUBYEAR, 2019) OR LIMIT-TO(PUBYEAR, 2018) OR LIMIT-TO(PUBYEAR, 2017)).*³ After deleting duplicate cases, this search returned 2813 references.

Screening

Articles were sorted for inclusion or exclusion based on the first author's reading of the articles' title and abstract. If any of these inclusion and exclusion criteria were unclear based on the abstract, the first author turned to the full text for clarification. In total, 27 journal articles were identified for the review.⁴ Eleven of the identified articles are not discussed in the Carrotte et al. (2020) review (including the review itself). A book (McKee et al., 2008) is also included as it expands on the analysis reported in an article that was identified through the database search (McKee, 2005).

³ Carrotte et al. (2020) report the exact search phrase they used to search the database Medline (p. 4), but not the exact search phrases used for other databases. Databases differ in how search phrases are constructed (e.g., different databases use different operators for proximity searching). We attempted to replicate Carrotte et al.'s (2020) search term using the search operators required for each database.

⁴ A number of articles reported on in this review have overlapping samples. Shor (2019) and Shor and Golriz (2019) report analyses from the same sample of videos, with some of the videos analyzed in Shor and Seida (2019) also overlapping with this sample. Fritz et al. (2020), Fritz et al. (2021), Zhou and Paul (2016), and Zhou et al. (2019) all appear to be drawing from the same sample of videos (it is not directly stated, but all these articles include a statement indicating that the study was produced as part of a larger ongoing project, and similar details are reported around the dates of data collection and coding). Bridges et al. (2010) and Sun et al. (2008) used a similar sampling approach (sampling films from Adult Video News' most-rented list during the 2004-2005 period). Thus, there may be overlap in these samples also.

Data Extraction and Synthesis of Results

Once studies were identified, the first author conducted a preliminary reading to determine each article's primary area/s of focus (e.g., consent communication in pornography). Based on this process, subheadings were developed to reflect major thematic areas within this literature. The included articles and proposed subheadings were presented to a sex researcher not involved with the project, who was asked to review the subheadings. The final subheadings were: 1) violence in pornography, 2) objectification and degradation in pornography (this section includes articles reporting on depictions of sexual agency, or lack thereof), 3) sex acts in pornography, 4) representations of race/ethnicity, 5) performer appearance, 6) safe sex practices, 7) depictions of infidelity, and 8) consent communication.

The review does not aim to present an exhaustive list of all findings in relation to each study. Rather the focus is on presenting findings which exemplify these subheadings. Given the quantitative focus of Carrotte et al. (2020), this review aims to be more descriptive in nature. Table 2 outlines the studies identified as part of this review and the subheadings under which articles are discussed (some articles are discussed under multiple subheadings). For longer sections, Internet and film pornography are discussed separately, and a summary is then given. Pornographic website metadata is discussed following the review of content analyses.

Results

Violence

Carrotte et al.'s (2020) review presents statistics on violence within pornography in terms of the frequency of particular aggressive behaviors (name calling, spanking, hair pulling, gagging, choking, slapping, punching, kicking, torture, murder, and rape) across three mediums (Internet, DVDs, and VHSs). The authors purposely avoided reporting summary variables (e.g., percentage of scenes containing any kind of physical aggression).

However, these kinds of summary statistics are useful in answering questions around the prevalence of violence in pornography. Accordingly, the below discussion focuses on these summary variables (although we do report the most common aggressive behaviors, where applicable, to provide context). Readers interested in the prevalence of particular behaviors (e.g., choking) are directed toward Carrotte et al. (2020).

Internet

Fritz et al. (2020) have conducted the largest content analysis in this area. Their study employed a sample of 4009 heterosexual scenes taken from Pornhub.com (574 scenes) and Xvideo.com (3435 scenes). These scenes were selected using a systematic random sampling approach. Solo and same sex scenes were excluded from the sample. Scenes were coded for acts of physical aggression—using the definition “any action that clearly did or could reasonably be expected to cause physical harm to oneself or another person, *regardless of the perpetrator’s intent and the target’s response*” (p. 3045)—and verbal aggression—using the definition “any action that clearly did or could reasonably be expected to cause psychological harm to oneself or another person, *regardless of the perpetrator’s intent and the target’s response*” (pp. 3045-3046). The gender of the perpetrator and targeted person was also noted, as was the reaction of the targeted person. Coding was conducted by a team of trained raters. High percentage agreement between raters is reported across indicators (89% to 100%).

Among the Pornhub scenes, 10% contained at least one instance of verbal aggression and 45% contained at least one instance of physical aggression—with the three most common physically aggressive acts being spanking (present in 32% of scenes), slapping (12%), and gagging (12%). Among the sample of Xvideo scenes, 10% contained at least one instance of verbal aggression, with 35% containing physical aggression. Again, the three most common physically aggressive acts were spanking (present in 24% of scenes), slapping (7%), and gagging (7%). Extreme acts like torture were rarely depicted, occurring in fewer than 1% of

scenes in both samples. The authors do not report any instances of real or simulated rape, however it is not directly specified as to whether these behaviors were not found, or were simply not coded for.

In both the Pornhub and Xvideo samples around three-quarters (76% in both cases) of the physically aggressive acts were performed by men and targeted toward women (male-to-female aggression), with the next most common gender configuration being female-to-female aggression (14% and 12% respectively). In terms of verbal aggression, male-to-female verbal aggression was most common (51% and 42% of instances of verbal aggression), followed female-to-female verbal aggression (14% and 21%). If focusing solely on the gender targeted, women were the targets of physical aggression much more frequently than men, with similar findings being observed for verbal aggression. Women rarely acted with displeasure in response to either verbal or physical aggression; instead acting either neutrally or with pleasure in over 90% of cases.

The authors also analyzed the frequency of violent acts by genre (teen, mature, amateur, and hardcore). Scenes labelled amateur featured significantly fewer acts of aggression than the cross-genre average (for both Pornhub and XVideo). XVideo hardcore scenes contained significantly more acts of aggression than average.

Shor and Seida (2019) analysed 269 videos uploaded to Pornhub between 2008 and 2016. Half of their sample videos were selected for being popular (in terms of number of audience views), with the remaining clips being selected at random. The authors used four measures of aggression: verbal aggression (such as name calling), suggestions of aggression in video title, visible aggression irrespective of intent (any instance of a predetermined list of aggressive acts), and “non-consensual” aggression (aggressive acts which are met with verbal or non-verbal signs of resistance). Verbal aggression was depicted in 50% of random videos and 29% of popular videos. Visible aggression occurred more frequently in random videos

compared to popular videos (37% compared to 13%). Non-consensual aggression was infrequent, occurring in 9% of random videos and 1% of popular videos. The percentage of random and popular video titles to suggest aggression did not differ (11% in both cases). The authors state that they found no evidence that aggression had become more common in mainstream pornography over the period examined. In fact, they found that, by some metrics, pornography is becoming less aggressive.

Fritz and Paul (2017) compared 100 scenes of mainstream (randomly selected from the five largest categories on Pornhub), “for-women” (randomly selected from the for-women category of Pornhub), and feminist pornography. The feminist scenes were taken from Lustcinema.com (which primarily depicts heterosexual partners) and Crashpadseries.com (which primarily depicts queer partners). Physical aggression was present in 31% of mainstream scenes (as in Fritz et al., 2020, aggression was defined without regard to the intent of the perpetrator). These aggressive acts included spanking, gagging (inserting the penis very far into the partner’s mouth, causing the partner to gag), and hitting. Compared to mainstream pornography, physical aggression was slightly less common in the for-women scenes (24%), occurred about as frequently in the heterosexual feminist scenes (26%), and was more common in the queer feminist scenes (54%). Verbal aggression occurred in 5% of mainstream scenes, 2% of for-women scenes, 2% of heterosexual feminist scenes, and 14% of queer feminist scenes. Women were the targets of aggression significantly more often than men in mainstream pornography, whereas men and women were equally likely to be the targets of aggression in for-women and heterosexual feminist pornography.

Klaasan and Peters (2015) analysed the 100 most viewed videos from four popular tube-sites. They found 37% of scenes to contain violence against women and 3% to contain violence against men (violence was assessed without reference to the intent of either party). These violent acts were composed primarily of spanking and gagging. Women generally

responded positively or neutrally to these acts. Non-consensual sex occurred in 6% of videos, and men and women were equally likely to be the target of non-consensual sex.

Vannier et al. (2014) analysed teen and MILF (*mother I'd like to fuck*) Internet videos (randomly selected from the MILF and teen sections of popular tube-sites). While they did not specifically set out to assess videos for violence or aggression, they did record the frequency of specific sexual acts. In their study, spanking was found to occur in 28% of teen and 26% of MILF videos. Themes of persuasion (where one partner convinced or pressured another to engage in sex) were relatively uncommon, occurring in 16% of videos (12% contained verbal persuasion, 1% contained physical persuasion, and 3% contained both verbal and physical persuasion). Frequency of persuasion did not differ between teen and MILF videos. Shor (2019) similarly compared teen and “adult” videos (videos featuring women over 20, which would include, but is not limited to, MILF videos) using a sample of 172 popular Pornhub clips (this sample is also reported on in Shor & Golriz, 2019, with respect to depictions of race, see Representations of Race/Ethnicity section). As in Shor and Seida (2019), videos were analysed for visible aggression as well as non-consensual aggression. Visible aggression was present in 43% of videos. Splitting the sample by video type, visible aggression was present in 36% of teen videos and 46% of adult videos (a non-significant difference). Non-consensual aggression was present in 15% of videos in the overall sample, 11% of teen videos and 17% of adult videos (again, a non-significant difference). Gorman et al. (2010) analysed 45 Internet videos randomly selected from the first pages of popular tube-sites. Only one of these videos were categorised as violent. However, they do state that five videos depicted “a show of force by male actors when female actors resisted their sexual acts” (p. 137).

The above studies have all tended to focus on heterosexual pornography (or at least did not explicitly set out to sample pornography aimed at gay audiences).⁵ In contrast, Downing et al. (2014) analysed a sample of 302 videos featuring male same-sex performers. The authors sampled the most recently uploaded videos from the male same-sex sections of Gaytube.com, Pornhub.com, Youporn.com, Xtube.com, and Xvideo.com at randomly selected times. Sixteen percent of scenes were found to contain spanking and 10% contained bondage or sadomasochism. The authors note that much of this spanking consisted of “a single slap on the buttocks” (p. 815). Seida and Shor (2021) also assessed violence in gay pornography. They compared highly viewed gay male, lesbian, and heterosexual videos from Pornhub (70 videos in each category) in terms of the presence of visible aggression, non-consensual physical aggression, and verbal aggression. Visible physical aggression occurred significantly more frequently in the gay (26% of scenes) and lesbian videos (24%), compared to the heterosexual videos (13%). Non-consensual violence occurred more frequently in the gay male videos (14%) compared to the heterosexual videos (1%). There was no difference in the prevalence of non-consensual aggression between the lesbian (6%) and heterosexual videos. These significant differences in visible aggression and non-consensual aggression remained, even after statistically controlling for covariates such as production type (professional or amateur). No instances of verbal aggression were observed in the heterosexual videos, while verbal aggression was present in 7% of the lesbian videos (a statistically significant difference) and 3% of the gay male videos (a non-significant difference). Across all three video types, the most common aggressive behavior was spanking.

Film

⁵ It can be difficult to determine what constitutes “heterosexual pornography” as pornography may depict same-sex behavior between women, while being targeted toward a heterosexual male audience.

Bridges et al. (2010) analysed 300 scenes from bestselling pornographic films. They found 88% of the scenes to contain acts of aggression, with an average of 11.52 aggressive acts per scene. The most common type of verbal aggression was name calling (97% of the verbally aggressive acts recorded). The most common types of physical aggression were spanking (36% of the physically aggressive acts recorded), gagging (28%) and open-hand slapping (15%). The remaining aggressive acts consisted of hair-pulling, choking, and bondage. Women were overwhelmingly the targets of aggression. Aggressive behavior was met with displeasure in only 3% of cases. Sun et al. (2008) compared bestselling pornographic films from male and female directors. They found that 85% of male-directed and 77% of female-directed scenes contained violence. Females were most likely to be the targets of violence. The three most commonly depicted acts of physical aggression were: spanking, gagging, and open-hand slapping. Once again, violent acts were rarely met with displeasure.

McKee (2005; also reported on in McKee et al., 2008) analysed 838 scenes from a list of Australia's bestselling pornographic films. In sharp contrast to Bridges et al. (2010), McKee found violence to be extremely rare, occurring in 2% of scenes only (see below for a discussion of how these studies differed in their operationalization of aggression). Salmon and Diamond (2012) compared bestselling heterosexual and gay pornographic films. They found violent acts to be uncommon in both heterosexual and gay pornography (mean number of violent acts per film was < 2), with no significant difference between gay and heterosexual pornography in terms of the prevalence of violence.

Summary

As can be seen, estimates of the prevalence of violence in mainstream pornography differ markedly, ranging from 2% of film scenes (McKee, 2005) to 88% of film scenes (Bridges et al., 2010). While some of the discrepancies seen in this literature can be attributed

to methodological differences—sampling films versus Internet videos or differences in the unit of analysis (e.g., entire films, entire videos, scenes)—McKee (2015) suggests that these divergent findings can primarily be attributed to differences in the way in which violence and aggression are operationally defined. He observes that studies which produce lower estimates tend to include a consideration of consent in their operational definition of violence. For example, McKee et al. (2008) operationally defined violence as “Any form of behavior directed toward the goal of harm; or injuring another living being *who is motivated to avoid such treatment*” (p. 52).

Authors such as Bridges et al. (2010), Sun et al. (2008), Fritz et al. (2020), and Fritz and Paul (2017) tend to employ operational definitions which ignore the intentions of those involved. Bridges et al. (2010) contend that this approach has two advantages. First, it avoids having coders make subjective interpretations of the reactions and intentions of the victims and perpetrators of violence. Second, it “captures aggressive or violent acts that have been naturalized” (p. 1067). It is argued that this is important as depictions of violence being met with a favourable (or even neutral) response will send a permissive message about violence against women (an argument consistent with sexual script theory).

In contrast, McKee et al. (2008) argue that their consent-focused approach to defining violence better corresponds to what the average person understands violent pornography to mean:

Take spanking. Some people get their sexual thrills from being spanked. If you watch a video where a woman puts a man over her knee and spanks him, is that violence? He asks her to do it, and he’s obviously enjoying it, and she’s obviously enjoying it. But all the same, she’s spanking his buttocks. So is that violence?...

Many previous academic studies decided that they should count spanking as violence, no matter if all the people involved are enjoying themselves and have

specifically requested the behavior. That didn't make sense to us. It's not common sense. When people say that they're concerned about violent pornography, we don't think they mean consensual spanking. They mean rape. They mean people being beaten, scared, forced to have sex. (p. 52)

McKee (2015) also argues that ignoring the issue of consent when determining what constitutes violence risks stigmatising and pathologizing those who engage in consensual sadomasochism.

Shor and Seida's (2019) study found that while aggressive acts are relatively common in mainstream pornography, non-consensual aggression (aggressive acts which are met with verbal or non-verbal signs of resistance) is not. This disparity between the prevalence of visible physical aggression and non-consensual physical aggression was also found in Shor (2019) and Seida and Shor (2021; although the disparity was smaller for gay male pornography than heterosexual pornography). These findings lend support to McKee's (2015) argument that divergent findings into the prevalence of violence in mainstream pornography are driven primarily by differences in the way violence is operationally defined. It should be noted that a number of survey studies estimate the lifetime prevalence of violent pornography exposure to be under 16% (see Miller et al., 2020 for a review). These statistics are incongruent with the idea that mainstream pornography regularly depicts violence, suggesting that the average consumer's understanding of what constitutes violent pornography is more like that of McKee et al. (2008), than Bridges et al. (2010). If we focus only on heterosexual Internet pornography, estimates as to the percentage of videos to contain non-consensual violence range from 1% (Shor & Seida, 2019) to 15% (Shor, 2019) and estimates as to the percentage of videos to contain visible violence, regardless of intent, range from 13% (Seida & Shor, 2021) to 45% (Fritz et al., 2020). Interestingly, Fritz and Paul (2017) found that mainstream pornography depicts aggression less frequently than queer feminist pornography.

Aggressive behavior appears to be much more likely to be targeted toward women in mainstream pornography, whereas aggressive behavior is more evenly directed toward men and women in heterosexual feminist and for-women pornography (Fritz & Paul, 2017). Of the two studies to directly compare *mainstream* gay and heterosexual pornography in terms of violence, one reports no difference (Salmon & Diamond, 2012), while the other found violence (both visible aggression and non-consensual aggression) to occur more frequently in gay male pornography compared to heterosexual pornography (Seida & Shor, 2021).

This issue of operationally defining violence aside, the literature is consistent on a few key points, namely that within mainstream pornography: 1) spanking and gagging are the most frequently depicted violent acts, 2) other, arguably more serious, violent acts are depicted far less frequently, 3) violent acts are typically targeted at women and perpetrated by men, and 4) women typically respond positively (or at least neutrally) to behaviors such as spanking. Depictions of rape appear to be relatively rare. This is not to say that rape pornography does not exist. It certainly does (see Gossett & Byrne, 2002). However, the available literature suggests that depictions of rape are rare in contemporary, mainstream pornography.

Objectification and Degradation

Of course, depicting aggression is not the only way in which pornography may degrade women (and men for that matter). Several authors suggest that pornography may demean women in other ways. Accordingly, this review now turns to the literature around objectification, degradation, and dehumanisation within pornography (different authors use different terminology here). Studies examining female sexual agency within pornography are also discussed. These are included as it has been suggested that a lack of female agency is indicative of female objectification (Klaasan & Peters, 2015). The approaches that

researchers have taken to quantifying the constructs of objectification, degradation, dehumanisation and sexual agency are critically discussed in the summary section.

Internet

Fritz and Paul (2017) assessed objectification referencing the following: extended close-ups of genitals, presence of double penetration, presence of gaping of the anus or vagina, presence of ejaculation onto the body or face, presence of stripping and posing for the camera, and presences of physical or verbal aggression. These measures were combined to create an overall objectification score. They found that females were objectified in mainstream pornography more often than in (heterosexual and queer) feminist pornography. No difference in overall objectification was observed between mainstream and for-women pornography. Women were more frequently objectified than men across all categories of pornography (although the gender gap in objectification was largest for mainstream pornography). The authors also assessed sexual agency (in terms of who initiated sex, who controlled the direction of sex, self-touching of genitals, and female orgasm). Queer feminist pornography had a significantly higher agency score than heterosexual feminist, for-women, and mainstream pornography. The latter three categories did not significantly differ from one another in terms of overall agency. This difference was primarily driven by frequency of female orgasm; with the queer feminist videos depicting female orgasm far more frequently than the heterosexual feminist, for-women, and mainstream videos. Male performers were significantly more likely to orgasm than female performers across heterosexual feminist, for-women, and mainstream pornography.

Séguin, et al. (2018) similarly found that men are more likely than women to orgasm in pornography, based on a sample of the 50 most viewed videos on Pornhub (as of December, 2015). Only 18% of the women in these videos were depicted as reaching orgasm, compared to 78% of men. Male orgasm frequently resulted in external ejaculation (in 72% of

cases), with female “squirting” being far less common (5% of cases). However, the authors also report that while women’s bodies were always visible during orgasm, “the penis was the only visible male body part in 51% of men’s orgasms” (p. 353), and that there was a much greater focus on female facial cues during orgasm.

Klaasan and Peters (2015) assessed objectification along two dimensions: instrumentality and dehumanization. In terms of instrumentality, close-up shots of women’s bodies occurred significantly more than close-up shots of men. Men were more often manually and orally stimulated than women. Consistent with Fritz and Paul (2017) and Séguin et al. (2018), men were also more likely to orgasm than women. In terms of dehumanisation, men were somewhat more likely to engage in sex for their own pleasure. However, men and women were equally likely to initiate sex and more scenes showed close-up shots of women’s faces (which the authors argue shows agency and humanizes the character in focus) than men’s faces. In just under half of scenes power was shared equally between men and women. Of those scenes with unequal gender power-dynamics, women were more likely to be submissive and men were more likely to be dominant. Men and women were equally likely to be depicted in a higher social position (e.g., a boss as opposed to a secretary).

Vannier et al. (2014) found that women were more likely to initiate sex in MILF pornography and men were more likely to initiate sex in teen pornography. Similarly, women were more likely than men to be portrayed as having a higher social status and being in control over the pace and direction of sexual activity in MILF videos, with the reverse being true for teen videos. In the vast majority of videos (91%), men and women were portrayed as being equally sexually experienced. Male performers were more likely to appear nude than female performers. Shor (2019) similarly found that men were more likely to initiate sex in teen videos as compared to videos featuring women older than 20. Shor also found that teen

videos were more likely to feature ejaculation onto the face or mouth. Zhou and Paul (2016) found that men and women were equally likely to initiate sex, but that oral and manual stimulation was more frequently performed on men compared to women.

Peters et al. (2014) analysed a sample of 150 popular “teen” videos from Pornhub.com, Redtube.com and Youjizz.com. They found characters being coerced into sex to be relatively infrequently depicted, with verbal, physical, and economic coercion being depicted in three (2%), four (3%), and four (3%) videos, respectively. In the majority of videos (97%) female performers “appeared to consent throughout” (p. 535). Implied adult-minor relationships (e.g., teacher-student or parent-babysitter relationships) were depicted relatively infrequently (13% of videos). The authors also coded for cues suggestive of adult-minor relationships (e.g., use of infantilising terms like “good girl”, a performer dressing in a school uniform, classrooms settings). While 81% of videos contained at least one such cue, a small number of videos (19%) contained the majority of these cues (54%). Using a sample of 2600 adult video covers, Jensen (2010) found 21% of covers to contain “youth sexualized language” (e.g., the word *teen* or *school*) and a similar percentage (22%) to contain “youth sexualized images” (e.g., a child-like font or a performer’s hair in pigtails). It should be noted that both these studies purposely sampled teen pornography, which is probably more likely to contain youth sexualized cues than other forms of pornography.

In contrast to Vannier et al. (2014), Gorman et al. (2010) found that female performers were more likely to appear nude than male performers (however, in 45% of videos level of nudity was roughly equivalent between genders). They also found that domination by a man was a commonly depicted theme (present in 33% of videos), as was submission by a female (47%). Exploitation (“one or more participants were being used by another and could include aspects of inequality such as age or status” p. 140) was a theme in 22% of videos, although reciprocity (“scenes of mutual satisfaction and consent” p. 141) was

an equally common theme (22%). Roughly half of videos (49%) depicted women eagerly complying with all sexual requests and 47% of videos depicted ejaculation onto a woman's face. Among Downing et al.'s (2014) sample of male same-sex videos, ejaculation onto the partner's face was less common (9% of videos), with a further 8% and 7% of videos depicting ejaculation into the partner's mouth or onto the partner's anus, respectively. Using their sample of gay, lesbian, and heterosexual videos, Seida and Shor (2021) found ejaculation into the partner's mouth occurred significantly less frequently in gay male pornography (6% of scenes) compared to heterosexual pornography (36% of scenes). Ejaculation onto the partner's face was found to occur less in gay male content (16% of scenes) compared to heterosexual content (24%), but this difference was not statistically significant. Interestingly, while gay and lesbian pornography was found to depict violence more frequently compared to heterosexual pornography (see *Violence* section), gay male and lesbian pornography was also significantly more likely to depict physical affection (e.g., kissing) than heterosexual pornography. Furthermore, gay and lesbian pornography was also found to be significantly more likely to depict the "non-dominant" partner as having an orgasm (51% of gay scenes and 70% of lesbian scenes) compared to heterosexual pornography (11%).

Arakawa et al. (2012) analyzed Internet- and magazine-based pornographic still images from three countries: Norway, the United States, and Japan. They assessed images for empowerment using a 24-item yes/no scale, which took multiple factors into account (e.g., Is the women depicted as being bound? Is the woman depicted as overly youthful and infantilized?). They found that Norwegian pornography featured more empowering depictions of women than US pornography, which in turn featured more empowering depictions of women than Japanese pornography.

Mazandarani (2021) took a different approach to assessing objectification, analyzing a sample of scenes for film conventions which encourage the audience to identify with a character: on-screen time (e.g., performer's face being visible on screen), on-screen placement (e.g., location of a performer's face within frame), camera and performer blocking (e.g., the camera or a performer physically blocking another performer), audibility (e.g., amount of speech from performers), and participation with the camera (e.g., speaking directly to camera). Scenes ($N = 123$) were taken from the most-viewed videos on Pornhub in 2017. Scenes were coded from the first moment of genital penetration to the end of genital penetration (thereby excluding "foreplay before genital penetration" p. 4). Female performers were found to receive considerably more on-screen time than male performers, with female faces being shown four times as much as male faces. It is noted that many scenes were shot "point-of-view" from the perspective of the male performer. However, even when point-of-view scenes were excluded, this screen time disparity remained. Male performers were more likely to be blocked by the camera or another performer, and female performers were much more likely to be centrally located within a frame. Female performers were more audibly present, across all types of speech (intelligible sentences, intelligible words, unintelligible speech, such as moans), and much more likely to make eye contact with the camera. The author concludes "female performers are far more likely to be seen, heard, upfront, and showcased from a physical representation perspective, whereas male performers are actively hidden from view and often silent" (p. 6).

Film

Bridges et al. (2010) assessed the frequency of a number of "non-normative" and "degrading" sexual acts. They found anal-to-mouth sequences (referred to "ass-to-mouth" within pornography), double penetration, and facial ejaculation all to be common, occurring in 41%, 19%, and 59% of scenes, respectively. Sun et al. (2008) similarly found anal-to-

mouth, double penetration, and external ejaculation to be prevalent in mainstream pornography. They also found no evidence that the frequency of these acts differed between male- and female-directed films.

Salmon and Diamond (2012) reported that, among their sample, men and women were equally likely to initiate sexual encounters in heterosexual films. They also found that heterosexual pornography depicted ejaculation onto the face more frequently than gay pornography (which is consistent with the findings of Seida & Shor, 2021), but that gay pornography more frequently depicted ejaculation onto the partner's body than heterosexual pornography (ejaculation onto the body was not assessed in Seida & Shor, 2021). External ejaculation of any type (face or body) was found to occur more frequently in gay pornography.

Similarly to Mazandarani (2021), McKee (2005; see also McKee et al., 2008) coded for film conventions which encourage character identification (e.g., a character talking directly to the camera), as a way of assessing objectification. He reports that male and female characters were equally likely to be nameless, and films were equally likely to be presented from the point of view of a male or female character. More male characters spoke to other characters, although when women spoke to other characters, they generally spoke for longer. Women spoke to the camera more often, and for longer, than men. Furthermore, women were found to initiate sex more often than men. However, men were more likely to orgasm than women.

Summary

In terms of the objectification and degradation of women within mainstream pornography, results are mixed. Several studies indicate that women are often treated equally to men on indicators of agency, such as social status. It also appears that women are more likely to be presented as the “star of the show,” being more visually and audibly present than

men, and engaging in behaviors which encourage character identification (e.g., looking directly into the camera).

Conversely, the literature indicates that in mainstream pornography men orgasm more often than women. Fritz and Paul (2017) argue that orgasm is “an indicator of embodiment and experiencing sexual pleasure” (p. 644), and therefore an important component of sexual agency. As such, these authors argue that infrequently depicting women reaching orgasm is indicative of a disregard for female pleasure. This said, it should be acknowledged that pornography is a visual medium. Male orgasms may be easier to depict visually than female orgasms (by virtue of men’s ability to ejaculate). The discrepancy in male and female orgasms observed in mainstream pornography (but also feminist and for-women pornography; Fritz & Paul, 2017) may be, at least partly, driven by this fact. This argument is also relevant to discussions of the meaning of external ejaculation in pornography (see below). Conversely, the apparent focus on female facial cues and moans, over those of men’s, could be interpreted as filmmakers’ attempts to convey female pleasure (given that they do not have a direct analogue to ejaculation to demonstrate pleasure). Interestingly, a survey of pornography consumers found that over 80% of users report frequently seeing pornography that portrays men’s pleasure, whereas just over 55% of users reported frequently seeing pornography that portrays women’s pleasure (Davis et al., 2018). These findings are consistent with the idea that there is a bias toward men’s pleasure in pornography, but also that women’s pleasure is not totally ignored.

The literature indicates that men are more likely to be depicted as taking charge in sexual situations, and women are more likely to be portrayed as being submissive (although several studies—Fritz & Paul, 2017; Klaasan & Peters, 2015—found that control of the sexual situation was frequently shared by men and women). Interestingly, Vannier et al. (2014) found that this differed by genre, with women generally being in control in MILF

pornography and men generally being in control in teen pornography. Both MILF and teen pornography are extremely popular genres (see the discussion of website metadata below). Whether consumers break into two distinct groups—MILF fans and teen fans—or whether the average consumer regularly views both MILF and teen pornography is unclear. Perhaps unexpectedly, heterosexual feminist and for-women pornography were not found to significantly differ from mainstream pornography on measures of female agency (although feminist pornography was found to objectify women less frequently than for-women and mainstream pornography; Fritz & Paul, 2017).

It appears that sex acts such as double penetration, gaping, anal-to-mouth sequences, and external ejaculation are frequently depicted in mainstream pornography. Several authors discussed in this review suggest that these acts are inherently degrading to women (e.g., Bridges et al., 2010; Fritz & Paul, 2017; Gorman et al., 2010; Sun et al. 2008). For example, Fritz and Paul (2017) write that:

A woman's body being a mere object can be portrayed in pornography by certain sexual acts and behaviors, such as when double penetration of a woman occurs, which suggests a woman's body is just a series of holes to be entered or when a woman's face or chest is ejaculated upon, suggesting a woman's body is simply an object to display the result of male pleasure instead of an embodiment of her own pleasure. (p. 641)

Opponents of pornography are particularly critical of external ejaculation. For example, Schauer (2005) argues that ejaculate is a visual metaphor for other excreta, thus external ejaculation “metaphorically debases femininity” (p. 55). However, other authors (Rubin, 1984; Weitzer, 2011) are critical of labelling any particular sex act as inherently degrading, arguing against researchers making value judgements as to what should constitute proper or improper, good or bad, egalitarian or degrading sex. Feminist pornographer, Erika

Lust, has similarly expressed frustration with the notion that certain kinds of sex are inherently degrading to women, writing in a blogpost:

For me feminist porn should portray women's fantasies and desires—all of them. I certainly know that a woman can be a strong feminist and still wanting to be taken strongly by a man or enjoying blowing a man's cock or having his cum all over her face. (Lust, 2007, para. 7)

It is also worth noting that those who object to depiction of external ejaculation in pornography may assume that this behavior infrequently occurs in “real life” sex. However, research suggests that the “pull-out” method of contraception is still widely used, with one large survey finding that about a third of young women had used the pull-out method in the past month (Jones et al., 2014). It is likely that use of this method would frequently result in ejaculation onto the partner's body.

The literature is mixed as to whether external ejaculation occurs less frequently in gay pornography compared to heterosexual pornography. While Seida and Shor (2021) found ejaculation into the partner's mouth to occur far less frequently in gay pornography, ejaculation onto the face occurred about as frequently in gay and heterosexual pornography. Furthermore, Salmon and Diamond (2012) found that external ejaculation, regardless of kind, was more common in pornography aimed at gay men than heterosexual pornography. They argue that this is evidence that external ejaculation is not driven by contempt for women (as women would not feature heavily in pornography aimed at gay men). Instead, they posit an argument regarding the visual nature of ejaculation: “the only proof of male sexual satisfaction is ejaculation; if the male ejaculates inside his female co-star, the audience does not see it” (p. 198). In this way, external ejaculation acts as visual proof of male sexual pleasure (and hence indicates the authenticity of the sexual encounter to the audience). Whatever the motivation for, and meaning of, depicting external ejaculation, it seems clear

that the practice is commonplace within mainstream pornography. The review also suggests that women in pornography are typically indiscriminately available for sex, and meet all sexual requests with enthusiasm. This is perhaps not surprising given that pornography, by definition, involves depicting sex.

Sex Acts in Pornography

While the prevalence of various sex acts (e.g., spanking, external ejaculation) have already been noted in relation to the discussion of violence and objectification within pornography, some studies have assessed the sex acts depicted in pornography more generally. These findings are well summarized in Carrotte et al. (2020). Accordingly, the current paper will give a brief overview of the findings of Carrotte et al. before focusing on a large study conducted subsequent to Carrotte et al.'s review (Zhou et al., 2019), as well as some auxiliary findings that were not discussed by Carrotte and colleagues.

From Carrotte et al.'s (2020) review it can be seen that estimates of the prevalence of particular sex acts vary considerably across studies. That said, some acts have consistently been found to occur more frequently than others. In terms of heterosexual pornography, these include vaginal intercourse (depicted in 48-90% of videos) and female-to-male oral sex (52-90% of videos). Cunnilingus (41-48% of videos) is less frequently depicted than fellatio, but still relatively common. Kissing (8-50% of videos) and anal intercourse (10-53% of videos) are depicted about as frequently as each other. The review confirms the large gender gap in frequency of orgasm discussed in the *Objectification and Degradation* section.

Far fewer studies have been conducted examining the sexual behaviors depicted in pornography aimed at gay men. Carrotte et al.'s (2020) review indicates that within pornography aimed at gay men, male-to-male oral sex (66% of videos and 100% of films) and anal sex (70% of videos and 80% of scenes) are both common. Only one study (Downing et al. 2014) assessed kissing (34% of videos) and anilingus (17% of videos). Grudzen et al.

(2009) assessed for, but found no instances of, anal-to-mouth sequences. The Carrotte et al. (2020) review does not discuss the frequency of masturbation (of the self or others), but these behaviors are relatively common in pornography (see below).

A recent study by Zhou et al. (2019) is unique for its use of a statistical technique called *network analysis*. As part of the study, human raters coded a sample of 3053 Xvideo scenes, identifying 28 frequently occurring sex acts (external ejaculation was not coded for). Network analysis was then applied to this data (with each behaviour being treated as a node in the network) to ascertain which acts co-occur. Dendrogram clustering was then used to cluster the acts by their structural similarity in the network analysis. This resulted in a dendrogram with four trunks. The first trunk is made up of six central behaviors (coitus, female-to-male oral sex, female-to-male penile digital stimulation, male-to-female vaginal digital stimulation, self-female vaginal digital stimulation, self-male penile digital stimulation). These represent the six most commonly depicted behaviors, occurring in between 53% and 29% of scenes, and frequently co-occurring with each other. Accordingly, the authors describe these six behaviors as constituting “the core sexual scripts depicted in online SEM [sexually explicit material]” (p. 2266). The second cluster represents eight “semi-peripheral” behaviors, which are “substantially less central” (p. 2266) than the core six, but are all about as likely as each other to co-occur with the core six. These include five kissing/sucking related behaviors (male kissing or sucking of a female body, male-to-female oral sex, light kissing between a male and female, deep kissing between a male and female, female kissing or sucking of a male body) and three “non-normative” (p. 2266) sexual behaviors (female-to-male spitting, male-to-female anal sex, male-to-female face fuck). These behaviors occurred in between 19% and 9% of scenes. The final two clusters represent behaviors which occur less frequently, and are less likely to co-occur with the core six. These include a cluster of five female-to-female behaviors (e.g., female kissing or sucking a female

body, female-to-female oral sex) and a cluster of nine “non-normative, heterosexual, male-initiated sexual behavior” (p. 2267; e.g., male-to-female anal digital stimulation, male-to-female anilingus). These behaviors occurred in fewer than 8% of scenes.

Vannier et al. (2014) compared the frequency of sex acts between MILF and teen videos. All the sex acts assessed occurred about as frequently in MILF and teen pornography. Sun et al. (2008) found that female-to-male oral sex was more common in male-directed films (93% of scenes) than female-directed films (67%), whereas female-to-female oral sex was more common in female-directed films (41%) than male-directed films (15%).

Summary

As can be seen, vaginal intercourse and female-to-male oral sex appear to be the most commonly depicted sexual acts in mainstream heterosexual pornography. Manual stimulation (of either sex) and masturbation (of either sex) are also commonplace. Cunnilingus, anal sex, and kissing are less prevalent, but still occur frequently. The gender of film directors may impact which sexual acts are depicted. However, no evidence was found to indicate that the frequency of sexual acts differs greatly by genre (MILF or teen pornography). Anal intercourse appears to be more common in gay male pornography, although there are far fewer studies into the sex acts depicted in gay pornography.

In some ways the data is consistent with the idea that mainstream pornography is more heavily orientated towards men’s pleasure than women’s. Fellatio and male orgasms are more frequently depicted than cunnilingus and female orgasms. This said, cunnilingus, male-to-female manual stimulation, and female orgasms still occur relatively frequently; suggesting that mainstream pornography does not totally neglect women’s pleasure (and if pornographers were driven by misogyny, one might expect it to totally disregard women’s pleasure).

Representations of Race/Ethnicity

Fritz et al. (2021) content analyzed 1741 Xvideo and Pornhub scenes featuring heterosexual couples. Scenes featuring black and white performers (performers of other races were purposely excluded from the analysis) were compared in terms of the presence of objectification (indexed by facial ejaculation and stripping for the camera), physical aggression against females (irrespective of intent), and intimacy (indexed by kissing). Facial ejaculation did not occur more frequently in scenes with black women (22% of scenes) compared to scenes with white women (21% of scenes), nor did female stripping (17% of scenes with black women vs. 15% of scenes with white women). However, there was a significant difference in terms of the percentage of scenes to depict aggression against women, with scenes depicting black women more frequently containing aggression than scenes with white women (51% vs. 36% of scenes). Furthermore, scenes featuring black men were significantly more likely to contain aggression against women compared to scenes featuring white men (47% vs. 35% of scenes). Spanking was the most common aggressive act. Scenes with white men contained more instances of kissing than scenes with black men (28% vs. 18%). The authors also compared aggression and kissing by the racial makeup of couples (black couple, black woman and white man, white woman and black man, white couple). Scenes with black couples were more likely to contain aggression, while scenes with white couples were less likely to. Scenes depicting black couples or a white woman and a black man were less likely to depict kissing, while scenes with white couples did so more frequently.

Shor and Golriz (2019) content analysed a sample of 172 popular Pornhub videos. Purposive sampling was used to ensure an adequate representation of various ethnic/racial groups (e.g., Asian men and women, Latin men and women, Black men and women, White men and women). The authors coded for the presence of physically aggressive acts (irrespective of consent), as well as non-consensual aggression. Consistent with Fritz et al.

(2021), the authors found some differences in aggression based on race. Around half of videos featuring black (53%) and Latino men (50%) were found to contain visible aggression, compared to around a third of videos featuring white men (33%) and two-thirds of videos featuring Asian men (69%). Around a third of the videos featuring white (30%) or black women (33%) contained visible aggression, compared to around half of videos featuring Latina women (52%) and three-quarters of the videos featuring Asian women (75%). Logistic regression analyses were then used to predict violence by race, while controlling for factors like video length, production type, et cetera. This found that black men were more likely to appear in videos with titles suggesting aggression or depicting visual aggression than white men. Furthermore, black, Latino and Asian men were more likely to appear in videos with a higher share of aggression (relative to video length) compared to white men. Latina and Asian women were more likely to appear in videos depicting visible aggression than white women. Black women were significantly *less* likely to appear in videos with non-consensual violence than white women. This finding is somewhat inconsistent with the findings of Fritz et al. (2021), although Fritz et al. did not assess non-consensual violence specifically, so these figures cannot be directly compared. The authors also note that videos depicting sexual partners of different races/ethnicities (e.g., a black man and a white woman or a white man and an Asian woman) were generally more likely to contain aggression than videos with couples of the same race/ethnicity.

Zhou and Paul (2016) compared Xvideo scenes in the Asian women category ($n = 174$) to scenes in all other categories ($n = 2958$; which we will call *other scenes* hereafter). In contrast to Shor and Golriz (2019), who found Asian women were more likely to feature in scenes depicting violence, Zhou and Paul (2016) found the Asian women scenes contained less aggression than other scenes. The mean number of aggressive acts per scene was significantly lower in the Asian women scenes (0.33) than other scenes (0.83). Agency was

assessed in terms of self-touching and sex initiation. The women in the Asian women scenes self-touched significantly less than the non-Asian women. Women in the Asian women scenes were also significantly less likely to initiate sex compared to men (which was not the case for women in the other scenes, in which men and women initiated sex at roughly the same rate). Objectification was assessed in terms of the frequency of “non-normative” sex acts (e.g., anal sex, anilingus, tit fuck), male versus female focused behaviour, and lack of passion (indexed by the absence of kissing). The Asian women scenes depicted significantly fewer non-normative sexual acts than the other scenes. Men in Asian women scenes were more frequently orally stimulated than women (also the case in the other scenes), but men and women were equally likely to be manually stimulated in Asian scenes (which was not the case in the other scenes, where men were manually stimulated more frequently). Light and deep kissing was equally prevalent in the Asian women scenes and other scenes. The authors state that these findings demonstrate that pornography reinforces the “Lotus Blossom” stereotype in which Asian women are positioned as submissive and docile “good girls.”

Finally, Gorman et al. (2010) report that 76% of the actors in their sample were white. They also note the lack of representation of black couples compared to white and interracial couples, having found that only one scene in their sample portrayed sex between a black man and woman.

Summary

The available evidence consistently indicates that black men in pornography are more likely to be depicted perpetrating aggression compared to white men (especially when in a scene with a white woman), which may reflect racial tropes of black hypersexuality (Miller-Young, 2010). Shor and Golriz’s (2019) found that, by some metrics, videos featuring Asian men were more likely to contain violence. The authors note that all the videos they sampled

featuring Asian men were produced in Japan, and thus may reflect unique characteristics of the Japanese porn industry.

Compared to men, the findings around depictions of women are less consistent. The evidence is mixed as to whether Asian women and black women are more or less likely to be targets of aggression, compared to white women. Fritz et al. (2021) found that black women were more likely to be aggressed against (which is consistent with Miller-Young's, 2010, observation that black female performers are often marginalized within the porn industry, and thus more vulnerable to verbal and symbolic violence). However, Shor and Golriz (2019) found that black women were less likely to be the targets of violence (at least in terms of non-consensual aggression). Shor and Golriz (2019) also found that Asian women were more likely to be targeted for aggression, while Zhou and Paul (2016) found the opposite. In terms of objectification, the results are similarly mixed, with one study finding no differences in the frequency of objectification of black and white women (Fritz et al., 2021) and another study (Zhou & Paul, 2016) finding Asian women to be less frequently objectified than white women (by some metrics).

Performer Appearance

The appearance of performers in mainstream pornography is discussed at length in McKee et al. (2008). They found that female performers tended to be young: 83% appeared to be aged 18–30, 13% aged 31–40, 2% aged 41–50, and 1% aged 51+. For male performers, youth was less vital: 49% appeared to be aged 18–30, 35% aged 31–40, 9% aged 41–50, and 2% aged 51+. Female performers also tended to be slim, although a range of other body types were reported: 65% were rated as slim, 24% were average build (untoned), 7% were average build (toned), less than 1% were “bulked up”, and less than 1% were unhealthily underweight. For male performers there was a greater emphasis on being muscular: 5% were slim, 30% were average (untoned), 31% were average (toned), 21% were bulked-up, and 7%

were overweight. In terms of female performer's breast size, 19% of female performers were rated as having small breasts, 39% were rated average, and 42% were rated large. Twenty-nine per cent of female performers had had obvious breast surgery, 60% had not, and in 11% of cases coders were unsure. Among male performers, 3% had smaller than average penises, 42% had an average sized penis, and 55% had larger than average penises.

The authors point out that while female performers were typically young and slim, there was still a great deal of diversity in terms of female performers' body and breast size: "We suspect that there is a much larger range of attractive body types shown in porn than there is in other media genres, such as advertising and fashion and women's magazines" (p. 62). Male performers tended to be muscular and well-endowed, and in some ways the physical appearance of male performers was less diverse than that of female performers: "Women [in pornography] can have small breasts, but men are definitely not allowed to have small penises" (p. 68).

Peters et al. (2014) report that in their sample of teen videos, performers typically had small breasts (64%) and a skinny build (81%), and wore minimal makeup (73%). However, it should be noted that performers in teen pornography may be selected for having youthful features (e.g., smaller builds), so these findings may not reflect what is typical of pornography in general. Vannier et al. (2014) report that, in their analysis, male performers typically had groomed (42%) or no (35%) pubic hair. Female performers were more likely to have no pubic hair (61%). About a third (30%) of female performers had groomed pubic hair. Brennan (2018) analysed 6,900 performer profiles across 10 gay male porn websites. These profiles report performer "stats" such as penis size. Across nine of these websites, the most frequently reported penis size was 7-8 inches. For one website (Seancody.com) the most frequently reported penis size was 6.5 inches (it is noted that this website markets itself as featuring amateur performers).

Safe Sex Practices

In mainstream heterosexual pornography condom use is rare. In two studies (Gorman et al., 2010; Vannier et al., 2014) fewer than 2% of scenes portrayed condom use. In another two studies (Bridges et al., 2010; Sun et al., 2008) these figures were 11% and 6% respectively. Safe sex was discussed in less than 1% of scenes in Bridges et al. (2010), and not at all in Sun et al. (2008).

Grudzen et al. (2009) compared condom use in a random sample of 50 heterosexual and gay male films. Condoms were used in 7% of heterosexual film scenes containing penile contact, compared to 64% of gay film scenes. Downing et al. (2014) found that in their sample of gay male videos, unprotected anal sex (present in 36% of scenes) was depicted about as frequently as protected anal sex (present in 34% of scenes).

Depictions of Infidelity

Rasmussen et al. (2019) assessed depictions of extrarelational sex and infidelity in a sample of 190 scenes taken from the highest rated (in the last month) section of Pornhub ($n = 86$) and Xvideo ($n = 104$). About half of scenes (53%) provided little or no relational information. Of the scenes that provided relational information, characters were most frequently depicted as being acquaintances or friends (26% of scenes), having just met (13%), or dating (7%). Characters were rarely depicted as being married (1% of scenes). About a quarter of the scenes (25%, $n = 48$) displayed or mentioned extrarelational sex (i.e., infidelity). In only nine scenes was it made clear that the partner was consenting to the extrarelational sex (i.e., a consensual non-monogamous relationship). More than twice as many women than men were depicted engaging in extrarelational sex (38 women and 17 men). The authors suggest that the findings indicate that pornography presents casual sex and infidelity as “normative, exciting, or desirable” (p. 580).

Consent Communication

While multiple studies have assessed the prevalence of depictions of rape, only one study (Willis et al., 2020) has assessed more general consent communication within pornography. The study, which employed a sample of 20-minute segments from 50 top selling pornographic films, extends work on consent communication cues in mainstream film. Within this sample, 1109 separate sexual behaviours were identified along with 2850 consent cues. Explicit nonverbal cues (“behaviors or actions that are sexually explicit including bodily touching in a sexual way”, p. 57) were most common (41% of cues), followed by implicit nonverbal cues (“behaviors or actions that imply interest in engagement in sexual behavior”; 30%), explicit verbal cues (“straightforward statements, questions, or responses”; 12%), implicit verbal cues (“verbally initiating sexual behavior or communicating agreement to engage in sexual behavior without explicitly using the word sex or a close synonym”; 11%), and no response cues (“characters do not say anything, do not resist, or let the sexual activity happen without much action”; 7%). The authors argue that this models an *explicit verbal consent isn't natural* sexual script.

In around a quarter of the behaviors no consent was shown (i.e., the scene starts with the actors already engaged in sexual activity), which the authors argue models a *sex can happen without ongoing communication* script. Alternatively, in cases where scenes start with performers engaged in sexual activity, viewers may assume that the characters had an explicit discussion of consent “off-camera.” Male characters more frequently modelled explicit verbal cues than female characters, with the reverse being true for implicit nonverbal cues. The authors argue this indicates that pornography promotes a *women are indirect while men are direct* script. Explicit verbal consent cues were less common in instances of manual stimulation compared to other kinds of sexual activities. The authors argue this indicates that pornography contains *lower-order behaviors don't need explicit consent* scripts. Finally, *no response* cues were more common among characters receiving behaviors (e.g., the character

receiving oral sex), which the authors argue is indicative of a *people receiving sexual behaviors can consent by doing nothing* script.

Website Metadata

Website metadata—in the form of search terms (the phrases users type into a website’s search bar) and content descriptors (e.g., video tags and video categories)—provide an alternative method of assessing the content of pornography, while also providing insights into what consumers actively seek out. Metadata from popular pornographic tube-sites is discussed below.

Pornhub is ranked as the 45th most trafficked website on the Internet (as of December, 2019; Alexa, 2019). The website maintains a blog, *Pornhub Insights* (<https://www.pornhub.com/insights>), in which it communicates website statistics in the form of infographics. Some of the information conveyed on the blog is useful to those trying to understand the kind of pornography people are accessing, in particular the site’s annual “Year in Review” blogposts (Pornhub Insights, 2017, 2018a, 2018b). These posts outline, among other things, the most popular search terms and the most viewed categories (videos on tube-sites are broken into categories to help users navigate content) over the previous year. Based on this data, the ten most popular Pornhub search terms for the years 2016, 2017, and 2018 are provided in Table 3. As can be seen, several search terms appeared across all three years (suggesting that these kinds of content are extremely popular): *lesbian*; *hentai* (Japanese pornographic animation); *MILF*; *teen*; *step mom*; *massage*; *mom*; and *Japanese*. *Step sister* appeared across two years.

Search terms are only one of the ways in which users navigate tube-sites. Users may also go to the website’s landing page and then browse through the video selection, choosing content to watch based on titles and thumbnails. Alternatively, users may navigate to a particular content category (e.g., *amateur*, *brunette*, *mature*) and browse videos from there.

As such, the most viewed categories can also provide insights into what kind of content is being watched. These are presented in Table 4 for the same period. As can be seen, this list is relatively consistent from year to year, with the following terms appearing across all three years: *lesbian*; *MILF*; *ebony* (black performers, particularly black, female performers); *anal*; *big tits*; *big dick*; *mature*; *hentai*; and *threesomes*. *Japanese* appears as a most viewed category in two years. It is also worth noting that *lesbian*, *MILF*, and *hentai* appeared in the lists of most searched terms and most viewed categories across all of the years examined.

While the data provided by Pornhub Insights is useful we should not accept it uncritically. Some argue the blog is simply a way to encourage favourable media reporting on Pornhub while giving the website an air of legitimacy (Marshall, 2013; Oremus, 2014). Accordingly, it would be unlikely that Pornhub Insights would highlight anything that would cast the website, or pornography more generally, in a negative light (e.g., listing *rape* or *violence* among the most popular search term).⁶

Mazières et al. (2014) designed a software program to collect metadata from two popular tube-sites: XNXX and XHamster. Their analysis focused on the content tags which accompany individual videos. For XHamster the 10 most frequently occurring tags were: *amateur*, *men*, *teen*, *hardcore*, *blowjob*, *anal*, *big boobs*, *masturbation*, *matures* (older women), and *cumshots* (external ejaculation). For XNXX the top 10 tags were: *blowjob*, *hardcore*, *amateur*, *teen*, *cumshot*, *anal*, *brunette*, *blonde*, *pussy*, and *sex*. The authors note that different websites use different tag systems (e.g., some websites limit the number of tags associated with a video, while others do not) and thus we should expect some differences between websites. Consistent with the content analyses outlined above, Mazières et al.'s (2014) study highlights the ubiquity of fellatio and external ejaculation in mainstream pornography.

⁶ *Rape* is not a category on Pornhub, although *rough sex* is.

Summary

The metadata findings provide insight into the popularity of various genres of pornography in a way that the content analytic studies do not. Both the Pornhub Insight data and the independent analysis of content descriptors suggest that MILF pornography, teen pornography, and lesbian pornography are extremely popular genres. The Pornhub Insight data also points to the popularity of cartoon pornography and pornography featuring sex between step-relatives—although not much evidence for this was found in Mazières et al.’s (2014) study. The popularity of various genres of pornography is worth considering given that genres of pornography may differ dramatically in terms of their representations of women. As mentioned above, Vannier et al. (2014) found that in MILF pornography women were more likely to be sexually agentic, whereas in teen pornography women were more likely to be sexually passive. Further analysis of the representation of women in lesbian pornography (a seemingly incredibly popular genre) would be informative.

The metadata analysis did not find evidence that mainstream pornography commonly depicts violence against women, as suggested by authors such as Bridges et al. (2010) and Sun et al. (2008). Terms relating to aggression (e.g., *rape*, *struggle*, *BDSM*) did not appear in the lists of most searched terms or most viewed categories in the Pornhub Insights data. However, in Mazières et al.’s (2014) study the term *hardcore* appeared in the list of top tags for both XNXX and XHamster. It is difficult to know what constitutes *hardcore* pornography, as the term is nebulous, and its meaning appears to have shifted over time. *Hardcore* was originally used to contrast with *softcore* pornography. However, examination of the hardcore category of tube-sites like Pornhub would suggest that the term now has connotations of rough sex. It should also be noted that analysis of metadata may be too blunt an approach to adequately assess the frequency of the kind of violence the abovementioned authors describe (acts such as consensual spanking or gagging). The popularity of the *big*

dick category in the Pornhub Insights data is consistent with the findings of McKee et al. (2008) and Brennan (2018), who also found male performers to typically be well-endowed.

Discussion

This review has investigated the content of contemporary, mainstream pornography. This was done by reviewing content analytic studies and analyses of website metadata. The results of this investigation can be summarised as follows: In modern, mainstream pornography fellatio and vaginal sex are ubiquitous. Solo-masturbation, masturbation of a partner, cunnilingus, and anal intercourse are less prevalent but still common. Whether pornography demeans and degrades women is debated. On some measures men are more agentic and objectified less often than women, but on other measures this trend is reversed. Men are more likely to orgasm in pornography, but women receive more camera facetime. Many studies have found that male and female performers are equally likely to initiate sex, equally likely to take control of the sexual encounter, and equally likely to be depicted as being of a higher social status. However, when control was not shared equally, men are more likely to be dominating and women are more likely to be submissive (although the reverse is true of MILF pornography). Women in pornography are indiscriminately available for sex and are generally enthusiastic and receptive of all sexual behaviors and demands. Depictions of external ejaculation are ubiquitous. Whether external ejaculation is inherently degrading to women is debated by scholars. The prevalence of violence against women in pornography depends on how violence is defined. Acts such as spanking and gagging are common. These acts are typically directed at women, by men, and are infrequently met with displeasure. More extreme violence and simulations of rape are rare in mainstream pornography. The available evidence suggests that the rate of violence in pornography is not increasing. Condom use is infrequently portrayed in mainstream pornography (relative to the frequency with which condoms are used during casual sexual encounters; National Centre for Health

Statistics [NCHS], 2019). Condom use may be more frequently depicted in gay male pornography than pornography aimed at a heterosexual audience (although a recent trend toward condomless anal sex in gay pornography has been noted by scholars; Tollini, 2019). While only a few analyses have been conducted into representations of race and ethnicity in pornography, there is some evidence to indicate that pornography may depict minority performers in stereotyped and problematic ways (e.g., depicting black men as sexually aggressive or Asian women as sexually passive), potentially reinforcing existing cultural stereotypes around race (e.g., of black men as hypersexual or Asian women as demure). Pornography is much more likely to depict casual sex than sex within the context of a long-term relationship. In terms of consent, although explicit discussions of consent are not the norm, pornography is not totally devoid of explicit verbal consent. Pornography may contain some problematic messages around consent (e.g., that lower-order sex acts do not require explicit consent). Evidence based on website metadata suggests that lesbian pornography, MILF pornography, teen pornography, and pornography portraying sex between step-relatives are extremely popular genres. The review would suggest that certain sexual behaviors (e.g., external ejaculation) and situations (e.g., women being indiscriminately available for casual sex) appear to be frequent enough in mainstream pornography that one is able to speak of a pornographic style of sex and sexual relations; which we have previously referred to as “porn-like” sex (see Miller et al., 2019).

The review also highlights a number of limitations of this literature. First, there is a great deal of methodological variation in how content is sampled (e.g., selecting from a list of the top selling videos, selecting from the most recently uploaded videos to a tube-site) and the unit of analysis that is employed (e.g., entire films, scenes, 20-minute segments). It is likely that this has contributed to some of the cross-study differences that were observed. Second, there are major differences in how some concepts (e.g., violence) are operationally defined.

In the case of violence, this is a reflection of different philosophical orientations toward what constitutes *violence*. Some recent studies (e.g., Shor & Seida, 2019) have recognised this and taken steps to present results around violence using multiple operational lenses. Third, some of the ways in which violence or objectification/degradation are indexed run the risk of stigmatising particular sexual behaviors and those who engage in them. For example, multiple studies index degradation through the presence of “non-normative” sex acts, which could be seen as positioning these behaviors as being inherently deviant. For example, anal sex was classified as a non-normative sex act in Zhou and Paul (2016) and used to index objectification (despite this practice being relatively common, with more than 20% of younger adults reporting having engaged in anal sex in the past year; Herbenick et al., 2010). Finally, quantitative content analyses, by their nature, are blunt instruments, and while they are useful in giving a general sense of the content of pornography, they likely miss some of the nuances of human sexual behavior and relationships. For example, whether the recipient of external ejaculation would interpret this behavior as degrading likely depends on the context in which this behavior occurs.

Some limitations of the current review itself are also worth considering. First, although the current review was limited to studies published since 2005 (given our goal of surveying the content of *contemporary*, mainstream pornography), some of the analyses reviewed sampled content produced outside this period. Secondly, it should be acknowledged that in a review such as this, it is not possible to exhaustively report every finding of every study. Instead, we concentrated on the findings which we felt most directly related to the research theme under discussion (e.g., violence in pornography). We recognize that this is a somewhat subjective process, at least in comparison to quantitative reviews (e.g., Carrotte et al., 2020). However, we felt this was the most apt approach given the broad study goal and number of studies to be reviewed.

As discussed in the introduction, a core tenet of the pornography effects literature is that if pornography shapes the attitudes and behaviors of consumers, it does so by routinely depicting certain kinds of sexual behaviors and social/relational dynamics over others. It is hoped that this article will provide the reader insight into what kinds of behaviors and dynamics are routinely depicted in mainstream pornography. This kind of information has practical implications for sex educators. For example, the information offered in this review may inform the work of those who develop “porn literacy” programs, by giving an indication of what elements should be addressed by these programs. Indeed, in order to create programs to “promote critical disengagement from pornographic texts” (Albury, 2014, p. 173) one has to be aware of the content of pornographic texts.⁷ For example, the review would suggest that focusing on extreme sexual violence is probably unnecessary, as this appears to occur relatively infrequently in mainstream pornography. In contrast, discussions around acts like spanking or gagging are probably warranted, as these behaviors appear to occur frequently (typically without an overt discussion around consent), and are often depicted as being pleasurable for the partner in a way that may not reflect reality. Similarly, discussing issues of body image with male pornography consumers is likely warranted (given that pornography appears to be restrictive in the kinds of male bodies it depicts), as are discussions of how sex and race intersect within pornography (given that pornography appears to reinforce certain racial stereotypes). This may also serve as a prompt to acknowledge that porn not only influences society but is itself a reflection of the society in which it is produced (e.g., reflecting social dynamics rooted in racism and sexism in its depictions of minority characters).

⁷ It is also helpful to be aware of the rate at which sexual behaviors depicted in pornography occur in “real-life.” Toward this end, there are several useful sources: for information on contraceptive methods see Jones et al. (2014) and NCHS (2019); for base-rate information on various sexual behaviors (e.g., anal sex) see Herbenick et al. (2010); for information on the frequency of rough sex see Herbenick et al. (2021).

The review may also indicate ways in which pornography can be drawn on, as Albury (2014, p. 173) suggests, to “promote sexual learning” among adults. For example, protected anal sex is relatively common within pornography aimed at gay male audiences. Accordingly, the review lends support for the possible use of this material to promote safer-sex practices among gay men. Similarly, although there does appear to be a bias toward male pleasure within mainstream pornography, it is not totally devoid of depictions of female pleasure. Thus, pornography could potentially be used as a starting point to promote discussion of female sexual agency (the fact that queer feminist pornography is more likely to depict female orgasm may be used to prompt discussions of alternative approaches to the creation of pornography and how this may influence representations of sex and sexuality).

References

- Albury, K. (2014). Porn and sex education, porn as sex education. *Porn Studies*, 1(1–2), 172–181. <https://doi.org/10.1080/23268743.2013.863654>
- Alexa. (2019). The top 500 sites on the web. Retrieved December 8, 2019, from <http://www.alexa.com/topsites>
- Arakawa, D. R., Flanders, C., & Hatfield, E. (2012). Are variations in gender equality evident in pornography? A cross-cultural study. *International Journal of Intercultural Relations*, 36, 279–285. <http://dx.doi.org/10.1016/j.ijintrel.2011.08.006>
- Attwood, F., Smith, C., & Barker, M. (2018). ‘I’m just curious and still exploring myself’: Young people and pornography. *New Media & Society*, 20(10), 3738–3759. <https://doi.org/10.1177/1461444818759271>
- Bandura, A. (1971). *Social learning theory*. New York, NY: General Learning.
- Bandura, A. (2001). Social cognitive theory of mass communication. *Media Psychology*, 3, 265–298. http://dx.doi.org/10.1207/S1532785XMEP0303_03
- Bandura, A. (2004). Social cognitive theory for personal and social change by enabling media. In A. Singhal, M. J. Cody, E. M. Rogers, & M. Sabido (Eds.), *Entertainment-education and social change: History, research, and practice* (pp. 75–96). Mahwah, NJ: Lawrence Erlbaum.
- Brennan, J. (2018). Size matters: Penis size and sexual position in gay porn profiles. *Journal of Homosexuality*, 65, 912–933. <http://dx.doi.org/10.1080/00918369.2017.1364568>
- Bridges, A. J., Wosnitzer, R., Scharrer, E., Sun, C., & Liberman, R. (2010). Aggression and sexual behavior in best-selling pornography videos: A content analysis update. *Violence Against Women*, 16, 1065–1085. <http://dx.doi.org/10.1177/1077801210382866>

- Burke, N. B. (2016). Straight-acting: Gay pornography, heterosexuality, and hegemonic masculinity. *Porn Studies*, 3, 238-254.
<https://doi.org/10.1080/23268743.2016.1196117>
- Carrotte, E. R., Davis, A. C., & Lim, M. S. (2020). Sexual behaviors and violence in pornography: Systematic review and narrative synthesis of video content analyses. *Journal of Medical Internet Research*, 22(5), e16702.
<http://dx.doi.org/10.2196/16702>
- Cowan, G., & Campbell, R. R. (1994). Racism and sexism in interracial pornography: A content analysis. *Psychology of Women Quarterly*, 18, 323– 338.
<http://dx.doi.org/10.1111/j.1471-6402.1994.tb00459.x>
- Davis, A. C., Carrotte, E. R., Hellard, M. E., & Lim, M. S. (2018). What behaviors do young heterosexual Australians see in pornography? A cross-sectional study. *The Journal of Sex Research*, 55(3), 310-319. <https://doi.org/10.1080/00224499.2017.1417350>
- Downing, M. J., Jr., Schrimshaw, E. W., Antebi, N., & Siegel, K. (2014). Sexually explicit media on the Internet: A content analysis of sexual behaviors, risk, and media characteristics in gay male adult videos. *Archives of Sexual Behavior*, 43(4), 811-821.
<http://dx.doi.org/10.1007/s10508-013-0121-1>
- Fritz, N., & Paul, B. (2017). From orgasms to spanking: A content analysis of the agentic and objectifying sexual scripts in feminist, for women, and mainstream pornography. *Sex Roles*, 1–14. Advance online publication. <http://dx.doi.org/10.1007/s11199-017-0759-6>
- Fritz, N., Malic, V., Paul, B., & Zhou, Y. (2020). A descriptive analysis of the types, targets, and relative frequency of aggression in mainstream pornography. *Archives of Sexual Behavior*, 49(8), 3041-3053. <https://doi.org/10.1007/s10508-020-01773-0>

- Fritz, N., Malic, V., Paul, B., & Zhou, Y. (2021). Worse than objects: The depiction of black women and men and their sexual relationship in pornography. *Gender Issues*, 38, 100-120. <https://doi.org/10.1007/s12147-020-09255-2>
- Gagnon, J. H. (1990). The explicit and implicit use of the scripting perspective in sex research. *Annual Review of Sex Research*, 1, 1–43.
<http://dx.doi.org/10.1080/10532528.1990.10559854>
- Gorman, S., Monk-Turner, E., & Fish, J. N. (2010). Free adult Internet web sites: How prevalent are degrading acts? *Gender Issues*, 27, 131–145.
<http://dx.doi.org/10.1007/s12147-010-9095-7>
- Grudzen, C. R., Elliott, M. N., Kerndt, P. R., Schuster, M. A., Brook, R. H., & Gelberg, L. (2009). Condom use and high-risk sexual acts in adult films: A comparison of heterosexual and homosexual films. *American Journal of Public Health*, 99(S1), S152-S156. <http://dx.doi.org/10.2105/AJPH.2007.127035>
- Hald, G. M., Seaman, C., & Linz, D. (2014). Sexuality and pornography. In D. L. Tolman & L. M. Diamond (Eds.), *APA handbook of sexuality and psychology: Vol. 2. Contextual approaches* (pp. 3–35). Washington, DC: American Psychological Association.
<http://dx.doi.org/10.1037/14194-001>
- Herbenick, D., Reece, M., Schick, V., Sanders, S. A., Dodge, B., & Fortenberry, J. D. (2010). Sexual behavior in the United States: Results from a national probability sample of men and women ages 14–94. *Journal of Sexual Medicine*, 7, 255-265.
<https://doi.org/10.1111/j.1743-6109.2010.02012.x>
- Herbenick, D., Fu, T. C., Valdivia, D. S., Patterson, C., Gonzalez, Y. R., Guerra-Reyes, L., ... & Rosenberg, M. (2021). What is rough sex, who does it, and who likes it? Findings from a probability sample of US undergraduate students. *Archives of Sexual Behavior*, 50(3), 1183-1195. <https://doi.org/10.1007/s10508-021-01917-w>

- Hofer, K. P. (2016). Approaching analog amateur porn empirically: Video practices in Austrian swinger classifieds, 1981–1990. *Sexualities, 19*, 263–285.
<http://dx.doi.org/10.1177/1363460715583608>
- Klaassen, M. J., & Peter, J. (2015). Gender (in) equality in Internet pornography: A content analysis of popular pornographic Internet videos. *Journal of Sex Research, 52*, 721–735. <http://dx.doi.org/10.1080/00224499.2014.976781>
- Kohut, T., & Fisher, W. A. (2013). The impact of brief exposure to sexually explicit video clips on partnered female clitoral self-stimulation, orgasm and sexual satisfaction. *The Canadian Journal of Human Sexuality, 22*(1), 40-50. <https://doi.org/10.3138/cjhs.935>
- Jensen, R. E. (2010). A content analysis of youth sexualized language and imagery in adult film packaging, 1995–2007. *Journal of Children and Media, 4*(4), 371-386.
<https://doi.org/10.1080/17482798.2010.510005>
- Jones, R. K., Lindberg, L. D., & Higgins, J. A. (2014). Pull and pray or extra protection? Contraceptive strategies involving withdrawal among US adult women. *Contraception, 90*(4), 416-421.
<https://doi.org/10.1016/j.contraception.2014.04.016>
- Lischinsky, A. (2018). Doing the naughty or having it done to you? Agent roles in erotic writing. *Porn Studies, 5*, 156-174. <https://doi.org/10.1080/23268743.2017.1301215>
- Lust, E. (2007, November 5). Can't a feminist enjoy a blowjob??? [Blog post]. Retrieved from <https://web.archive.org/web/20110930132053/http://erikalust.blogspot.com/2007/11/cant-feminist-enjoy-blowjob.html>
- Marshall, J. (2013, December 20). Pornhub finds sexy data is content-marketing gold. *Digiday*. Retrieved from <https://digiday.com>

- Mazières, A., Trachman, M., Cointet, J., Coulmont, B., & Prieur, C. (2014). Deep tags: toward a quantitative analysis of online pornography. *Porn Studies, 1*, 80–95.
<http://dx.doi.org/10.1080/23268743.2014.888214>
- Mazandarani, F. (2021). Between a camera and a hard place: A content analysis of performer representation in heterosexual pornographic content. *The Journal of Sex Research, 58*, 305-313. <https://doi.org/10.1080/00224499.2020.1754747>
- McKee, A. (2005). The objectification of women in mainstream pornographic videos in Australia. *Journal of Sex Research, 42*, 277–290.
<http://dx.doi.org/10.1080/00224490509552283>
- McKee, A. (2015). Methodological issues in defining aggression for content analyses of sexually explicit material. *Archives of Sexual Behavior, 44*, 81–87.
<http://dx.doi.org/10.1007/s10508-013-0253-3>
- McKee, A., Albury, K., & Lumby, C. (2008). *The porn report*. Melbourne University.
- Miller, D. J., McBain, K. A., & Raggatt, P. T. F. (2019). An experimental investigation into pornography's effect on men's perceptions of the likelihood of women engaging in porn-like sex. *Psychology of Popular Media Culture, 8*(4), 365–375. <https://doi.org/10.1037/ppm0000202>
- Miller, D. J., Raggatt, P. T., & McBain, K. (2020). A literature review of studies into the prevalence and frequency of men's pornography use. *American Journal of Sexuality Education, 15*(4), 502-529. <https://doi.org/10.1080/15546128.2020.1831676>
- Miller-Young, M. (2010). Putting hypersexuality to work: Black women and illicit eroticism in pornography. *Sexualities, 13*(2), 219-235.
<https://doi.org/10.1177/1363460709359229>

- National Centre for Health Statistics. (2019). *Key Statistics from the National Survey of Family Growth - C Listing*. Retrieved from https://www.cdc.gov/nchs/nsfg/key_statistics/c.htm
- Oremus, W. (2014, January 10). How Pornhub milks its own traffic data [Blog post]. Retrieved from <http://www.slate.com>
- Peters, E. M., Morrison, T., McDermott, D. T., Bishop, C. J., & Kiss, M. (2014). Age is in the eye of the beholder: Examining the cues employed to construct the illusion of youth in teen pornography. *Sexuality & Culture, 18*(3), 527-546. <https://doi.org/10.1007/s12119-013-9210-5>
- Pham, M. N., Jeffery, A. J., Sela, Y., Lynn, J. T., Trevino, S., Willockx, Z., ... & McDonald, M. M. (2016). Duration of cunnilingus predicts estimated ejaculate volume in humans: A content analysis of pornography. *Evolutionary Psychological Science, 2*, 220-227. <https://doi.org/10.1007/s40806-016-0057-5>
- Piccolo, E. E., Johnson, T. W., & Wassersug, R. J. (2019). Sadomasochistic erotica and the sexual response cycle: Insights from the Eunuch Archives. *The Canadian Journal of Human Sexuality, 28*, 203-214. <https://doi.org/10.3138/cjhs.2019-0016>
- Pornhub Insights. (2017, January 4). Pornhub's 2016 year in review [Blog post]. Retrieved from <https://www.pornhub.com/insights/2016-year-in-review>
- Pornhub Insights. (2018a, January 9). Pornhub's 2017 year in review [Blog post]. Retrieved from <https://www.pornhub.com/insights/2017-year-in-review>
- Pornhub Insights. (2018b, December 11). Pornhub's 2018 year in review [Blog post]. Retrieved from <https://www.pornhub.com/insights/2018-year-in-review>
- Rasmussen, K. R., Millar, D., & Trenchuk, J. (2019). Relationships and infidelity in pornography: An analysis of pornography streaming websites. *Sexuality & Culture, 23*(2), 571-584. <https://doi.org/10.1007/s12119-018-9574-7>

- Rothman, E. F., Beckmeyer, J. J., Herbenick, D., Fu, T. C., Dodge, B., & Fortenberry, J. D. (2011). The prevalence of using pornography for information about how to have sex: Findings from a nationally representative survey of US adolescents and young adults. *Archives of Sexual Behavior, 50*, 629-646. <https://doi.org/10.1007/s10508-020-01877-7>
- Ryan, J. (2010). *A history of the Internet and the digital future*. Reaktion.
- Rubin, G. (2007). Thinking Sex: Notes for a radical theory of the politics of sexuality. In R. Parker & P. Aggleton (Eds.), *Culture, society, and sexuality: A reader* (pp. 149-178). <https://doi.org/10.4324/9780203966105>
- Salmon, C., & Diamond, A. (2012). Evolutionary perspectives on the content analysis of heterosexual and homosexual pornography. *Journal of Social, Evolutionary, and Cultural Psychology, 6*, 193–202. <http://dx.doi.org/10.1037/h0099215>
- Schauer, T. (2005). Women’s porno: The heterosexual female gaze in porn sites “for women”. *Sexuality & Culture, 9*, 42–64. <http://dx.doi.org/10.1007/s12119-005-1007-8>
- Seehuus, M., Handy, A. B., & Stanton, A. M. (2020). Change in the popularity of transgressive content in written erotica between 2000 and 2016. *The Journal of Sex Research*. Advance online publication. <https://doi.org/10.1080/00224499.2020.1716206>
- Seehuus, M., Stanton, A. M., & Handy, A. B. (2019). On the content of “real-world” sexual fantasy: Results from an analysis of 250,000+ anonymous text-based erotic fantasies. *Archives of Sexual Behavior, 48*(3), 725-737. <https://doi.org/10.1007/s10508-018-1334-0>
- Séguin, L. J., Rodrigue, C., & Lavigne, J. (2018). Consuming ecstasy: Representations of male and female orgasm in mainstream pornography. *The Journal of Sex Research, 55*(3), 348-356. <https://doi.org/10.1080/00224499.2017.1332152>

- Seida, K., & Shor, E. (2021). Aggression and pleasure in opposite-sex and same-sex mainstream online pornography: A comparative content analysis of dyadic scenes. *The Journal of Sex Research*, 58, 292-304.
<https://doi.org/10.1080/00224499.2019.1696275>
- Shor, E. (2019). Age, aggression, and pleasure in popular online pornographic videos. *Violence Against Women*, 25, 1018–1036. <https://doi.org/10.1177/1077801218804101>
- Shor, E., & Golriz, G. (2019). Gender, race, and aggression in mainstream pornography. *Archives of Sexual Behavior*, 48, 739–751. <https://doi.org/10.1007/s10508-018-1304-6>
- Shor, E., & Seida, K. (2019). “Harder and harder”? Is mainstream pornography becoming increasingly violent and do viewers prefer violent content? *The Journal of Sex Research*, 56, 16–28. <https://doi.org/10.1080/00224499.2018.1451476>
- Simon, W., & Gagnon, J. H. (1986). Sexual scripts: Permanence and change. *Archives of Sexual Behavior*, 15, 97–120. <http://dx.doi.org/10.1007/BF01542219>
- Sun, C., Bridges, A., Wosnitzer, R., Scharrer, E., & Liberman, R. (2008). A comparison of male and female directors in popular pornography: What happens when women are at the helm? *Psychology of Women Quarterly*, 32, 312–325.
<http://dx.doi.org/10.1111/j.1471-6402.2008.00439.x>
- Tollini, C. (2017). Different portrayals of masculinity in gay bareback pornographic videos: comparing Sean Cody with Treasure Island Media. *Porn Studies*, 4, 419-432,
<http://dx.doi.org/10.1080/23268743.2017.1358654>
- Tollini, C. (2019). How two holdouts went bareback: CockyBoys and Men.com's initial transition to producing videos without condoms. *Porn Studies*, 6, 282-300.
<http://dx.doi.org/10.1080/23268743.2019.1602958>

- Uhl, C. A., Rhyner, K. J., Terrance, C. A., & Lugo, N. R. (2018). An examination of nonconsensual pornography websites. *Feminism & Psychology, 28*(1), 50-68. <http://dx.doi.org/10.1177/0959353517720225>
- Vannier, S. A., Currie, A. B., & O'Sullivan, L. F. (2014). Schoolgirls and soccer moms: A content analysis of free "Teen" and "MILF" online pornography. *Journal of Sex Research, 51*, 253–264. <http://dx.doi.org/10.1080/00224499.2013.829795>
- Weitzer, R. (2011). Pornography's effects: The need for solid evidence: A review essay of *Everyday Pornography*, edited by Karen Boyle (New York: Routledge, 2010) and *Pornland: How Porn Has Hijacked Our Sexuality*, by Gail Dines (Boston: Beacon, 2010). *Violence Against Women, 17*, 666–675. <http://dx.doi.org/10.1177/1077801211407478>
- White, J. M., Dunham, E., Rowley, B., Reisner, S. L., & Mimiaga, M. J. (2015). Sexually explicit racialised media targeting men who have sex with men online: A content analysis of high-risk behaviour depicted in online advertisements. *Culture, Health & Sexuality, 17*, 1021-1034. <https://doi.org/10.1080/13691058.2015.1027738>
- Willis, M., Canan, S. N., Jozkowski, K. N., & Bridges, A. J. (2020). Sexual consent communication in best-selling pornography films: A content analysis. *The Journal of Sex Research, 57*(1), 52-63. <https://doi.org/10.1080/00224499.2019.1655522>
- Wright, P. J. (2011). Mass media effects on youth sexual behavior assessing the claim for causality. *Annals of the International Communication Association, 35*, 343–385. <http://dx.doi.org/10.1080/23808985.2011.11679121>
- Wright, P. J., Tokunaga, R. S., & Kraus, A. (2016). Consumption of pornography, perceived peer norms, and condomless sex. *Health Communication, 31*, 954–963. <http://dx.doi.org/10.1080/10410236.2015.1022936>

Zhou, Y., & Paul, B. (2016). Lotus blossom or dragon lady: A content analysis of “Asian women” online pornography. *Sexuality & Culture*, 20(4), 1083-1100.

<http://dx.doi.org/10.1007/s12119-016-9375-9>

Zhou, Y., Paul, B., Malic, V., & Yu, J. (2019). Sexual behavior patterns in online sexually explicit materials: a network analysis. *Quality & Quantity*, 53(4), 2253-2271.

<https://doi.org/10.1007/s11135-019-00869-7>

Table 1

Content Analyses Excluded from Review

Authors and Year	Reason for Exclusion	Study Description
Burke (2016)	Content analyzed deemed not to constitute mainstream porn	Analysis of “Str8” videos posted to a website (Baitbuddies.com) specializing in this genre
Hofer (2016)	Content analyzed deemed not to constitute mainstream porn	Analysis of swinger classifieds from the 1980s
Lischinsky (2018)	Analysis of text-based content	Analysis of stories posted to Literotica.com
Pham et al. (2016)	Content analyzed deemed not to constitute mainstream porn	Analysis of 100 scenes featuring the same male performer
Piccolo et al. (2019)	Content analyzed deemed not to constitute mainstream porn; Analysis of text-based content	Analysis of stories posted to the Eunuch Archive (Eunuch.org)
Seehus et al. (2019)	Analysis of text-based content	Analysis of stories posted to Literotica.com
Seehus et al. (2020)	Analysis of text-based content	Analysis of stories posted to Literotica.com
Tollini (2017)	Content analyzed deemed not to constitute mainstream porn	Analysis of gay bareback content produced by a particular studio (Seancody.com)
Tollini (2019)	Content analyzed deemed not to constitute mainstream porn	Analysis of content produced by particular studios (Cockyboys.com and Men.com) during a transition from producing only videos with condoms to producing some videos without condoms
Uhl et al. (2018)	Content analyzed deemed not to constitute mainstream porn	Analysis of revenge porn websites
White et al. (2015)	Content analyzed deemed not to constitute mainstream porn	Analysis of sexually explicit online ads

Table 2

Studies Analyzed as Part of the Review

Authors and Year	Medium	Section Discussed
Arakawa et al. (2012)	Internet and magazine images	Objectification & Degradation
Brennan (2018)	Performer profiles	Performer Appearance
Bridges et al. (2010)	Films	Violence; Objectification & Degradation; Safe Sex Practices
Carrotte et al. (2020)	Review	Violence; Sex Acts
Downing et al. (2014)	Internet videos	Violence; Objectification & Degradation; Safe Sex Practices
Fritz & Paul (2017)	Internet videos	Violence; Objectification & Degradation
Fritz et al. (2020)	Internet videos	Violence
Fritz et al. (2021)	Internet videos	Racism
Gorman et al. (2010)	Internet videos	Violence; Objectification & Degradation; Racism; Safe Sex Practices
Grudzen et al. (2009)	Films	Sex Acts; Safe Sex Practices
Jensen (2010)	Video covers	Objectification & Degradation
Klaasan & Peters (2015)	Internet videos	Violence; Objectification & Degradation
Mazandarani (2021)	Internet videos	Objectification & Degradation
McKee (2005)	Films	Violence; Objectification & Degradation
McKee et al. (2008)	Films	Violence; Objectification & Degradation; Performer Appearance
Peters et al. (2014)	Internet videos	Objectification & Degradation; Performer Appearance
Rasmussen et al. (2019)	Internet videos	Infidelity
Salmon & Diamond (2012)	Film	Violence; Objectification & Degradation
Séguin et al. (2018)	Internet videos	Objectification & Degradation
Seida & Shor (2021)	Internet videos	Violence; Objectification & Degradation
Shor (2019)	Internet videos	Violence
Shor & Golriz (2019)	Internet videos	Racism
Shor & Seida (2019)	Internet videos	Violence
Sun et al. (2008)	Film	Violence; Objectification & Degradation; Sex Acts; Safe Sex Practices
Vannier et al. (2014)	Internet videos	Violence; Objectification & Degradation; Sex Acts; Safe Sex Practices; Performer Appearance
Willis et al. (2020)	Films	Consent Communication
Zhou & Paul (2016)	Internet videos	Objectification & Degradation; Racism
Zhou et al. (2019)	Internet videos	Sex Acts

Table 3

The Ten Most Searched for Terms on Pornhub for the Years 2016 to 2018

Position	2016	2017	2018
1 st	Lesbian	Lesbian	Lesbian
2 nd	Step mom	Hentai	Hentai
3 rd	MILF	MILF	MILF
4 th	Teen	Step mom	Step mom
5 th	Step Sister	Step sister	Japanese
6 th	Mom	Mom	Mom
7 th	Cartoon	Teen	Teen
8 th	Hentai	Japanese	Asian
9 th	Massage	Massage	Massage
10 th	Japanese	Anal	Korean

Table 4

The Ten Most Viewed Categories on Pornhub for the Years 2016 to 2018

Position	2016	2017	2018
1 st	Lesbian	Lesbian	Lesbian
2 nd	Teen	MILF	Japanese
3 rd	Ebony	Ebony	MILF
4 th	MILF	Hentai	Ebony
5 th	Anal	Japanese	Hentai
6 th	Big dick	Anal	Anal
7 th	Hentai	Mature	Mature
8 th	Big tits	Big tits	Threesome
9 th	Threesome	Threesome	Big tits
10 th	Mature	Big dick	Big dick