

More Than a Dalliance? Pornography Consumption and Extramarital Sex Attitudes Among Married U.S. Adults

Paul J. Wright
Indiana University

Robert S. Tokunaga
University of Hawaii at Manoa

Soyoung Bae
University of Maryland

Extramarital sex is one of the most commonly cited reasons for divorce. U.S. adults who have more positive extramarital sex attitudes are more likely to engage in extramarital sex. Given pornography's positive portrayal of extramarital sex, several recent studies have explored whether people who consume pornography have a more positive attitude toward extramarital sex. Consistent correlations have been found, but limitations to inference are posed by the sampling of adolescents and college students and the cross-sectional designs used. This brief report used national panel data gathered from two separate samples of married U.S. adults. Data were gathered from the first sample in 2006 and in 2008 ($N = 282$). Data were gathered from the second sample in 2008 and in 2010 ($N = 269$). Consistent with a social learning perspective on media, prior pornography consumption was correlated with more positive subsequent extramarital sex attitudes in both samples, even after controlling for earlier extramarital sex attitudes and nine additional potential confounds. Contrary to a selective exposure perspective on media, prior extramarital sex attitudes were unrelated to subsequent pornography consumption in both samples.

Keywords: pornography, extramarital sex, sexual socialization, selective exposure

Apprehension about the social impact of entertainment media depicting nudity and explicit sexual acts (i.e., pornography—Wright, Malamuth, & Donnerstein, 2012a) has centered on two concerns: violence against women and familial disruption (Linz & Malamuth, 1993). Social scientists have explored pornography's association with attitudes predictive of the former significantly more so than with attitudes predictive of the latter (Wright, 2012a). However, the advent of the Internet and the proliferation of Internet pornography have motivated a number

of studies relevant to the position that pornography contributes to familial disruption. Of particular note are studies that have explored whether pornography consumers are more positively inclined toward extramarital sex. Extramarital sex has been identified as a leading (and sometimes the leading) cause of divorce in U.S. studies (Amato & Previti, 2003; Kitson, Babri, & Roach, 1985).

Extant studies of pornography consumption and extramarital sex attitudes are limited in two important ways. First, no study has specifically targeted married individuals. In fact, most studies have sampled adolescents and college students (Carroll et al., 2008; Lo, Neilan, Sun, & Chiang, 1999; Lo & Wei, 2005; Omori, Zhang, Allen, Ota, & Imamura, 2011). Second, studies in the past 25 years have been exclusively cross-sectional (Carroll et al., 2008; Lo et al., 1999; Lo & Wei, 2005; Omori et al., 2011; Wright, 2012a, 2013a). These studies are framed in terms of social learning (i.e., consuming pornography leads to more positive extramarital

Paul J. Wright, Department of Telecommunications, Indiana University; Robert S. Tokunaga, Department of Communication, University of Hawaii at Manoa; Soyoung Bae, Department of Communication, University of Maryland.

Correspondence concerning this article should be addressed to Paul J. Wright, Department of Telecommunications, Indiana University, 1229 East 7th Street, Bloomington, IN 47405. E-mail: paulwrig@indiana.edu

sex attitudes), but it is just as likely that selective exposure is the explanatory mechanism (i.e., people who have positive attitudes toward extramarital sex gravitate to pornography).

This brief report addresses both of these limitations. First, the article focuses on married individuals. Second, the article uses two independent panel studies capable of addressing the question of temporal sequencing. Other advantages of the present report include its use of national data, inclusion of multiple potential confounds, and ability to evaluate not only temporal sequencing but also interindividual over time change.

Sexual Socialization, Pornography, and Attitudes Toward Extramarital Sex

Through what mechanisms might pornography affect attitudes toward extramarital sex? Wright's acquisition, activation, application model ($_3AM$) provides a theoretical explanation for the socializing impact of sexual media (Wright, 2011, 2012b, 2013a, 2013b; Wright et al., 2012a; Wright & Randall, 2012, 2013; Wright, Randall, & Arroyo, 2012b). According to the model, sexual media provide consumers with scripts for sexual behavior. Sexual media can provide viewers with scripts they were unaware of [acquisition], prime scripts they were already aware of [activation], and encourage the perceptual and behavioral use of scripts by portraying behaviors as normative and rewarding [application]. Scripts can inform abstract perspectives on sexual behavior (e.g., attitudes toward nonmarital sex in general) or perspectives on specific sexual behaviors (e.g., attitudes toward extramarital sex specifically).

That pornography depicts nonmarital sex as normative and rewarding is unanimous among pornography scholars (Brosius, Weaver, & Staab, 1993; Linz & Malamuth, 1993; Lo & Wei, 2005; Malamuth, 1996; Monk-Turner & Purcell, 1999; Omori et al., 2011; Peter & Valkenburg, 2010; Zillmann & Bryant, 1988a). Married individuals in particular are depicted as often indulging in pleasurable extramarital relations (Markman, 2010; Noelle, 2010; Rhodes, 1999; Smith, 1976; Thomas, 2010; Winick, 1985). In sum, pornography provides both abstract and specific scripts supporting the perspective that extramarital sex is normative and rewarding.

Correspondingly, several cross-sectional surveys have found that individuals who consume more pornography express more positive attitudes toward extramarital sex than individuals who consume less pornography. Lo et al. (1999) and Lo and Wei (2005) found that Taiwanese adolescents who consumed more pornography also held more positive extramarital sex attitudes. Omori et al. (2011) found that Japanese college students who consumed more pornography expressed more positive attitudes toward extramarital sex. Carroll et al. (2008) found that more frequent pornography consumption was associated with more positive extramarital sex attitudes among male collegians. Wright found that consumption of Internet pornography in the last 30 days (2012a) and pornographic movie consumption in the previous year (2013a) were associated with more positive extramarital sex attitudes among adult U.S. males.

In sum, the $_3AM$ theorizes that sexual media serve as a source of social influence through the provision of sexual scripts. Pornographic scripts portray nonmarital sex generally and extramarital sex particularly as normative and rewarding, and pornography consumption has been associated with more positive extramarital sex attitudes in recent cross-sectional surveys. From a social learning perspective on media, these correlations are owing to pornography having a socializing effect on consumers. Two alternative explanations may account for these correlations, however.

Alternative Explanations

Selective Exposure

The most compelling alternative explanation to a social learning account for why pornography consumers' sexual attitudes tend to align with content of pornography is selective exposure. The selective exposure perspective argues that correlations between pornography consumption and sexual attitudes are owing to deliberate pornography exposure, not pornographic socialization. Specifically, a selective exposure perspective on media contends that consumers "deliberately select material congruent with their attitudes" and "turn away from material that disagrees with their preexisting attitudes" (D'Alessio & Allen, 2007, p. 104). From this standpoint, people who have more

positive extramarital sex attitudes gravitate to pornography and people who have more negative extramarital sex attitudes avoid pornography. Therefore, the temporal sequencing of the pornography–extramarital sex attitudes association is attitudes first, pornography consumption second, as opposed to pornography consumption first, attitudes second.

Cross-sectional survey studies of pornography consumption and extramarital sex attitudes adopt a social learning stance, but must acknowledge that they cannot rule out selective exposure as an alternative explanation. Wright (2013a), for instance, includes the following disclaimer: “Does pornography consumption lead to the sexual behaviors and attitudes identified, or do people who already hold these attitudes and engage in these behaviors gravitate to pornography? This report cannot answer this question” (p. 69). Likewise, Lo and Wei (2005) concede: “It may well be the case that sexually active adolescents aggressively seek . . . pornographic materials . . . The one-shot survey design makes it impossible to ascertain the bidirectional relationship . . . This is a major limitation of the study” (p. 233). Fortunately, the present study’s panel design allows for an evaluation of whether earlier extramarital sex attitudes predict later pornography consumption.

Third-Variable Confound

An additional alternative explanation for the finding that pornography consumption correlates with attitudes symbolic of pornography’s presentation of sex is that such relationships are owing to a third-variable confound (Gunter, 2002). A third-variable confound is a variable that may “covary with the independent and dependent variables and therefore may confound the analysis” (Newton & Rudestam, 1999, p. 135). As the best predictor of future attitudes is typically past attitudes and the selective exposure hypothesis argues that attitudes predict media behavior, the most plausible third-variable confound of the pornography consumption–subsequent extramarital sex attitudes association is earlier extramarital sex attitudes (Little, Card, Preacher, & McConnell, 2009). Indeed, the only confound some longitudinal media studies deem necessary for inclusion is earlier attitudes (Peter & Valkenburg, 2009), as the

variability in subsequent attitudes explained by other possible confounds should be captured by the assessment of prior attitudes. To err on the side of methodological conservatism, the present study also controls for nine additional potential third-variables: marital unhappiness, general unhappiness, gender, religiosity, political orientation, divorce history, education, ethnicity, and age.

Marital unhappiness was controlled because dissatisfaction with one’s spouse may lead to consideration of both interpersonal and mediated sexual alternatives (Previti & Amato, 2004; Zillmann & Bryant, 1988b). General unhappiness was controlled because both pornography and affairs may be considered as avenues for the reduction of negative affect (Fielder & Carey, 2010; Omori et al., 2011). Gender was controlled because males may be more likely to consume pornography and express positive attitudes toward extramarital sex (Malamuth, 1996). Religiosity and political orientation were controlled because both are related to pornography consumption and sexual attitudes (Wright, 2013a; Wright & Randall, 2013). Divorce history was controlled because pornography consumption and extramarital sex are commonly cited reasons for divorce (Amato & Previti, 2003; Daines & Shumway, 2012). Education was controlled because of its relation to extramarital sex attitudes and potential relation to pornography consumption (Stack, Wasserman, & Kern, 2004; Wright, 2013a). Ethnicity and age were controlled because Whites and older adults are less likely to consume pornography and have more negative attitudes toward extramarital sex (Wright, 2013a).

Research Questions

The preceding sections can be synopsized as follows. From a sexual scripting perspective, correlations between pornography consumption and positive extramarital sex attitudes are owing to social learning. Chronologically, pornography consumption comes first, extramarital sex attitudes come second. From a selective exposure perspective, correlations between pornography consumption and positive extramarital sex attitudes are owing to people who favor extramarital sex consuming pornography and people who disapprove of extramarital sex avoiding pornography. Chronologically, extra-

marital sex attitudes come first, pornography consumption comes second. Finally, from a third-variable perspective, associations between pornography consumption and extramarital sex attitudes are owing to a third-variable such as marital unhappiness or religiosity. These differing perspectives give rise to the following research questions:

RQ1: Will pornography consumption at T1 be related to more positive extramarital sex attitudes at T2 even after controlling for earlier extramarital sex attitudes and age, divorce history, education, ethnicity, gender, general unhappiness, marital unhappiness, political orientation, and religiosity?

RQ2: Will extramarital sex attitudes at T1 be related to pornography consumption at T2 even after controlling for earlier pornography consumption and age, divorce history, education, ethnicity, gender, general unhappiness, marital unhappiness, political orientation, and religiosity?

Method

Data Source

Data were generated by the General Social Survey (GSS; Davis & Smith, 2010). Funded by the National Science Foundation, the GSS is the only ongoing, national, personal interview survey examining social beliefs and behaviors currently carried out in the United States (The National Data Program for the Social Sciences, 2012). The first GSS was conducted in 1972. To maximize measurement validity, the GSS began using computer-assisted interviewing in 2002 (J. Kim, Ph.D., personal communication, January 9, 2012).

The GSS has traditionally sampled a new group of respondents at each data collection. Recently, the GSS added a panel component. The present article reports results from the General Social Survey's first (T1 2006, T2 2008; referred to as the "2006 panel") and second (T1 2008, T2 2010; referred to as the "2008 panel") panel studies. Each panel was composed of a different set of participants; the studies were separate. Participants were married adults who provided data at both T1 and T2 on the variables of interest to the present inquiry (N 2006 panel = 269; N 2008 panel = 282). Weight variable WTPANNR12 was applied in accordance with GSS directives (GSS 2008 Sample Panel Wave 2, 2012).

Participants

Participant characteristics at baseline were as follows. All participants were married. Participants were 47.03 years old on average ($SD = 14.84$) in the 2006 panel; 49.94 years old on average ($SD = 14.01$) in the 2008 panel. Men comprised 37.1% of the sample in the 2006 panel; 50.9% of the sample in the 2008 panel. Whites comprised 82.5% of the sample in the 2006 panel; 82.5% of the sample in the 2008 panel. Participants had completed 13.55 years of education on average ($SD = 3.15$) in the 2006 panel; 13.92 years of education on average ($SD = 2.95$) in the 2008 panel. In the 2006 panel, 25.7% had been divorced; 22.9% had been divorced in the 2008 panel. On a marital unhappiness scale ranging from 1 = very happy to 3 = not too happy, participants described themselves as "very happy" on average ($M = 1.43$, $SD = .52$) in the 2006 panel, and as "very happy" on average ($M = 1.39$, $SD = .54$) in the 2008 panel. On a general unhappiness scale ranging from 1 = very happy to 3 = not too happy, participants described themselves as "pretty happy" on average ($M = 1.61$, $SD = .60$) in the 2006 panel, and as "pretty happy" on average ($M = 1.68$, $SD = .66$) in the 2008 panel. Participants attended religious services once a month on average (scale: 0 = never attend religious services, 8 = attend religious services more than once a week; $M = 4.26$, $SD = 2.68$) in the 2006 panel, and once a month on average ($M = 3.96$, $SD = 2.80$) in the 2008 panel. On a political orientation scale ranging from 1 = extremely liberal to 7 = extremely conservative, participants identified as "moderate" on average ($M = 4.30$, $SD = 1.32$) in the 2006 panel, and as "moderate" on average ($M = 4.40$, $SD = 1.42$) in the 2008 panel.

Measures

The study's primary measures are described below. Measurement consistency was established via test-retest reliability (DeVellis, 1991). Construct validity was established via convergent associational tests (DeVellis, 1991).

Pornography consumption. Pornography consumption was assessed with the following question: "Have you seen an X-rated movie in the last year?" (no = 0, yes = 1). At T1 in the 2006 panel, 18.6% of participants indicated

they had viewed a pornographic movie in the prior year; 21.0% at T2. At T1 in the 2008 panel, 13.3% of participants indicated they had viewed a pornographic movie in the prior year; 14.8% at T2. Regarding test–retest reliability, pornography consumption at T1 was correlated with pornography consumption at T2 in both panels ($r = .56, p < .01$ in the 2006 panel; $r = .66, p < .01$ in the 2008 panel). Regarding construct validity, prior studies suggest that women (Paul, 2009) and the religious (Wright, 2013a) are less likely to consume pornography. Correspondingly, in both panels at T1, women ($r = -.21, p < .01$ in the 2006 panel; $r = -.19, p < .01$ in the 2008 panel) and the more religious ($r = -.28, p < .01$ in the 2006 panel; $r = -.23, p < .01$ in the 2008 panel) were less likely to consume pornography.

This pornography consumption measure has been used across decades (Buzzell, 2005; Jaffee & Straus, 1987; McMillen & McMillen, 1977; Winick & Evans, 1994) and has correlated with sexual attitudes and behaviors in theoretically predictable directions in several recent studies (Wright, 2012b, 2013a; Wright & Randall, 2013). Pornographic movies can be streamed online from a variety of Web sites (e.g., adultrental.com, adultvideonet.com, moviemonster.com). Adult industry data indicate that pornographic “video sales and rentals are the preferred method of consumption in the United States” (Bridges, Wosnitzer, Scharrer, Sun, & Liberman, 2010, p. 1082). Recent studies have found that items assessing pornographic movie consumption form internally consistent scales with assessments of consumption of other pornographic media, including Internet pornography (Lo & Wei, 2005; Peter & Valkenburg, 2010; Wright, 2013b). Furthermore, classification of participants into consumer/nonconsumer categories has proven predictive in several studies (Kjellgren, Priebe, Svedin, & Langstrom, 2010; Wingood et al., 2001; Ybarra et al., 2011).

Extramarital sex attitudes. Attitudes toward extramarital sex were assessed with the following question: “What is your opinion about a married person having sexual relations with someone other than the marriage partner?” Response options ranged from 1 = always wrong to 4 = not wrong at all (2006 panel: T1 $M = 1.22, SD = .54$; T2 $M = 1.24, SD = .60$; 2008 panel: T1 $M = 1.20, SD = .53$; T2 $M =$

1.26, $SD = .65$). This assessment of extramarital sex attitudes has been used across decades (Fleishman, 1988; Hayduk, Ratner, Johnson, & Bottorff, 1995; Irwin & Thompson, 1977; Wright, 2013a). Regarding test–retest reliability, extramarital sex attitudes at T1 were correlated with extramarital sex attitudes at T2 in both panels ($r = .29, p < .01$ in the 2006 panel; $r = .39, p < .01$ in the 2008 panel). Regarding construct validity, prior research and theory (Linz & Malamuth, 1993; Wright, 2013a) suggest that conservatives and the religious should express more negative attitudes toward extramarital sex. Correspondingly, in both panels at T1 the more conservative ($r = -.14, p < .05$ in the 2006 panel; $r = -.31, p < .01$ in the 2008 panel) and the more religious ($r = -.20, p < .01$ in the 2006 panel; $r = -.12, p < .05$ in the 2008 panel) expressed more negative attitudes toward extramarital sex.

Results and Discussion

RQ1: Does Earlier Pornography Consumption Predict Later Extramarital Sex Attitudes?

Two identical hierarchical multiple regression analyses were carried out to answer research question 1 (one analysis for the 2006 panel, a second analysis for the 2008 panel). Results of these analyses are presented in Table 1. T1 age, divorce history, education, ethnicity, extramarital sex attitudes, gender, general unhappiness, marital unhappiness, political orientation, and religiosity were entered in the first step. T1 pornography consumption was entered in the second step. The addition of pornography consumption improved model fit in both analyses (2006 panel: $\Delta R^2 = .02, \Delta F(1, 256) = 7.07, p < .01$; 2008 panel: $\Delta R^2 = .01, \Delta F(1, 269) = 3.99, p < .05$). Pornography consumption was associated with more positive subsequent extramarital sex attitudes in both analyses (2006 panel: $\beta = .16, t(257) = 2.66, p < .01$; 2008 panel: $\beta = .12, t(270) = 1.99, p < .05$). Because variability in T2 extramarital sex attitudes associated with T1 extramarital sex attitudes was accounted for, these coefficients indicate that T1 pornography consumption was associated with over time interindividual change in extramarital sex attitudes (Little et al., 2009).

Table 1
Hierarchical Multiple Regression Analyses Predicting T2 Extramarital Sex Attitudes

Variable	R ² Change	F Change	B	β	SE
Step 1	.24 (06 panel) .23 (08 panel)	7.98** (06 panel) 7.93** (08 panel)			
T1 age ^a					
06 panel			.001	.014	.002
08 panel			-.001	-.03	.003
T1 divorce ^b					
06 panel			.23**	.17	.08
08 panel			-.10	-.07	.09
T1 education ^c					
06 panel			.03**	.16	.01
08 panel			.01	.03	.01
T1 ethnicity ^d					
06 panel			-.14	-.09	.09
08 panel			-.05	-.03	.09
T1 extramarital sex ^e					
06 panel			.24**	.22	.06
08 panel			.37**	.30	.07
T1 gender ^f					
06 panel			-.18**	-.15	.07
08 panel			-.08	-.06	.07
T1 general unhappiness ^g					
06 panel			-.08	-.08	.06
08 panel			.07	.07	.06
T1 marital unhappiness ^h					
06 panel			.26**	.23	.07
08 panel			.06	.05	.08
T1 political orientation ⁱ					
06 panel			-.05	-.11	.03
08 panel			-.04	-.09	.03
T1 religiosity ^j					
06 panel			-.03*	-.14	.01
08 panel			-.05**	-.20	.01
Step 2	.02 (06 panel) .01 (08 panel)	7.07** (06 panel) 3.99* (08 panel)			
T1 pornography ^k					
06 panel			.24**	.16	.09
08 panel			.22*	.12	.11

Note. In both the 2006 and 2008 panel analyses, the statistical significance (or nonsignificance) of age, divorce, education, ethnicity, extramarital sex, gender, general unhappiness, marital unhappiness, political orientation, and religiosity in Step 2 was the same as in Step 1, with the exception that the religiosity coefficient dropped to marginal significance ($\beta = -.11$, $p < .10$) in Step 2 of the 2006 analysis.

^a Higher scores = older. ^b Never divorced = 0; Been divorced = 1. ^c Higher scores = more education. ^d White = 0, Nonwhite = 1. ^e Higher scores = more positive attitudes. ^f Male = 0, Female = 1. ^g Higher scores = more unhappiness. ^h Higher scores = more unhappiness. ⁱ Higher scores = more conservative. ^j Higher scores = more frequent attendance at religious services. ^k No pornography exposure = 0, Pornography exposure = 1.

* $p < .05$. ** $p < .01$.

RQ2: Do Earlier Extramarital Sex Attitudes Predict Later Pornography Consumption?

Two identical hierarchical logistic regression analyses were carried out to answer research question 2 (one analysis for the 2006 panel, a second

analysis for the 2008 panel). Results of these analyses are presented in Table 2. T1 age, divorce history, education, ethnicity, gender, general unhappiness, marital unhappiness, political orientation, pornography, and religiosity were entered in the first step. T1 extramarital sex attitudes were entered in the second step. Earlier extramarital sex

Table 2
Hierarchical Logistic Regression Analyses Predicting T2 Pornography Consumption

Variable	Nagelkerke R ² change	χ ² change	B (SE)	Wald	Odds ratio	95% CI Odds ratio
Step 1	.44 (2006 panel) .53 (2008 panel)	88.75** (2006 panel) 100.04** (2008 panel)				
T1 age ^a						
06 panel			.01 (.01)	.11	1.01	.98–1.03
08 panel			-.04* (.02)	5.19	.96	.92–.99
T1 divorce ^b						
06 panel			-.51 (.47)	1.16	.60	.24–1.52
08 panel			.38 (.54)	.50	1.46	.51–4.20
T1 education ^c						
06 panel			-.11 (.06)	2.81	.90	.80–1.02
08 panel			-.11 (.09)	1.49	.90	.75–1.07
T1 ethnicity ^d						
06 panel			.28 (.51)	.30	1.32	.49–3.56
08 panel			.39 (.62)	.40	1.48	.44–4.96
T1 gender ^e						
06 panel			-1.04** (.39)	7.23	.35	.17–.76
08 panel			-.56 (.51)	1.17	.57	.21–1.57
T1 general unhappiness ^f						
06 panel			-.01 (.36)	.001	.99	.49–1.98
08 panel			-.03 (.41)	.01	.97	.44–2.16
T1 marital unhappiness ^g						
06 panel			.68 (.40)	2.84	1.97	.90–4.35
08 panel			-.12 (.51)	.05	.89	.33–2.41
T1 political orientation ^h						
06 panel			.04 (.16)	.07	1.04	.77–1.41
08 panel			-.09 (.19)	.22	.91	.63–1.33
T1 pornography ⁱ						
06 panel			3.08** (.46)	45.36	21.78	8.88–53.39
08 panel			3.37** (.51)	43.03	29.02	10.61–79.38
T1 religiosity ^j						
06 panel			-.07 (.08)	.68	.94	.80–1.10
08 panel			-.15 (.10)	2.51	.86	.71–1.04
Step 2	.01 (2006 panel) .00 (2008 panel)	2.76 (2006 panel) .13 (2008 panel)				
T1 extramarital sex ^k						
06 panel			.56 (.34)	2.78	1.75	.91–3.38
08 panel			-.19 (.53)	.13	.83	.30–2.32

Note. In both the 2006 and 2008 panel analyses, the statistical significance (or nonsignificance) of age, divorce, education, ethnicity, gender, general unhappiness, marital unhappiness, political orientation, pornography, and religiosity in Step 2 was the same as in Step 1.

^a Higher scores = older. ^b Never divorced = 0; Been divorced = 1. ^c Higher scores = more education. ^d White = 0, Nonwhite = 1. ^e Male = 0, Female = 1. ^f Higher scores = more unhappiness. ^g Higher scores = more unhappiness. ^h Higher scores = more conservative. ⁱ No pornography exposure = 0, Pornography exposure = 1. ^j Higher scores = more frequent attendance at religious services. ^k Higher scores = more positive attitudes.

* $p < .05$. ** $p < .01$.

attitudes did not contribute to the prediction of later pornography consumption, as the addition of extramarital sex attitudes did not improve model fit in either analysis.

Implications

Whether a byproduct of pornography consumption is a shift in attitudes toward the sociosexual

reality portrayed in pornography has been debated extensively (Gunter, 2002). An attitude that several recent cross-sectional surveys have correlated with pornography consumption is a favorable attitude toward extramarital sex. For example, Wright (2012a, 2013a) found that men in the United States who consume Internet pornography or pornographic movies express more favorable

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attitudes toward extramarital sex than men who do not consume pornography. Referencing the ₃AM, Wright (2013a) reasoned that pornography's scripts of attractive individuals regularly engaging in pleasurable nonmarital relations generally and extramarital relations specifically lead many consumers to apply these scripts to judgments of extramarital sex, resulting in more positive extramarital sex attitudes.

Furthermore, using the ₃AM as a theoretical guide, the present article studied married men and women and found in two national longitudinal panel studies that pornography consumption at baseline predicted interindividual shifts toward more positive attitudes toward extramarital sex two years later. Specifically, earlier pornography consumption was correlated with more positive subsequent attitudes toward extramarital sex even after controlling for earlier extramarital sex attitudes and a number of other potential confounds (age, divorce history, education, ethnicity, gender, general unhappiness, marital unhappiness, political orientation, and religiosity). In total, the results of the present study are consistent with the theoretical premise that pornography consumption leads to the acquisition and activation of sexual scripts, which are then used by many consumers to inform their sexual attitudes (Wright, 2013a; Wright et al., 2012a).

Wright (2013a) and other cross-sectional survey analysts (Lo & Wei, 2005) point out, however, that the concept of selective exposure provides an alternative theoretical explanation for the finding that pornography consumers express more positive extramarital sex attitudes than nonconsumers. From a selective exposure perspective, correlations between positive extramarital sex attitudes and pornography consumption are the result of people who already have favorable extramarital sex attitudes gravitating to pornography to affirm their beliefs and people who already have unfavorable extramarital sex attitudes eschewing pornography to avoid attitudinal threat. Chronologically, a selective exposure perspective would hypothesize that prior extramarital sex attitudes would predict later pornography consumption. This supposition was not supported in the present article. Prior extramarital sex attitudes did not predict subsequent pornography consumption in either panel study. As selective exposure has been evidenced in other communication contexts

(D'Alessio & Allen, 2007), it is important to consider why selective exposure dynamics may be less operable in the context of pornography. Two possible explanations are proposed.

First, it may be the case that unlike in other communication contexts (e.g., consumption of political media—Stroud, 2008), consumers use pornography for the physiological and affective rewards it provides, not to confirm their preexisting attitudes. For example, studies of pornography use suggest that motives such as sexual arousal, masturbatory stimulation, boredom relief, stress reduction, and loneliness alleviation drive pornography consumption (Boies, 2002; Chaney & Chang, 2005; Cooper, Morahan-Martin, Mathy, & Maheu, 2002; Goodson, McCormick, & Evans, 2001; Paul & Shim, 2008; Wallmyr & Welin, 2006; Yoder, Virden, & Amin, 2005). Studies reporting attitudinal reaffirmation as a motive for pornography consumption are difficult to locate.

Correspondingly, anecdotal evidence supports the notion that preexisting opposition to pornography's perspective on sex does not necessarily result in pornography avoidance. For example, numerous books have been written about religious individuals who oppose—but still consume—pornography (Arterburn & Stoeker, 2009; Hitz, 2012; Laaser & Earle, 2012). Some empirical evidence also supports this idea. Carroll et al. (2008) found that among emerging adult men, about 1 in 5 reported that they opposed pornography but still consumed it. Edelman (2009) found that subscriptions to online adult entertainment services “show a remarkable consistency” across the United States (p. 219), even though public opinion polls find state-level variability in expressed sexual conservatism and liberalism.

Second, it may be the case that pornography consumption is a product of personality (Peter & Valkenburg, 2010). Sensation seeking, for example, is a personality trait characterized by a predisposition toward high levels of excitement, arousal, and stimulation (Zuckerman, 1994). Sensation seekers have been found to be more likely to consume pornography in several studies (Peter & Valkenburg, 2011; Weisskirch & Murphy, 2004). Another explanatory personality variable may be erotophilia. Erotophilia is a personality trait characterized by sexual permissiveness, sexual curiosity, and attraction to unconventional sexual behaviors (Fisher, White,

Byrne, & Kelley, 1988). Individuals who are more erotophilic report stronger motivations to consume pornography than individuals who are less erotophilic (Paul & Shim, 2008). Another characteristic of personality that may drive pornography consumption is sexual compulsiveness (Cooper, Putnam, Planchon, & Boies, 1999). Sexually compulsive individuals are preoccupied with sex and act with sexual impulsivity despite the threat of negative consequences (Kalichman & Rompa, 1995). Longitudinal research conducted by Meerkerk, Van Den Eijnden, and Garretsen (2006) found consistent correlations between compulsiveness and pornography consumption. In sum, the influence of personality characteristics on pornography consumption may overwhelm any possible effects of preexisting attitudes.

Practically, if pornography consumption leads to more positive extramarital sex attitudes as the results of the 2006–2008 and 2008–2010 panels suggest, pornography consumption may be a contributing factor in some divorces via extramarital sex behavior. Attitudes are an important predictor of behavior (Fishbein & Ajzen, 2010; Glasman & Albarracín, 2006; Kraus, 1995) and a spouse's extramarital sex behavior is one of the most frequent reasons given for divorce in the United States (Amato & Previti, 2003; Kitson et al., 1985). That divorce is often associated with significant social, personal, and economic costs is well documented (Page & Stevens, 2005; Schramm, 2006; Segrin, Taylor, & Altman, 2005).

Limitations and Future Directions

Limitations of the present article point to several future research directions. First, multiple year panel studies with at least four waves are needed to assess the hypothesis that pornography consumption → extramarital sex attitudes → extramarital sex behavior → divorce. A definitive test of this mediated sequence requires that a sample of married U.S. adults is interviewed on at least four separate occasions.

Multiple wave, multiple year studies outside of the United States are also important. Sex researchers have frequently advised that findings from one culture may not translate to another culture. Yet the results of pornography consumption and extramarital sex attitude studies conducted in Taiwan (Lo & Wei, 2005), Japan (Omori et al., 2011), and the United

States (Carroll et al., 2008; Wright, 2012a, 2013a) are quite congruent. Additionally, a study of 160 societies found that extramarital sex is the most commonly cited cause for conjugal dissolution (Betzig, 1989). It is important, thus, to examine linkages between pornography consumption, extramarital sex attitudes and behaviors, and marital disruption cross-culturally.

Analysis of factors that may enhance the association between pornography consumption and extramarital sex attitudes is also important. Perceiving that pornography replicates life, identifying with pornographic actors and actresses, possessing sexual scripts consistent with pornography's presentation of sex, ruminating over extramarital sex depictions, and dependency on pornography for sexual learning may all facilitate pornography's socializing impact (Wright, 2011).

Methodologically, measuring pornography consumption with interval level indices (e.g., Lo & Wei, 2005; Peter & Valkenburg, 2009) may enhance correlation coefficients (Cohen & Cohen, 1983), as experimental evidence suggests that a dose–response relationship exists between pornography consumption and attitude change (Zillmann & Bryant, 1982). In a dose–response relationship, each incremental increase in dose (e.g., each additional pornographic movie viewed) results in a correspondingly heightened response (e.g., a correspondingly heightened increase in positivity toward extramarital sex). Theoretically, each subsequent exposure to pornography increases the likelihood of script acquisition, as well as script activation for already acquired scripts (Higgins, 1996; Rock, 1957; Roskos–Ewoldsen, Klinger, & Roskos–Ewoldsen 2007; Wright, 2011). Script acquisition is a prerequisite for an effect, and the magnitude of an effect should increase with heightened script accessibility (Wright & Tokunaga, 2013). Relatedly, future studies using primary data should use nuanced multiple-item scales for relevant covariates such as general unhappiness (e.g., Lyubomirsky & Lepper, 1999) and marital unhappiness (e.g., VanLangingham, Johnson, & Amato, 2001).

Finally, researchers interested in the topic of pornography and extramarital sex attitudes should consider using experimental designs. More than a quarter century ago, Zillmann and Bryant (1988a) found that experimental exposure to pornography led to more positive extra-

marital sex attitudes. Contemporary replications are needed. The present panel study—with its assessment of selective exposure, autoregressive component, and control of numerous potential confounds—has a high degree of internal validity (Little et al., 2009). Experiments, however, definitively address the third-variable problem. The most confident conclusions about pornography's causal impact on extramarital sex attitudes can be drawn when the results from the more internally valid experimental design align with findings from the more externally valid survey design (Hald, Malamuth, & Yuen, 2010; Wright, 2011).

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