



Premature Speculation Concerning Pornography's Effects on Relationships

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The possible effects of pornography use on romantic relationships, as well as other outcomes more broadly, are a deeply divisive issue. Partially reflecting public concern regarding the dangers of pornography (Montgomery-Graham, Kohut, Fisher, & Campbell, 2015), much of the accumulated research appears to indicate that pornography use may undermine relationship quality (Wright, Tokunaga, Kraus, & Klann, 2017). There is, however, a minority position that has been critical of the view that pornography harms relationships, which has criticized the existing literature on both methodological and conceptual grounds (Campbell & Kohut, 2017), and pointed to select studies that indicate potential relational benefits of pornography use (see Kohut, Fisher, & Campbell, 2017). It is within this empirical milieu that Leonhardt, Spencer, Butler, and Theobald (2018) proposed a theoretical framework for understanding the effects of sexual media on different aspects of relationship quality. Their Target Article appears to be a genuine attempt to reconcile diverse findings in this domain, and we applaud them for providing more than token treatment of the possible non-negative effects of pornography use while still accounting for the presumed harms. In a field that has been criticized for being too atheoretical (Newstrom & Harris, 2016), we see this as a positive step forward.

We do feel there are several issues, however, that limit the utility of this newly proposed framework. It is our opinion that this theoretical proposal may be premature because non-trivial problems pertaining to the measurement of pornography use will likely hamper future applications and attempts at falsification. Further, there are some elements of this specific framework that are unclear to us or with which we disagree and we encourage Leonhardt et al. (2018) to consider additional explication,

elaboration, and refinement of this model. Finally, it occurs to us that this framework further compounds the assumed causal role of pornography use on downstream outcomes, largely ignoring alternative explanations and well-established theories that may plausibly apply.

Issues of Measurement

As suggested by Leonhardt et al. (2018), there are several important measurement issues with respect to the assessment of pornography use in the existing literature. Here we focus on two in particular: (1) how pornography use has been operationalized; and (2) the lack of validity of the measures that have been used.

To put it bluntly, there is no clear consensus on operational definitions of pornography use in survey and experimental work (Kohut, 2014; Willoughby & Busby, 2016). Thus, there has been very little consistency in the measurement of pornography use across studies (see Fisher & Barak, 2001; Short, Black, Smith, Wetterneck, & Wells, 2012). There are substantial differences in the terminology used to refer to the type of material consumed in survey research (e.g., X-rated materials, pornography, sexually explicit materials), and researchers do not always provide definitions of these specific terminologies to their participants. Major differences also exist in the types of media referred to in the questions (e.g., magazines, videos, pictures, internet content), the time intervals over which pornography use is reported (e.g., over the past year, use in the prior week), and the response options that are provided to participants (e.g., Likert scales, frequency scales, timescales, recency measures). This lack of consistency in the definition and measurement of pornography use does not simply make it difficult to meaningfully compare results obtained across independent studies; it makes it virtually impossible. On this basis, we believe that creating a framework to model the existing corpus of knowledge is premature.

Differences in the definition and measurement of pornography use are directly related to the second measurement issue, that of validity. Measures of pornography usually rely

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on self-reports of prior behavior, but do these self-reports truly reflect the amount of pornography used (or the actual behavior)? The devastating answer to this question is that we do not currently know. No existing measures have been systematically validated with objectively obtained behavioral data. If self-reports of pornography use are not accurate representations of actual behavior, then research using such measures are severely limited in their ability to address possible links between pornography use and other constructs such as relationship and sexual quality.

Recent research on the accuracy of self-reported internet, as well as smartphone use, suggests that caution is warranted when inferring the accuracy of self-reported measures of pornography use. For instance, Scharkow (2016) found that self-reported frequency of internet use was weakly associated with actual use as identified from the log files obtained from participants' computers. Similarly, Ellis, Davidson, Shaw, and Geyer (2018) obtained weak correlations between the actual amount of time participants spent on their Apple iPhones during a 6-day period (derived from Apple's Screen Time application) and a number of self-report scales of smartphone use as well as technology addiction scales, and concluded that existing self-report scales of smartphone use do not accurately reflect actual behavior. These results, combined with the numerous ways researchers operationalize pornography use, call into question the validity of self-report scales of pornography use, and therefore the conclusions of this body of research. (see Flake, Pek, Hehman, & Thorndike, 2017 on the importance of construct validity when evaluating empirical evidence.) It is conceivable that the published research on pornography use and relationship outcomes does not accurately reflect the association between actual pornography use and such outcomes. For this reason, we as researchers in this area need to begin anew, starting first by building a solid measurement foundation upon which to base our investigations.

Limitations of the Proposed Framework

The framework proposed by Leonhardt et al. (2018) can be divided into four interconnected yet discrete elements: (1) the content of pornography; (2) moderators of sexual script application; (3) couple-level moderators; and (4) short-term compared to long-term sexual quality. In brief, Leonhardt et al. assert that sexual scripts presented in different types of sexual content are variously applied depending on a host of moderators. If these scripts are applied within a sexual relationship, their meaning and ultimate impact depends on the nature of the relationship between partners. While we generally agree with the logic of this model, we do question some specific aspects of Leonhardt et al.'s development of the content of pornography and the proposed connections to short- and long-term sexual quality.

Prior to presenting their framework, Leonhardt et al. (2018) informally catalogue the content of sexual media, ultimately dividing all sexual content into three high-order, (presumably)

mutually exclusive, categories based on broad similarity in the depicted content (e.g., Suggestive Sexual Media, Explicit Sexual Media, and Paraphilic Sexual Media). This typology is important for the model given that pornographic content is presumed to influence sexual quality through the development of specific sexual scripts that flow directly from what is depicted in these materials. While we understand that Leonhardt et al., guided by recent empirical research, were simply fashioning a "rough typology" in an effort to illustrate the mechanics that underlie their model, we caution against the uncritical adoption of these specific divisions.

From our perspective, the proposed typology has at least three shortcomings. First, it is neither the first, nor the most exhaustive typology, that has been considered. Other typologies, for example, have included child pornography (see Gunter, 2001) or have distinguished between "mainstream"/"degrading" (Fisher & Barak, 2001; Weaver, 1994) and "idealized sexual themes"/"erotica." Clearly, Leonhardt et al. (2018) have not considered other broad categories of script-based content, the enactment of which would plausibly have implications for sexual relationships. Second, while this typology is premised on empirical work, very few studies have examined what pornography users actually consume, and as alluded to above, this research also suffers from critical measurement issues that undermine the conclusions that can be drawn. One consequence of the paucity of systematic research that rigorously examines the nature of content that is widely consumed, is that any informal cataloguing of such content is necessarily speculative. Under such circumstances, errors are likely, and indeed there are several assertions made by Leonhardt et al. about the nature of sexual content that are verifiably untrue. For example, in contrast to the Leonhardt et al.'s claims, we contend that intimacy and sexual communal strength are present in some explicit sexual media, including "paraphilic sexual media." Participation in kinky sex involves a great deal of trust and validation and is known to enhance feelings of interpersonal closeness between partners (Sagarin, Lee, & Klement, 2015). Thus the depiction of consensual kinky sex in paraphilic sexual media *can* involve intimacy-related cues (e.g., the willing submission of bottoms, tops responding appropriately to the limits of bottoms, aftercare) and typically provides an explicit demonstration of an extreme form of sexual communal strength in which bottoms willingly sacrifice their selfhood for the sexual fulfillment of their partner. Broad mischaracterizations of content have serious implications for the predictions offered by this model. Finally, we are concerned that the proposed groupings are too broad to be of much use for understanding specific relationship consequences. Each of these categories homogenizes a diverse range of content, ignoring how the presence or absence of other content features may themselves moderate the expression of sexual scripts. We could, for example, further divide the paraphilic sexual media into examples that involve explicitly consensual acts and examples that do not. In the most extreme example, kink.com films

explicit verification of consent, and negotiation of behaviors that may be explored in a scene before the sexual encounter is shot. If we are to take Leonhardt et al.'s scripting arguments seriously, consumption of materials from sites like *kink.com* should not result in the enactment of dominance or fetishistic acts without the approval of a partner. Sexual media are very complex stimuli, and higher-ordered typologies are unnecessary when researchers can consider more specific aspects of content that are tied to directly to their research questions (e.g., barebacking in gay porn when studying safer-sex among MSM).

In addition to problems with the Leonhardt et al.'s (2018) sexual media typology, we also find the Leonhardt et al.'s discussion of sexual quality somewhat problematic. We generally agree with Leonhardt et al.'s premise that it is important to move beyond higher-order measures of sexual satisfaction by examining a variety of specific indicators of sexual quality, and we believe that Leonhardt et al. have identified a good collection of indicators which may have different relationships with pornography use. What is at issue, for us, is the distinction between short- and long-term sexual qualities. The authors contend that short-term sexual quality taps an erotic dimension of sexuality, while long-term sexual quality taps a relational component.

It is our view that the distinction between short- and long-term sexual qualities contributes to more confusion than it clarifies. To some extent, the very nomenclature used to make this distinction is confusing. Typically short- and long-term relationships refer to relationships that differ in their degrees of commitment (e.g., one-night stands vs. a couple married for 20 years). The adoption of this terminology contributes to the improbable assumption that improvements in sexual technique would not contribute to evaluations of sexual quality among couples who have been married for long periods of time or that differences in sexual communication would not be related to differences in sexual quality during booty calls. This choice of language may have implications for how others understand and apply this framework in their own research.

The core of our concern, however, is that differentiating between these two factors appears to be a largely arbitrary division based on insufficient justification that minimizes positive reciprocal relationships between specific indicators. The factor of sexual openness provides a useful example. Leonhardt et al. (2018) describe sexual openness as the pursuit of sexual gratification free of inhibitions and restraint, and argue that it reflects short-term sexual quality, based on the work of Pascoal, Narciso, and Pereira (2014) that indicates that sexual openness is an "individual characteristic" that "is not contingent on a sexual partner." To begin with, asserting that sexual openness is not contingent on a sexual partner is a highly dubious claim. While not denying the possibility that sexual openness has a dispositional component, we find it incredibly unlikely that factors like the degree of trust one has with a partner would not determine the extent of sexual openness that one exhibits or experiences within a specific sexual encounter or relationship (see LoPiccolo

& Friedman, 1988). Moreover, sexual intimacy, or feelings of closeness based on experience of shared vulnerability, both require and contribute to experiences of sexual openness in relationships. We would argue, based on Reis and Patrick's (1996) interpersonal process model of intimacy, that if pornography improves sexual openness, then it will also provide the potential for increased intimacy by allowing a person to initiate or express an interest in novel sexual behaviors, which in turn leaves them vulnerable and open to evaluation by their partners. Dividing indicators of sexual quality into two overarching groups does little to advance knowledge when each of these indicators can be treated as discrete but highly interrelated components of sexual quality.

Concerns About the Theoretical Focus

The proposed model generally adheres to the premise that pornography use is a cause of downstream thoughts, feelings, and behaviors. Specifically, the use of different types of pornography results in the development of different types of sexual scripts (with the consideration of some possible moderating effects). Then these different sexual scripts, when enacted, contribute to the development of positive/negative short- or long-term sexual quality. Although Leonhardt et al. (2018) admit that "the application of identified sexual media scripts is not solely responsible" for pornography-related changes in sexual quality, the explication of other potential mechanisms is rather brief and under-developed in their work. All models prescribe how researchers should address research topics, and this model primarily positions pornography-induced changes in sexual scripts as the "cause" and positive or negative sexual quality as the "effect."

It is easy to understand the emphasis that is placed on the enactment of sexual scripts, but other models should be considered just as seriously. The simplest, of course, is that dysfunctional sexual relationships may contribute to solitary pornography use as form of sexual surrogacy, just as functional relationships may contribute to the use of pornography together as a way of sharing novel sexual experiences among erotophilic partners. Although relevant longitudinal findings are admittedly mixed on this point, Leonhardt et al. (2018) may wish to consider how their model can be adapted to take into account the possibility of mutual causality; at present, a cyclical pattern of reciprocal relationships between "cause" and "consequence" cannot be ruled out.

Even more relevant to us as social psychologists, the focus on media use as a causal agent ignores a wealth of well-founded social psychological theory that offers competing explanations for many of the established "effects" of pornography. For example, there are individual difference antecedents of pornography use, like attachment orientation, that are positively related to both pornography use (Tylka, 2015) and negatively related to

relationship functioning (Mikulincer & Shaver, 2013). It is plausible that attachment insecurity, which begins to develop long before most individuals first use pornography, manifests later in increased pornography use while independently undermining relationship functioning at the same time. Additionally, much like the moral paradigms mentioned by the Leonhardt et al. (2018), attachment theory may be very relevant for understanding how one partner reacts to the other partner's pornography use. Emerging experimental research conducted in our laboratory suggests that the attachment anxiety of one partner heightens negative responses to the other partner's pornography use (Kohut, Campbell, & Fisher, 2016). Importantly, this may have nothing to do with the adoption or enactment of sexual scripts per se, as we find the same pattern of results when anxiously attached individuals find their partners eating a meal—a burrito in this case—by themselves. We currently suspect that these results may simply indicate that anxiously attached individuals feel more threatened when their partners engage in solitary behaviors that are traditionally communal behaviors in relationship contexts (e.g., eating together, having sex with one another, going to the movies together).

Beyond attachment, there are other theories that have relevance for understanding correlations between pornography use and sexual quality that do not assume that relationship consequences follow pornography precipitated changes in sexual scripts. For example, there is a wealth of research demonstrating that similarity in attitudes, personality, and preferences is important for understanding attraction as well as relationship and sexual functioning (Montoya & Horton, 2013). This literature would suggest that similarity/dissimilarity in pornography use, which indicates similarity/dissimilarity in a host of attitudinal and individual difference variables (e.g., erotophilia, religiosity, sex drive) may be the primary determinant of sexual quality rather than exposure to sexual media. Indeed, we have recently found that dissimilarity in solitary pornography use is associated with less open sexual communication and less closeness (Kohut, Balzarini, Fisher, & Campbell, 2017), and we have preliminary unpublished results that extend this pattern of findings to relationship and sexual satisfaction (Kohut et al., 2018).

While we are happy to see an explicit acknowledgment that relationship consequences may extend beyond script-based explanations of the effects of pornography use, the minimal treatment of this issue in this framework is unfortunate. Although perhaps a minority view, alternative mechanisms may completely explain the weak associations between pornography use and sexual satisfaction without having to invoke the enactment of sexual scripts.

Conclusion

In keeping with our previous work in this area, we have been very critical of the framework proposed in Leonhardt et al.'s (2018) Target Article, perhaps too critical. Although we believe that some of the specifics may be incorrect and the theoretical focus may be misguided, we are in general agreement that the proposed process outlined in this model offers one possible explanation for the connection between pornography use and sexual quality. We are also very enthusiastic about the development of a more nuanced script-based approach that acknowledges a diverse plethora of potential relationship outcomes. From our perspective, these and other elements of this work clearly have merit. Ultimately, though, a good theory is one that makes novel supported predictions. Now that these ideas are out there, they need to be vetted and shaped by honest attempts at falsification. But in our view, what is needed first is research that attempts to create a valid measure of actual pornography use, using a consistent definition of pornography. Without valid measures of pornography use, falsification of this, and other relevant theories, will be difficult if not impossible. It is our hope that Leonhardt et al.'s (2018) Target Article will ultimately serve to inspire more carefully considered research that can be used to further shape and guide theoretical development and refinement.

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