

Oral Sex: Gateway or Alternative to Vaginal Intercourse?

Charlotte Danielle Brill

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William H. George

Mary Larimer

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Charlotte Danielle Brill

University of Washington

Abstract

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Charlotte Danielle Brill

Chair of Supervisory Committee:
Professor William H. George, PhD
Department of Psychology

Oral sex – a highly prevalent behavior that is independently associated with STIs – has been constructed as an alternative to vaginal intercourse (VI), and as a gateway to VI. No studies have evaluated these competing constructions, or in-the-moment factors contributing to oral sex. This study evaluated whether 1) acute alcohol intoxication and sexual sensation seeking (SSS) predicted intentions to engage in unprotected oral sex with an unfamiliar partner, and 2) oral sex intentions predicted subsequent unprotected VI intentions. Following assessment of SSS, participants (N=324 heterosexual men and women) were randomized to the alcohol or control groups, and read and projected themselves into an eroticized scenario assessing risky sex intentions. Results demonstrated that only SSS predicted oral sex intentions, and that oral sex intentions mediated the relationship between SSS and VI intentions differentially among men and women. Implications regarding risk-related predictors and putative “gateway” effects of oral sex are discussed.

Heterosexual oral sex and vaginal intercourse are highly prevalent behaviors, particularly during adolescence and young adulthood. The Center for Disease Control's (CDC's) National Survey of Family Growth recently indicated that two-thirds of females and males aged 15-24 have engaged in oral sex with an opposite-sex partner, and two-thirds have engaged in vaginal intercourse (i.e., penile-vaginal intercourse; Copen, Chandra, & Martinez, 2012). Because both oral sex and vaginal intercourse – protected (e.g., with a male latex condom) as well as unprotected – are associated with sexually transmitted infections (STIs; e.g., CDC, 2013), such high rates of these sexual behaviors during young adulthood pose a significant public health concern. However, oral sex has received scant research attention compared to vaginal intercourse, perhaps because it is less associated with HIV transmission. The present work investigates behavioral intentions to engage in oral sex by examining gender differences and evaluating two factors known to influence intentions to engage in vaginal sex: sexual sensation seeking and acute alcohol intoxication. Furthermore, using mediational analyses, two widespread cultural constructions of oral sex are evaluated: Oral sex as an alternative versus a gateway to vaginal sex.

Risks and Perceived Risks Associated with Heterosexual Oral Sex

Young adults tend to view oral sex as less risky than vaginal intercourse (e.g., Vannier & Byers, 2013). This perception of reduced risk persists despite the fact that oral sex is causally linked to a variety of STIs. Indeed, unprotected oral sex is reliably linked to the transmission of gonorrhea and chlamydia, as well as a variety of vaginal infections, including recurrent vaginal candidiasis (Edwards & Carne, 1998; Ballini et al., 2012). Also, although rare, HIV transmission via unprotected oral sex is possible (CDC, 2014). Furthermore, even when barrier protection methods are used, oral sex remains associated with syphilis, herpes, and human papillomavirus

(HPV), as these STIs may occur via skin contact outside of the area covered by barrier methods (CDC, 2013). Unfortunately, young adults rarely, if ever, use barrier protection during oral sex (Downing-Matibag & Geisinger, 2009; Fielder & Carey, 2010a). Furthermore, young adults cannot reliably identify the actual STI-transmission risks associated with oral sex, nor how to properly protect themselves and/or their partners from STI transmission during oral sex (Chambers, 2007; Downing-Matibag & Geisinger, 2009). These latter points imply that, contrary to their reduced-risk rationale for engaging in oral sex, young adults may be putting themselves and their sexual partners at greater risk of contracting a wide range of STIs while under the false impression that they are in fact exercising sexual caution.

Gender Differences

Given that young adults view oral sex as relatively risk-free, it is not surprising that oral sex occurs frequently during sexual encounters with uncommitted, one-time, and/or nonmonogamous partners. Approximately one-third of young adults indicate that they have engaged in oral sex with such casual sexual partners (Reiber & Garcia, 2010; Fielder & Carey, 2010a, 2010b). In comparison to women, men appear to receive oral sex considerably more often and perform oral sex considerably less often in such casual sexual encounters. Casual encounters involving oral sex also tend to involve fellatio only much more frequently than cunnilingus only or mutual oral sex (Armstrong, England, & Fogarty, 2009, in Garcia et al., 2012). This gender difference reflects the overall trend in oral sex experiences regardless of relationship context and developmental period: Women tend to perform oral sex on their opposite-sex partners more often than men do and also tend to perform oral sex more often than they receive oral sex (e.g., Brewster & Tillman, 2008; Leichter, Chandra, Liddon, Fenton, & Aral, 2007; Vannier & O'Sullivan, 2012).

Oral Sex Constructions

As noted, young adults distinguish the degree of risk between oral sex versus vaginal intercourse. For example, Halpern-Felsher and colleagues' (2005) sample associated fewer negative social, emotional, and health outcomes from engaging in oral sex than from engaging in vaginal intercourse. Young adults describe greater motivation to use barrier protection for vaginal intercourse than for oral sex, and are in fact more likely to use barrier protection for vaginal intercourse than for oral sex (Moore & Harris, 2014). This is consistent with their tendency not to use barrier protection when engaging in oral sex (Chambers, 2007; Downing-Matibag & Geisinger, 2009) and not to be concerned about contracting STIs via oral sex (Downing-Matibag & Geisinger, 2009). In addition to the risk-related distinction they make between oral and vaginal sex, few young adults define *having sex* as performing or receiving oral sex, whereas nearly all young adults define *having sex* as having engaged in vaginal intercourse (Sanders & Reinisch, 1999).

These differences suggest that young adults may see oral sex as an alternative to vaginal intercourse, in that, like vaginal intercourse, it is a genital-mucosal sexual behavior that confers sexual pleasure (Chambers, 2007); yet, avoids the unique risks associated with vaginal intercourse, such as unplanned pregnancy. To be consistent with the construction of oral sex as an alternative to vaginal intercourse, a casual sexual encounter involving oral sex would not also involve vaginal intercourse. Yet, oral sex and vaginal intercourse *do* co-occur during casual sexual encounters, with approximately one-fourth of casual sexual encounters involving both such sexual behaviors (Lewis, Granato, Blayney, Lostutter, & Kilmer, 2012). Evidently, then, young adults' experiences of oral sex are not entirely or universally encapsulated by the oral-as-alternative construction.

Developmentally, it has been proposed that oral sex may function as a gateway to vaginal intercourse (Halpern-Felsher, 2008), given that many individuals' first oral sex experience precedes their first vaginal intercourse experience (e.g., Schwartz, 1999; Chandra, Mosher, & Copen, 2011). This gateway construction of oral sex draws upon the gateway theory of drug addiction. As other researchers have noted, there are several different iterations of the gateway drug theory (Morral, McCaffrey, & Paddock, 2002; Degenhardt et al., 2010). However, most are founded on the notion that use of "soft" drugs (e.g., tobacco) with less deleterious effects predicts subsequent use of "hard" drugs that are associated with greater harm. Thus, if oral sex is a gateway sexual behavior, then initiation of oral sex should lead to subsequent initiation of vaginal intercourse, with the degree of health risks to which one is exposed increasing (San Francisco Department of Public Health, 2008). Applying this construction of oral sex to casual sexual encounters, it could be speculated that in a casual sexual encounter involving both oral sex and vaginal intercourse, oral sex has served as a gateway to vaginal intercourse, with oral sex preceding as well as predicting vaginal intercourse during the specific sexual encounter.¹

There has been no research to date on factors that might affect whether one's experience of oral sex in a casual sexual encounter is consistent with the alternative versus gateway construction. However, given that young adults' differentiation between oral sex and vaginal intercourse appears to be closely connected to health risks, it could be speculated that factors pertaining to sexual health risks would be pertinent to these constructions.

Sexual Sensation Seeking

¹ This paper deals with oral sex as a gateway sexual behavior within a *single* sexual encounter. Although outside the scope of this article, it could similarly be posited that oral sex's occurrence during a specific sexual encounter could act as a gateway to vaginal intercourse in a *subsequent* sexual encounter.

The personality trait of sensation seeking, defined as one's "need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experiences" (Zuckerman, 1983, p. 35), generally predicts one's tendency to engage in risky behavior. *Sexual* sensation seeking (SSS) is viewed as a unique expression of this personality trait (Kalichman & Rompa, 1995). SSS is conceptualized as one's tendency to seek out high levels of sexual arousal and novel sexual experiences, and to engage in such novel, arousing sexual behaviors even if they pose considerable physical risks, including STI transmission (Kalichman & Rompa, 1995).

SSS is closely linked with sexual risk behaviors. For example, a higher degree of SSS is associated with having a greater number of sexual partners and with engaging in unprotected vaginal intercourse more often (Kalichman & Rompa, 1995; McCoul & Haslam, 2001; Gullette & Lyons, 2005; Hendershot et al., 2007). Regarding casual sexual encounters, SSS is positively correlated with lifetime number of 1-night stands (Gaither & Sellbom, 2003). Norris and colleagues' (2009) experimental study in which women projected themselves into an eroticized sexual risk scenario depicting a casual sexual encounter with a partner of unknown STI status demonstrated that SSS positively predicted in-the-moment behavioral intentions to engage in unprotected vaginal intercourse with the story's casual sexual partner. Importantly, SSS is more strongly associated with sexual risk behaviors than general sensation seeking (Kalichman & Rompa, 1995). Also, although this personality trait predicts risky sexual behavior for both men and women (e.g., McCoul & Haslam, 2001), SSS tends to be higher among men than among women (e.g., Kalichman & Rompa, 1995).

In the only study that has explored the connection between SSS and oral sex, Kalichman and Rompa (1995) found that SSS was positively correlated with men and women's degree of

anticipated pleasure from both performing and receiving oral sex without a condom. Outside of this study, researchers have addressed the SSS-oral sex link by including oral sex in an aggregate measure of sexual risk behaviors (e.g., Hendershot et al., 2007; Wiederman & Hurd, 1999; Gaither & Sellbom, 2003). In light of the dearth of attention that the SSS-oral sex relationship has received, it is only possible to speculate that this personality trait, which has been demonstrated to be correlationally and causally associated with sexual risk behaviors in general, may also predict unprotected oral sex.

Alcohol

It is well established that alcohol intoxication is linked with sexual risk behaviors (e.g., George & Stoner, 2000). For example, at the event level, alcohol consumption appears to be uniquely associated with unprotected vaginal intercourse with casual partners as opposed to committed partners (Kiene et al., 2009). Alcohol administration research, which represents the most methodologically rigorous manner of evaluating the alcohol intoxication-sexual risk behavior link, echoes such findings, with acute intoxication leading to greater intentions to engage in unprotected vaginal intercourse with an unfamiliar partner of unknown STI status (see reviews by Hendershot & George, 2007; Rehm, Shield, Joharchi, & Shuper, 2012).

From the limited extant cross-sectional literature that has addressed the relationship between alcohol and oral sex (apart from an aggregate measure of sexual risk behaviors), there is, interestingly, no evidence for a relationship between alcohol consumption done proximally to a casual sexual encounter and oral sex (Patrick & Maggs, 2009; Lewis et al., 2012). Yet, without alcohol administration research, we cannot clarify the impact of acute alcohol intoxication on oral sex in (casual) sexual encounters. As other researchers have noted, self-report, retrospective data suffer from threats to validity and cannot shed any light on whether alcohol intoxication

truly plays a causal role in such sexual behavior (see George & Stoner, 2000, for a review). Laboratory-based empirical research in which participants are administered a standardized amount of alcohol and subsequently respond to a standardized, fictional sexual scenario is less subject to such limitations. Thus, akin to SSS, it is only possible to speculate that acute intoxication may play a causal role in oral sex intentions, as it has been demonstrated to play in vaginal intercourse intentions.

Present Study

In this experimental alcohol administration study, we examined the relationships between and among SSS, acute alcohol intoxication, oral sex, and vaginal intercourse. To examine the competing constructions of oral sex – of oral sex as an alternative versus a gateway to vaginal intercourse – we formulated two research questions. First, do intentions to perform oral sex predict vaginal intercourse intentions? Second, do intentions to receive oral sex predict vaginal intercourse intentions? Given the aforementioned gender differences in performing oral sex, receiving oral sex, and SSS, we evaluated these questions separately for men and for women.

We also developed three hypotheses to evaluate regarding these relationships. Consistent with previous correlational findings, we hypothesized that SSS would positively predict intentions to both perform and receive oral sex among both men and women. Although cross-sectional research thus far has not demonstrated a link between alcohol consumption and oral sex, in light of the empirical support for the acute alcohol intoxication-vaginal intercourse link, we also hypothesized that acute intoxication would affect oral sex intentions, with intoxicated men and women participants endorsing greater intentions to both perform and receive oral sex than sober participants. Our final hypothesis was that intentions to both perform and receive oral sex would mediate the relationships between alcohol intoxication and vaginal intercourse

intentions, and SSS and vaginal intercourse intentions. We based this hypothesis on our predictions about the impacts of alcohol intoxication and SSS on oral sex intentions, evidence for their respective effects on vaginal intercourse intentions, and our first two research questions. That is, if both alcohol and SSS predict intentions to perform and receive oral sex, and oral sex intentions predict vaginal intercourse intentions, it may be that oral sex intentions function as a mediating factor in the relationships between alcohol intoxication and vaginal intercourse intentions, and SSS and vaginal intercourse intentions.

Method

Participants

Participants were recruited from a large university and the surrounding metropolitan area in the Pacific Northwest, via print advertisements such as flyers and newspaper advertisements that described a study on “social drinking and decision-making.” Interested individuals who contacted the laboratory for further information were screened for eligibility. Inclusion criteria were that callers be between the ages of 21 and 35 years; consume alcoholic beverages regularly each week; self-identify as heterosexual; not be involved in a romantic relationship at the time of phone screening; and be native English speakers. Individuals who endorsed any of the following were excluded from participating: medical conditions and/or prescription medications contraindicated with alcohol consumption, problem drinking, a family history of alcoholism, and/or an adverse reaction to alcohol consumption.

The majority of participants (N = 324; 50% women) self-identified as Caucasian/White (73.4%), followed by multi-racial (7.5%), Asian/South Asian (5.6%), Black/African American (5.6%), Native Hawaiian/Pacific Islander (1.9%), Native American/American Indian/Alaska Native (1.3%), other (4.1%), and Middle Eastern/North African (.6%). Approximately one-half

(51.4%) of participants had completed some college; 44% were college students at the time of the experiment, and 56.3% of participants held part- or full-time jobs. Participants' mean age was 25.25 years ($SD = 3.98$), and they consumed a mean of 14.36 alcoholic drinks per week ($SD = 10.69$).

Materials and measures

Pre-beverage administration materials and measures.

Sexual Sensation Seeking Scale (SSSS; Kalichman & Rompa, 1995). This self-report questionnaire was used to assess participants' sensation-seeking behaviors and attitudes related to sexual experiences. Participants completed the SSSS as part of a battery of other questionnaires that are not pertinent to the present paper. On the SSSS, participants indicated the degree to which they agreed with 11 statements, such as, "I like to have new and exciting sexual experiences and sensations" on a Likert scale of 1 (*not at all like me*) to 5 (*very much like me*). Within-gender internal consistency was acceptable for both men and women ($\alpha_{Men} = .79$; $\alpha_{Women} = .76$).

Post-beverage administration materials and measures.

Sexual risk scenario. After beverage administration (see below), participants read an eroticized $\approx 1,000$ -word story depicting consensual sexual activity between a heterosexual man and woman who met earlier that evening at a party. Participants read the following instructions prior to the story: "You are now going to read a brief scenario and answer some questions. Imagine that you are the person being described in the scenario and try and put yourself in the situation. When the scenario involves drinking, imagine that you have had a similar amount to drink as you have had today in the lab." The scenario – which was written in the second person in order to facilitate participants' ability to project themselves into the role of the protagonist –

described a mutual attraction developing between the recently introduced characters over the course of the evening. The protagonist and new partner – “Dan” for female participants, and “Ellen” for male participants – ultimately went to this partner’s house after the party, where they engaged in consensual sexual activity. The characters became progressively more aroused as they moved from kissing to petting, and they then realized that neither has a condom. The scenario included that the female character was taking oral contraceptives, to control for the potential confound of concerns about unwanted pregnancy. Both characters were depicted as consuming alcohol if the participant had received alcohol; however, for control group participants, the protagonist was depicted as consuming soda and the new partner as consuming alcohol (See George et al., 2009, for further information about the scenario).

Scenario evaluation: Sexual risk-taking assessment.

Receive oral sex. The scenario was paused after depicting the partners discussing that neither had a condom. Participants’ intentions to receive oral sex were then assessed with one item: “At this point, how likely are you to allow Dan/Ellen to perform oral sex on you?” Responses were measured on a scale of 1 (*not at all likely*) to 5 (*very likely*).

Perform oral sex. Participants’ intentions to perform oral sex were also assessed during this pause. Participants were asked, “At this point, how likely are you to perform oral sex on Dan/Ellen?” Responses were measured on a scale of 1 (*not at all likely*) to 5 (*very likely*).

Vaginal intercourse. The scenario resumed after these questions, and concluded by depicting further and more intense sexual activity. Participants then reported their intentions to engage in vaginal intercourse with one item: “At this point, how likely are you to allow Dan to put his penis inside of you/to put your penis inside of Ellen?” They again responded on a scale of 1 (*not at all likely*) to 5 (*very likely*).

Procedure

Pre-experimental instructions. Individuals who met preliminary eligibility criteria based on the phone screen interview were scheduled for a laboratory appointment. Participants were instructed not to consume alcohol or any other drug during the 24 hours before the appointment, not to eat for three hours before their appointment, not to drive to the appointment, and to bring photo identification.

Laboratory procedures. All participants were lead through study procedures by a same-sex experimenter. Upon arriving at the laboratory, each participant was escorted by the same-sex experimenter to a private room, where the experimenter reviewed study procedures, risks, and benefits. After signing the informed consent form, participants were screened to confirm that they met the age and health criteria assessed during the initial phone interview and had also complied with pre-experimental instructions. Each participant also completed an alcohol breath test with a breathalyzer (Alco-Sensor IV, Intoximeters Inc., St. Louis, MO) to ensure that blood alcohol level (BAL) was not greater than 0.00. Female participants also completed a urine pregnancy test; no women were required to be excused from the study due to positive or ambiguous test results. Participants were then left alone to complete a battery of background questionnaires, including the SSSS (Kalichman & Rompa, 1995), on a computer.

Beverage administration. Participants were randomly assigned to the low-dose alcohol group (target peak BAL = 0.06, $n = 103$), high-dose alcohol group (target peak BAL = 0.10, $n = 114$), or control group ($n = 107$). Beverages for participants in the alcohol conditions contained a mixture of one part vodka to four parts fruit juice. In the low-dose alcohol condition, women received 0.514 g ethanol/kg body weight and men received 0.612 g ethanol/kg body weight. In the high-dose alcohol condition, women received 0.857 g ethanol/kg body weight and men

received 1.02 g ethanol/kg body weight. BAL was measured via breathalyzer every three minutes to ensure that alcohol participants met criterion BALs before proceeding to experimental procedures (for low-dose participants, criterion BAL = 0.03; for high-dose participants, criterion BAL = 0.06). Participants' mean pre-experimental BAL was 0.05 ($SD = 0.01$) in the low-dose alcohol condition, and 0.07 ($SD = 0.01$) in the high-dose alcohol condition. Beverages for participants in the control group consisted only of fruit juice, and were of the same volume of those that they would have received, based on weight and biological sex, in the alcohol groups. A yoked-control design was used in order to minimize between-subjects variation in alcohol consumption and absorption time (Schacht, Stoner, George, & Norris, 2010; Giancola & Zeichner, 1997). Control participants were informed accurately that their drinks would contain no alcohol; completed the same number of breathalyzer tests as their alcohol-condition yoke; and were given the same amount of time to consume their non-alcoholic beverages as their alcohol-condition yoke prior to beginning experimental procedures.

Sexual arousal priming. In order to prime their sexual arousal prior to the eroticized scenario, participants viewed sexually neutral and sexually erotic films following beverage administration. The sexually neutral film was a 2.5 minute documentary about birds; the subsequent sexually erotic films – 2 three-minute segments from commercially available films – depicted consensual heterosexual sexual activity (kissing, oral sex, and vaginal intercourse).

Sexual risk-taking assessment. After the sexual arousal induction, all participants read the aforementioned eroticized scenario about consensual heterosexual sexual activity and reported their intentions to receive oral sex, perform oral sex, and engage in vaginal intercourse.

Detoxification and debriefing. Control group participants were debriefed, compensated (\$15/hour of participation), and permitted to leave after completing the experimental procedures.

Alcohol condition participants remained at the laboratory until their BAL had decreased to 0.03 or below; at this point, they were debriefed, compensated (\$15/hour of participation), and permitted to leave.

Results

Preliminary Analyses

Descriptive statistics for SSS, vaginal intercourse intentions, and oral sex intentions are shown in Table 1. SSS, vaginal intercourse intentions, and oral sex intentions were all greater among men than among women (see Table 1). The high- and low-dose alcohol groups did not differ in their oral sex and vaginal intercourse intention ratings ($ps > .05$); we therefore collapsed across alcohol groups in the subsequent analyses.

Mediation Analyses

Parallel multiple mediation analyses were conducted via Hayes' PROCESS macro for SPSS (Hayes, 2013), allowing for evaluation of the respective effects of SSS and acute alcohol intoxication on intentions to perform and to receive oral sex (see Figures 1 and 2, path *a*). Such analyses also allowed us to explore whether the respective oral sex intentions predicted unprotected vaginal intercourse intentions. SSS and acute alcohol intoxication (0 = control, 1 = alcohol) were entered as predictor variables; intentions to perform oral sex, and intentions to receive oral sex were entered as the parallel mediators; and intentions to engage in unprotected vaginal intercourse was entered as the outcome variable. Within-gender centered SSS and oral sex intention scores were used in the separate analytic models. All results reported below include unstandardized regression coefficients.

Men

SSS. SSS positively predicted men's intentions to both perform and receive oral sex intentions ($a_{\text{perform}} = 0.64, p < .001$; $a_{\text{receive}} = 0.42, p < .001$). In turn, intentions to perform oral sex and receive oral sex positively predicted intentions to engage in unprotected vaginal intercourse ($b_{\text{perform}} = 0.18, p < .05$; $b_{\text{receive}} = 0.44, p < .01$). The bias-corrected, 95% bootstrap confidence interval for the indirect effect of performing oral sex based on 10,000 bootstrap samples was above zero ($ab_{\text{perform}} = 0.11$; 95% CI = 0.01 - 0.28), as was that of receiving oral sex ($ab_{\text{receive}} = 0.18$; 95% CI = 0.07 - 0.36). The contrast of indirect effects for performing oral sex intentions and receiving oral sex intentions was not significant, per bias-corrected, 95% confidence intervals that included zero (-0.30 to 0.11), indicating that the respective indirect effects of performing and receiving oral sex intentions were comparable in magnitude. Finally, the direct effect of SSS on unprotected vaginal intercourse intentions was not significant ($c' = 0.31, p > .05$).

Alcohol. Analyses failed to demonstrate that alcohol predicted intentions to perform oral sex and receive oral sex ($a_{\text{perform}} = 0.28, p > .05$; $a_{\text{receive}} = 0.03, p > .05$). The bias-corrected, 95% confidence intervals for the indirect effect of alcohol on vaginal intercourse intentions through performing oral sex intentions included zero (-0.02 to 0.22), as did that for the indirect effect of alcohol on vaginal intercourse intentions through receiving oral sex intentions (-0.14 to 0.08). The direct effect of alcohol on vaginal intercourse intentions was not significant ($c' = 0.23, p > .05$).

Women

SSS. Among women, results first demonstrated that SSS positively predicted both performing and receiving oral sex intentions ($a_{\text{perform}} = 0.54, p < .001$; $a_{\text{receive}} = 0.42, p < .001$). Intentions to perform oral sex positively predicted unprotected vaginal intercourse intentions

($b_{\text{perform}} = 0.34, p < .01$); however, intentions to receive oral sex were not similarly predictive of unprotected vaginal intercourse intentions ($b_{\text{receive}} = -0.02, p > .05$). The bias-corrected, 95% bootstrap confidence interval for the indirect effect of performing oral sex based on 10,000 bootstrap samples was entirely above zero ($ab_{\text{perform}} = 0.19$; 95% CI = 0.08 - 0.34); however, that of receiving oral sex included zero ($ab_{\text{receive}} = -0.01$; 95% CIs: -0.10 - 0.06). The direct effect of SSS on unprotected vaginal intercourse intentions was not significant ($c' = 0.31, p > .05$).

Alcohol. Analyses failed to demonstrate that alcohol predicted intentions to perform oral sex and receive oral sex among women ($a_{\text{perform}} = 0.30, p > .05$; $a_{\text{receive}} = 0.23, p > .05$). The bias-corrected, 95% confidence intervals for the indirect effect of alcohol on vaginal intercourse intentions through performing oral sex intentions included zero (-0.04 to 0.31), as did that for the indirect effect of alcohol on vaginal intercourse intentions through receiving oral sex intentions (-0.09 to 0.03). Finally, the direct effect of alcohol on vaginal intercourse intentions was not significant ($c' = 0.37, p > .05$).

Discussion

In this experimental alcohol-administration study, we evaluated the effects of acute alcohol intoxication and SSS on men's and women's behavioral intentions to perform oral sex and receive oral sex with a casual sexual partner. We also explored competing constructions of oral sex as an alternative to vaginal intercourse versus a gateway to vaginal intercourse. SSS – a dispositional tendency to engage in sexual risk behaviors – emerged as a noteworthy predictor of oral sex intentions, and the oral sex constructions emerged as differentially applicable to performing and receiving oral sex, for men versus for women.

As hypothesized, SSS positively predicted oral sex intentions among both men and women, indicating that as men's and women's degree of SSS increased, so too did their

intentions to both perform and receive oral sex. These results are consistent with past research demonstrating that this personality trait is associated with in-the-moment behavioral intentions to engage in sexual behaviors with a risk of STI transmission (Norris et al., 2009). These findings are a novel contribution to the growing body of literature on SSS and sexual risk behaviors that also warrant replication, as they are the first to address the relationship between specifically oral sex and SSS. Importantly, these findings also represent the first empirical investigation of individual difference factors related to young adults' in-the-moment decisions to engage in oral sex with casual sexual partners. We therefore expand our recommendation of replication by encouraging researchers investigating connections between intentions to engage in sexual risk behaviors and personality traits to continue addressing both performing and receiving oral sex as discrete and distinct sexual risk behaviors.

Contrary to hypotheses, sober and intoxicated men and women did not differ in their intentions to perform or receive oral sex. That acute intoxication had no bearing on intentions to engage in such risky sexual behaviors is perplexing, in light of existing empirical support for the role of intoxication in intentions to engage in unprotected vaginal intercourse (see Rehm et al., 2012 for a review). Further investigation of the relationship between oral sex intentions and alcohol intoxication is evidently required. Replication of the present study's null findings for alcohol's effect on oral sex intentions could raise a simple yet important question: why is (unprotected) oral sex immune to alcohol's disinhibiting physiological and/or psychological effects, specifically those effects that impinge upon and increase intentions to engage in unprotected vaginal intercourse?

Among men in this study, intentions to both perform and receive oral sex mediated the relationship between SSS and vaginal intercourse. Previous research has demonstrated that SSS

is cross-sectionally associated with the frequency with which men engage in unprotected vaginal intercourse (McCoul & Haslam, 2001; Gullette & Lyons, 2005); however, there have been no investigations of how this personality trait may influence men's vaginal intercourse intentions, in the moment, during the sexual encounter. Yet, our preliminary findings certainly do suggest that the link between SSS and unprotected vaginal intercourse intentions is a nuanced one, and we encourage future studies to continue evaluating how oral sex may factor into this nuance.

Regarding the oral sex constructions, among men, intentions to both perform and receive oral sex predicted vaginal intercourse intentions, with greater oral sex intentions leading to greater vaginal intercourse intentions. These findings suggest that, for men, both performing and receiving oral sex with a casual sexual partner are consistent with the construction of oral sex as a gateway to vaginal intercourse. Further, SSS positively predicted oral sex intentions, and in turn, oral sex intentions predicted vaginal intercourse intentions. We speculate that the oral sex/vaginal intercourse relationship demonstrated here speaks to the relative risks of unprotected oral sex and unprotected vaginal intercourse. Given that SSS reflects an individual's propensity to engage in risky sexual behaviors (Kalichman & Rompa, 1995), it may be that the objective risks of unprotected oral sex function as a gateway to the even greater objective risks of unprotected vaginal intercourse. It may be beneficial for future studies of the oral sex/vaginal intercourse relationship to include an evaluation of participants' knowledge of STI transmission via unprotected oral sex in order to assess this interpretation more directly.

Among women in the present study, intentions to perform oral sex, but not to receive oral sex, mediated the relationship between SSS and vaginal intercourse intentions. Norris and colleagues (2009) demonstrated that SSS indirectly predicted vaginal intercourse intentions among women, through sexual arousal. Our findings underscore the complexity of the

relationship between the dispositional tendency to engage in risky sexual behavior and unprotected vaginal intercourse by demonstrating that this link may be accounted for by having engaged in other sexual risk behaviors earlier in the sexual encounter. It is unclear, however, why performing oral sex but not receiving oral sex would factor into the SSS-vaginal intercourse connection. We therefore encourage continued investigation of these relationships.

Among women, as among men, intentions to perform oral sex predicted vaginal intercourse intentions, suggesting that performing oral sex with a casual sexual partner may be consistent with the gateway construction. However, receiving oral sex intentions did *not* predict oral sex intentions among women, suggesting that receiving oral sex from a casual sexual partner may be consistent with the alternative construction. More research is warranted to elucidate how these two behaviors function differently for women.

The discrepancy between the oral sex constructions for women, for fellatio versus cunnilingus, ultimately implies that, for women, performing and receiving oral sex may have disparate functions and meanings. Moreover, this discrepancy appears to be informed by a dispositional tendency to engage in risky sexual behavior. This discrepancy, and SSS' role therein, warrants continued investigation. We likewise call for continued investigation into the gender difference in cunnilingus serving as a gateway versus an alternative to vaginal intercourse.

There are several limitations to the present study that must be taken into account. First, our findings should be interpreted with caution due to limited generalizability. Sample characteristics, and the fact that individuals who volunteer to participate in sexuality research tend to have more sexual experience and more liberal attitudes towards sexuality (Strassberg & Lowe, 1995), are both relevant to our results' limited generalizability. Additionally, the

mediators and outcome variable in this study were based on single items. It is possible that findings would be strengthened by evaluating additional items relevant to oral sex and vaginal intercourse behavioral intentions. However, the single items used in this study were highly face valid. Finally, this study was the first of its kind, to evaluate in-the-moment predictors of behavioral intentions to engage in oral sex and the relationship between oral sex intentions and vaginal intercourse intentions. It was also the first to examine, scientifically, competing constructions of oral sex, in the context of a casual sexual encounter. Although the present study thusly represents a novel contribution to the field, replication is necessary.

Conclusions

As noted, the present study expands upon existing literature by evaluating in-the-moment predictors of men's and women's behavioral intentions to engage in unprotected oral sex with a casual sexual partner. Our findings underscore the impact of a trait-based affinity for sexual risk on both performing and receiving oral sex, for men and for women. They also demonstrate that, overall, oral sex may not function as an alternative to vaginal intercourse, contrary to what many studies on young adults' views of oral sex have found (e.g., Chambers, 2007).

As noted at the outset, oral sex has received negligible research attention in comparison to vaginal intercourse. Yet, as our results have shown, (unprotected) oral sex may indeed lead to (unprotected) vaginal intercourse, and consequently, the risks that this latter behavior confers. We therefore conclude this paper by calling for a change to this research status quo, as the potential health risks of oral sex may be much more profound than the scientific community has considered them to be.

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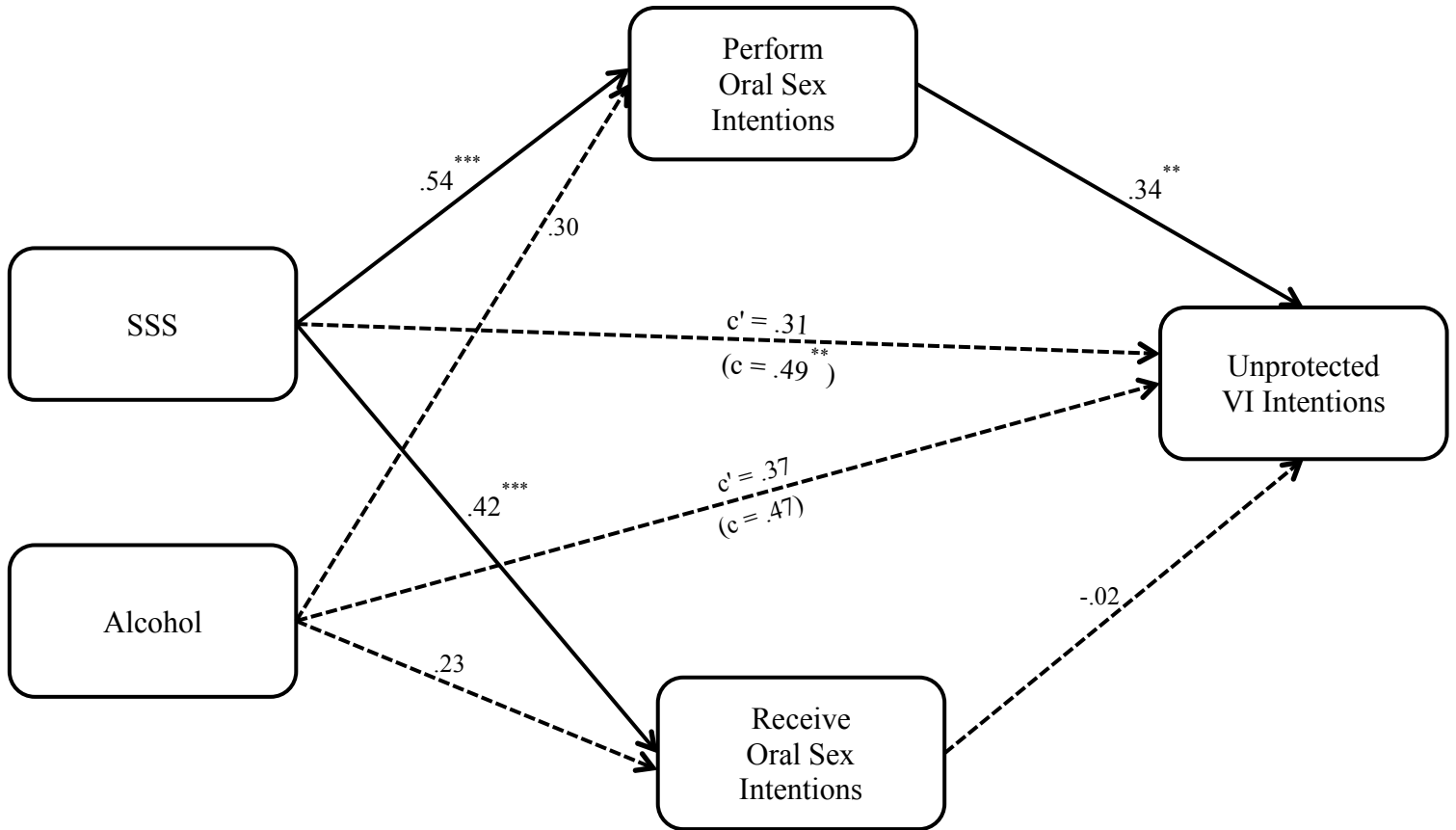
Table 1:
Contrast of Sexual Risk Behavioral Intentions and SSS, By Gender.

	Men	Women	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>t</i>
Perform Oral Sex Intentions	3.81 (1.45)	3.39 (1.41)	-2.61*
Receive Oral Sex Intentions	4.72 (.78)	4.40 (1.05)	-3.11**
Vaginal Intercourse Intentions	3.43 (1.48)	2.58 (1.50)	-5.06***
SSS	3.57 (.62)	3.14 (.67)	-5.96***

Responses for sexual behavior intentions measured on a scale of 1 (*not at all likely*) to 5 (*very likely*). SSS = Sexual sensation seeking, per Sexual Sensation Seeking Scale; responses measured on a scale of 1 (*not at all like me*) to 5 (*very much like me*).

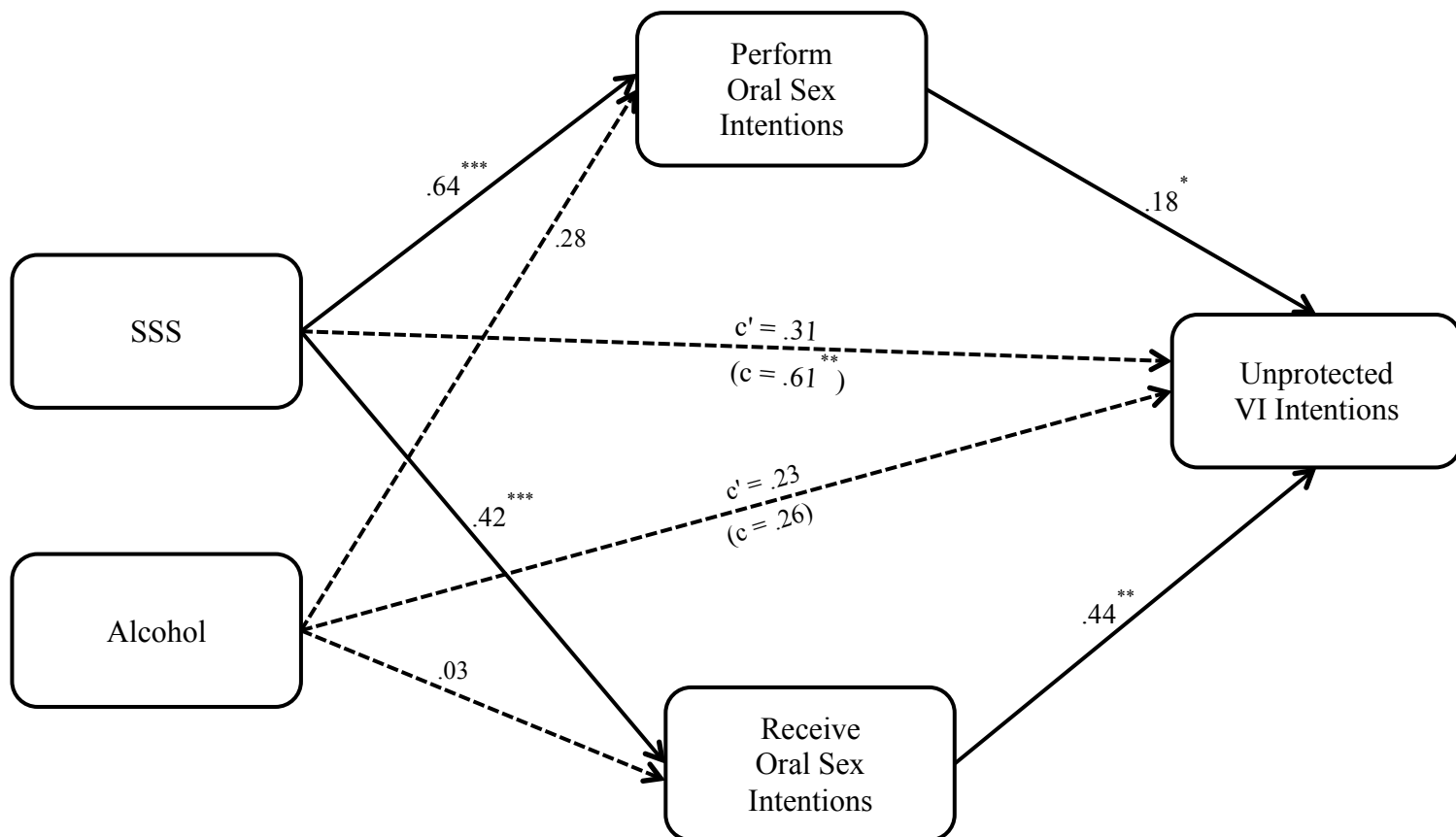
*** $p < .001$; ** $p < .01$; * $p < .05$

Figure 1.
Mediation Model with Unstandardized Regression Coefficients for Prediction of Women's Unprotected Vaginal Intercourse Intentions.



Note. Solid arrows represent statistically significant paths; dotted arrows represent nonsignificant paths.
 *** $p < .001$; ** $p < .01$; * $p < .05$

Figure 2.
Mediational Model with Unstandardized Regression Coefficients for Prediction of Men's Unprotected Vaginal Intercourse Intentions.



Note. Solid arrows represent statistically significant paths; dotted arrows represent nonsignificant paths.
 *** $p < .001$; ** $p < .01$; * $p < .05$