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Independent, Autonomous, and Permissive: Examining the Links
Between Self-Construal and Sexual Permissiveness

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Abstract

Much of the research on sexual attitudes has focused on biological sex as a predictor variable. This work has consistently demonstrated that men are more permissive in attitudes towards casual sex than are women. Less is known, however, about how other individual difference variables may shape sexual attitudes. In this research, we considered whether self-construal (whether one believes that others are or are not part of their self-concept) influences people's attitudes toward casual sex. Specifically, we posited that an independent self-construal is positively related to, and an interdependent self-construal is negatively related to, sexual permissiveness. Two cross-sectional studies ($n_s = 517$ and 212) yielded support for these hypotheses. We further considered autonomy as a potential process variable. A mediation analysis revealed that self-construal was related to autonomy, which in turn positively predicted sexual attitudes and drove this association. We integrate these findings into the literature on sexual attitudes and discuss theoretical insights into our findings.

Keywords: Cross-cultural comparison/differences in behavior, evolutionary perspectives, societal attitudes

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Independent, Autonomous, and Permissive: Examining the Links

Between Self-Construal and Sexual Permissiveness

One's self-concept may affect a variety of factors in everyday life, from the objects we buy to the food we may eat. Importantly, our sense of self extends toward the realm of close relationships, influencing the decisions we make and approaches we take to form and maintain our social bonds (Markus & Kitayama, 1991; Triandis, Bontempo, Villareal, Asai, & Lucca, 1988). Some of these bonds, such as a romantic tie, may be long-term—the person involved in the relationship is committed to maintaining it with the goal of keeping it over an extended period of time. Not all, however, desire a single intimate relationship that is targeted to last a lifetime. Rather, some may prefer short-term sexual relationships with little to no commitment to partners as they proceed through their romantic lives.

The tendency to “jump” from partner to partner may be associated with a variety of factors, one of which may be one's sexual attitudes (i.e., positive attitudes toward having sex with multiple partners without any goal of commitment). Why would some people possess attitudes associated with preferring to keep sex casual and uncommitted while others prefer dedication to one partner? We address this question in this research. Specifically, we focus on the link between self-construal, or the degree to which one views that others are independent of or embedded in their self-concept (Cross, Hardin, & Gercek-Swing, 2011), and permissive attitudes toward casual sex (i.e., the degree to which one finds sex in uncommitted or casual relationships as acceptable; Simpson & Gangestad, 1992). We begin by discussing the construct of self-construal and its influence on a number of relationship variables. Then, we review research on attitudes

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toward casual sex in relationships. Finally, across two studies we enumerate and test seven hypotheses regarding links between self-construal and attitudes toward casual sex.

Looking at the Self: Reliance on or Distance from Others?

One's self-concept is complex. People may tie their identity to multiple sources, such as music, schools, and even brands. Given that "...the human brain is designed to *assume* that it is embedded within a relatively predictable social network" (Beckes & Coan, 2011, pp. 976-977, italics in original text), it is perhaps unsurprising that much of our lives center around some types of social interactions and relationships. These social ties, however, may be a larger part of the self-concept that one may possess. People's self-concepts regarding how they relate to others is called *self-construal*. Whereas some may perceive that their self-concept does not include any others (the independent self-construal), others may perceive that their social relationships are a key part of their self-concept (the interdependent self-construal; Cross, Bacon, & Morris, 2000; Cross et al., 2011; Gardner, Gabriel, & Lee, 1999; Markus & Kitayama, 1991; Triandis et al., 1988).

Self-construal as an individual difference construct has its roots in cross-cultural psychology. Early cross-cultural researchers identified two dimensions that are perhaps at the epicenter of cultural differences. Both of these dimensions, interestingly, also reflect dynamics of social interactions. Specifically, cultures entail degrees of *individualism* and *collectivism*. Similar to independent self-construal, a culture valuing individualism promotes goals of independence without much reliance on others, whereas a culture valuing collectivism espouses norms such as cooperation and agreeableness (Triandis, 1993, 2001). Perhaps unsurprisingly, persons from individualistic cultures generally espouse an independent self-construal, whereas persons from collectivistic cultures

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generally espouse interdependent self-construal (e.g., Gardner et al., 1999).

It is important to note some researchers have used independence/interdependence and individualism/collectivism interchangeably (e.g., Fong & Goetz, 2010). There is, however, an important distinction often between the two. As discussed above, individualism/collectivism is typically associated with the cultural level of analysis (Hofstede, 2001), whereas independence/interdependence is at the level of the individual. Because we are specifically interested in individual differences, we will focus primarily on independent and interdependent self-construal.

Individual differences in independence and interdependence appear to influence a number of dimensions of social relationships, including their formation. From a cultural lens, for instance, persons from collectivistic cultures (who are interdependent) tend to report having less relational intimacy (e.g., self-disclosure in their relationships) than their individualistic (and thus, independent) counterparts (Marshall, 2008). Cultural variations related to independent and interdependent self-construal also appear to affect relationship institutions such as marriage. Dion and Dion (1993), for example, have noted love is a less important basis for marriage in collectivistic versus individualistic societies.

At the level of the individual, Gore, Cross, and Morris (2006) found that college students high in interdependence developed more intimate relationships, characterized by aspects such as self-disclosure, with their roommates. Furthermore, Dion and Dion (1991) documented that in Canadian college students, independence (which they conceptualized as “psychological individualism”) was negatively related to experiences in love and affective involvement with a partner in a relationship. Interestingly, Dion and Dion (1991) also found that independent individuals adapt a style of love that is

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characterized by a desire to forego commitment in a relationship. Further prior work has shown that those with an interdependent (vs. independent) self-construal are more motivated to cooperate with others (Utz, 2004), more likely to mimic another's behavior during a social interaction (van Baaren, Maddux, Chartrand, de Bouter, & van Knippenberg, 2003), and are more likely to evaluate a social interaction positively (Cross et al., 2000; for a review, see Cross et al., 2011).

Attitudes Toward Sex

Some people may believe love and emotional attachment are unnecessary before consenting to sex; others stress the importance of a strong emotional bond as a prerequisite for sex. These individual differences are not categorical, however. Rather such beliefs actually fall along a continuum, reflecting one's *sociosexual orientation* (Simpson & Gangestad, 1991; Penke & Asendorpf, 2008). On one end of the sociosexual spectrum are permissive or "unrestricted" persons who find casual, low-commitment sex acceptable. Persons on the other end are restricted, preferring emotional bonds (such as love) prior to engagement in sex. Over the last few decades, researchers have identified several important predictors and outcomes of one's placement on the sociosexuality continuum.

Research examining personality, for example, has positively linked permissive sexual attitudes with the Big Five personality traits of extraversion and openness; and negatively-linked permissive sexuality with conscientiousness and neuroticism (Schmitt & Shackelford, 2008). Further work on the foundations of sexual attitudes has shown that relatively permissive sociosexuality is associated with distress to sexual (vs. emotional) infidelity (Treger & Sprecher, 2011), an avoidant attachment style (Schmitt, 2005b;

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Schmitt & Jonason, 2015), lesser emotional investment in a relationship (Simpson & Gangestad, 1992), and lesser commitment to a romantic partner (Ali & Chamorro-Premuzic, 2010).

Perhaps the most widely-replicated finding associating personal attributes with sexual attitudes is the tendency for men tend to be more permissive or “unrestricted” (i.e., finding casual sex to be more acceptable) than women (Schmitt, 2005a; Simpson & Gangestad, 1992; Sprecher, Treger, & Sakaluk, 2013). Some theorists attribute sex differences in sociosexuality to discrepancies in the reproductive risks that men and women have faced in humans’ evolutionary past (e.g., Buss & Schmitt, 1993; Schmitt, 2005a). Because ancestral women faced higher levels of obligatory investment in reproduction than men did (e.g., placental implantation, prolonged gestation, and breastfeeding) and, subsequently, because women’s greater obligatory investments necessitate they faced greater risk from making a poor mate choice (Schmitt, 2003), women may be more selective of their mates. In particular, women may be especially selective regarding men’s willingness to provide high parental investments in long-term mating relationships (Buss & Schmitt, 1993), resulting in less permissive sociosexual attitudes than men.

Evolution, however, is not the only influence on sexual attitudes. Specifically, societal factors, such as gender roles, likely have great effect on men’s and women’s sociosexual orientation as well. Wood and Eagly (2002) proposed much of the sex differences in mate preferences and sexual attitudes stem from societal division of labor between men and women. Thus, changes in gender roles should lead to changes in sex differences. This idea has gained some empirical support (Schmitt, 2015). For instance,

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Lippa (2010) examined 53 nations to document whether a country's level of gender development affects sex differences in sociosexuality (the index of a country's sex difference was the effect size d). Indeed, Lippa found that a nation's degree of the United Nation's human development report indices of gender development (e.g., gender equity in health, education, and standard of living) and gender empowerment (e.g., gender equity in power over economic resources and participation in both economic and political decision-making) were both negatively correlated with sex differences in sociosexuality (see also Schmitt, 2005a). Still, even in Iceland, the sample's most egalitarian country, a sex difference of approximately $d = 0.25-0.30$ emerged. Furthermore, Lippa saw that a nation's degree of religiosity was positively associated with sex differences in sociosexuality. Some researchers, however, have speculated that the negative effects of religiosity on sexual permissiveness may stem from particular biological influences, such as the promotion of morality and adherence to norms in a social group (Schmitt & Fuller, 2015).

Similar to Lippa's (2010) research, Zentner and Mitura (2012) found a negative correlation between the 2010 United Nations report of the Global Gender Gap Index (index of gender equality) and the difference between men's and women's traits desired for a potential mate (e.g., age difference, physical attractiveness, social status), although the difference did not vanish completely, remaining relatively medium in effect size ($d = 0.39$) in the most egalitarian nation in their sample (Finland; see also Schmitt, 2005a, who saw that although they are present in all nations, the magnitude of the sex difference in sociosexuality varied, suggesting further societal influences). Collectively, these studies indicate societal factors complement evolutionary factors to play an important

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role in shaping human sexual attitudes (Baumeister, 2000; Buss, 1989).

Purposes of this Research

Researchers studying self-construal have yielded numerous insights regarding its influence on our social relationships. Less is known, however, about self-construal's influences on a particularly-important factor of certain relationships: Sexual attitudes. There are some reasons to believe people who endorse an independent self-construal may be more acceptable of casual sex given their desire for some distance between the self and the other. Ahrold and Meston (2007), for instance, found Asian college students (who tend to be less independent and more interdependent compared to their Western peers) tend to report more conservative sexual attitudes than their Western and Hispanic counterparts. Schmitt and Jonason (2015) found it was cross-culturally universal for those with dismissing or avoidant attachment styles (which emphasize independence of the self from others) to have more permissive sexual attitudes compared to those with secure or preoccupied attachment (who consider the self to be more interdependent with others). In a study focusing more specifically on self-construal and sexual attitudes, Fong and Goetz (2010) examined the associations between sociosexuality and college students' self-construal, measured via a forced choice scale, after which students were classified into one of two self-construals (which Fong and Goetz conceptualized as individualism and collectivism). They found persons of an independent self-construal reported more permissive sexual attitudes than did persons of an interdependent self-construal. Based on Fong and Goetz's results, we propose two predictions:

Hypothesis 1a (H1a): An independent self-construal orientation will be positively related with permissive sexual attitudes.

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Hypothesis 1b (H1b): An interdependent self-construal orientation will be negatively related with permissive sexual attitudes.

Further lingering questions, however, remain. First, Fong and Goetz (2010) focused specifically on college students. Results from such samples are indeed important, especially in initial investigations of effects, but they are limited in interpretability. A larger sample of non-college students, with a wider range of age, allows for a clearer and more generalizable examination of the effects of self-construal (Henrich, Heine, & Norenzayan, 2010).

Another important question is *why* such a link between relational independence and permissiveness in sexual attitudes may appear to emerge. Gaining insights into the processes behind ostensible links allows a clearer picture of the origins of these links and how they may influence various dimensions of close relationships and sexuality. There is reason to believe that the value of *autonomy* may serve as a key process variable in this association. Autonomy captures the degree to which one desires to rely on others in their lives (Hirschfield, Klerman, Gough, Barrett, Korchin, & Chodoff, 1977). Persons with an independent self-construal tend to view the self as separate from others (Cross et al., 2011), which may further lead to preferences for autonomy (Dion & Dion, 1993). Similarly, persons with an interdependent self-construal, who believe that their self-concept entails others, may be more likely to rely on others and in turn, espouse lower levels of autonomous values. We thus propose the following two predictions:

Hypothesis 2a (H2a): An independent self-construal will be positively related to autonomy.

Hypothesis 2b (H2b): An interdependent self-construal will be negatively related to

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autonomy.

Given their desire to avoid relying on others, it is likely that persons with high autonomy would be more likely to endorse permissive sexual attitudes, as they may not desire the interdependence of a committed long-term relationship (Dion & Dion, 1991; 1993). We thus predict:

Hypothesis 3 (H3): Autonomy will positively predict permissive sexual attitudes.

It is possible to form additional predictions on a link between self-construal and autonomy. Given its potential relations with self-construal and sexual attitudes, autonomy may serve as a process variable between self-construal and sexual attitudes. In other words, people with an independent self-construal may be more sexually permissive because they seek the autonomy that non-committed relationships may offer; persons with an interdependent self-construal, however, do not seek as much autonomy, which is why they may desire to seek long-term relationships (cf. Dion & Dion, 1991, 1993; Fong & Goetz, 2010). We therefore propose the following hypotheses:

Hypothesis 4a (H4a): Autonomy will serve as a mediator variable underlying the positive link between independence in self-construal and permissive sexual attitudes.

Hypothesis 4b (H4b): Autonomy will serve as a mediator variable underlying the negative link between interdependence in self-construal and permissive sexual attitudes.

It is important for us to note that although related, autonomy and self-construal are not identical constructs. For instance, Sato and McCann (1998) empirically demonstrated that autonomy and independence load on separate orthogonal factors (although general

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work on the links between autonomy and self-construal is scant).

Study 1

Overview. Our first study served as the initial testing of *H1a* and *H1b* using a regression analysis in which independence, interdependence, and the set of five control variables (age, sex, education, religiosity, and sex role ideology) collectively predicted attitudes towards casual sex.

We selected our set of control variables based on prior cross-cultural work on sexual attitudes. Given the consistent sex difference in sociosexuality (e.g., Schmitt, 2005a; Simpson & Gangestad, 1992; Treger & Sprecher, 2011), and a widely-replicated negative relation between religiosity and sexual permissiveness (e.g., Ahrold & Meston, 2007; Lippa, 2010; Schmitt & Fuller, 2015; Sheeran, Abrams, Abraham, & Spears, 1993), we controlled for participants' sex and their religiosity. We also controlled for further demographic variables of age and education. Our final control variable was sex role ideology (Kalin & Tilby, 1978). We chose to do so based on prior work demonstrating that sex role ideology—at least at the level of the nation—moderates sex differences in sexual permissiveness, such that lesser beliefs in sex role ideology (i.e., greater beliefs in egalitarianism) begets smaller sex differences (Lippa, 2010; Schmitt, 2005a; Zentner & Mitura, 2012). Relatedly, at the individual level, prior research has documented that sexual permissiveness is correlated positively with masculine ideology and negatively with feminine ideology (Bailey, Hendrick, & Hendrick, 1987).

Participants. A total of 603 participants Amazon.com Mechanical Turk (MTurk) workers participated in this study. This sample was an amalgam of two independent samples of MTurk participants ($n_s = 317$ and 286). Of these participants, we excluded

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one for reporting to be under the age of 18; nine who reported a four or below on a 7-point scale assessing honesty in their responses (this item was assessed only in the second sample); 21 who reported that their answers should not be kept in the analyses (this item was assessed only in the second sample); two chose to forego disclosing their sex (in the first sample); and 53 who reported too many missing data (e.g., failing to provide responses on the measures or on all of the control variables). The final sample was thus 517 persons (64.02% male; $M_{\text{age}} = 28.29$, $SD_{\text{age}} = 7.68$, $\text{Range}_{\text{age}} = 18, 67$, $ns = 287$ and 230 for samples one and two, respectively). Participants' ages did not differ between the two samples ($M = 28.62$, $SD = 7.77$, $\text{range} = 18, 67$ and $M = 27.88$, $SD = 7.67$, $\text{range} = 18, 62$ for samples one and two, respectively; Welch's $t [498.14] = 1.10$, $g = 0.10$, $p = .2714$).

The country most-represented in the sample was India ($n = 454$; because of the number of persons in this sample from this country, we also present comparisons between India and non-Indian countries in this section). Other countries in this sample included Austria ($n = 2$), Canada ($n = 3$), Philippines ($n = 4$), Macedonia ($n = 2$), and the United States ($n = 19$). For both studies in this combined sample, we intended to collect at least 200 participants as it provides ample power to detect medium effects with seven predictors in a regression (Cohen, 1992). Post-hoc estimates revealed that the statistical power to detect the effect size we found in our primary multiple regression with seven predictors ($f^2 = 0.22$) was over .99.

Procedure

Materials. Volunteering MTurk users clicked on a link to the survey. We presented the measures of self-construal and sexual permissiveness to the participants in

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random order.

Self-construal. We measured self-construal using Singelis, Triandis, Bhawuk, and Gelfand's (1995) 32-item scale that assesses two dimensions of individualism and collectivism: vertical (i.e., acceptance of inequality) and horizontal (i.e., emphasis on equality). Because our interest focused in global indices of independence and interdependence, we averaged over the horizontal and vertical dimensions of each self-construal type to compute composite individualism and collectivism scores. Sixteen items measured independent self-construal (sample item: "I am a unique individual;" $\alpha = .88$). One item in the measure of interdependence was negatively correlated with the remaining items in the scale—we omitted this item from our index of interdependence. Thus, 15 items measured interdependent self-construal (sample item: "To me, pleasure is spending time with others;" $\alpha = .91$). Each item was measured using a 7-point scale (1 = *Strongly disagree* and 7 = *Strongly agree*).

The mean for independence was 5.07 ($SD = 0.91$, range: 1.47, 7) and 5.18 ($SD = 0.94$, range: 1.76, 7) for interdependence. A dependent-samples *t*-test revealed that the sample was somewhat more interdependent than independent, $t(516) = -3.22$, Hedge's $g = -0.14$, $p = .0013$. A difference in independent self-construal emerged between the two samples. Specifically, the first sample ($n = 287$) was somewhat lower in independence ($M = 4.96$, $SD = 0.90$, range = 1.47, 7) than was the second sample ($n = 230$; $M = 5.20$, $SD = 0.91$, range = 1.73, 7), Welch's $t(492.13) = -3.05$, Hedge's $g = -0.27$, $p = .0024$. Participants from India ($M = 5.10$, $SD = 0.92$, range = 1.47, 7) were somewhat more independent than were participants from other nations ($M = 4.85$, $SD = 0.84$, range = 3.07, 7), Welch's $t(84.75) = -2.17$, Hedge's $g = -.27$, $p = .0329$. Furthermore, participants

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from India were more interdependent ($M = 5.24$, $SD = 0.92$, range = 1.94, 7) than were participants from other nations ($M = 4.73$, $SD = 0.98$, range = 1.76, 7), Welch's t (78.52) = -3.87, Hedge's $g = -0.54$, $p = .0002$.

Sexual Permissiveness. Participants completed two measures of sexual attitudes which we averaged to form an index of sexual permissiveness. The first measure was the three attitudinal items of Simpson and Gangestad's (1991) *Sociosexuality Orientation Inventory* (*SOI*; sample item: "Sex without love is OK"), measured on a 7-point scale (1 = *I strongly disagree* and 7 = *I strongly agree*). The other measure was the first two questions of Sprecher et al.'s (1988) five-item Premarital Sexual Standards Scale (*PSS*; the items were: "I believe that sexual intercourse is acceptable for me on a first date" and "I believe that sexual intercourse is acceptable for me while casually dating someone"), measured on a 6-point scale 1 = *Disagree strongly* to 6 = *Agree strongly*. The index of sexual permissiveness was an average of these four items, which were standardized (z -scores) given that the *PSS* and *SOI* were measured on different scales ($\alpha = .85$; including the *SOI* item which we omitted reduced the α to .73).

The two final samples amalgamated for this study did not differ in their score on the index of sexual permissiveness (ns , M_s [SD_s] = 287, 0.03 [0.81] vs. 230, -0.04 [0.85]), Welch's t (481.45) = 0.90, Hedge's $g = 0.08$, $p = .3708$. An examination of whether participants from India differed in their sexual permissiveness than did participants from other countries yielded no differences in sexual permissiveness between both groups (M_s [SD_s] = -0.02 [0.81] vs. 0.17 [0.95] for Indian and non-Indian samples, respectively), Welch's t (75.31) = 1.53, Hedge's $g = 0.23$, $p = .129$.

Sex role ideology. We measured sex role ideology using eleven items from Kalin

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and Tilby's (1978) 30-item sex-role ideology scale. We selected the 11 items with face validity to prevent participant exhaustion in completing the survey (sample item: "A married woman should feel free to have men as friends;" $\alpha = .75$). The items were measured using the scale: 1 = *Strongly disagree*, 3 = *Somewhat disagree*, 5 = *Somewhat agree*, and 7 = *Strongly agree*.

The mean for sex role ideology was 4.95 ($SD = 0.87$, range = 1, 7). The two samples amalgamated for this study did not differ in sex role ideology ($n = 287$; $M = 4.91$, $SD = 0.87$, range = 2.64, 7 vs. $n = 230$, $M = 5.00$, $SD = 0.87$, range = 1, 7, Welch's $t(492.68) = 1.15$, Hedge's $g = -.10$, $p = .2516$. Indian participants reported greater endorsement of sex role ideology ($M = 5.02$, $SD = 0.83$, range = 1, 7) than did their non-Indian counterparts ($M = 4.39$, $SD = 0.92$, range = 2.36, 7), Welch's $t(77.43) = -5.17$, Hedge's $g = -0.75$, $p < .0001$.

Demographic information. Similar to prior cross-cultural investigations (e.g., Schmitt, Alcalay, Allensworth, Allik, Ault, Austers, Bennett, et al. 2003), we included the demographic variables of sex, age, religiosity, and education as further control variables. Our index of religiosity consisted of a single item: "How important is religion in your life?" using the scale, 1 = *Not at all important*, 3 = *Somewhat important*, 5 = *Quite important*, and 7 = *Very important*" ($M = 4.82$, $SD = 1.94$, range: 1, 7). Both samples reported similar degrees of religiosity (M s [SD s] = 4.82 [1.94], range = 1, 7 and 4.99 [1.97], range = 1, 7, Welch's $t(488.794) = -1.02$, Hedge's $g = -0.09$, $p = .3097$. Indian participants ($M = 5.05$, $SD = 1.85$, range = 1, 7) reported greater degrees of religiosity than did persons from other nations ($M = 3.75$, $SD = 2.24$, range = 1, 7), Welch's $t(74.63) = -4.42$, Hedge's $g = -0.68$, $p < .0001$. We measured *age* by asking participants to

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provide their age in years (two people reported their birth year; we calculated their age by subtracting the year of data collection (2012) from their reported birth year). We measured *education* with the item “How many years of schooling have you completed?” The choices were: 1 = *Less than high school* ($n = 1$), 2 = *High school* ($n = 34$), 3 = *Some college* ($n = 80$), 4 = *College* ($n = 191$), 5 = *Graduate school* ($n = 211$).

Results

We estimated standard errors in our regression analyses using robust (“sandwich”) estimations to account for any potential inequality of variance. Because neither the sample nor one’s nationality affected sexual permissiveness (including when entered into the regression model), we did not include them in our hypothesis tests.

The raw correlations between variables used in this study can be seen in Table 1. Although raw scores between sexual permissiveness and independence in self-construal were uncorrelated, a negative relation emerged between sexual permissiveness and interdependence in self-construal. Age, religiosity, and education were also negatively correlated with sexual permissiveness. Sex role ideology was unrelated to sexual permissiveness.

Table 2 presents regression analyses pertaining to *H1a* and *H1b*. In support of our first prediction, *H1a*, a positive relation emerged between independence in self-construal and sexual permissiveness. Furthermore, in support of our second prediction, *H1b*, possessing a more interdependent self-construal was negatively related to sexual permissiveness. Three control variables emerged as predictors in regression analyses. Replicating prior work (e.g., Sprecher et al., 2013), men ($M = 0.16$, $SE = 0.04$) were more sexually permissive than were women ($M = -0.29$, $SE = 0.05$), Hedge’s $g = 0.55$.

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Furthermore, both education and religiosity were negatively related to sexual permissiveness: The more education one has received, and the greater was their degree of religiosity, the less permissive one was. Finally, reflecting prior work (Bailey et al., 1987), sex role ideology was positively correlated with sexual permissiveness.

Discussion

In our first investigation, we used a combination of two MTurk samples to test and find support for our first two hypotheses. Specifically, we saw, as predicted, that controlling for interdependence and a set of demographic variables (e.g., sex, religiosity), participants' degree of independent self-construal positively predicted acceptance of casual sex. On the other hand, while controlling for independence and the same set of demographic variables, interdependence negatively predicted acceptance of casual sex. In the next study, we attempted to replicate these results and to further test for hypothesized mediations of these relationships.

Study 2

Overview. The final study served two purposes. First, we sought to again test and replicate *H1a* and *H1b*. Second, we tested *H2a*, *H2b*, *H3*, *H4a*, and *H4b* by examining whether autonomy serves as a key mediator of the link between self-construal and sexual attitudes.

Participants. A total of 296 Amazon.com's Mechanical Turk (MTurk) workers participated in this study. We excluded 17 participants who reported that their answers should not be kept for analyses, eight participants who reported a response below the midpoint of a seven-point scale assessing response honesty ("How honest were you in your responses to this survey?;" 1 = *Not honest at all*; 3 = *Somewhat honest*; 5 = *Quite*

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honest; 7 = *Very honest*); and 59 participants who either did not provide information on all demographic variables that served as controls in this study or chose not to disclose their sex (by selecting “Prefer not to answer” to the question assessing sex [$n = 2$]). We maintained participants who provided a response to at least one of the two questions assessing religion. Thus, the final sample was 212 participants (127 men; $M_{\text{age}} = 28.70$, $SD_{\text{age}} = 8.51$; range_{age}: 18-65). As in Study 1, the most-represented country in this sample was India ($n = 170$)—other countries in this sample included Canada ($n = 2$), Macedonia ($n = 2$), Pakistan ($n = 2$), Romania ($n = 2$), and the United States ($n = 17$). We decided on sample size using the same criteria as in Study 1. Post-hoc estimates revealed that the statistical power to detect the sample size we found in our primary regression analysis with seven predictors ($f^2 = 0.30$) was over 0.99.

Procedure

Materials. Volunteering MTurk users clicked on a link to the survey. We presented the measures of self-construal and sexual permissiveness to the participants in random order.

Our assessments of independent ($\alpha = .85$; $M = 5.07$, $SD = 0.89$, range: 2.53, 7) and interdependent self-construal ($\alpha = .89$; $M = 5.22$, $SD = 0.91$, range = 2.50, 7) was identical to that of Study 1. In this sample, however, we dropped the item “Some people emphasize winning; I’m not one of them” from the interdependent factor because it positively correlated to both items assessing independence and items assessing interdependence. Removing this item had no effect on the scale’s internal consistency. This sample was somewhat more interdependent than independent, $t(218) = 2.75$, Hedge’s $g = 0.19$, $p = .0064$. The Indian sample ($M = 5.16$, $SD = 0.86$) reported greater

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degrees of interdependence than did the non-Indian sample ($M = 4.69$, $SD = 0.93$), Welch's $t(60.21) = 3.00$, Hedge's $g = 0.54$, $p = .0039$. Furthermore, the Indian sample reported greater degrees of interdependence ($M = 5.41$, $SD = 0.85$) than did the non-Indian sample ($M = 4.48$, $SD = 0.76$), Welch's $t(69.78) = 6.94$, Hedge's $g = 1.11$, $p < .0001$.

Our indices of sexual permissiveness ($\alpha = .86$), sex role ideology ($\alpha = .75$; $M = 4.50$, $SD = 1.06$, range = 1.55, 7), and demographic control variables were identical to those in Study 1 with one exception: the religiosity index consisted of two items: "How important is religion in your life?" measured on the scale 1 = *Not at all important*, 3 = *Somewhat important*, 5 = *Quite important*, and 7 = *Very important*; and "I consider myself a religious person," measured on the scale 1 = *Not true at all*, 3 = *Somewhat true*, 5 = *Quite true*, and 7 = *Very true* ($r = .88$, $p < .0001$; $M = 4.67$, $SD = 2.01$, range = 1, 7).

The Indian ($M = -0.04$, $SD = 0.83$) and the non-Indian sample ($M = 0.15$, $SD = 0.90$) reported similar degrees of sexual permissiveness, Welch's $t(60.01) = 1.28$, Hedge's $g = 0.23$, $p = .2053$. In the analysis of sex role ideology, the Indian sample ($M = 5.04$, $SD = 0.85$) reported greater degrees of sex role ideology than did the non-Indian sample ($M = 4.22$, $SD = 0.94$), Welch's $t(59.43) = 5.19$, Hedge's $g = 0.95$, $p < .0001$. Finally, the Indian sample ($M = 5.02$, $SD = 1.77$) was sizably more religious than was the non-Indian sample ($M = 3.19$, $SD = 2.29$), Welch's $t(54.39) = 4.85$, Hedge's $g = 0.97$, $p < .0001$. For education, 18 persons reported completing high school; 40 persons reported completing some college; 71 persons completed college; and 83 persons completed at least some graduate school.

Autonomy. We assessed autonomy using Hirschfield et al.'s (1977) 14-item

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assertion of autonomy subscale of the *Interpersonal Dependency Inventory*. Example items include “I rely on myself,” “When I am sick, I prefer that my friends leave me alone,” and “I don’t need anyone” ($\alpha = .88$). Each item was measured using the scale $1 =$ *Strongly disagree* to $7 =$ *Strongly agree*. The mean autonomy score in the sample was 4.48 ($SD = 1.08$, range: 1.21, 7). The Indian sample ($M = 4.58$, $SD = 1.04$) reported greater degrees of autonomy than did the non-Indian sample ($M = 4.06$, $SD = 1.11$), Welch's $t(60.95) = 2.76$, Hedge's $g = 0.49$, $p = .0077$.

Overview of Analysis. We used an analytic approach identical to that in Study 1. To test the proposed mediation ($H4a$ and $H4b$), we employed a non-parametric *Monte Carlo* simulation in which the mediation obtained in the data is simulated k number of times to form a confidence interval, which if it entails no zero value, can be interpreted to be statistically significant (Preacher & Selig, 2012; for an online utility, see Selig & Preacher, 2008). Similar to Study 1, including country of origin (India vs. non-India) as a covariate did not affect the results; thus, we omitted this variable from our hypothesis tests below.

Results

Table 1 displays the raw correlations between each variable in this study. As in Study 1, raw correlations between sexual permissiveness and both types of self-construal were generally null. Age, religiosity, and education were again negatively correlated with sexual permissiveness. Sex role ideology was again unrelated to sexual permissiveness in this sample. Autonomy was positively related to sexual permissiveness.

We began our hypothesis tests by conducting two separate regression analyses: one to test $H1a$ and $H1b$; and a second to test $H2a$ and $H2b$. See Table 3 for the results of

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both regressions. The first analysis replicated our prior findings ($F [7, 204] = 10.15, R^2 = .23, p < .0001$): an independent self-construal was positively associated with sexual permissiveness and an interdependent self-construal was negatively associated with sexual permissiveness. Three associations emerged between sexual permissiveness and our control variables. Age and religiosity were both negatively related to sexual permissiveness; and men ($M = 0.20, SE = 0.07$) were more permissive than were women ($M_s = -0.32, SE = 0.08$), Hedge's $g = 0.66$.

Our second regression analysis revealed support for *H2a* and *H2b* (see Table 3; $F [7, 204] = 13.39, R^2 = .31, p < .0001$). Specifically, while holding our five control variables constant, individual differences in autonomy were positively related to an independent self-construal and negatively related to an interdependent self-construal. Two control variables were also related to autonomy. Sex role ideology was positively related to autonomy, and men were more autonomous ($M = 4.60, SE = 0.07$) than were women (and $4.30, SE = 0.11$), Hedge's $g = 0.30$.

Table 4 contains the results of the regression test of mediation ($F [8, 203] = 10.80, R^2 = .28, p < .0001$). Our analyses revealed the effect of an independent and interdependent self-construal became null when considering individual differences in autonomy, which, supporting *H3*, positively predicted permissive sexual attitudes. Mediation analyses revealed support for *H4a* and *H4b*: autonomy mediated both the positive link between independence and permissive sexual attitudes (95% *MC CI*: 0.04, 0.18) and the negative link between interdependence and permissive sexual attitudes (95% *MC CI*: -0.11, -0.01).

Two control variables emerged as predictors of sexual permissiveness in this

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model. Age was again negatively associated with sexual permissiveness, and men ($M = 0.18$, $SE = 0.07$) were more sexually permissive than were women ($M = -0.28$, $SE = 0.08$), Hedge's $g = 0.58$.

Discussion

The purpose of our second study was to replicate the results we found in Study 1 and test a set of novel hypotheses predicting mediation for the links between self-construal and sexual permissiveness. We again saw people of relatively high (vs. low) independence reported more permissive sexual attitudes, whereas people of relatively high (vs. low) interdependence reported less permissive sexual attitudes. Importantly, we demonstrated a positive relation between independence and autonomy, and a negative relation between interdependence in autonomy; and autonomy served as a mediator variable between both types of self-construal and sexual permissiveness. In other words, our study suggests for those with an independent self-construal, it is the desire for autonomy that may primarily motivate acceptance of casual sex relationships, which are characterized by relatively high emotional and commitment distances between the self and the other. Persons who endorse an interdependent self-construal, however, strive for autonomy less, and may thus not be accepting of casual relationships.

General Discussion

Why do some people find casual sex acceptable yet others believe that sex should wait until love emerges? Decades of work on this question revealed a plethora of insights into the predictors of sexual attitudes, although further questions remain. Although the scope of this literature is large, one factor prior work on sexual attitudes did not generally consider is self-construal, or the degree to which one views their self-concept as either

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being independent of or entailing others (Cross et al., 2011; Markus & Kitayama, 1991).

Self-construal may shape our close relationships, even their formation, as interdependence may help beget intimacy between persons (Gore et al., 2006). Such effects have potential to traverse from the coffee shop of a first date to the bedroom. Still, research on the links between self-construal and sexual attitudes is surprisingly scant. Our aim in this research was to address this empirical gap by considering not only the relations between self-construal and sexual permissiveness, but also the mechanism that may be responsible for such a relation.

In two cross-sectional studies, we examined how self-construal influences attitudes towards casual sex. Specifically, individual differences in independence positively predicted permissive sexual attitudes, whereas individual differences in interdependent positively predicted restricted sexual attitudes. Fong and Goetz (2010) investigated differences in sexual permissiveness between Western (Caucasian) and Eastern (Asian) students, finding that Westerners tend to be more permissive than are Easterners. Although Fong and Goetz did include a measure of self-construal, they split their sample into categorical individualism versus collectivism, rather than using a continuous measure of self-construal as we did in this study. Our study addressed these issues by using large cross-cultural non-student samples, as well as continuous measures of both types of self-construal separately. Thus, we were able to examine whether there are unique effects of one type of self-construal over another.

Borrowing insights from the theoretical perspectives of evolution and social roles, we can propose several explanations for our findings. Evolutionary theory may suggest that general cultural orientations or individualism and collectivism may have emerged

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from environmental constraints of early humans (Schaller & Murray, 2008). Of course, people from individualistic cultures tend to be largely independent in their self-construal, whereas people in collectivistic cultures tend to be more interdependent (Gardner et al., 1999). Thus, there may have been evolutionary advantages to adopt a particular type of self-construal that best increases the odds of reproduction. Independence may lead to unrestricted sexual attitudes because it may drive one to pursue multiple partners without commitment for maximizing reproduction. Still, interdependence may also present itself with evolutionary advantages. Being able to commit to one person and place them in one's own self-representation allows for secure pair-bonding and child rearing.

Social roles may also play an important factor in explaining our findings. Humans have evolved to be ultrasocial creatures, which led some theorists to believe that living in a social world is a baseline of the human brain (Beckes & Coan, 2011). Thus, it is perhaps no surprise that human society has a large influence on behavior. Historical trajectories of cultures led to differential social norms and gender roles in each culture. Indeed, some of the most fundamental cross-cultural differences center around how one interacts with another (Triandis, 2001). Countries that emphasize a division of labor between men and women would allocate greater reproductive agency to men and allow for a sexual double standard (i.e., granting more acceptance of casual sex for men than for women; Sprecher, et al., 2013), which may drive them to be less interdependent.

Another important contribution of this study was the investigation into the mediation behind the link between self-construal and sexual attitudes. In other words, we asked why people with an independent (vs. interdependent) self-construal report more permissive sexual attitudes. We considered one potential variable that is grounded in

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one's desire for agency and reliance on others: autonomy. Specifically, we believed that because autonomy reflects one's drive to avoid relying on others, independence should lead to greater autonomy, whereas interdependence would lead to lesser autonomy. Our research yielded support for this hypothesis. Thus, viewing others as distinct from the self may also motivate one to avoid relying on others. Seemingly similar, autonomy and independence in self-construal are not identical constructs (Sato & McCann, 1998). For example, one may desire autonomy yet still entails representations of others in their self-concept, or view themselves as separate from others yet still desire to rely on them. Prior work has provided some indirect support for the link between autonomy and sexual permissiveness. For example, persons oriented towards an independent self-construal are more likely to desire lesser committed relationships (Dion & Dion, 1991). Thus, we predicted and found that autonomy should be positively correlated with sexual permissiveness.

With the findings of the relations between self-construal and autonomy, and autonomy and sexual permissiveness, we tested whether autonomy serves as a mediation variable. Our analyses yielded support for the mediation model. Specifically, we saw that independence in self-construal was unable to predict sexual attitudes once autonomy was included in the model. In other words, independent persons may desire casual sex because they prefer to rely on themselves rather than others, which commitment-free sexual relationships offer.

Correlations Between Self-Construals. In our samples, we saw a positive correlation between indices of independent and interdependent self-construal.

Independence and interdependence, however, may not necessarily be orthogonal

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variables (e.g., Oyserman, Coon, & Kemmelmeier, 2002; Singelis et al., 1995). Some prior research has similarly yielded positive correlations between independence and interdependence. In one such study, Komarraju and Cokley (2008) discovered that independence and interdependence were positively correlated for Black students, but not for White students; although interestingly, they saw no difference in independence and interdependence scores between these two groups. Furthermore, it is possible that collectivism displays substantial variability even amongst highly individualistic countries such as the United States (Vandello & Cohen, 1999), suggesting that principles of collectivism still shape individualistic cultures.

Our samples contained persons from multiple cultures with individualistic and collectivistic roots. The modal country in our sample, India, although historically collectivistic, has been adopting more individualistic values, potentially stemming in part to an increasing influx of Western ideas. Indeed, Indian participants largely reported more of both interdependence and independence than did participants of other nations. Reflecting this finding, Ramamoorthy, Kulkarni, Gupta, and Flood (2007) saw that both independence and interdependence was *higher* in their Indian than in their Irish sample. Likewise, Hamamura (2012) provided support for the idea that individualism has been increasing in Japanese culture. Given the lack of evidence for multicollinearity, we do not believe that these positive correlations negatively impact our results and their interpretations.

Strengths, Limitations, and Future Directions

This research entailed a number of key strengths. First, we used multiple methodologies in the tests of the hypotheses, all of which converged in the support of the

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prediction. The samples we used were large and consisted of non-college-aged persons from various nations, albeit with India being the most common nation of origin.

Furthermore, this research was the first to test and introduce a potential mechanism behind the link between self-construal and attitudes towards casual sex. Thus, this study collectively garnished strong support for the link between self-construal and attitudes towards casual sex, and potential mechanisms behind it.

With the strengths of this research come limitations. First, there are a number of measures of self-construal that are characterized by individualism and collectivism, which may potentially defy the line between individual differences and cross-cultural differences. Sigelis et al.'s (1995) measure used in this research, however, has been used extensively to assess this construct in various populations. Although it consists of persons from a number of countries and continents, a majority of them were from India. This majority may potentially provide some homogeneity in variance in our variables. Still, given the large sample size and a sizable presence of participants in other cultures, both individualistic and collectivistic, any potential biases that this majority may bring may be small—our analyses indeed revealed that the country of origin did not affect our results if it was included in our regression models as a covariate. Furthermore, the effects we found were generally small to medium in size, which suggests that our findings paint a small part of a larger picture in examining the origins of sexual attitudes. Thus, both the advantages and limitations of this research open the door for future directions of this line of work.

Although this research has provided insights into the formation of sexual attitudes, there is a myriad of interesting questions that are awaiting empirical

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investigations. An interesting question reflects work on infidelity. A potentially interesting direction for future work is to examine how the effects found in this research affect other aspects of people's relationships. For example, are persons with an independent self-construal, and populations of persons from individualistic countries, more likely to engage in infidelity or be less committed to their relationship partners? Similarly, prior work has demonstrated that attitudes towards casual sex may influence one's distress over emotional versus sexual infidelity (Treger & Sprecher, 2011). With the findings of this research, it is possible to predict that self-construal may also influence the extent to which a person may find sexual and emotional infidelity distressing. Perhaps independent persons may gravitate towards sexual infidelity as being more distressing, whereas interdependent persons may find emotional infidelity to be the more distressing of the two. These are merely some of the future research directions suggested by the current set of studies.

Conclusion

A number of influences, both biological and social, play a role in shaping people's relationships and their attitudes towards relationship processes. As we discovered in this research, one's attitude towards casual sex may be rooted in part to their self-concept; specifically, whether one views that others are a part of, or independent from, their self. Those who view their self as being independent of others are more apt to engage in casual sex, a finding potentially stemming from the autonomy they gain from refraining commitment or psychological interdependence with another. On the other hand, those who believe others are embedded within their self-concept desire autonomy less, potentially because others shape their own choices. Thus, the

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psychological closeness they may experience with others may drive them towards lesser acceptance of casual uncommitted sex. Interdependence and Independence aside, one lesson remains clear: whether it is with multiple or with one person, people desire at least some type of interpersonal bond.

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Table 1. Correlations between variables used in Study 1 and Study 2.

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Study 1	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Sexual Permissiveness	-							
<i>p</i>	-							
2. Independence	.08	-						
<i>p</i>	.0850	-						
3. Interdependence	-.14	.64	-					
<i>p</i>	.0020	<.0001	-					
4. Sex	-.30	.05	.11	-				
<i>p</i>	<.0001	.2634	.0162	-				
5. Age	-.11	-.002	.06	.08	-			
<i>p</i>	.0132	.9698	.1894	.0576	-			
6. Religiosity	-.15	.11	.19	.11	.11	-		
<i>p</i>	.0006	.0103	<.0001	.01	.0130	-		
7. Sex role ideology	.05	.57	.58	.04	-.05	.27	-	
<i>p</i>	.2866	<.0001	<.0001	.3849	.2569	<.0001	-	
8. Education	-.16	.08	.10	.08	.11	.12	.13	
<i>p</i>	.0002	.0834	.0206	.0642	.0095	.0078	.0027	
Study 2	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Sexual Permissiveness	-							
<i>p</i>	-							
2. Independence	.12	-						
<i>p</i>	.0876	-						
3. Interdependence	-.07	0.59	-					
<i>p</i>	.2824	<.0001	-					
4. Sex	-.36	.03	.05	-				
<i>p</i>	<.0001	.6786	.4933	-				
5. Age	-.22	-.03	.00	.20	-			
<i>p</i>	.0011	.6824	.9801	.003	-			
6. Religiosity	-.18	.07	.25	.03	.01	-		
<i>p</i>	.0090	.3225	.0002	.6182	.9222	-		
7. Sex role ideology	.08	.54	.60	-.02	-.08	.24	-	
<i>p</i>	.2523	<.0001	<.0001	.8183	.2718	.0004	-	
8. Education	-.20	.11	.16	.15	.07	.20	.05	
<i>p</i>	.0041	.1134	.0199	.0263	.3339	.0041	.4843	
9. Autonomy	.31	.47	.24	-.14	-.06	.01	.43	.03
<i>p</i>	<.0001	<.0001	.0004	.0473	.4227	.8763	<.0001	.6165

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Table 2. Multiple regression results for Study 1.

Predictor	Slope	SE	95% CI Lower	95% CI		β	<i>p</i>
				Upper			
Independence	0.20	0.05	0.09	0.30		0.22	< .001
Interdependence	-0.26	0.06	-0.37	-0.15		-0.30	< .001
Sex	-0.45	0.07	-0.59	-0.31		-0.26	< .001
Age	0.00	0.00	-0.01	0.00		-0.04	.373
Religion	-0.05	0.02	-0.08	-0.01		-0.11	.012
Education	-0.12	0.04	-0.19	-0.04		-0.13	.002
Sex Role Ideology	0.14	0.05	0.04	0.24		0.15	.005

Note. Slope = raw slope. *SE* = sandwich-estimated robust standard errors of the slope. 95% *CI* Lower = lower bound of the 95% Confidence Interval. 95% *CI* Upper = upper bound of the 95% Confidence Interval. $F(7, 509) = 19.41, p < .0001, R^2 = .18$. 95% *CI_b* = 95% Confidence Interval of raw slope. Sex was entered as a categorical variable (0 = Men; 1 = Women), with a negative slope reflecting higher means for men. No evidence for collinearity emerged (mean VIF = 1.41; range of VIF: 1.03, 1.96).

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Table 3. Multiple regression results for Study 2.

Dependent Variable	Predictor	Slope	SE	95% CI Lower	95% CI Upper	β	<i>p</i>
Sexual Permissiveness	Independence	0.17	0.08	0.01	0.33	0.18	.033
	Interdependence	-0.17	0.07	-0.32	-0.02	-0.184	.023
	Sex	-0.52	0.11	-0.74	-0.31	-0.306	< .001
	Age	-0.01	0.01	-0.03	-0.001	-0.139	.029
	Religion	-0.06	0.03	-0.12	0.0001	-0.14	.050
	Education	-0.10	0.06	-0.20	0.01	-0.109	.085
	Sex Role Ideology	0.10	0.08	-0.06	0.26	0.11	.217
Autonomy	Independence	0.49	0.09	0.31	0.68	0.41	< .001
	Interdependence	-0.24	0.10	-0.43	-0.04	-0.20	.018
	Sex	-0.30	0.14	-0.57	-0.03	-0.14	.029
	Age	0.00	0.01	-0.01	0.01	0.01	.871
	Religion	-0.03	0.03	-0.09	0.03	-0.05	.385
	Education	0.04	0.07	-0.10	0.18	0.04	.57
	Sex Role Ideology	0.39	0.09	0.22	0.56	0.34	< .001

Note. Slope = raw slopes. *SE* = sandwich-estimated robust standard errors of the slope. 95% *CI* Lower = lower bound of the 95% Confidence Interval. 95% *CI* Upper = upper bound of the 95% Confidence Interval. Sex was entered as a categorical variable (0 = Men; 1 = Women), with a negative slope reflecting higher means for men. No evidence for multicollinearity emerged (Range of VIF: 1.05, 1.92; mean VIF = 1.39).

Table 4. Mediation analysis between self-construal and sexual permissiveness (Study 2).

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Predictor	Slope	SE	95% CI Lower	95% CI Upper	β	<i>p</i>
Autonomy	0.20	0.06	0.09	0.32	0.26	.001
Independence	0.07	0.09	-0.10	0.24	0.08	.398
Interdependence	-0.12	0.08	-0.27	0.03	-0.13	.115
Sex	-0.46	0.11	-0.68	-0.25	-0.27	< .001
Age	-0.01	0.01	-0.03	0.00	-0.14	.029
Religion	-0.05	0.03	-0.11	0.01	-0.13	.075
Education	-0.10	0.06	-0.21	0.00	-0.12	.061
Sex Role Ideology	0.02	0.08	-0.14	0.18	0.02	.803

Note. Slope = raw slopes. *SE* = sandwich-estimated robust standard errors of the slope. 95% *CI* Lower = lower bound of the 95% Confidence Interval. 95% *CI* Upper = upper bound of the 95% Confidence Interval. No evidence for multicollinearity emerged (Range of VIF: 1.05, 1.97; mean VIF = 1.46).