

Aleksandar Štulhofer¹
Ivan Landripet
Aco Momčilović
Vlasta Matko
Predrag G. Kladarić
Vesna Buško

Faculty of Humanities and Social Sciences, University of Zagreb, Croatia

**PORNOGRAPHY AND SEXUAL SATISFACTION AMONG YOUNG
WOMEN AND MEN: HOW TO CONCEPTUALIZE AND MEASURE
POSSIBLE ASSOCIATIONS**

Pornography and Young People

With the advent of digital technology and World Wide Web, sexually explicit materials have become ubiquitous (Cooper et al., 2000; Fisher & Barak, 2001). Due to its new and unprecedented availability, affordability and anonymity of use (Cooper & Griffin-Shelley, 2002), *cyber-porn* has become a part of contemporary lifestyles. Virtual ubiquity of sexually explicit materials and the on-going (and largely cross-cultural) process of cultural permissiveness (Scott, 1998) have transformed pornography, in socio-cultural terms, into an entertainment genre. This normalization of porn use is not only evident on the micro level - in the ease with which young people talk about pornography and its role in their lives today - but also in the mainstreaming of porn esthetics, described by terms such as *porn-chic* and *striptease culture* (McNair, 2002).

Unfortunately, a huge increase in the supply of pornography and an increase - mostly voluntary, but sometimes also involuntary - in exposure to pornography, especially among younger generations (Rideout, 2001; Wollak et al., 2007), has not been met by intensified research efforts to analyze potential effects of pornography on young people's sexual socialization. Although both positive and negative effects are theoretically plausible, the first being mostly educational benefits (Attwood, 2002; 2005), the calls for a new wave of social science research on the effects of pornography are usually motivated by presumed harms (Novak, 2006; Paul, 2004) - especially when addressing the needs of young people (Zillman, 2000; Flood & Hamilton, 2003; Thornburgh & Lin, 2002; Ybarra & Mitchell, 2005). As Zillmann

(2000: 41) pointed out, “next to nothing is known about the consequences of the steadily increasing amount of such exposure”. Although the appeals are not always void of the elements of moral panic (Flood & Hamilton, 2003), we clearly lack empirical understanding of the ways pornography consumption contributes to contemporary construction of adolescent sexuality. Although a number of correlation-based studies of young people’s use of pornography have been published in the past years (Lam & Chan, 2006; Held, 2006; Ven-Hwei & Ran, 2005; Wolak et al., 2007; Ybarra & Mitchell, 2005; Stella et al., 2005; Wallmyr & Welin, 2006), none of them presented a rigorous and robust analysis of the direct and indirect effects of consumption. The situation is hardly better in the qualitative camp (Attwood, 2005).

Whether what we need now is a “reconceptualization of harm from exposure to erotica” (Zillmann, 2000: 42) or a more broad and sex-positive emphasis on the myriad of ways pornography can affect young people’s sexual health (Attwood, 2005)², the importance of new research on pornography, especially cyber-porn, seems undisputed. This becomes even more obvious when we consider policy implications reflected in current educational dilemmas of how to approach and deal with the subject of explicit sexual contents, whether in schools, correctional youth facilities, counseling settings or other youth services.

Beyond the Standard Approach: Pornography, Sexual Socialization, and Sexual Satisfaction

In order to move beyond the so called *standard social science model* (SSSM) and the dominant experimental design focused on socially-detrimental attitudes and behaviors (Malamuth, 2001), it is necessary, in our view, not only to change the methodological approach, but also the meta-theoretical motivation. Keeping in mind the fact that sexually explicit materials are, and will continue to be, part of our daily environment, a significant reformulation of the pornography research agenda is needed. Research on pornography should broaden its scope and expand, if not replace, the usual goals. It should venture into the analysis of the effects of pornography use on individual and dyadic sexual health. In the light of claims that pornography is “transforming sexuality and relationships” (Paul, 2004) and altering the very fabric of intimate relationships (Novak, 2006), social science is called upon to establish whether pornography possesses such powers and, if so, to uncover the mechanisms of influence.

The initial interest behind our study was to analyze a possible impact of exposure to pornography, both in childhood and later, on sexual preferences, attitudes toward relationships and intimacy, and current sexual satisfaction in young women and men. Our ambition was to find out whether pornography plays a role in shaping sexual identities and expectations, and whether it contributes to the construction of young women and men's "internalized working models" of their and others' sexuality (Hardy, 2004: 16). This emphasis on the process of symbolic interaction between pornographic presentations, related fantasies, real-life sexual experiences, frustrations, partners' demands and desires, as well as peer conversations about sex – let us call it the socially negotiated micro-dynamics of pornography use – was largely absent from pornography studies, especially in quantitative research.

The notable exceptions were two experimental studies from the 1980s, both concerned with the impact of exposure to erotica or pornography on judgments regarding one's sexual partners, relationships and satisfaction with one's sex life. The first found that both male and female students and non-students expressed less sexual happiness and satisfaction (including satisfaction with partner's appearance, sexual curiosity and sexual performance) after being exposed to non-violent sexually explicit materials during six one-hour weekly sessions (Zillman & Bryant, 1988). In the other study, Kenrick et al. (1989) reported that only men rated their relationship and partner's attractiveness significantly lower after viewing magazine centerfolds. Although the studies suggest a negative impact of pornography/erotica on sexual satisfaction, they have significant limitations that need be taken into account. Both studies suffer from a relatively small number of participants, selection biases and rather brief exposure to pornography (which was, presumably, a novel experience for some of participants). Moreover, the studies were conducted in a single culture and at the time when pornography was considerably less available, less diverse and more stigmatized than today (Pratt, 1986).

In contrast to those studies, we opted for a non-experimental, retrospective approach. We surveyed a large number of young women and men asking them about their sexual preferences, relationships, intimacy, and experiences with pornography from the age of 14 on.. The retrospective character of the research study was essential to our assumption that pornography does not necessarily have a direct influence on sexual satisfaction, but an indirect one, through specific sexual socialization. In an earlier study carried out on a sample of habitual pornography users, members of a US-

based association of porn enthusiasts (Štulhofer et al., 2004), we found no direct effects of pornography consumption on participants' sexual satisfaction.

In order to better understand indirect effects of pornography, a proper theory of sexual socialization is needed.³ The sexual script theory is an obvious candidate. According to its authors, sexual scripts are specific cognitive schemata or personalized systems for defining sexual reality (Gagnon and Simon, 1973). They represent everyday heuristics or cognitive shortcuts that enable quick, sometimes almost automatic sexual decision making and responses. Sexual activity, as well as a considerable part of sexual performance, is assumed to be a direct result of a codified sequence of events, not much different from the script of a play – hence the metaphor (Simon & Gagnon, 1986; Frith & Kitzinger, 2001).

Even though it might appear that as many operational scripts exist as there are people, the sexual script theory situates sexuality in a broader social context and historicizes individual sexual behavior, referring to it therefore as sexual conduct (Gagnon and Simon, 1973; Simon and Gagnon, 2003). Scripting theory does allow room for variations and innovations within each culture, but postulates nonetheless that only a limited number of scripts are commonly pursued as the presence of the dominant norms and the existing, culturally mediated scripts (including pornography) is widely recognized and accommodated (Simon and Gagnon, 1999).⁴ The scripting approach has been used in the context of pornography use, but only qualitatively (Hardy, 2004; Attwood, 2002).

The concept of indirect effects of pornography, via sexual scripting, on sexual satisfaction is schematically presented in Figure 1. Our model stipulates the role of pornography in the process of intrapersonal sexual script construction, which is mediated by individual evaluation of pornographic materials. The evaluation is dependent on several intrapersonal (personality traits), interpersonal (social isolation, prior sexual experience) and socio-cultural (gender-specific norms and expectations) factors. The process of script construction is bi-directionally related to sexual outcomes. Sexual scripts guide sexual reactions and behaviors (reference), but are also affected by on-going sexual experiences and relationships. This *re-writing* of the intrapersonal sexual script is based on the “sexual reality principle” which entails shared experiences, emotional investments and exchanges, and communication about sex. As our model suggests, the interplay of all these (sequentially structured) factors determines the actual level of sexual satisfaction.

FIGURE 1 ABOUT HERE

Two hypotheses emerge from the presented model. The first (H1) posits that there is no direct association between pornography use and sexual satisfaction. Pornography affects sexual satisfaction only indirectly, mediated by the process of sexual socialization (sexual scripting), which determines a probability of positive sexual and emotional experiences that sexual satisfaction is dependent upon.

The second hypothesis (H2) takes into consideration gendered process of sexual socialization and marked differences between male and female sexual scripts (Wiederman, 2005). The fact that dominant social norms which regulate sexuality, especially adolescent sexuality (Reiss, 1986; Thompson, 1999), create gender-specific guidelines for sexual scripting informs our hypothesis in the following manner: we expect to find substantial differences in the pathways of indirect effects of pornography on sexual satisfaction among young women and men (Flood et al., 2003).

An Empirical Probe: On-line Study of Pornography and Sexual Satisfaction

A recent study on pornography use among young adults carried out in Croatia enables the above hypotheses to be tested, although only in a preliminary manner. In late 2006, a generic e-mail message was sent to college students' mailing lists at several universities. It contained a brief explanation of the research study, the link to an on-line questionnaire, and a request that the recipient forward the message to their friends and acquaintances of eligible age.⁵ The site was visited by 6,443 individuals; 4,605 started filling in the questionnaire (71% response rate) and 3,136 filled it out (49% completion rate). After excluding participants of ineligible age (under 18 and over 25)⁶, those who did not provide information about their age or sex, those who completed less than 90% of the survey, and those who did not use pornography at any of the time points assessed (at the age of 14, at the age of 17 and currently),⁷ the sample was reduced to 2,092. For multivariate analyses, the sample was further reduced to 1,914 by excluding participants who never experienced sexual intercourse.

The questionnaire application, based on Microsoft ASP.NET version 2 technology, was hosted on the Windows Server 2003 with the IIS 6.0 web server. No database software was used; raw data was recorded as a *flat text file*, which was later

preprocessed into Microsoft Excel compatible format. To ensure anonymity, neither IP address recording nor *permanent cookies* were used. Only a *session cookie* (lasting for 20 minutes from the last access) was used to identify a user session.

The questionnaire consisted of 244 items and required 30-40 minutes to complete. The first and lengthier version of the questionnaire was pre-tested on 277 college students to assess validity and reliability of composite indicators. The second, shortened version was pre-tested again for comprehensibility and time requirements on a dozen college students.

According to our theoretical model, pornography use affects the process of intrapersonal sexual scripting by providing a wish list of sexual acts, bodies, images and narratives, as well as a specific model of male and female sexuality (Hardy, 2004). To enable measurement of the impact of pornography on sexual scripting, the authors developed an original tool, the *Sexual Script Overlap Scale* (SSOS), which provides a quantifiable insight into the process of pornographic “colonization” of sexual scripts.

The scale was developed by asking two groups of college students, 76 young women and men in total, to make a list of things/activities/sensations that are (a) important for pornographic depiction of sex, and (b) personally important for great sex, respectively. The two inventories, the porn script inventory and the “great sex” inventory, were then combined. If an item was mentioned only once in students’ lists and was judged irrelevant by all four authors, it was removed from the final inventory. In total, the inventory comprised 42 items. In the first part of the questionnaire, participants were asked to assess the importance of the listed items for “great sex” using a 5-point scale (ranging from 1 = “completely unimportant” to 5 = “extremely important”). At the end of the questionnaire, participants were asked to assess the inventory again, but this time they were asked about each item’s importance “for pornographic presentation of sex”.

The SSOS scores were computed on the paired (the great sex vs. the porn) items by subtracting the second from the first. If, for example, the item “cuddling after sex” was judged as “somewhat important” (3) for good sex life and “completely unimportant” (1) for pornographic presentation of sex, the pair was scored 2. The SSOS was additive, representing the sum of scores for all 42 pairs of items. Even though the instrument was derived from multidimensional scales (that included different aspects of sexual performance and activity, emotions and communication,

physical appearance, bodily features, and power balance between partners/actors), it demonstrated a high level of internal consistency (Cronbach's $\alpha = .91$). The results ranged from 0 to 143 and were distributed in a Gauss-like fashion; the mean score was 71.7 ($SD = 21.6$). The larger the score, the larger the separation between the mental representations of pornographic sex and “great sex”.

Pornography and Sexual Satisfaction: Preliminary Findings

Sociodemographic and socio-sexual characteristics of the sample are presented in Table 1. The participants' mean age was 22 ($SD = 2.03$). The majority had at least one college educated parent and was living in a big urban setting. Over 90% of participants were sexually active, with almost one in five reporting at least one sexual partner of the same sex. Young women were more likely to be in a relationship and were somewhat more satisfied with their sex life.

TABLE 1 ABOUT HERE

Consistent with other studies (Malamuth, 2001), including those carried out on young adults in different cultures (Held, 2006; Wolak et al., 2007; Stella, 2004; Flood & Hamilton, 2003; Ybarra & Mitchell, 2005; Wallmyr & Welin, 2006; Ven-Hwei & Ran, 2005), we found the men to be more frequent users of pornographic materials than the women. Also, they reported earlier exposure to pornography, had more positive attitudes toward pornography and attached more personal value to pornography use (Table 2). Regarding the main source of pornographic materials, Internet was mentioned significantly more often by male participants. In comparison to a recent finding that only a small minority of young men (9%) used online pornography with their partners (Lam & Chan, 2006), such pattern of use was reported by about 40% of men in our sample. Less than three percent of male and female participants often used pornography as an overture to having sex in the last month.

TABLE 2 ABOUT HERE

To assess possible direct impact of pornography consumption on sexual satisfaction, multiple regression analyses were carried out separately for male and female participants. In addition to pornography use, body image, intimacy, and sexual experience were included as predictors.⁸ Unlike the other three variables, pornography was not found a significant predictor of sexual satisfaction either among men ($\beta = -.03, P > .44$) or women ($\beta = .06, P > .14$).

Next, we tested the hypothesis about indirect effects. Based on the theoretical expectation that pornography exposure/use contributes to the scripting process, which influences sexual satisfaction through sexual experience and intimacy⁹, we performed the analysis of structural equations models with five latent variables.¹⁰ To test the assumption about gendered pathways, the analysis was done separately for women and men.¹¹

In brief, structural equation modeling (SEM) is a comprehensive statistical methodology developed to enable testing of complex hypotheses about associations between observed and latent variables. A model is a specified set of dependence relationships that can be empirically tested – an operationalization of a theory. In general, evaluation of any SEM model is based on the comparisons between a covariance matrix implied by the theoretically specified model and an empirical matrix created by the observed data (Bryan et al., 2007).

Figure 2 presents main findings of the tested structural equation model in the case of young women. According to the χ^2 test and other overall fit indices, the model showed acceptable fit to the empirical data. Obtained standardized path coefficients indicated that pornography had a significant, albeit slight effect on the scripting process in the female model.¹² Actually, pornography had a larger effect on the range of sexual experience, which can, at least partially, be understood in educational and/or imitational terms. Overall, the model suggested that the effect of pornography on young women's sexual satisfaction was mediated primarily by the negative impact of scripting on intimacy. Pornography consumption was positively related to overlap between the porn script and the “good sex” script, which in turn was negatively associated with the level of intimacy with one's partner. However, the size of this indirect effect, according to path coefficients, was rather negligible.

FIGURE 2 ABOUT HERE

The male model is presented in Figure 3. Again, according to the goodness-of-fit indices, the proposed model could not be rejected by the data. As in the female model, after the direct path from pornography use/exposure to sexual experience (which was not a part of the initial model) was added, the χ^2 value and other indices confirmed an improvement in model fit. SEM parameters indicated a good fit. In contrast to the female model, both positive and negative indirect effects of pornography on young men's sexual satisfaction were observed. While the negative impact was mediated by the scripting process and intimacy (more pornography consumption, less intimacy), the positive impact was mediated by scripting and sexual experience. As in the case of women, the association between pornography consumption and sexual experience was both direct and indirect. While the indirect link might reflect increasing permissiveness and sexual openness as a consequence of exposure to pornography, the direct link might indicate a more immediate mechanism, such as sexual experimentation inspired by sexually explicit stimuli. If we compare the strength of positive (more varied sex life) vs. negative (less intimacy) indirect effects, the latter were somewhat larger.

FIGURE 3 ABOUT HERE

Our second hypothesis postulated gender-specific differences in indirect effects of pornography on sexual satisfaction. When the two structural equations models are compared, several distinctions emerge. First, the association between pornography use/exposure and sexual scripting is much stronger among men, which is consistent with the finding that men use pornography more often (and more continually) than women. Second, the association between sexual experience and intimacy is present in the female, but not in the male model. Again, the finding is consistent with the usual assertion that linking sex with emotions is more prevalent, and socially expected, among young women (Thompson, 1999). On the one hand, gendered macro scripts define (and *legitimize*) women's sexual interest through love and emotional closeness with her partner. On the other hand, becoming more intimate with one's partner and trusting him more facilitates woman's sexual explorations by making her confident that nothing bad or unwanted will take place in sexual

interaction. Thus, both cultural expectations and personal risk-management are responsible for the fact that many young women become fully comfortable with sex only once they feel close to and emotionally accepted by their partner.

The third gender-specific finding is the differential strength of association between sexual experience and satisfaction with one's sexual life. Although significant in both sub-samples, the relationship was stronger among male participants. This could reflect a stronger impact of varied sexual activities on male sexual satisfaction; in the case of female satisfaction, the role of variety of sexual acts was marginal. Interestingly, intimacy predicted both male and female sexual satisfaction much better than sexual experience. The fourth gendered finding was that the association between sexual scripting and intimacy was stronger in the male than in the female sub-sample, which seems to reflect a larger indirect impact of pornography consumption. Finally, the overall strength of mediated effects of pornography, estimated by standardized path coefficients, was larger in the case of male sexual satisfaction.

Pornography and Sexual Satisfaction in Young Adults

Has pornography become, as some authors claim, a new and problematic form of sex education – and thus a sexual health hazard (Paul, 2004; Zillmann, 2000)? Is it true that consumption of sexually explicit materials increases the probability of sexual dissatisfaction by creating unrealistic expectations, difficulties in forming and/or maintaining relationships (due to sexual callousness), and excitatory dependence on progressively and sexually more extreme visual stimuli, especially among young people? Testing an assumption about indirect and gendered effects of pornography on sexual satisfaction, our study offered a partial, although empirically robust answer to these questions.

It was proposed that exposure to pornography impacts the process of sexual scripting, which affects young people's satisfaction via specific sexual experiences and the level of intimacy achieved in sexual relationships. Using structural equations modeling, we demonstrated that indirect effects of pornography are negligible in the case of young women, but not in the case of young men. Although pornography use affects the scripting process in both cases, the overall influence is substantial – although quite moderate in size – only among men. As men consume sexually explicit

materials more consistently and more frequently than women, using it primarily to get aroused and self-pleasure themselves, the finding is hardly unexpected.

According to the findings, mediated effects of pornography among young men can be both positive and negative. While the first were related to more varied sexual experience, which is an important ingredient of male sexual satisfaction, the latter were related to a decrease in intimacy. It is unclear how these different effects were distributed and whether they affected different sub-groups of men. Are there additional variables or characteristics that filter out either positive or negative effects? In the future analyses we intend to explore the possibility that the type of pornographic materials consumed is such a filter.

Overall, were positive effects of pornography on male sexual satisfaction stronger than negative ones? The analysis presented suggested the opposite: negative impact of pornography use on intimacy (mediated by sexual scripting) affected sexual satisfaction more substantially.

Structural modeling revealed gender differences in a number of pathways in the sequence from pornography use to sexual satisfaction. In men we found stronger effect of pornography on sexual scripting and stronger negative impact of the scripting process on the level of intimacy achieved. Also, stronger positive influence of pornography use on the range of sexual experience (an educational effect) was observed among men. In contrast, a weak but statistically significant residual association between sexual experience and intimacy was found only among women.

Several limitations to our study should be mentioned. Although large, the sample was clearly not representative of the surveyed age group. Systematic self-selection was involved, most probably resulting in under-representation of less permissive and less pornography-exposed individuals. In addition, a certain amount of recall bias was unavoidable when reporting about events that took place a decade ago (porn use at the age of 14). We attempted to minimize this memory effect by limiting participants' age to 25.

It should also be noted that we focused on individual and not partner's sexual satisfaction. Although it is plausible to expect high correlation between partners' satisfaction, such an approach left unexplored the possibility that pornography use may have a stronger negative effect on the partner's sexual satisfaction.

Finally, a potentially important factor – the type or *genre* of sexually explicit materials – was not assessed in the analyses presented in this chapter. Although our

theoretical model acknowledged the role of pornographic genre (mainstream vs. paraphilic) in sexual scripting, its effect was not included in the measurement. It is unclear at this stage whether this potential effect is a direct or indirect one (according to our distinction), but we find it an important question to be explored in the future studies.

Pornography has never been as popular and accessible among young people as it is today. The digital revolution in the production and distribution of pornography, and a global (or at least Western) trend of sexual permissiveness have normalized the consumption of pornography, increasing its influence on the social construction of sexuality (McNair, 2002) and, consequently, on sexual socialization. What this makes clear is the need for more research on young people's *decoding* of pornography. In contrast with a more macro-oriented, social deviance perspective that guided pornography research in the 1970s and 1980s, a new research agenda should concentrate on the individual and couple's sexual well-being, avoiding ideological framing as much as possible. Neither moral outrage, nor stubborn reification of sexual freedom is helpful in understanding the impact of pornography on contemporary sexual socialization.

Appendix: Instruments used in the analyses of structural equation models

Exposure to pornography

Pornography consumption was measured by three 5-point (1 = every day, 2 = several times a week, 3 = several times a month, 4 = once a month or less, 5 = never) indicators assessing frequency of pornography use/exposure at the age of 14, 17, and currently ("How often have you used sexually explicit materials during the last 12 months?"). The three indicators were highly inter-correlated ($\alpha = .84$). In addition, we asked participants about the average time (hours per week) they spend on pornography. This indicator was significantly correlated with the three frequencies of use variables (r_s ranged from $-.43$ to $-.69$; $P > .001$). Indicators were recoded (values were reversed) so that higher scores would denote more exposure/consumption.

Sexual Experience

The instrument was composed of 11 "yes-no" format items that measured the range of personal sexual experience. A variety of sexual activities were assessed, including oral and anal sex, same-sex sex, group sex, role playing, BDSM, sex with strangers and sex in a public place. All affirmative answers were coded 1, and negative (no experience) 0. Higher scores indicated more varied or extensive sexual experience.

Intimacy

The degree of intimacy shared with the current romantic partner (or the most recent one) was assessed by five items based on the Miller Social Intimacy Scale (Miller & Lefcourt, 1982). The items measured the degree to which one feels close to his/her partner, the need to help/give support to the partner when he or she is in low spirits, the need to show one's feelings to the partner, as well as to spend time with him/her and share highly personal information. Responses were made on a 5-point scale (1 = almost never to 5 = almost always); higher scores reflected higher levels of intimacy. All items were moderately inter-correlated (Cronbach's $\alpha = .79$).

Sexual Satisfaction

Satisfaction with one's sexual life in general was measured by the modified Snell's Index of Sexual Satisfaction (Snell et al., 1993). The original instrument was reduced from five to three Likert type items: satisfaction with the way in which one's sexual needs are being met, the degree in which one feels sexually fulfilled, and the assessment whether something is presently missing from one's sexual life. The scale ranged from 3 to 15 (higher scores indicated higher level of sexual satisfaction) with the mean score of 9.88 ($SD = 3.46$). Cronbach's α for the scale was .92. Sexual satisfaction was additionally assessed by a single item indicator with a 7-point scale (from 1 = fully satisfied to 7 = extremely dissatisfied). The following wording was used: "All things considered, how satisfied are you with your sexual life at present?" The correlation between the sexual satisfaction scale and the single-item indicator was moderately strong ($r_s = .77$, $P < .001$).

References

- Attwood, F. (2002). Reading Porn: The paradigm shift in pornography research, *Sexualities* 5, pp. 91-105.
- Attwood F. (2005) What do people do with porn? Qualitative research into the consumption, use and experience of pornography and other sexually explicit media, *Sexuality & Culture* 9, pp. 65-86.
- Bryan, A., Schmiede, S. J., Broaddus, M. R. (2007). Mediation analysis in HIV/AIDS research: Estimating multivariate path analytic models in a structural equation modelling framework, *AIDS and Behavior* 11, pp. 365-382.
- Cooper, A. & Griffin-Shelley, E. (2002). The Internet: The next sexual revolution. In: A. Cooper (Ed.) *Sex and the Internet: A guidebook for clinicians*. New York: Brunner-Routledge.
- Cooper, A., McLoughlin, I. P. & Campbell, K. M. (2000). Sexuality in cyberspace: Update for the 21st century, *CyberPsychology and Behavior* 3, pp. 521-536.
- Fisher, W. A. & Barak, A. (2001). Internet pornography: A social psychological perspective on Internet sexuality, *Journal of Sex Research* 38, 312-325.
- Flood, M. & Hamilton, C. (2003). *Youth and pornography in Australia: evidence on the extent of exposure and the likely effects*. Discussion paper No 52. Canberra, Australia: The Australia Institute.
- Frith, H. & Kitzinger, C. (2001). Reformulating sexual script theory: Developing a discursive psychology of sexual negotiation, *Theory & Psychology* 11, pp. 209-232.
- Gagnon, J. & Simon, W. (1973). *Sexual conduct*. Chicago: Aldine.
- Hardy S. (2004). Reading pornography, *Sex Education* 4, pp. 3-18.
- Held, G. M. (2006). Gender differences in pornography consumption among young heterosexual danish adults, *Archives of Sexual Behavior* 35, pp. 577-585.
- Jöreskog, K. G. & Sörbom, D. (1996). *LISREL 8: User's reference guide*. Chicago: Scientific Software International.
- Kenrick, D., Gutierrez, S. & L. Goldberg (1989). Influence of popular erotica on judgements of strangers and mates, *Journal of Experimental and Social Psychology* 25, pp. 159-167.
- Lam, C. B. & Chan, D. (2006). The use of cyberpornography by young men in Hong Kong: Some psychosocial correlates, *Archives of Sexul Behavior* /on line first/.
- Malamuth, N. (2001). Pornography. In: J. Smelser & Baltes, P. B. (Eds.) *International Encyclopedia of Social and Behavioral Sciences*, Vol.17. Amsterdam: Elsevier: Amsterdam.
- McNair, B. (2002). *Striptease culture: Sex, media, and the democratization of desire*. London: Routledge.
- Miller, R. S. & Lefcourt, H. M. (1982). The assessment of social intimacy, *Journal of Personality Assessment* 46, pp. 514-518.
- Morrison, T. G., Ellis, S. R., Morrison, M. A., Bearden, A. & Harrison, R. L. (2006). Exposure to sexually explicit materials and variations in body esteem, genital

- attitudes, and sexual esteem among a sample of Canadian men. *Journal of Men's Studies* 14, pp. 209-222.
- Novak, C. (2006). 30 years later, porn affecting couples. *Ka Leo O Hawaii*; [Online] <http://www.kaleo.org/>; accessed 2006, September 19.
- Paul, P. (2004). The porn factor. *Time Magazine*, 19. January Issue (pp. 73-75); [Online] <http://www.time.com/time/magazine/article/0,9171,993158,00.html>; accessed 2007, April 7.
- Pratt, J. (1986). Pornography and everyday life, *Theory, Culture and Society* 3, pp. 65-78.
- Reiss, I. (1986). A sociological journey into sexuality, *Journal of Marriage and the Family* 48, pp. 233-242.
- Rideout, V. (2001). *Generation Rx.com: How young people use the Internet for health information*. Washington, D.C.: Kaiser Family Foundation; [Online]. <http://www.kff.org/entmedia/20011211a-index.cfm>; accessed 2007, March 30.
- Scott, J. (1998). Changing attitudes to sexual morality: A cross-national comparison. *Sociology* 32, pp. 815-845.
- Simon, W. & Gagnon, J. H. (1986). Sexual scripts: Performance and change, *Archives of Sexual Behavior* 15, pp. 97-120.
- Simon, W. & Gagnon, J. H. (1999). Sexual scripts. In: P. Aggleton & Parker, R. (Eds.) *Culture, Society and Sexuality: A Reader*, London: UCL Press.
- Simon, W. & Gagnon, J. H. (2003). Sexual scripts: Origins, influences and changes, *Qualitative Sociology* 26, pp. 491-497.
- Snell, W. E., Fisher, T. D. & Walters, A. S. (1993). The multidimensional sexuality questionnaire: An objective self-reported measure of psychological tendencies associated with human sexuality, *Annals of Sex Research* 6, pp. 27-55.
- Stella, R., Mazzuco, S., & Dalla Zuanna G. (2004). Pornography and sexual behaviour. In: G. Dalla Zuanna, & Crisafulli, C. (Eds.) *Sexual Behaviour of Italian Students*. Messina, Italy: University of Messina.
- Štulhofer, A., Matković, T. & J. Elias (2004). Pornografija i seksualno zadovoljstvo: postoje li veze? /Pornography and sexual satisfaction: Any associations?/, *Zbornik Pravnog fakulteta Sveučilišta u Rijeci* 25, pp. 707-720.
- Thompson, S. (1999). *Going all the way: Teenage girls' tales of sex, romance, and pregnancy*. New York: Hill & Wang.
- Thornburgh, D. & Lin, H. S. /Eds./ (2002). *Youth, Pornography, and the Internet*. Washington, D.C.: National Academy Press.
- Ven-Hwei, L. & Ran, W. (2005). Exposure to Internet pornography and Taiwanese adolescents' sexual attitudes and behaviour, *Journal of Broadcasting and Electronic Media* 49, pp. 1-19.
- Wallmyr, G. & Welin, C. (2006). Young people, pornography, and sexuality: Sources and attitudes, *Journal of School Nursing* 22, pp. 290-295.
- Wiederman, M. W. (2005). The gendered nature of sexual scripts, *Family Journal* 13, pp. 496-502.

Wolak, J., Mitchell, K., Finkelhor, D. (2007). Unwanted and wanted exposure to online pornography in a national sample of young Internet users, *Pediatrics* 119, pp. 247-257.

Ybarra, M. L. & Mitchell, K. J. (2005). Exposure to internet pornography among children and adolescents: A national survey, *CyberPsychology and Behavior* 8, pp. 473-486.

Zillman, R. & Bryant, J. (1988). Pornography's impact on sexual satisfaction, *Journal of Applied Social Psychology* 18, pp. 438-453.

Zillmann, D. (2000). Influence of unrestrained access to erotica on adolescents' and young adults' dispositions toward sexuality, *Journal of Adolescent Health* 27, pp. 41-44.

Figures & Tables

Figure 1 – Theoretical Model of Indirect Effects of Pornography Use on Sexual Satisfaction

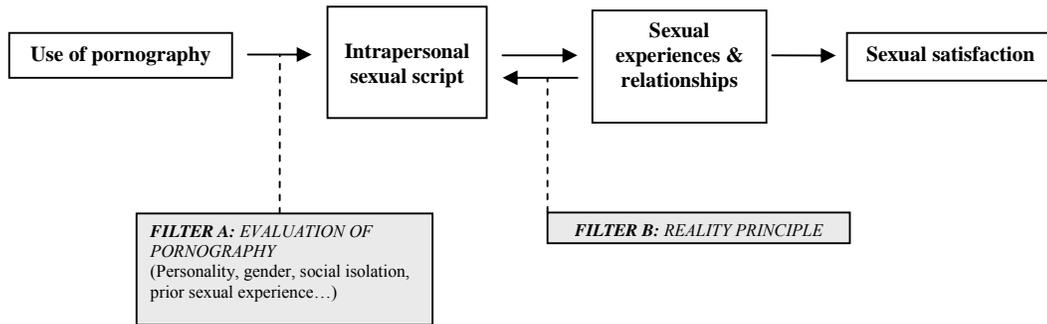
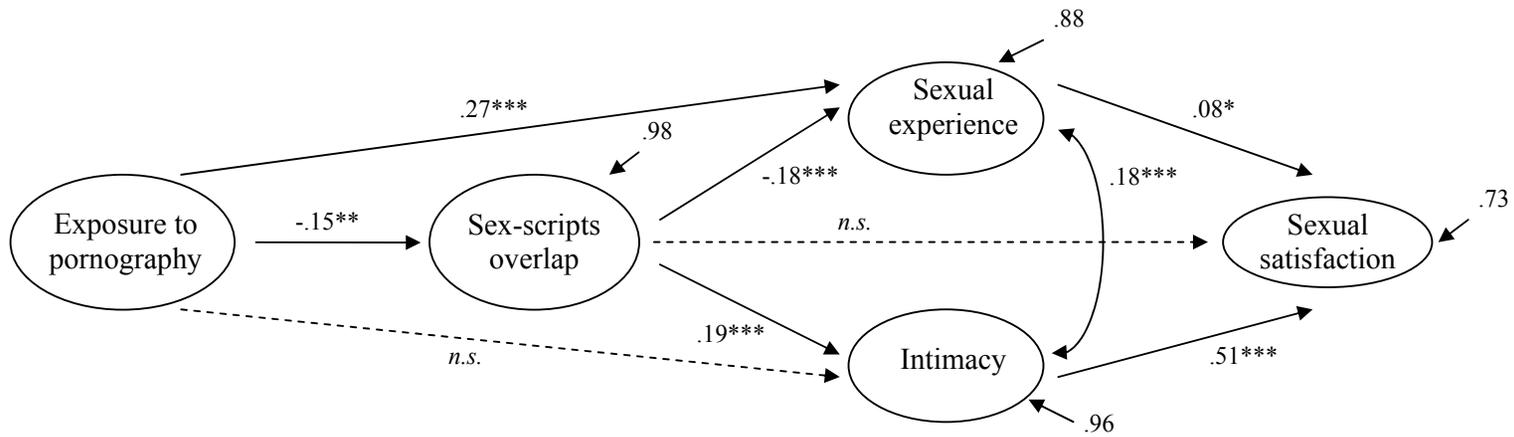


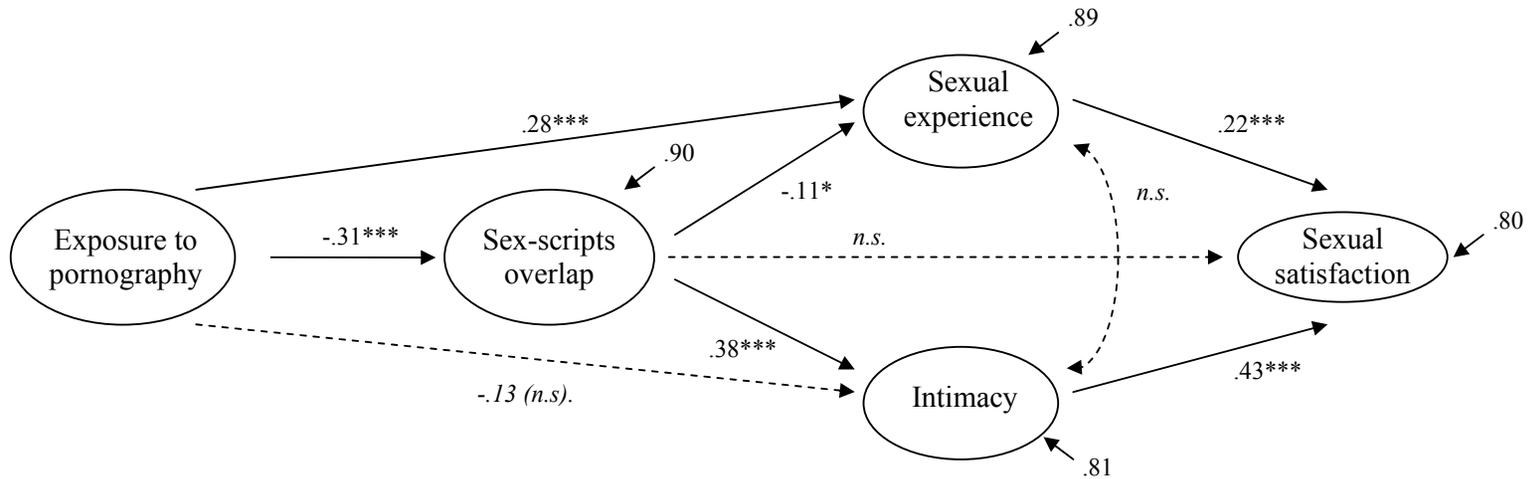
Figure 2 – Path Diagram of the Hypothesized Impact of Pornography-Affected Sexual Socialization on Sexual Satisfaction of Young Women (n = 915)



* $P < .05$, ** $P < .01$, *** $P < .001$; *n.s.* = non-significant path

Goodness-of-fit indices: $\chi^2 = 15.36$, $DF = 9$, $P > .08$; RMSEA = .028; AGFI = .99

Figure 3 – Path Diagram of the Hypothesized Impact of Pornography-Affected Sexual Socialization on Sexual Satisfaction of Young Men (n = 565)



* $P < .05$, ** $P < .001$; n.s. = non-significant path

Goodness-of-fit indices: $\chi^2 = 15.37$, $DF = 9$, $P > .08$; RMSEA = .035; AGFI = .98

Table 1 – Sociodemographic and Socio-Sexual Characteristics of the Sample

	<i>Women</i> (n=1269)	<i>Men</i> (n=823)	All (n=2092)	GD
	n (%)			
<i>Age</i>				n. s.
18-21	535 (42.2)	351 (42.7)	886 (42.4)	
22-25	734 (57.8)	472 (57.3)	1206 (57.6)	
<i>Parents' education</i>				n. s.
Both parents without college education	545 (43.0)	340 (41.4)	885 (42.4)	
One parent with college education	355 (28.0)	236 (28.8)	591 (28.3)	
Both parents with college education	368 (29.0)	245 (29.8)	613 (29.3)	
<i>Place of residence at the age of 14</i>				n. s.
Metropolitan setting	691 (54.4)	473 (57.6)	1164 (55.7)	
City	311 (24.5)	193 (23.5)	504 (24.1)	
Town	162 (12.8)	93 (11.3)	255 (12.2)	
Village	105 (8.3)	62 (7.6)	167 (8.0)	
<i>Currently in relationship</i>				**
Yes	842 (66.4)	484 (59.1)	1326 (63.5)	
<i>Experience of sexual intercourse</i>				n. s.
Yes	1175 (93.0)	739 (90.2)	1914 (91.9)	
<i>Sexual partners</i>				*
Exclusively of the other sex	991 (79.7)	635 (78.4)	1626 (79.2)	
Mostly of the other sex	71 (5.7)	24 (3.0)	95 (4.6)	
Of both sexes	21 (1.7)	13 (1.6)	34 (1.7)	
Mostly of the same sex	34 (2.7)	17 (2.1)	51 (2.5)	
Exclusively of the same sex	127 (10.2)	121 (14.9)	248 (12.1)	
<i>Satisfaction with one's sexual life</i>				*
Very satisfied	260 (20.6)	167 (20.3)	427 (20.5)	
Satisfied	629 (49.7)	340 (41.4)	969 (46.4)	
Neither satisfied, nor unsatisfied	112 (8.9)	91 (11.1)	203 (9.7)	
Unsatisfied	210 (16.6)	170 (20.6)	380 (18.2)	
Very unsatisfied	54 (4.3)	54 (6.6)	108 (5.2)	

GD = gender difference (χ^2); n. s. = non-significant; * $P < .01$, ** $P < .001$

Table 2 – Gender Differences in Pornography Consumption and Patterns of Use

	<i>Women</i>	<i>Men</i>	<i>All</i>	<i>GD</i>
	Mean (<i>SD</i>)			
<i>Age at first exposure to porn</i>	11.1 (3.02)	10.3 (2.7)	10.8 (2.93)	$t = 6.9^*$
	n (%)			
<i>Average porn consumption per week (in hrs)</i>				*
0	419 (33.5)	43 (5.3)	462 (22.3)	
1	647 (51.7)	351 (43.0)	998 (48.3)	
2	107 (8.5)	167 (20.5)	274 (13.2)	
3 or more	79 (6.3)	255 (31.3)	334 (16.2)	
<i>Main source of porn</i>				*
Internet	452 (36.2)	567 (68.9)	1019 (49.2)	
VCR tapes	22 (1.8)	7 (0.9)	29 (1.4)	
CD and DVD	242 (19.4)	187 (22.7)	429 (20.7)	
Cable/satellite TV	349 (28.0)	37 (4.5)	386 (18.6)	
Books, magazines, cartoons	120 (9.6)	13 (1.6)	133 (6.4)	
Other	62 (5.0)	12 (1.5)	74 (3.6)	
<i>Preferred porn genre(s)</i>				
S&M / B&D	140 (11.4)	80 (9.9)	220 (10.8)	n. s.
Fetish	152 (12.4)	180 (22.1)	332 (16.3)	*
Bestiality	20 (1.6)	27 (3.4)	47 (2.3)	n. s.
Violent/coercive sex	236 (19.3)	104 (13.0)	340 (16.8)	*
None of the above (mainstream)	908 (71.8)	566 (68.8)	1474 (70.5)	n. s.
<i>How often do you consume porn together with your partner?</i>				*
Never	594 (47.0)	474 (57.9)	1068 (51.2)	
Rarely	316 (25.0)	250 (30.5)	566 (27.2)	
Sometimes	166 (13.1)	77 (9.4)	243 (11.7)	
Often	85 (6.7)	8 (1.0)	93 (4.5)	
Always	104 (8.2)	10 (1.2)	114 (5.5)	
<i>In the last six months, how often did you use porn as an overture to having sex?</i>				n. s.
Never	747 (59.0)	532 (65.0)	1279 (61.3)	
Rarely	310 (24.5)	180 (22.0)	490 (23.5)	
Sometimes	174 (13.7)	86 (10.5)	260 (12.5)	
Often to always	35 (2.8)	21 (2.6)	56 (2.7)	

GD = gender difference (χ^2 , except where noted otherwise); n. s. = non-significant; * $P < .001$

Endnotes

¹ Address all correspondence to A. Stulhofer, PhD., Dept. of Sociology, Faculty of Humanities and Social Sciences, University of Zagreb, I. Lučića 3, 10000 Zagreb, Croatia; astulhof@ffzg.hr

² By sexual health we refer to a totality of sexual well-being and not merely the absence of sexual difficulties, dysfunctions and/or problems; sexual health stands for contentment and sexual satisfaction, sexual responsibility and a sense of (intimate) connectedness.

³ The distinction between direct and indirect effects of pornography on sexual health is based on a simple notion that the effects can have different developmental trajectories and gestation time. Although it is hard to imagine any potential impact of pornography that would be unmediated, it is analytically useful to distinguish between those effects that are dependent on personality and those that are linked to the process of sexual socialization. In the first case, pornographic materials that sexualize aggressive behavior would have a direct effect on the sexual behavior of consumers with proclivity to aggression. Indirect effects, on the other hand, affect the formation of one's sexual persona and are later expressed, mediated by this sexual identity, in sexual behavior. The distinction between direct and indirect effects has obvious methodological ramifications. While direct effects can be assessed by standard regression models, establishing indirect (or mediated) effects would require path analysis or structural equations modeling (Bryan et al., 2007).

⁴ Of the three levels of sexual scripts (individual, interactional or interpersonal, and cultural), it is the last one that specifies appropriate sexual goals, objects and relationships, providing societal guidelines for sexual conduct. Although the intra-psychoic scripts (individual level) manifest internally as desires and fantasies, they are also affected by culture and therefore compatible with cultural scenarios. Finally, interpersonal scripts take shape in the interplay of partners' scripts and mutual expectations. At this level an individual is transformed from a mere actor to a script co-writer (Simon & Gagnon, 1986; 1999).

⁵ The Ethical Review Board for the Protection of Human Subjects at the Faculty of Humanities and Social Sciences (University of Zagreb) approved all study procedures.

⁶ Since respondents were retrospectively asked about some conditions and activities when they were 14 or 15 (sense of social isolation, number of close friends, frequency of SEM consumption etc.), the upper age limit was set at 25 in order to minimize recall bias.

⁷ Frequency of pornography use was assessed at these three points in time only.

⁸ Body image was assessed with six statements, such as "When I watch myself in the mirror I see a good looking and desirable person" and "I always had problems with accepting my body"; responses were recorded on a 5-point scale (from 1 = agree completely to 5 = completely disagree). All items loaded high on a single factor and were combined into a composite scale (Cronbach's $\alpha = .78$). Higher scores indicated higher level of satisfaction with one's body. The other predictors are detailed in the appendix.

⁹ Potentially, pornography consumption can have a negative impact on body image (Morrison et al., 2006). Pornographic images may decrease satisfaction with one's body while increasing the concerns over physical appearance and desirability. Although body image was found an important predictor of both male and female sexual satisfaction in our regression analyses, subsequent analyses (not shown here) did not point to a significant association either between body image and pornography use, or between body use and sexual scripting.

¹⁰ Observed variables are not presented in the figures, but are described in the appendix.

¹¹ The analyses of structural equation models were carried out using LISREL 8.7 statistical package (Jöreskog & Sörbom, 1996).

¹² For simplicity, measurement models for all latent variables were omitted from Figures 2 and 3.