

## Partner Meeting Contexts and Risky Behavior in College Students' Other-Sex and Same-Sex Hookups

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### Abstract:

We analyzed a sample of 12,065 hookup encounters among college students at 22 colleges and universities in the Online College Social Life Survey (OCSLS) to explore how partner meeting locales may influence college students' risky behavior when hookup partners are met in those contexts. For other-sex encounters, meeting in bars or at parties, through common interest groups or history, and (for women) at dormitories was associated with binge drinking during encounters, while meeting online and (for women) in public was associated with reduced binge drinking during encounters. Unprotected sex during other-sex encounters was more common when partners were met in public and less common with partners met in dormitories. Binge drinking and marijuana use during or just prior to encounters was associated with an increased risk of unprotected sex and other substance use. Marijuana use and unprotected sex during encounters was more common when students knew their hookup partner better or had hooked up with the partner before, while binge drinking was associated with hooking up with less familiar partners. Associations of meeting contexts with behavior were explained by the locale's association with institutional and personal trust, social scripts, and selection into certain contexts by students with a risk-taking personality.

**Keywords:** hookups | risky behavior | college students | substance use | unprotected sex | meeting contexts

### Article:

How do partner meeting contexts influence behavior during sexual encounters? Studies of college students' sexual practices indicate that visibility, normativity, and perhaps frequency of

casual sex has increased over time as the “hookup”, or casual sexual encounter, has become common on college campuses; recent estimates indicate that 60% to 80% of college students engage in at least one of these encounters (Kuperberg & Padgett, 2015a; Fielder & Carey, 2010a; Garcia, Reiber, Massey, & Merriwether, 2012; Heldman & Wade, 2010). When hooking up, students often engage in risky behavior (Turchik & Garske, 2009); understanding the link between behavior and social environments—such as partner meeting contexts—is key to developing effective interventions that can mitigate risky activity (Groves, Parsons, & Bimbi, 2007).

Apart from a study that found no difference by meeting context in unprotected anal sex among men having sex with men (Groves et al., 2007), to our knowledge no studies have specifically examined correlations between partner meeting contexts and risky behavior during sexual or other encounters. Our prior research established that meeting contexts vary by encounter type and that encounters with other-sex partners met in dormitories or bars, parties, and nightclubs, compared to other meeting contexts, are more likely to be a hookup, while encounters with other-sex partners met online were more likely to be a more public, formal, and less sexual “date” (Kuperberg & Padgett, 2015a). Other research has examined where sexual and romantic partners are met (Benotsch, Kalichman, & Cage, 2002; Bolding, Davis, Hart, Sherr, & Elford, 2007; Garcia, Muñoz-Laboy, Parker, & Wilson, 2014; Herold & Mewhinney, 1993; Mahay & Laumann, 2004; Rosenfeld & Thomas, 2012) and impacts of meeting context on partner homogamy and interracial unions (Houston, Wright, Ellis, Holloway, & Hudson, 2005; Kalmijn, 1998; Kalmijn & Flap, 2001).

We add to prior literature by developing theoretical explanations for linkages between sexual partner meeting contexts and risky behavior during college students’ hookups, and by exploring these patterns with a large, recently collected data set. We specifically examined binge drinking, marijuana and other drug use, vaginal/anal sex, and vaginal/anal sex without a condom. We also examined and accounted for correlations between risky behaviors and both students’ personal familiarity with their partners and their drug and alcohol use during encounters in our examination of linkages between meeting context and behavior. Finally, we examined whether linkages between meeting context and risky behavior differed by students’ gender and whether encounter partners were same-sex or other-sex.

### **Risky Behavior in Hookup Encounters**

The term *hookup* is used by adolescents and young adults to describe casual, noncommittal encounters of a sexual nature (Bogle, 2008; Downing-Matibag & Geisinger, 2009; Flack et al., 2007; Paul & Hayes, 2002; Paul, McManus, & Hayes, 2000). Hookups vary widely in the level of physical contact involved, and may consist of kissing; groping; oral, vaginal, or anal sex; or any combination of these sexual acts (Bogle, 2008; Downing-Matibag & Geisinger, 2009; England, Fitzgibbons Shafer, & Fogerty, 2007; Fielder & Carey, 2010b); slightly less than one-third of college hookups do not involve any genital contact, 41% include vaginal sex, and 2.4% include anal sex (Kuperberg & Padgett, 2015a). Hookup partners may be well acquainted or less familiar with their partners, and a degree of anonymity seems to be common; approximately 55% of students reported hooking up with anonymous partners (Bogle, 2008; Eisenberg, Ackard, Resnik, & Neumark-Sztainer, 2009; Paul & Hayes, 2002; Paul et al., 2000).

Individuals face physical and emotional *risks* in sexual encounters (Giddens, 1992). Managing risks in a calculated manner is a unique feature of modern societies and involves notions of possible danger and hazards—undesirable outcomes viewed as originating with forces largely beyond human control—but is often personally chosen and carries the potential for rewards, unlike dangers and hazards that simply “happen” to individuals (Beck, 1992; Giddens, 1999a, 1999b). Individuals draw from a multitude of knowledge sources, including social cues, to accumulate sufficient information to calculate potential gains—be they monetary or sensation seeking in nature—relative to the potential for harm, and become willing to act and take risks based on that knowledge (Giddens, 1999b). Students often engage in risky behavior during hookup encounters, including drinking alcohol (especially binge drinking) (Bogle, 2008; Disiderato & Crawford, 1995; Downing-Matibag & Geisinger, 2009; Fielder & Carey, 2010a; Fisher, Worth, Garcia, & Meredith, 2012; Paul et al., 2000; Temple & Leigh, 1992), drug use (Fielder & Carey, 2010a), and unprotected sex (Bearak, 2014).

An important component of risk is potential rewards. Students who engage in risky behavior during hookups increase their probability of experiencing pleasurable physical sensations, such as intoxication and sexual pleasure, and pleasurable emotions. The thrill of engaging in risky behavior may itself heighten arousal. Students who hook up also increase the probability of forming lasting romantic relationships; a recent report found one-third of married young adults began their relationship with a hookup (Rhoades & Stanley, 2014), and a study of college students found around half who hooked up did so hoping to start a romantic relationship, although over 90% did not expect that hookups would lead to one (Garcia & Reiber, 2008).

These actions increase the risk of potential negative outcomes, such as unintended pregnancy, sexually transmitted infections (STIs), and rape or attempted rape. Young adults have high rates of placing themselves at risk of STIs through high frequency of engagement in hookups, a high number of sexual partners, and low rates of condom use, posing a continued public health concern (Centers for Disease Control and Prevention, 2014; Eisenberg, 2001; Epstein, Calzo, Smiler, & Ward, 2009; Fielder & Carey, 2010a; Lambert, Kahn, & Apple, 2003; Lewis, Lee, & Patrick, 2007; Scholly, Katz, Gascoigne, & Holk, 2005; Turchik & Garske, 2009). Students face potential direct negative health outcomes from recreational substance use, including the risk of death due to alcohol poisoning and an array of conditions related to chronic substance use. Alcohol intoxication is related to higher rates of risk-taking behavior, violence, lower condom use, and impaired judgment, and can cause difficulty in communicating a desire to cease sexual activity (Bogle, 2008; Disiderato & Crawford, 1995; Downing-Matibag & Geisinger, 2009; Flack et al., 2007). Almost half of college students’ regretful sexual encounters involved drinking, and over half of students agreed that intoxication caused regret after uncommitted sexual encounters, while only 27% reported being sober during their most recent encounter of this nature (Caron & Moskey, 2002; Fisher et al., 2012). A recent report estimated 7% to 10% of female college students experience forcible rape while in college (Armstrong & Budnick, 2015); 79% of college rape or sexual assaults occurred in the context of a hookup (Flack et al., 2007); and heavy drinking was found to be more common at parties at fraternity houses categorized as having a high risk for rape (Boswell & Spade, 1996).

## Meeting Contexts and Risky Behavior

We theorized that partner meeting contexts are related to risk-taking activities regardless of when and where a hookup occurs, and regardless of personal familiarity with a partner or other substance use during encounters, because meeting contexts are associated with varying levels of trust and some contexts are specifically associated with social expectations that encourage risk taking. In addition, students with risk-taking/thrill-seeking personalities or other specific motivations for hooking up may seek partners, or be more likely to respond to approaches, in certain locales, leading to differences in risk-taking behavior in sexual (or other) encounters with partners met in those contexts. Meeting contexts may also be related to risk-taking behavior because of selection into certain meeting locales by certain groups who have different propensities for risk taking, the association of some meeting contexts with drug and/or alcohol use, and the nature of certain meeting contexts leading to more repeated encounters with partners, and to greater personal familiarity; these effects must be accounted for when exploring the association of risk taking with meeting contexts.

In the face of uncertain outcomes, individuals rely on trust, rather than accumulating specific knowledge, to act (Jalava, 2003; Luhmann, 1988). Risk and trust are bound to each other; without trust, or “the mutual confidence that no party to an exchange will exploit another’s vulnerability” (Sabel, 1993), individuals could not make the leap of faith required during many social interactions where the potential for negative outcomes is high (Giddens, 1990; Lupton, 1999). In addition to trust built from personal familiarity that results from repeated contact and interaction, trust can result from faith in a social organization and reliance on the normalcy provided by consistent routines, recognizable social scripts, and familiar, stable contexts of social institutions, which allow individuals to continually deal with situations of uncertainty in an efficient manner while fending off the cognitive demands presented by risks (Giddens, 1991). Churches, schools, common interest groups, and workplaces are examples of contexts that can foster this institutionalized trust. In these contexts individuals may perceive a degree of safety and mitigation of risks that is bolstered by shared symbols and chances for repeat unplanned contact, leading students to later engage in riskier behaviors with partners met in those contexts than in contexts lacking this or other types of trust, such as public contexts or online. Therefore, we predicted the following:

H1: Personal familiarity with a partner will lead to more trust and therefore more risk taking during encounters.

H2: Regardless of personal familiarity with a partner, risk-taking behavior will be more likely with partners met through institutional, dormitory, and common interest/history contexts than with those met in public, bars, parties, or nightclubs, or through Internet/personals advertisements.

Context does not always refer to a physical location, and personal relationships are key in establishing trust with others. The concept of transitivity—the expectation that if A establishes a tie to B, and B establishes a tie to C, then A is likely to also establish a tie to C (Granovetter, 1973)—explains the ease with which a connection might emerge when an individual meets a potential partner through a family member or friend. Individuals may perceive

some degree of familiarity with the new person stemming from a perception that a state of trust currently exists between the friend or family member, who is presumably already a trusted other, and the new other to whom they are being introduced. The family is considered to be one of the two most important institutions to socialization and is responsible for facilitating many subsequent associations the individual will form over the course of his or her life (Jalava, 2003); connections formed via the family therefore facilitate trust more readily than other means of social networking. Similarly, connections formed within the context of friendship are likely to readily lead to a trust state. Perceived familiarity, less-than-random contact, communication with the other, and similar bonds to a third party are likely to exist when an individual meets a potential partner in such social contexts. Personal trust is distinguished from institutional trust by lower perceived social distance between the self and other. A student may expect that any misconduct during encounters will be reported to mutual acquaintances, which could lead to varying degrees of trust and willingness to engage in risk-taking behavior dependent on the social distance between the student and the third party he or she has in common with the new partner. Because of the closer social distance associated with personal connections, students may trust partners more when they share a connection to a socially close third party via some primary group, such as friends or family, than when they share a more socially distant connection with the partner, such as through institutional connections. The closer the student is to the third party through which they are connected to the partner, the greater the degree of perceived accountability to that third party will be, and the greater the student's willingness to engage in risk-taking behaviors with that partner will be. Therefore we expected:

H3: Regardless of personal familiarity with a partner, risk-taking behavior will be more likely with partners met through personal recommendation than through institutional contexts.

In addition to trust built on personal or institutional ties, people rely on shared meaning and predictable patterns of action to determine available and appropriate responses to the social worlds through which we move (Miztal, 2001). Peer influence and social expectations, or *norms*, shape individuals' sexual behavior, even when notions of "typical" behavior are not accurate (Kuperberg & Padgett, 2015b; Lambert et al., 2003; Lewis et al., 2007; Maticka-Tyndale, Herold, & Mewhinney, 1998). Norms exist through and influence the socialization of individuals, who come to recognize particular social *scripts* as appropriate to any given event that may arise. These scripts are a kind of cognitive map, shaped by social norms, outlining a typical sequence of events and expected behaviors during a given interaction (Kuperberg & Padgett, 2015a). Social scripts, and an expectation that others follow them, serve to bolster trust states, filling knowledge gaps and moving individuals closer to action. When individuals see that an interaction closely follows the expected pattern depicted in a known social script, they may be more likely to trust others because of a perception that "things are as they should be," or engage in certain behaviors because that is how they "should" behave.

Epstein et al. (2009) outlined several themes central to the definitional social script of hookup culture. These scripts depict hookups as occurring outside of committed relationships; an unspoken agreement exists between partners that the encounter will not likely culminate in a relationship; and a variety of sexual behaviors may occur within any given encounter, none of which are predetermined, leaving no clear boundaries for conduct. Also, the hookup script typically involves attending a party or similar social event, consuming alcohol, dancing, or

engaging in some social activity (Bogle, 2008; Disiderato & Crawford, 1995; Epstein et al., 2009; Fielder & Carey, 2010b; Flack et al., 2007; Grello, Welsh, & Harper, 2006; Gute & Eshbaugh, 2008). Students consider a perpetual party atmosphere, high alcohol consumption, frequent pickup attempts, peer approval, and a carefree atmosphere to be conducive for casual sex encounters—features common in college environments (Bogle, 2008; Grello et al., 2006; Maticka-Tyndale et al., 1998). Media depictions of hookup behavior and peer endorsement of this behavior contribute to the perception that risky, frequent, anonymous sexual encounters are the norm within the social contexts of college campuses and young adult dating arenas, influencing individuals to act accordingly and perpetuate those behaviors resulting in pluralistic ignorance (Bogle, 2008; Fielder & Carey, 2010a; Lambert et al., 2003). Both men and women overestimate the comfort level of the other gender with sexual behaviors and believe others of their same gender are more comfortable than they report being themselves, perhaps leading students to “compete” with others of their gender by hooking up and engaging in activities beyond their comfort level (Lambert et al., 2003; Reiber & Garcia, 2010).

Sexual scripts can vary by social context. One study found that at fraternities known to be at high risk for rape, students drank more heavily and acted more aggressively than when attending parties at fraternities at lower risk (Boswell & Spade, 1996). While hookups do not necessarily occur when and where partners first meet, some portion of hookups do likely occur soon after partners meet. Students may also later reindulge in behaviors undertaken with that partner when they first met, such as binge drinking or drug use, because they associate that partner with a particular context and social script. Grello and colleagues (2006) found that most students indicated meeting their most recent casual sex partner in contexts that they described as promoting alcohol and drug use, such as parties, bars, and fraternity gatherings. Prior research with the data in this study demonstrated that about one-third of hookup partners were met in bars, parties, and nightclubs, and that meeting in those contexts or college dormitories, contexts associated with a casual sex script and a party atmosphere, was predictive of the encounter having been a hookup rather than a date (Kuperberg & Padgett, 2015a). The association of certain contexts such as bars and parties with intoxication can also lead to an increase in other types of risk-taking behavior. Alcohol is viewed as useful for facilitating hookups by students, providing the “liquid courage” to be bold enough to approach potential partners. Substance use is commonly cited by young adults as the reason they engaged in casual sex (Bogle, 2008; Disiderato & Crawford, 1995; Lyons, Manning, Longmore, & Giordano, 2014; Stoner, George, Peters, & Norris, 2007), and, as discussed, has been linked to risk taking during encounters. We therefore predicted:

H4: Other forms of risk-taking behavior will be more likely for students who engage in binge drinking and drug use during encounters than for students who do not.

H5: Regardless of level of intoxication, risk-taking behavior will be more likely with partners met through bars, parties, nightclubs, and dormitories than institutional contexts.

Hypothesis 5 in part contradicts hypothesis 2, which predicts risk taking will be less likely among partners met in bars, parties, or nightclubs than in institutional contexts, because of the lack of institutionalized trust among partners met through bars, parties, or nightclubs. These effects may cancel each other out so that bars and parties do not differ from institutional settings,

or a trust or social script effect may dominate. Further, effects may differ based on the type of risky activity.

The association of bars, parties, and nightclubs with drinking and casual sex scripts also differentiates those contexts from the Internet as meeting locales specifically utilized by those seeking sexual partners. Students' partnering encounters are significantly more likely to be a date than a hookup when the encounter partner was met on the Internet (Kuperberg & Padgett, 2015a); similarly, they may avoid risky behavior if they do not associate these scripts with encounter partners met on the Internet, consistent with hypothesis 2, which predicted lower levels of risk taking among partners met online. Parties and bars likely also include a greater proportion of partners met in social situations when students were with a friend, at the home of a friend or acquaintance, or at an institution-based party such as a frat party, which may enable a sense of security that increases risk taking.

### Selection Into Hooking Up, Risk Taking, and Meeting Contexts

As a competing theory to the association of meeting contexts with trust and risk taking previously discussed, students who have an impulsive personality may be more likely to meet hookup partners in certain venues and also be more likely to engage in risky behaviors during hookups with those partners. For instance, approaching a partner in public, at a bar or party/nightclub, or online, where institutional and personal ties are relatively absent, or responding to being approached in such a way by a potential partner may be more common among students who are generally inclined to impulsively take more risks (Kuperberg & Padgett, 2015a). Students with risk-taking or impulsive personalities may also engage in multiple types of risk-taking behavior together, consistent with hypothesis 4. If this is the case, then in contrast with hypothesis 2 and consistent with hypothesis 5, we offer:

H6: Risk-taking behavior will be more likely with partners met in public, online, or in bars, parties, and nightclubs than when met through institutional, personal recommendation, or common interest/history contexts.

Conversely, students may be more likely to utilize Internet dating when they are not bold enough to approach potential partners in face-to-face contexts, leading to less risk taking among this group due to selection, consistent with hypothesis 2.

Students' motivations to hook up may also differ by group, leading to partner seeking in specific contexts they believe will facilitate their needs. For instance, students who are more interested in hookups may be more likely to utilize bars, parties, and nightclubs to seek sexual partners due to the association of these meeting contexts with a casual sex script. An association between Internet meeting places and dating (Kuperberg & Padgett, 2015a) may result from students utilizing the Internet to seek romantic partners at a higher rate than casual sex partners, a factor that may also reduce engagement in vaginal or anal sex during hookups, consistent with hypothesis 2. While the most common motivation for hooking up is sexual satisfaction without emotional attachment, and having fun, around 20% of young adults reported hooking up because they wanted their relationship to turn into something more, 51% of college students hooked up with the motivation to form a relationship, and female students were more likely to hook up in

college if they wanted more opportunities to date or form long-term relationships on campus (Garcia & Reiber, 2008; Kuperberg & Padgett, 2015b; Lyons et al., 2014; Vrangalova, 2014), indicating hookups may substitute for and/or aid in the formation of more committed relationships. Students may also have distinct scripts and meeting contexts for hookups that intend to be a one-night stand versus those they hope will become a more lasting relationship.

Hookup meeting contexts, rates of casual sex, and sexual behavior during hookups have been found to differ substantially by gender and whether partners were same-sex or other-sex (Kuperberg & Padgett, 2015a, 2015b; Grello et al., 2006). Men were more likely to prefer hookups over dates compared to women—although the vast majority of both genders prefer dates and are far more likely to wish they had more opportunities for long-term relationships than for hookups (Bradshaw, Kahn, & Saville, 2010; Kuperberg & Padgett, 2015b). Students engaging in same-sex hookups have distinctive partner meeting patterns, with partners more often found through Internet and personal ads compared with other-sex partners (Kuperberg & Padgett, 2015a). Same-sex encounters may also have distinctive scripts compared to other-sex encounters (Klinkenberg & Rose, 1994), potentially leading to differences in risky behavior more generally and the association of certain meeting contexts with this behavior.

Risk-taking behavior varies by gender as well. Men use illicit drugs and alcohol more than women, and they are five times more likely to be heavy drinkers, 2.5 times more likely to use marijuana once or more per week, and more likely to report recent binge drinking and drug use, as well as lifetime use of cocaine, heroin, and cigarettes (Johnston, O'Malley, Bachman, & Schulenberg, 2005; Substance Abuse and Mental Health Services Administration, 2000). Women, who are at an increased risk given that they are likely to bear greater costs resulting from unintended pregnancy and are generally more at risk of sexual assault and rape compared to men, may also place more emphasis on trust when navigating risks during encounters (Kuperberg & Padgett, 2015a). While these differences do not lead to clear hypotheses about relationships between meeting contexts and risk-taking behavior, they point to the importance of examining whether these relationships are consistent across gender and other-sex or same-sex groups in significance, direction, and explanatory power.

Finally, analyses must account for differences in selection into risk taking and meeting contexts by other demographic characteristics. Hookups are more common among White women, fraternity/sorority members, and students who attended religious services sometimes but not regularly, and least common among regular religious service attendees and Asian students (Kuperberg & Padgett, 2015b). In a separate line of research (available from authors) these factors have been found to be correlated with hookup partner meeting place. Drug and alcohol use has also been found to be more common among members of Greek organizations (McCabe et al., 2005), less common among Black adolescent students compared to White students, and less common among more religious students (Wallace, Brown, Bachman, & Laveist, 2003). Alcohol use prevalence increases from age 18 to 23, with the highest prevalence among those age 21 to 22, but drug use tends to decline with age (Johnston et al., 2005). Unprotected sex is also more common among older college students and freshmen whose mothers have higher levels of education, while upperclassmen are more likely to engage in sex during encounters and meet partners via the Internet or through personal recommendation (Bearak, 2014; Kuperberg & Padgett, 2015a). Risky health behavior is more common among offspring of divorced parents

(Huurre, Junkkari, & Aro, 2006). We controlled for these factors in all models to account for selection effects that may otherwise result in spurious relationships between meeting context and risky behavior, and compared the explanatory power of these demographic variables with meeting context, personal knowledge, and substance use, to examine the relative importance of these factors in determining behavior during hookups.

## **Method**

### **Participants**

We analyzed the Online College Social Life Survey (OCSLS), which surveyed 24,131 college students at 22 colleges and universities in the United States between 2005 and 2011 about their most recent hookup. The OCSLS was collected via a self-administered computer survey and was a convenience sample, in which professors that were personally acquainted with the data collector were recruited to give the survey to students in large introductory-level college courses. Human subjects approval was obtained at all universities where data were collected. Students were not compensated monetarily for participating in this survey, but in many cases the survey was presented as a class assignment with an alternative assignment for students who did not wish to participate. Response rates within these courses were higher than 99% (Armstrong, England, & Fogarty, 2012). A wide range of universities from throughout the United States were included: 12 research universities (with nine of 12 being public universities), five comprehensive universities, and four small liberal arts colleges, including two religiously affiliated and one community college.

While more than 80% of courses in which data were collected were sociology courses, the sample was almost 90% nonsociology majors. Significant differences were not found between sociology majors and other majors in the sample (see Armstrong et al., 2012; Kuperberg & Padgett, 2015a for more details on the survey). As a sensitivity test we ran additional models controlling for whether the student was a sociology major and did not find significant effects; we therefore present more parsimonious models without this variable. Female respondents and lowerclassmen were overrepresented in these data compared to the sex ratio at these schools, which may result from sampling within sociology and introductory-level courses. All regression models therefore accounted for gender and class standing.

We focused on the 14,630 (60.6%) students who reported engaging in a hookup and who reported their gender. Our sample was further reduced by the 2,537 students (17.3% of hookups) who did not report a meeting place for their last hookup partner or whose meeting place was unable to be categorized (discussed further in the following section). An additional 28 hookups were deleted because they occurred among men who indicated they hooked up with men and had vaginal sex during the encounter. Values were imputed on 25 encounters missing responses on outcome variables and 205 students missing responses on one or more control variables using the MICE package in R (van Buuren & Groothuis-Oudshoorn, 2011). In all, 20 imputed data sets were created based on the original data, and all analyses were conducted 20 times (once per data set) with results pooled using Rubin (1987) rules. Our final sample size was 12,065 hookups, with responses from 3,787 men and 8,278 women; 11,532 hookups are other sex and 533 are same sex.

## Measures

Students were prompted by being told: “For this section, use whatever definition of hookup you and your friends generally use. It doesn’t have to include sex to count if you and your friends would call it a hookup.” They were then asked detailed questions about behavior just prior to and during their most recent hookup encounter which occurred while they were in college, that referred to “the last time you hooked up with someone you were *not* already in an exclusive relationship with (whether or not you knew the person beforehand).”

Outcomes examined included binge drinking, marijuana use, other drug use, anal/vaginal sex, and anal/vaginal sex without a condom, referred to as “unprotected sex” in this study. Binge drinking was defined as four or more alcoholic drinks for women and five or more drinks for men (following the definition of the National Institute on Alcohol Abuse and Alcoholism, 2014) during or just prior to the encounter. Other drug use was defined as a positive response to questions about the use of amphetamines (speed); cocaine; ecstasy (“x,” “e”); heroin, mushrooms, or other substances during or just prior to the encounter.

We also examined and accounted for how well students personally knew their partners with responses to two questions. The first, “How well did you know the person you hooked up with before you hooked up?,” provided four response options: *A little bit*, *Somewhat*, *Moderately well*, and *Very well*; an additional option, *Not at all*, was not selected by any student in our sample. We also examined the question “How many times had you previously hooked up with this partner before this hookup?” to account for and explore the degree to which risk taking changes as students engage in multiple hookups with partners. Responses to this item were truncated at 10 at the time of data collection.

*Meeting Contexts.* We analyzed responses to the question “Where did you and the person you hooked up with first meet?” Respondents could select from the following close-ended responses: *Class*, *Student club/team*, *Dorm*, *Work*, *Personal ad/dating service*, *At a party/bar/nightclub*, and *Other*. A subsequent open-ended question asked, “If other, please specify”; 3,115 (25.50%) of students who had hooked up provided an open-ended response to this question. Of those, 1.8% of meeting places were indiscernible, too vague, or otherwise not possible to categorize; this category is excluded from the analysis. Some meeting contexts may overlap; for instance, a student may both have met a hookup partner at a party and have been introduced by a friend. By examining answers provided by students, we measured the meeting context the respondent considered most salient when describing a partner. We developed 13 initial categories and based on a *t* test analysis of demographic and other differences between groups that were theoretically similar (not shown, available from authors), we further simplified these groups into seven final meeting context categories. Recoding was conducted by the second author in close consultation with the first author, with questionable cases jointly discussed and categorized.

The first category is *personal recommendation* and combined two initial categories we discovered in the open-ended responses: partners met through friends (e.g., “through mutual friends” and “a friend’s friend”) and through family (including responses such as “through my

brother” and “my sister’s friend”). Partners met through family may theoretically be distinct from those met through friends when impacting sexual behavior that is transgressive, which can include same-sex behavior. Perhaps as a result we found no students in our sample who hooked up with a same-sex partner met that partner through family members. Among students that hooked up with other-sex partners, only eight men and 61 women met through family, versus 212 and 877 in those respective groups who met other-sex partners through friends. Due in part to the small size of the family group, we combined these groups for analyses; effects differed for only one behavior, marijuana use, which was associated with women meeting partners via friends but not family.

The second category combined three initial categories that we identified in the open-ended responses; *repeat event/common interest* (e.g., “ballroom dance class/club,” “our mutual sports team”), *one-time event/common interest* (e.g., “sporting event,” “tennis match,” “photo shoot”), and *shared history/hometown* (e.g., “from my hometown,” “knew from high school,” “we grew up together”). In these settings, individuals are likely to perceive some shared interests with the individuals they encounter and as such form “like me” associations that could foster states of trust. Hometown and personal histories were more common meeting places for other-sex couples, and common interest groups and one-time events were more common meeting places for same-sex partners. After finding that these groups had no differences in effects on risky behavior for both other- and same-sex hookups, we combined them into the *common interest/shared history* category.

The third category created was labeled *institutional* contexts thought to be associated with institutional trust; *class*, *student clubs/teams*, and *work* responses originally provided to respondents were coded into this category, along with open-ended responses such as *orientation*, *college event*, *Alcoholics Anonymous*, *nonprofit organization volunteers*, and *at church*. The original category *dorm* was coded along with open-ended responses related to institutional living contexts (e.g., “at a dorm-sponsored dance”; “we were roommates in an on-campus apartment”) into the fourth category, *dormitories*. These responses were separated from other institutional contexts due to the assumption that living in relatively close quarters with others is likely to be more conducive of getting to know one another and hence more likely to facilitate trust states. Dormitories may be associated with a “party atmosphere,” and were found in our past research to be associated with an increased likelihood of hooking up with, rather than dating, a partner met in that context compared to other institutional settings (Kuperberg & Padgett, 2015a). A fifth category, *public*, combined three distant social spaces after we found no differences among them: *neighborhood* (e.g., “we are neighbors,” “same apartment building”), *public restaurant/retail/business* (e.g., “grocery store,” “coffeehouse,” “hotel”), and *public spaces* (e.g., “the bus,” “the park,” “at a beach”).

The final two categories represent contexts specifically conducive to sexual partnering with more socially distant partners. The originally supplied response of *at a party/bar/nightclub* was combined with open-ended responses such as “bar,” “at a club in London,” “pool hall,” and “kegstands at a townhouse” into the *bars/parties/nightclubs* category. Finally, the category *Internet/personals* combined the original response *personal ad/dating service* with open ended responses such as “adultfriendfinder.com,” “online/personal ad,” and “on Facebook.”

## Procedure

We estimated several random effects logistic regression models predicting risk taking during hookups. All models were calculated using R statistical software and estimated first in a model that combined genders, then separately by gender and whether the encounter was same-sex or other-sex. Fitting a model to all cases assumes that social processes work similarly for all respondents, yet evidence demonstrates this is not the case for arenas such as sexual encounters in which behavior fundamentally differs by gender and whether an encounter is with an other-sex or same-sex partner. Separate models are more sensitive to these dynamics and allow investigation of how effects and explanatory power differ across groups (Sprague, 2005, pp 95–96). We also estimated interactive models to calculate differences between genders and other- and same-sex encounters. McFadden's  $R^2$ s, a goodness-of-fit statistic that approximates the standard  $R^2$  measure, are presented for models in tables and from a variety of models not presented (available from authors) to explore the explanatory power of meeting contexts as compared to various other variables.

**Table 1.** Descriptive Statistics for All Hookup Encounters: Control Variables Used in Regression Analyses

<b>Variables</b>	<b>Total</b>
Same sex	4.42%
Race	
White (reference)	62.48%
Black	6.44%
Asian	10.92%
Hispanic	12.15%
Other race	8.01%
Class standing	
Freshman (reference)	28.45%
Sophomore	24.77%
Junior	21.24%
Senior	19.32%
5+ undergrad	5.08%
Graduate	1.14%
Mother BA+	52.26%
Parents separated	28.76%
GPA	
< 2.1 (reference)	7.84%
2.1–3.0	35.93%
3.1–3.75	47.21%
3.76+	9.02%
Religious attendance	
None (reference)	35.49%
1–11 times per year	45.04%
1+ time/month	19.47%
Fraternity/sorority member	15.74%
<i>N</i>	12,065

Models included coefficient estimates for meeting place, how well students knew their partners, number of previous hookups with the partners, binge drinking, marijuana use, and other drug use during the encounter. The models also controlled for students' race, class standing, mother's education (father's education was not collected in these data), whether parents were separated at age 14, grade point average (GPA), religious attendance, and sorority or fraternity membership. Table 1 contains descriptive statistics for these demographic control variables.

**Table 2.** Descriptive Statistics: Key Outcome and Predictor Variables by Gender and Partner's Gender

Variables	All (%)	Other Sex		Same Sex			
		Men (%)	Women (%)	Men (%)	Women (%)		
Binge drinking	46.79	49.59	**###	46.42	24.97	***	42.10
Marijuana use	11.10	15.22		9.19	14.64		10.30
Use of other drugs	1.90	2.89	***	1.41	2.67		2.56
Penetrative sex	41.66	45.42	***	41.14	###	*	27.78
Penetrative sex without condom	13.29	12.62	##	13.79	5.76	**	14.31
Meeting place							
Personal recommendation	10.08	6.24	***	11.72	7.30	**	14.41
Common interest/history	6.59	4.93	***	7.32	3.46	**	9.55
Institution	30.12	33.79	***	28.58	#	**	34.73
Dorm	18.34	21.69	***#	16.98			17.19
Public place	2.69	1.98	**#	2.99	3.84		1.83
Internet/personals	2.35	1.16	###	2.20	###	***	6.21
Bars/parties	29.83	30.20		30.21	###	**	16.09
How well knew partner							
A little bit	24.07	28.05	***	21.22	##	***	13.58
Somewhat	23.20	23.80		23.98		**	21.20
Moderately well	27.31	26.49	#	27.83		*	29.62
Very well	25.41	21.67	***	26.99	##	***	35.59
# Prior hookups with partner	3.11	2.84	***	3.27			3.11
N	12,065	3,527		8,005	260		273

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  significant differences between men and women within other- or same-sex hookups. # $p < .05$ , ## $p < .01$ , ### $p < .001$  significant differences between other-sex and same-sex hookups within gender, in random effects models without additional control variables.

## Results

Risky behaviors examined were fairly common in college students' hookups (see Table 2) and were correlated with most demographic variables controlled for in models (see Table 3). Binge drinking was reported during 47% of hookups. Women did not significantly differ in binge drinking by whether hookups were same-sex or other-sex, with rates of 42% and 46% respectively, but men were significantly less likely to binge drink during same-sex hookups, with only 25% binge drinking versus 50% binge drinking during hookups with women. Marijuana use during hookups was reported by 15% of men and 9% to 10% of women who had hooked up; other drug use was less common, reported by slightly less than 3% of men and women who hooked up with women and 1.5% of women who hooked up with men, with no significant variation by whether encounters were same sex or other sex. Vaginal or anal sex was reported by 45% of men and 41% of women who hooked up with other-sex partners and reported less

commonly during same-sex hookups, with rates of 29% and 28% for men's and women's same-sex hookups, respectively. Unprotected sex occurred during 12% of men's hookups with women and 14% of women's hookups with either men or women. Men hooking up with men were significantly less likely to engage in unprotected sex, with rates of less than 6% during last hookup.

**Table 3.** Random Effects Models Predicting Risk-Taking Activities, Demographic Effects for Full Sample: Odds Ratios

	Binge Drinking		Marijuana		Other Drugs		Vaginal/Anal Sex		Vaginal/Anal Sex, No Condom	
Women hooking up with men	0.87	**	0.55	***	0.48	***	0.83	***	1.11	
Men hooking up with men	0.38	***	1.02		—		0.46	***	0.42	**
Women hooking up with women	0.88		0.61	*	—		0.25	***	1.11	
Black	0.31	***	0.67	**	0.49		1.43	***	0.79	
Asian	0.69	***	0.56	***	0.94		0.92		0.92	
Hispanic	0.71	***	0.77	*	0.51	*	1.04		0.88	
Other race	0.75		1.44		1.18		1.10		0.92	
Sophomore	0.94		0.97		1.11		1.19	**	1.24	**
Junior	0.90		0.96		1.28		1.47	***	1.50	***
Senior	0.92		0.91		0.78		1.78	***	1.68	***
5+ undergrad	0.88		0.82		1.23		1.88	***	1.57	
Graduate	0.93		0.38	*	1.02		1.25		1.35	
Mother BA+	1.10	*	1.20	**	1.14		0.93		1.01	
Parents separated	0.88	**	1.15	*	1.38	*	1.19		1.21	**
GPA 2.1–3.0	1.33		0.93		0.83		0.96		1.05	
GPA 3.1–3.75	1.15		0.87		0.59	*	0.75		0.83	
GPA 3.76+	1.01		0.68	*	0.57		0.53	***	0.68	**
Religious attendance 1–11 times/year	1.02		0.81	**	0.70	*	0.82	***	0.80	
Religious attendance 1+/month	0.85	**	0.44	***	0.40		0.60	***	0.62	***
Fraternity/sorority member	1.47	***	0.85		0.87		0.95		0.86	
McFadden $R^2$	0.04		0.04		0.03		0.05		0.02	

*Note.* Reference categories: Men who have sex with men, White, freshman, parents together, GPA under 2.1, no religious attendance. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

The most common meeting place for hookup partners was an institutional setting, where just over 30% of students met hookup partners, followed by bars, parties, or nightclubs, where just under 30% of partners were met. Dormitories came in third at 22%, and personal recommendation was fourth at 10%. Less common meeting places included common interest group or shared history (6.6%), public places (2.7%), and Internet or personal ads (2.4%). Reproducing our prior research on this topic (Kuperberg & Padgett, 2015a), women were more likely than men to report meeting hookup partners in contexts with closer social distances, including personal recommendations or a common interest or shared history group. Men, who were outnumbered by women on campus, were more likely to meet women hookup partners in institutional and dormitory settings, and women hooking up with women were also more likely to meet in institutional settings compared to women hooking up with men. Same-sex partners were more likely to be met online compared to other-sex encounters, especially for men, with 19% of men and 6% of women meeting same-sex partners online, compared to 1% of men and 2% of women meeting other-sex partners.

#### Contexts and Risk-Taking Behavior

The odds of binge drinking during hookups differed distinctly by meeting context (see Table 4). Compared to those meeting partners in institutional settings, partners met through personal history or common interest groups had a 47% increase in the odds of binge drinking during encounters; meeting in bars, parties, or nightclubs was associated with double the likelihood of binge drinking; and those who met their partners online or through personal ads were 36% as likely to binge drink. Women who met male partners through personal recommendation or dormitories were more likely to have been binge drinking, while those meeting in public places were only 63% as likely to have been binge drinking during or just prior to the hookup encounters compared to encounters with partners met in institutional settings. Women hooking up with women met in dormitories also had higher rates of binge drinking compared to encounters with partners met in institutional settings. No other significant differences emerged in binge drinking among same-sex hookups. These findings are in line with hypothesis 2, which predicted lower rates of risk taking among those met in public or online; hypothesis 3, which predicted higher risk taking among those met through personal recommendation; and hypothesis 4, which predicted higher risk taking when partners met at bars and parties or dormitories. All explanations are based on the association of contexts with trust and social scripts, and contrast with hypothesis 6, which predicted higher risk taking when partners were met online or in public due to a risk-taking personality.

**Table 4.** Random Effects Models Predicting Binge Drinking (Women: Four or More Drinks, Men: Five or More Drinks): Odds Ratios

	Combined	Other Sex				Same Sex	
		Male	Female	Male	Female		
Meeting place							
Institution (reference)							
Personal recommendation	1.06	1.06	1.18	*	1.01	2.15	
Common interest/history	1.47	* 1.52	1.27	*	0.30	1.22	
Dorm	1.18	1.19	1.24	**	1.37	2.69	*
Public place	0.67	0.62	0.63	**	0.00	3.81	
Internet/personals	0.36	* 0.38	0.34	***	0.30	0.86	
Bars/parties	2.16	*** 2.13	2.05	***	2.24	2.20	
Knew partner							
A little bit	1.24	* 1.25	1.25	**	0.57	1.52	
Somewhat (reference)							
Moderately well	0.88	0.87	0.84	**	1.52	1.26	
Very well	0.64	0.63	0.77	**	1.38	1.74	
# Prior hookups with partner	0.93	*** 0.93	0.93	***	0.82	* 0.93	
Marijuana use	1.90	*** 1.95	2.04	***	9.92	***##	3.83
Use of other drugs	1.54	1.59	3.05	***#	1.26	2.05	
McFadden $R^2$							
Meeting context only	0.05	0.05	0.05		0.08	0.08	
+ Demographic controls	0.05	0.07	0.07		0.15	0.14	
+ Personal knowledge	0.10	0.10	0.09		0.16	0.15	
+ Substance use	0.11	0.11	0.10		0.24	0.18	

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  within group; # $p < .05$ ; ## $p < .01$  results of test for significant differences between men who hook up with women and other groups in the interactive model; coefficients for interactions not shown. Controls for race, class standing, mother BA+, parents separated, GPA, religious attendance, and fraternity/sorority membership.

The association of marijuana or other drug use with meetings contexts was more limited (Table 5). Models predicting other drug use among students engaging in same-sex hookups were not able to be estimated due to the very small sample size of students in this group. Men who hooked up with women met at bars, parties, or nightclubs, and women who met men through personal recommendation were more likely to use marijuana, in line with hypothesis 3. As noted previously, these effects are driven by personal connections through friends rather than family members. Meeting context was not significantly associated with women's other drug use, while men who hooked up with women met on the Internet were significantly more likely to use other drugs, more in line with hypothesis 6, having a risk-taking personality, than hypothesis 2, which predicted less risk taking when partners were met online due to lack of trust.

**Table 5.** Random Effects Models Predicting Marijuana and Other Drug Use During Last Hookup Encounter: Odds Ratios

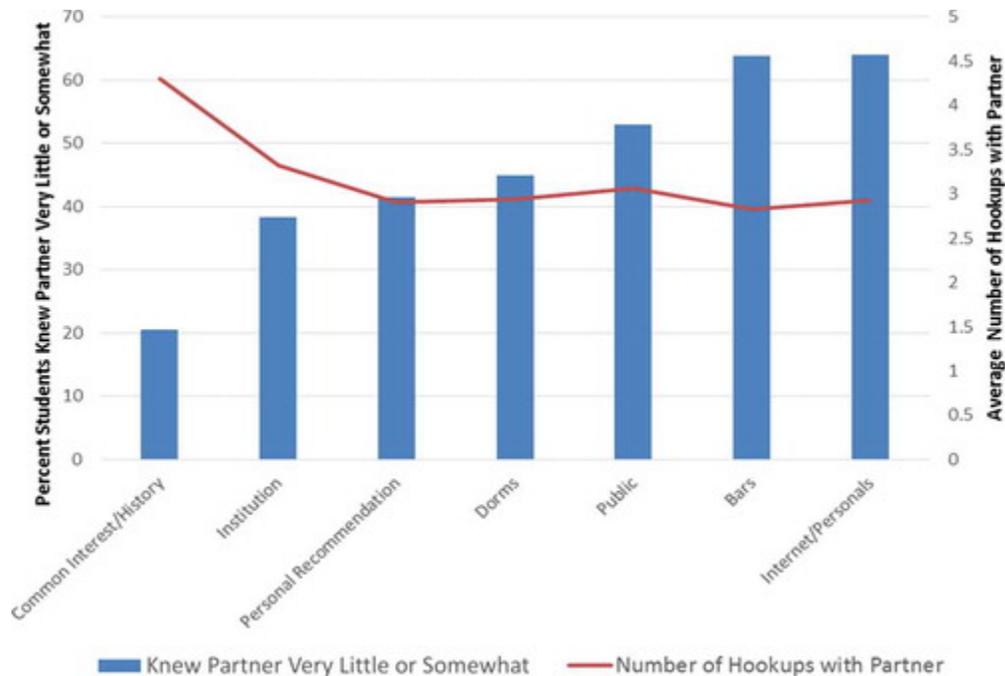
	Marijuana Use					Other Drug Use			
	Combined	Other Sex		Same Sex		Combined	Other Sex		
		Male	Female	Male	Female		Male	Female	
Meeting place									
Institution (reference)									
Personal recommendation	1.92	1.94	1.32 *	1.13	2.11	1.30	1.35	0.86	
Common interest/history	1.36	1.39	1.08	7.28	4.00	0.84	0.90	0.91	
Dorm	1.29	1.30	1.04	0.61	1.07	0.79	0.81	1.06	
Public place	1.12	1.17	0.95	2.65	13.38	0.99	0.93	1.39	
Internet/personals	0.55	0.55	0.48	0.39	1.52	3.52	3.78 *	0.00	
Bars/parties	1.27	1.30 *	1.11	0.33 #	0.70	1.04	1.01	0.93	
Knew partner									
A little bit	1.24	1.26	0.95	1.96	1.02	0.85	0.83	1.27	
Somewhat (reference)									
Moderately well	1.17	1.17	0.89	0.33 #	1.37	0.61	0.60	1.30	
Very well	1.09	1.09	0.78 *	0.54	0.69	0.43 *	0.42 *	1.18 #	
# Prior hookups with partner	1.03 *	1.03 *	1.05 ***	1.37 ##	1.07	1.05	1.04	1.02	
Binge drinking	1.94 ***	1.92 ***	2.03 ***	8.18 ##	5.15 **	1.59 *	1.64 *	3.11 ***#	
Marijuana use						5.66 ***	6.12 ***	7.53 ***	
Use of other drugs	5.77 ***	5.92 ***	7.43 ***	73.93	45.12				
McFadden R <sup>2</sup>									
Meeting context only	0.01	0.02	0.01	0.04	0.03	0.01	0.01	0.02	
+ Demographic controls	0.05	0.04	0.04	0.12	0.12	0.05	0.04	0.05	
+ Personal knowledge	0.05	0.05	0.04	0.17	0.15	0.05	0.05	0.06	
+ Substance use	0.09	0.08	0.07	0.33	0.29	0.15	0.13	0.16	

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; within group # $p < .05$ ; ## $p < .01$  results of test for significant differences between men who hook up with women and other groups in the interactive model; coefficients for interactions not shown. Controls for race, class standing, mother BA+, parents separated, GPA, religious attendance, and fraternity/sorority membership.

Vaginal and anal sex and unprotected sex during encounters was also related to meeting contexts (see Tables 6–7). Compared to encounters with partners met in institutional settings, students meeting other-sex partners in dormitories were 75% to 86% as likely to have had sex during the encounter, and men hooking up with women met at bars, parties, or nightclubs had odds of vaginal or anal sex that was 22% higher; the latter is in line with hypothesis 5, a script-based explanation for risk taking, but the lower rate of sex among those met in dormitories contrasts hypothesis 5 and is not in line with our theoretical explanations. Women meeting men in public

had 57% higher odds of sex during encounters, while women meeting women in public had 4.8 times the odds of having vaginal or anal sex during encounters, both in line with hypothesis 6, the risk-taking personality explanation. Meeting in common interest groups or through personal history increased the odds of women having vaginal or anal sex with men by 32%, an unexpected finding similar to that of binge drinking, but women hooking up with women met in these contexts were only 91% as likely as those whose partner were met in institutional settings to have had vaginal or anal sex during the encounter. Women hooking up with women met online had 3.6 times the odds of having vaginal or anal sex compared to partners met in institutional settings, a finding in line with hypothesis 6, an explanation based on risk-taking personality; for other groups, online contexts did not differ from institutional settings. Similar to rates of having sex overall, compared to those who met partners in institutional settings, students who met other-sex partners in dormitories were 65% (men) and 75% (women) as likely to have had unprotected sex, while those meeting other-sex partners in public had odds 1.5 (women) and 2.4 (men) times higher. Among women hooking up with women, meeting partners online was associated with 6.6 times the odds of having had unprotected sex when compared to the encounters of those who met partners in institutional settings.

**Figure 1.** Partner familiarity (percent of students who knew partner *A little bit* or *somewhat* and mean number of prior hookups with that partner) of last hookup partner, by partner meeting context.



### Personal Knowledge, Substance Use, Meeting Contexts, and Risks

As shown in Figure 1, personal knowledge was associated with meeting contexts, and therefore this measure, which is highly correlated with trust, can both illuminate the influence of trust on behavior and must be isolated when examining the influence of contextual-based trust and scripts on behavior. In the total sample, students are evenly distributed in their self-described personal familiarity with partners in the four categories that contained answers, with each possible

category being chosen by around one-fourth of students (see Table 2). Women reported being more familiar with their partners than men did, and women engaging in same-sex hookups reported greater partner familiarity than women engaging in other-sex hookups, with 36% of women hooking up with women that they knew “very well” and only 14% with women that they knew “a little bit,” while women hooking up with men had rates of 27% and 21%, respectively, in these two most-extreme categories. Men hooking up with men were slightly less personally familiar with partners compared to men hooking up with women.

**Table 6.** Random Effects Models Predicting Vaginal or Anal Sex During Encounter: Odds Ratios

	Combined	Opposite Sex		Same Sex	
		Male	Female	Male	Female
Meeting place					
Institution (reference)					
Personal recommendation	1.07	1.08	0.99	2.01	0.25 ###
Common interest/history	1.30	1.32	1.32 **	4.07	0.91 *
Dorm	0.79 *	0.76 **	0.85 *	1.76 #	0.72
Public place	1.47	1.56	1.57 **	0.13	4.83 *
Internet/personals	1.60	1.71	1.25	2.78	3.60 **
Bars/parties	1.23 *	1.22 *	1.02	1.39	1.03
Knew partner					
A little bit	1.18	1.18	0.86 *#	1.46	1.70
Somewhat (reference)					
Moderately well	1.01	1.01	1.00	1.13	1.04
Very well	1.07	1.05	1.16	0.78	0.98
# Prior hookups with partner	1.15 ***	1.15 ***	1.15 ***	1.12	1.12 *
Binge drinking	1.15	1.13	1.06	2.17	1.23
Marijuana use	1.75 ***	1.78 ***	1.99 ***	0.64 #	1.00
Use of other drugs	1.03	1.07	1.75 **	4.48	4.93
McFadden R <sup>2</sup>					
Meeting context only	0.02	0.02	0.02	0.08	0.03
+ Demographics	0.05	0.04	0.05	0.15	0.14
+ Personal knowledge	0.10	0.09	0.10	0.16	0.16
+ Substance use	0.11	0.09	0.11	0.18	0.17

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; within group # $p < .05$ ; ### $p < .01$  results of test for significant differences between men who hook up with women and other groups in the interactive model; coefficients for interactions not shown. Controls for race, class standing, mother BA+, parents separated, GPA, religious attendance, and fraternity/sorority membership.

**Table 7.** Odds Ratios From Random Effects Model Predicting Vaginal or Anal Sex Without a Condom During Encounter

	Combined Model	Opposite Sex		Same Sex	
		Male	Female	Male	Female
Meeting place					
Institution (reference)					
Personal recommendation	1.26	1.25	1.06	1.09	0.29
Common interest/history	1.02	1.02	1.11	18.80	1.12
Dorm	0.71 *	0.65 *	0.75 *	5.40	0.92
Public place	2.34 **	2.41 **	1.46 *	0.00	4.86
Internet/personals	1.41	1.47	1.26	25.40	6.57 *
Bars/parties	1.18	1.15	0.98	2.88	0.76
Knew partner					
A little bit	1.24	1.23	1.18	0.33	0.88
Somewhat (reference)					
Moderately well	1.06	1.06	1.16	1.16	1.74
Very well	1.40	1.35	1.57 ***	9.89	1.64
# Prior hookups with partner	1.17 ***	1.17 ***	1.12 ***#	0.92	1.15 *
Binge drinking	1.32 *	1.26 *	1.17 *	8.62	1.44
Marijuana use	1.93 ***	2.01 ***	1.82 ***	0.49	0.65
Use of other drugs	1.01	1.06	2.16 #	1.05	8.33
McFadden R <sup>2</sup>					
Meeting context only	0.02	0.01	0.02	0.06	0.05
+ Demographics	0.03	0.03	0.03	0.37	0.16
+ Personal knowledge	0.08	0.09	0.08	0.42	0.21
+ Substance use	0.09	0.11	0.09	0.47	0.22

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; within group # $p < .05$ ; ## $p < .01$  results of test for significant differences between men who hook up with women and other groups in the interactive model; coefficients for interactions not shown. Controls for race, class standing, mother BA+, parents separated, GPA, religious attendance, and fraternity/sorority membership.

Figure 1 shows the percentage of students who reported they knew their partner “not at all” or “a little bit,” instead of “moderately well” and “very well,” and average number of past hookups with partner by context, our two measures of personal familiarity that can increase trust, and demonstrates a distinct association of certain contexts with greater personal familiarity. Meeting contexts associated with the least partner familiarity were Internet sources (personals advertisements/social networking sites) and bars/parties, with over 60% of respondents reporting low levels of familiarity with partners met in these contexts. Those who met through a common interest group or shared history, venues providing repeated contact which can increase

familiarity and trust, were the most familiar with their partners, with around 20% indicating low levels of familiarity with partners met in this context. Between these two extremes were those who met through personal recommendation, a public place, a dormitory, or an institution. In general, number of past hookups was higher in contexts in which students were more familiar with partners. In particular, those meeting in institutional settings and especially in common interest groups/hometowns had a higher numbers of past hookups with their partner, with averages of 3.3 and 4.5 past hookups with partners met in those contexts, while all other contexts were associated with an average of three prior hookups with the partner; these numbers do not include the hookup of interest analyzed in this study.

Personal knowledge also was correlated with risk-taking activity during hookups independent of the effect of meeting context. In contrast with hypothesis 1, which predicted personal familiarity would be associated with more risk taking, and perhaps more in line with hypothesis 4, which predicted binge drinking would increase risk taking, binge drinking was associated with lower levels of personal familiarity for men and women and lower-order hookups for all groups except women having sex with women; more familiarity with and more past hookups with the encounter partner were associated with a lower likelihood of having been binge drinking during the encounter.

Other types of risk taking and relationships to personal knowledge were more in line with hypothesis 1. Women who hooked up with men were less likely to have used marijuana during encounters when they reported having known their partner very well, but for both men and women there was a greater likelihood of having used marijuana during higher-order hookups with other-sex partners. For women, knowing their male partners only “a little bit” was associated with lower likelihood of having engaged in vaginal or anal sex during hookups, and knowing the male partners “very well” was associated with higher likelihood of having engaged in unprotected sex during the hookup; risk taking did not vary by subjective personal familiarity for any other group. For all groups, a greater number of past hookups was associated with a higher likelihood of anal/vaginal sex during last hookup. Except among men hooking up with men, number of past hookups was positively associated with unprotected vaginal or anal sex during encounters; for men hooking up with women there was an increase of 17% in the likelihood of having had unprotected sex associated with each additional prior hookup with that partner, and for women hooking up with men each additional prior hookup increased this odds by 12%.

### Compounding Risks

Confirming hypothesis 4, students who engaged in any kind of substance use were more likely to have engaged in other risky behavior during encounters. Marijuana use was positively correlated with binge drinking for every group examined. Use of other drugs was also positively associated with binge drinking for other-sex encounters. Binge drinking did not increase the likelihood of having vaginal or anal sex during encounters in general but increased the odds of engaging in unprotected sex among students hooking up with other-sex partners by 17% for women and 26% for men. Marijuana use increased the likelihood of vaginal or anal sex during other-sex encounters and also increased the likelihood of unprotected vaginal or anal sex by 86% for

women and doubled the risk for men hooking up with other-sex partners. Use of other drugs also increased the odds of women reporting unprotected sex with male hookup partners.

### Comparing Explanatory Power of Variables and Models

How do meeting contexts compare to other commonly examined explanations for this behavior, including personal knowledge, other substance use, and demographic selection, in the percentage of variation in risky behavior explained? Further, does the effect of meeting context on behavior vary by gender and whether the encounter was other- or same-sex? To explore these issues we present McFadden's *R* squareds for a series of nested models (full models available from authors) in which we added a series of variables to each model to examine the extent to which those variables improve explanatory power for variation in risk-taking behavior.

Meeting context explained 5% of variation in binge drinking during other-sex encounters and 8% of variation in same-sex encounters. For all encounters, this is roughly equivalent to the proportion of variation in binge drinking explained by both demographic selection and personal knowledge of partners combined, and for women hooking up with both men and women, meeting context explained slightly more variation than these other variables. Marijuana use and other drug use were less related to meeting context, with 1% to 2% of variation in other-sex drug use explained by meeting context. Personal knowledge explained a lesser 0% to 1% of variation in drug use. For men hooking up with men, 4% of variation in marijuana use was explained by variation in meeting contexts, slightly less than the 5% of variation explained by personal knowledge. Among women hooking up with women, personal knowledge and meeting context each explained 3% of variation in marijuana use.

In models predicting anal or vaginal sex among opposite-sex partners, meeting context explained 2% of variation, personal knowledge explained 5% of variation, and other substance use during encounters explained 0% of variation for men and 1% for women. Among men hooking up with men, 8% of variation in having anal sex during encounters was explained by meeting context, accounting for more variation in sex during these encounters than demographic variation (7%), personal knowledge (1%), or substance use (2%). For women hooking up with women, demographics explained more of behavior (11%), but meeting contexts explained more variation in risk (3%) than personal knowledge (2%) or substance use (1%).

For other-sex hookups, meeting contexts explained 1% to 2% of engagement in unprotected sex, which is smaller than the effect of personal knowledge (5% to 6%); for men (1%) this is smaller than the effect of demographics (2%) and substance use (2%), but for women (2%) this effect is larger than the effect of both demographic and substance use (1% each). Among same-sex hookups, meeting context explained 6% of men's and 5% of women's variation in unprotected sex, explaining more variation among men than personal knowledge or substance use (5% each), and for women explaining the same amount of variation as personal knowledge (5%) and more than substance use (1%).

Variables generally explained a great proportion of variation in same-sex risk-taking behavior versus other-sex risk-taking behavior. The most extreme example is unprotected sex; these variables explained 9% to 11% of variation in unprotected sex among other-sex hookups, but

fully 47% of variation in unprotected sex among men who hooked up with men and 22% of variation in women who hooked up with women.

## **Discussion**

Examining the contexts and the full spectrum of sexual behaviors involved in hookups is important to the development of effective education programs and clinical interventions (Grello et al., 2006), as well as public health interventions. Many students are unaware of the risk of contracting STIs during hookups; some studies indicate that only 50% of students show concern about contracting STIs during sexual intercourse (Downing-Matibag & Geisinger, 2009). College administrators are increasingly concerned about high-risk sexual behavior on campuses across the United States, and many are trying to formulate appropriate programs to prevent potential negative ramifications from casual sexual encounters (Scholly et al., 2005). Our findings have important implications for how sexual risk prevention programs can be improved to make students aware of perceptions of trust and risk taking in hookups. Educating students about the impact of trust and meeting context on risk-taking behavior, and discussing predictors of risky behavior more generally, can potentially reduce negative outcomes among students by mitigating risky behavior that past research found resulted from pluralistic ignorance (Bogle, 2008; Fielder & Carey, 2010a; Lambert et al., 2003).

We found meeting contexts explained a relatively large proportion of risk-taking behavior compared to other previously explored explanations for risk taking, including substance use, personal knowledge, and demographic selection, and is an important factor to take into consideration when determining risk taking during hookups. We hypothesized that risk-taking behavior would be more common when students met through institutional settings, dormitories, or common interest groups or personal history due to institutional trust (hypothesis 2) or through personal recommendation due to personal trust (hypothesis 3), while less common among students meeting in more socially distant contexts that do not contain these types of trust, such as the Internet or public contexts. We also theorized that risky behavior would be more common when partners are met in contexts with partying scripts, such as bars, parties, and nightclubs, and college dormitories (hypothesis 5). We also considered an alternative in which public meeting contexts would be associated with more risk taking as a result of selection into this context by individuals who have a more risk-prone personality (hypothesis 6). We expected that these effects would be distinct from the effect of personal knowledge, which we expected to increase risk taking (hypothesis 1), and the effect of binge drinking and drug use, which we also expected to increase risk taking (hypothesis 4), although the association of meeting contexts with these factors may further compound certain risk-taking behaviors.

We found support for these hypotheses varied by type of risk-taking behavior, with differences in support for theorized effects by the type of behavior. We also found distinct patterns by whether encounters were other or same sex. For binge drinking, results were in line with our theoretical explanations related to both personal and institutional trust and social scripts but did not support a risk-taking personality explanation. Students who met other-sex partners in socially distant contexts (Internet and, for women, public) were less likely to take the risk of binge drinking, reflecting low levels of trust in these contexts, while those who met hookup partners in closer social distances, such as common interest groups or personal histories and (for women)

personal recommendation and dormitories, were more likely to binge drink during hookup encounters, in line with hypotheses 2 and 3. Meeting contexts associated with a partying script, such as bars, parties, and nightclubs and dormitories (for women), were associated with binge drinking during encounters, in line with hypothesis 5. Readers should recall this measure includes only excessive drinking (four or more drinks for women and five or more drinks for men); we found that this behavior was present during or right before almost half of hookups and was the most commonly undertaken risky behavior examined.

Findings related to binge drinking echoed our earlier research with these data (Kuperberg & Padgett, 2015a) in which we analyzed students' most recent date and hookup encounters together. There we found that encounters with partners met in a dormitory or bar, party, or nightclub were more likely to be a hookup than a date relative to those with partners met in other contexts, which demonstrates that locales associated with hookups are also associated with a binge drinking/partying script. Further, hookups with partners met through the Internet were associated with lower rates of binge drinking in the present study; in our previous study we found encounters with partners met through Internet sources were more likely to be a (more public, less risky) date than a hookup, indicating that the script being enacted by students who engage in encounters with partners met through Internet contexts may often resemble the more traditional date type of script more so than a hookup script.

In general, drug use did not differ greatly by context, except that marijuana use was more common among men meeting women in bars, parties, and nightclubs and among women meeting men through personal recommendation and other drug use was more common among men meeting women in public. These findings are consistent to some degree with hypothesis 6, predicting those meeting in public will have a risk-taking personality; hypothesis 3, an explanation based on personal trust; and hypothesis 5, which predicted bars, parties, and nightclubs would be associated with a partying script. Institutional trust does not seem to affect drug use.

Meeting places were also related to sexual activity during hookup encounters but in patterns distinct from those related to binge drinking during encounters. Women who met men in venues in which they have repeated contact in an informal setting, such as a common interest group or a shared social history, were more likely to have engaged in penetrative sex during hookups, consistent with hypothesis 2. Women who met either male or female partners in public and men who met female partners in public were more likely to engage in unprotected sex, consistent with hypothesis 6. These findings call into question the idea that some students have a general thrill-seeking personality applicable to all types of risk taking, as students who met in public took more sexual risks during encounters but were less likely to engage in binge drinking during encounters. Students instead selectively engaged in certain types of risks based on the context in which partners are met and the type of risky activity, with a thrill-seeking personality associated with sexual risk taking and, to a lesser degree, drug use but not binge drinking. Further, with the exception of common interest groups being associated with an increased likelihood of sex for women hooking up with men, partners met in other contexts that we theorized would be associated with higher institutional or personal trust were not more likely to engage in sex or unprotected sex, indicating this trust was less salient when determining sexual behavior.

The effects of social scripts on behavior, while clear for binge drinking, were also less clear for drug use and sexual activity. For men hooking up with women, meeting at bars, parties, or nightclubs was associated with an increase in marijuana use and sex during hookups. These effects were not present for any other group; the social script that associates bars and parties with higher-order sexual activity and drug use seems to be present or acted upon only by men hooking up with women, although the association of this script with binge drinking remains strong. Further, in contrast with expectations, despite the association of dormitories with institutional trust and social scripts related to sexual experimentation, students met in this context reported lower engagement in vaginal, anal, and unprotected sex during other-sex hookups. Scripts related to partners met in dormitories may develop distinctly, as a result of an expectation of seeing partners in the future; students may avoid behavior which may make future hallway encounters awkward. Sex education and awareness programs made available to college students might leave students with normative expectations that sexual experimentation in college or with partners students meet at bars and parties is widespread on their campus, leading to greater student willingness to engage in these behaviors, regardless of the risk involved, to fit in with what they perceive to be peer behavior, perhaps explaining distinct patterns of hookup behavior. Future qualitative research can further explore how sexual encounter scripts differ by partner meeting context and across college enrollees compared to the nonstudent young adult population.

Other variables examined also were correlated with risk taking and can inform future research and educational programs aimed at sexual-risk minimization. Binge drinking, the most common risk-taking activity in hookups, was not associated with the likelihood of students engaging in vaginal or anal sex in general, but it was associated with increases in the likelihood of students having used other drugs or having engaged in unprotected sex, consistent with hypothesis 4 and past research. We also found marijuana use was associated with higher likelihood of binge drinking, other drug use, sex, and unprotected sex for students engaging in other-sex hookups. Future research should more fully explore marijuana and other drug use during college hookups and other sexual encounters and effects on sexual risk taking.

Hypothesis 1 predicted that personal familiarity engenders trust, which explains why personal familiarity was found to be associated with an increased likelihood of some types of risky behavior during hookups; higher-order hookups were more likely to involve marijuana use and vaginal, anal, and unprotected sex. Because hookups were defined as not including exclusive relationships, this indicates a fruitful area for sex education campaigns to target could be the risk of engaging in unprotected sex with frequent hookup partners, sometimes referred to colloquially as “friends with benefits.” Women were also more likely to have unprotected sex with men that they report knowing very well, and while personal knowledge and past experience may increase trust in partners it does not similarly decrease the potential for negative outcomes resulting from engaging in unprotected sex with a nonexclusive partner.

Especially disturbing were two areas in which we found personal familiarity was associated with lower levels of risk taking, contradicting hypothesis 1. Binge drinking was negatively correlated with the degree to which students knew their other-sex partners, indicating that students may use drinking to overcome inhibitions with less familiar partners or may be likely to take the risk of hooking up with less familiar partners when binge drinking, perhaps using binge drinking as “liquid courage” to approach less familiar partners. Men who used other drugs were also more

likely have hooked up with less familiar women, perhaps indicating an overall risk-taking personality or a specific type of encounter more likely to occur when students engage in other drug use.

Although making use of some of the best available data and a large dataset worthy of extensive further research, our study is limited by several factors. First, our data are restricted to college students and are not a representative sample; while we accounted for selection into the sample through our methodology to the greatest degree possible, rates should not be taken to be entirely accurate estimates of national-level behavior. Second, studies of behavior in college may also not be comparable to behavior of non-college-enrolled individuals, and students likely exhibit distinctive partner meeting patterns after leaving the college environment. Third, the term *hooked up* was intentionally left undefined so that students could provide their own understanding of the term. As such, results related to overall rates of penetrative sex during encounters may to some extent reflect differences in individualistic perceptions of what is considered to be a hookup. Also, because the consumption of alcohol is a common feature of the hookup script, it may be possible that some students might not classify casual sex activity they engaged in as a hookup if they had not consumed any alcohol, which could potentially result in underreporting of hookup behavior captured for students who did not consume alcohol when hooking up. Because we compared behavior across the context in which hookup partners were met, rather than across hookup and nonhookup sexual encounters, this should not have affected results. As approximately 37% of students reporting on their most recent hookup encounter indicated that they consumed no alcohol just before or during the encounter, it is clear that at least one-third of the students in the sample who engaged in a sexual encounter which they defined as a hookup did not see alcohol consumption as a requirement for labeling sexual encounters as a hookup. Allowing students to provide their social meaning of hookups can also be viewed as a strength of these data; past research shows that students' descriptions of what they see as the typical hookup are consistent overall, particularly among students who engage in hookups, and defining hookups based on the occurrence of specific behaviors loses some important nuance in examining behavior during this socially defined encounter type (Holman & Sillars, 2012; Paul & Hayes, 2002). Finally, risk-taking propensity was not measured directly in these data.

## **Conclusions**

Our findings suggest that individual risk taking during sexual encounters goes beyond the degree to which students directly know their partners and is influenced by or correlated with the context in which they met those partners. Students who met partners in different meeting contexts demonstrated distinct patterns in engagement in binge drinking, in vaginal, anal, and unprotected sex and, to a lesser degree, in drug use. Meeting context explained as much or more of variation in substance use during hookups as personal knowledge and, for all groups except men hooking up with women, explained more variation in unprotected sex than binge drinking or drug use during encounters. Studies examining trust and risk taking during sexual or other encounters therefore must reach beyond individual factors and account for environmental factors as well, such as meeting context. Future research can further examine the degree to which those engaging in hookups with partners met online or in public may have a general risk-taking propensity and may follow sexual scripts distinct from a partying/hookup script associated with partners met in dormitories and at bars, parties, or nightclubs. Future research can also examine the effect of

meeting contexts and other environmental factors on risk-taking behavior in other situations, such as risky behavior engaged in with friends or business associates.

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