A behavioral science framework for understanding college campus sexual assault

To introduce our behavioral science framework for understanding sexual assault on college campuses, we will first tell a (fictional) story. The story illustrates a few of the situations in which two college students might find themselves, as well as the mental processes triggered by each of these particular situations and interactions.

A story

Consider the following scenario. Darren and Alysha have just met and are both dancing at an off-campus party. Alysha decides to return home. Darren has been dancing with Alysha all night in front of his friends, who remind Darren: “you’ve been stressed. You need to have a good time.” Darren decides to walk Alysha home, to see what she will say at the door. Darren walks with her down a well-lit street toward her dormitory. Getting to Alysha’s door requires that the two enter her dormitory building, which has long hallways with doors that swing shut and automatically lock, leaving hallways quiet and empty. When they reach the door, Darren gently pressures Alysha to let him come into her room, using jokes and promises that he’ll help her to procrastinate on preparing for tomorrow’s early class. Alysha initially refuses, but then relents after a five-minute awkward conversation. They go into her room.

What happens next? A behavioral science approach brings to light factors that contribute to whether an assault might happen in Alysha’s room. Specifically, we can analyze the contextual configurations and mental processes that interact with one another in each of the three situations mentioned in this scenario: the party, the walk home, and the dormitory. Each situation activated and suppressed particular mental processes, such as perceptions of social norms and social scripts, goals, perceptions of others, and moral reasoning. Each situation’s social and even physical configuration magnified or suppressed these types of mental processes. Notably,

1
2
3 because of their different social positions in each of the situations, Darren and Alysha’s mental
4
5 processes may be affected differently by the same situation.
6

7
8 **Party.** At the party, Darren may be focused on a prescriptive social norm (Cialdini &
9
10 Goldstein, 2004) endorsed by his friends, that he is expected to “hook up” or have a sexual
11
12 encounter with Alysha. Recall that his friends expressed to Darren some expectation that he
13
14 should “have a good time.” If the group of friends does not explicitly discuss what this entails,
15
16 Darren might infer that having a good time means hooking up and having sex instead of other
17
18 behaviors like dancing and flirting (Wade, 2017). This interpretation may be top of mind, given
19
20 that salient people in his social network endorse this behavior (Paluck et al., 2016). From
21
22 Alysha’s perspective, leaving the party with a male peer is a behavior that may conform to a
23
24 descriptive norm on campus, in which couples who leave parties together are doing so in order to
25
26 hook up. She may thus harbor concerns about leaving with Darren, if this is not what she intends.
27
28
29

30
31 Imagine instead that inaccurate perceptions of the normativity of sexual activity have
32
33 been corrected. Indeed, perceived peer attitudes predict individual rape-supportive attitudes
34
35 (Swartout, 2013; Bellis, Swartout, & Salazar, 2020) and serve as a risk factor for sexual assault
36
37 perpetration (Loh, Gidycz, Lobo, & Luthra, 2005), while diverse, dense networks of peers buffer
38
39 against this risk (Kaczkowski, Brennan, & Swartout, 2017). Moreover, men and women both
40
41 tend to overestimate the others’ comfort levels; students *think* other students are more
42
43 comfortable hooking up than they really are (Garcia, 2010; for a in-depth treatment, see Wade,
44
45 2017). Actively correcting descriptive norms could reduce ambiguity about normative behavior
46
47 and move students’ behavior toward the true norm (Miller & Prentice, 1993).
48
49
50

51
52 **Walk home.** In plain view of other people as they walk home, Alysha might still be
53
54 concerned that people imagine she is leaving the party to hook up with Darren, but she is less
55
56
57
58
59
60

likely to be concerned about the possibility of sexual assault. Certain “scripts” or stereotypes of sexual assault state that sexual assault happens in dark alleys, with strangers (Peterson & Muehlehard, 2011). Thus, Alysha may not harbor any serious concerns about Darren’s intentions and future behavior, since the street situation does not match her scripts about a dangerous one. For his part, the well-lit street and the presence of strangers may create a feeling of observability, which can activate Darren’s ideas about his “ought self” (Duval & Wicklund, 1972). The “ought self” activation may bring to mind the importance of Darren’s trustworthy persona, and of Alysha’s identity as a valued member of the campus community. At a minimum, Darren now sees Alysha’s entire physical self in the light, instead of the glimpses of her partially obstructed face or body parts afforded on the party dance floor. A broader view of a person helps to humanize her (Gray, Knobe, Sheskin, Bloom, Feldman-Barrett, 2011; Looser & Wheatley, 2010), as opposed to seeing her more as a sexualized object (Szymanski, Moffit, & Carr, 2011).

Now imagine that Darren and Alysha are walking home from a party that affords Darren and other men at the party a degree of situational power—that is, power derived from that particular situation, that endures for the time period spent in that particular context. A party might afford a man situational power, for example, when the man (or his friends) control who is admitted into the party, or when the party is far away from where others live and require attendees to drive a car to attend and to rely on someone to take them home if they consume alcohol. Situational power enhances a person’s pursuit of focal goals (Guinote, 2017) and approach motivation (Keltner, Gruenfeld, & Anderson, 2003). Both of these effects of situational power could result in Darren increasing the intensity of his efforts to go home with Alysha. Research supports the prediction that situational power increases the likelihood of sexual harassment (Pryor, Geddes, & Williams, 1995), especially among men with chronically low power

(Williams, Gruenfeld, & Guillory, 2017). As an additional example, on dates when men exert situational power by paying all of the date’s expenses, research finds an increased risk of sexual aggression on the date (Muelenhard & Linton, 1987).

Dormitory. When Darren and Alysha arrive in her dorm, Darren may feel he is no longer being monitored or observed, which may prompt a move away from his ideal or “ought” self (Duval & Wicklund, 1972). Generally, Darren may be vulnerable to over-perceiving Alysha’s interest in him (Abbey, 1982; Abbey, Zawacki, & McAuslan, 2000; Perilloux, Easton, & Buss, 2012), which can be exacerbated by both alcohol (Abbey, Zawacki, & McAuslan, 2000) and sexual arousal (Bouffard & Miller, 2014; or both George et al., 2013; George & Norris, 1991). More specifically, by dint of having arrived at her door, theories of goal pursuit would predict that Darren has perceived the decision of whether to initiate sexual contact as made, causing him to shift into an implemental mindset (vs. a deliberative one; Gollwitzer, 2012). In an implemental mindset, individuals tend to ignore cues that suggest that the goal should be abandoned (Büttner et al., 2014; Gollwitzer & Bayer, 1999). This can explain why Darren continues to pressure Alysha for an awkward five minutes; he has failed to recognize her polite refusals.

For her part, Alysha has no access to Darren’s mindset and is unlikely to realize he has mentally advanced beyond a deliberation phase to an implementation one. Alysha may be in a state of cognitive load (Lin, Keysar, & Epley, 2010), because she is maintaining a conversation with Darren all while juggling multiple possible interpretations of the situation and attempting to represent Darren’s mental state (which can help her predict his next actions) in her own mind. On the one hand, Alysha could interpret her situation as safe and socially prescribed, because she has followed a script used by her peers and perhaps even taught by the university. In this “safety” script, women keep themselves both safe and socially respectable by leaving parties early,

without being too drunk, and asking someone to walk them home. On the other hand, Alysha could feel uncertain about her safety, because she is wondering what it might signal to Darren that they are alone in her dorm. While she considers interpretations, Alysha may feel she has to follow yet another script in her conversation with Darren—a “politeness script” of gratitude in which women are expected to desire and thank men for walking them home (Armstrong, Hamilton, & Sweeney, 2006). The tax on Alysha’s cognitive resources (Bonnefon, Feeney, & De Neys, 2011) as she balances all of these considerations may lead to decisions that she would initially not judge to be in her best interest (Mullainathan & Shafir, 2013). If at a certain point Alysha decides that she needs to decline an offer of sex from Darren, her strategy may also progress to one in which she attempts to decline while maintaining face for Darren, a known conversational regularity with additional cognitive demands (Brown & Levinson, 1987).

Now imagine that instead of walking Alysha to her dormitory, Darren and Alysha had an additional common social space to go to after the party (that is not a bedroom). In our own qualitative research with undergraduate students, we learned that the physical configuration of their dormitories is impactful. Specifically, doors automatically swing shut (for fire safety reasons), which can make it appear that students are completely alone in their dorms with no one to turn to for help if needed. Moreover, when additional social spaces are bedrooms, beds may activate particular affordances—mental representations of the uses of objects in the environment (Gibson, 1977)—related to sexual activities that other social spaces would not. Research at Columbia University recently found convergent evidence (Hirsch, Khan, Wamboldt, & Mellins, 2018; Hirsch & Khan, 2020) and the university administration has introduced additional on-campus social spaces with the intent of reducing sexual assault.

Three things our story omits

Identities. In this brief story, we did not include more details about Alysha and Darren’s identities, which significantly affect how they feel about themselves, about the other person, and how they read the situation (Goff, Thomas, & Jackson, 2008; Kang & Bodenhausen, 2015; Purdie-Vaughns & Eibach, 2008). Race, class, perceived sexual orientation, and other identities magnify or change which norms are evoked, people’s ability to humanize the other, their sense of moral self and obligations, their perception of the safety or danger of the situation, which situations they are likely to find themselves in, whether they receive help in the moment, and more (e.g., Ford & Soto-Marquez, 2016; Katz, Merrilees, Hoxmeier, & Motisi, 2017; for a review see Moylan & Javorka, 2020). All of these processes can increase or decrease the likelihood of assault.

Alcohol. Alcohol is also intentionally omitted from this story. Alcohol use (both more generally and in the immediate situation) and the expectations of how it affects behavior are known significant risk factors for sexual assault in the general population (for a review, Lorenz & Ullman, 2016 and George, 2019; Abbey et al. 2001; Breckman & Ullman, 2010; Mellins et al., 2017, specifically perpetration Brecklin & Ullman, 2001; 2002; and expected effects on behavior, Untied, Orchowski, & Lazar, 2013; George & Stoner, 2000) though it may be the broader high-risk situation rather than the alcohol itself that is responsible in the immediate sense, and the relationship is sometimes not observed (Ullman, 2003). There is extensive research on the role that alcohol plays in sexual assault on college campuses (e.g., Adams-Curtis, & Forbes, 2004; Ullman, Karabastos, & Koss, 1999; Krebs et al. 2007; Walsh et al., 2019; Bellis, Swartout, & Salazar, 2020). Alcohol consumption is co-morbid with both sexual assault perpetration (Abbey, Zawacki, & McAuslan, 2000; Ullman, Karabastos, & Koss, 2006) and victimization (Bird, Gilmore, George, & Lewis, 2017; Ford, 2017; Walsh et al., 2020). We seek

to highlight other important causal factors in sexual assault that have received less attention. Here, we also wish to briefly highlight to researchers the personal and situational factors that alcohol likely exacerbates. It is likely that alcohol interacts in important and interesting ways with the psychological processes we describe (e.g., for effects of alcohol on perceptions of sexual interest, see Abby & Ross, 1992; Abbey, Zawacki, & McAuslan, 2000; Jacques-Tiurra, Abbey, Parkhill, & Zawacki, 2007; George, Gournic, & McAfee, 1988; emotion regulation, see Davis, et al., 2020; self-justification, Koss & Cleveland, 1997; George & Marlett, 1986; and labeling of sexual victimization, Orchowski, Untied, & Gidycz, 2013). We especially welcome future work that examines these interactions. (It is also interesting to think about how alcohol affects cognition and motivation more broadly see Wade 2017; Sevincer, Oettingen, & Lerner, 2011; Steele & Josephs, 1990; and as it relates to sexual assault George & Stoner, 2000; Taylor & Chermack, 1993; Davis, et al., 2007).

Our interest in pursuing more research on other personal and situational factors is informed by the behavioral science perspective, and by our qualitative research with sexual assault peer counselors who are themselves college students. They expressed to us that efforts to reduce sexual violence by reducing alcohol consumption on campus were frustrating for them for a few reasons. Specifically, centering conversations around alcohol consumption elicited defensiveness from their peers or even closed off conversations about reducing sexual violence entirely. In other words, this focus squandered opportunities to reach fellow students who did not want to reduce their drinking, but who may have been open to other messages about reducing sexual violence. Additionally, it was clear that the sexual assault peer counselors themselves sometimes partake in the drinking culture on campus and were not personally invested in reducing alcohol consumption. Viewed through a behavioral science lens, these peer counselors

were describing strong motivational and normative forces that would weaken the power of any alcohol-focused intervention to reduce sexual violence in this particular setting. If the students who were already working to reduce sexual violence on this campus were not on board with a focus on reducing alcohol consumption, then it is difficult to imagine the intervention catching on in a meaningful way with their fellow students.

The ending. Our story ends at the door because our theoretical framework is not one that can predict with certainty the occurrence of a particular assault. Rather, it will describe situations in which sexual activity without mutual consent is more or less likely. Stated more specifically, this detailed examination of a brief time period in which two students interact during and after a party demonstrates how situations trigger various social norms, goals, and identity concerns. This interaction can increase or decrease the chances that one of two individuals will push the other into sexual activity without consent. Our story purposefully unfolded across three locations in order to highlight how situations change processes and interaction—but also to imply how situations may be changed. We can think about how proximate aspects of the situation, such as the lighting (dark vs. well-lit streets), the configuration of social spaces (individual bedrooms vs. shared social space) and social norms (e.g., norms about how much sexual activity is expected, or about what it means to walk someone home) activate mental processes and activate the potential for some behaviors over others.

A behavioral science approach

How can we understand and prevent a problem as multifaceted as sexual assault? This essay offers a behavioral science approach to the questions of sexual assault understanding and prevention on college campuses. A behavioral science approach to sexual assault focuses on the behaviors involved, specifically: when, for whom, and in what contexts sexual assault behaviors

1
2
3 occur. A behavioral framework lends itself to novel interventions in part by clarifying the
4
5 ‘diagnosis’ (Datta & Mullainathan, 2014) of the most powerful proximate causes of sexual
6
7 assault, which can then be targeted and shifted by interventions. In our opening example, these
8
9 are behaviors like dancing at a party, walking someone home, and hanging out in a dorm room at
10
11 night—all situations already highlighted as important for understanding the social factors
12
13 surrounding campus sexual assault (Armstrong, Hamilton, & Sweeney, 2006). Our aim here is to
14
15 focus on these behaviors with an eye for revealing the multiple existing psychological theories
16
17 that are relevant to the topic. Psychological theories analyze aspects of the situation, the
18
19 individual, and the relationship between the two. Thus, rather than providing a unified theory of
20
21 sexual assault, a behavioral science approach provides a framework for identifying relevant
22
23 theories that can help answer specific questions of interest, such as: “Why are the rates of sexual
24
25 assault so high at a school during this time period?” or “What kind of intervention could make a
26
27 difference in this particular institution?” By bringing relevant psychological theories to bear on
28
29 behaviorally-focused questions, a behavioral science approach can lead to a discovery of
30
31 interactions among well-established psychological theories, and can stimulate the development
32
33 of new scientifically-informed interventions. With our behavioral science approach to sexual
34
35 assault, we aim to invite more psychologists into the study of sexual assault on college
36
37 campuses, operationalize a behavioral science approach to sexual assault on college campuses,
38
39 and outline a case study for a kind of brainstorming technique that could be used to analyze a
40
41 number of policy-relevant behavioral issues.
42
43
44
45
46
47
48

49 ***Start with a problem***

50
51 First, what is the problem of sexual assault? Sexual assault is a term used to refer to any
52
53 sexual activity involving a person who does not provide consent or cannot provide consent (due
54
55
56
57
58
59
60

to alcohol, drugs, or other causes of incapacitation; Ortiz & Shafer, 2018). Women between the ages of 18-25 are at greatest risk for being sexually assaulted (Sinozich & Langton, 2014). Among women enrolled in an undergraduate institution, between 20 and 25 percent are expected to experience sexual assault (Krebs et al., 2016).¹ The prevalence of sexual assault on college campuses threatens the safety, success, and overall well-being of a substantial proportion of all college students. For example, a woman who is sexually assaulted is more likely to drop classes, move residences, seek psychological counseling (Krebs et al., 2007), and experience higher academic stress, and lower commitment to their school and schoolwork (Banyard, et al., 2020).

Focus on a particular setting

In this paper, we focus on the college setting for a few reasons. First, there is accumulating data describing undergraduates’ subjective experience of consent and assault (e.g., Hirsch, Khan, Wamboldt, & Mellins, 2018; Hirsch & Khan, 2020). A well-defined context allows for the examination of recurring characteristics of situations in which assault has occurred. Indeed research has investigated some situational features of college bar and party culture that are more permissive of sexual assault. In particular, freshman and sophomore students are at particular risk at college parties (Cranney, 2015), and sorority (vs. non-sorority) women (Copenhaver & Grauerholz, 1991) are at particular risk when they attend parties at fraternities, though the mere presence of fraternities on campus does not appear to be a risk factor (Stotzer & MacCartney, 2016; Cass, 2007; Moylan & Javarka, 2020); fraternity members report engaging in more sexually coercive acts than non-fraternity members and fraternity parties that separate men and women, provide only unsanitary women’s restrooms (Boswell, & Spade,

¹ As with any exercise in establishing population rates of policy-relevant crime, it is difficult to know the precise rate of incidence and thus numbers are contested. This rate is the most widely agreed upon. For an overview of measurement issues see Fisher, Daigle, & Cullen (2010).

1996), and have high levels of group identity norms and secrecy (Martin, 2016; Smith & Freyd, 2014) are associated with higher rates of sexual assault. Other rape-permissive, situational aspects of college party culture include extreme expectations of male bonding (Sanday, 1990), including expectations of bragging about sexual encounters the next morning (Boswell & Space, 1996; Martin, 2016; Smith & Freyd, 2014), and potentially athletics, though results are mixed (Martin, 2016; Crosset, Benedict, & McDonald, 1995; Ford & Soto-Marquez, 2016; McCray, 2015; Murnen & Kohlman, 2007; Moylan & Javarka, 2020). Notably, rates of reported assaults are particularly high on Saturdays in which Division 1 football games are played at home (vs. away games and no-game days; Lindo, Siminsk, & Swensen, 2018). In addition, the conversations surrounding sexual assault and harassment more generally have historical roots in scholarly and activist work done on college campuses (Felton, 2018). We use the college context to construct a theory-driven behavioral analysis of campus sexual assault, suggesting diagnoses of the problem and new avenues to intervention. Finally, we also focus on campus sexual assault with the aim of galvanizing academic psychologists, who develop their theories and conduct most of their studies within the very population that is plagued by this problem.

Generate relevant individual and situational factors to the problem

In the next section, and in Table 1, we lay out a behavioral science framework for sexual assault. The framework is organized according to central themes in psychology regarding situational configurations and mental processes that guide behavior, and here, that could increase or decrease the chances of sexual assault.

Our main goal for this paper is to inspire more psychological researchers to be involved in the study of sexual assault on college campuses. We hope that Table 1 can serve as a prompt to encourage researchers to see not only how broad swaths of basic psychological science are

particularly promising areas for understanding sexual assault on campus, but also for deepening their understanding of their own theories.

To compose Table 1, we surveyed the sexual assault literature and identified the factors highlighted in this body of research that directly relate to central themes and research areas in psychology. By highlighting these fundamental areas of research, such as theories of motivation and goals, social norms, person perception, morality, and situational influences, the table demonstrates how basic theory and research can be used to understand and potentially design interventions to decrease sexual assault on campuses. The rightmost column in the table highlights some of the extant work on sexual assault and much of it demonstrates how research in the domain of sexual assault can build and test general theory in psychology. For example, Williams, Gruenfeld & Guillory (2017) find that men with chronically low power express greater likelihood to harass when they find themselves in a situation of high power. This research expands on the intrapersonal dynamics of power through the lens of research on sexual assault. Similarly, Niemi & Young (2016) provide novel insights about how moral values relate to our judgments of victimhood by bringing key themes from the sexual assault literature into the conversation. Finally, Woodicka & LaFrance’s (2001) work on the gap between how people think they will react to unwanted touching (by reporting) and how they actually act (freezing, nervous laughter) provides evidence cited by research on more generalized topics from affective forecasting (Wilson & Gilbert, 2003) to stereotyping, prejudice, and intersectionality (Major, Quinton, & McCoy 2002; Dovidio & Jones 2019; Purdie-Greenaway & Eibach, 2008).

One of the most fundamental proposals of social psychology and behavioral science is that situational factors and person-centered factors are both important for behavior, but especially when they interact. Thus, the table is organized into situational and person-centered thematic research concerns. When identifying literal and figurative situational arrangements known to interact with the selected psychological phenomena of motivation, norms, and the like, we sought to illustrate key situational considerations in behavioral science like geographical configurations, situation-based power, and local social expectations.

These themes do not fall into perfectly carved boundaries. For example, situational power affects goal pursuit (Guinote, 2017; Keltner, Gruenfeld, & Anderson, 2003), and the sexual objectification of women's bodies lies at the intersection of person perception and moral psychology (Cikara, Eberhardt, & Fiske, 2011; Gray, Knobe, Sheskin, Bloom, Feldman-Barrett, 2011; Haslam & Loughnan, 2014). More research is needed to look at how these themes interact with each other, and these points of interaction may even be among the most productive methods for discovering novel powerful interventions, and testing theory.

A review of interactive individual and situational factors

Rather than advance a single new theory or update an older one, in this paper we start with a problem, focus on its behavioral context and manifestations, and aim to solve it by bringing together theories relevant to these contexts and behaviors. This constitutes our behavioral science approach. By beginning with a social problem to solve, we have the opportunity to integrate theories, contribute to the creation of a cumulative science, and evaluate theoretical claims based on the solutions they can generate. In Table 1, which represents our behavioral framework, we have brought together myriad theoretical perspectives on the person and the situation, which separately and together, have some predictive power for understanding

the incidence of sexual assault. This may be the first time that some of these theories have sat side-by-side in a framework.

Table 1 organizes our behavioral science framework for sexual assault by (1) situational configurations that trigger (2) mental processes, the combination of which makes sexual assault more or less likely to occur. We specifically outline how each specified situational configuration and mental process relate to the issue of sexual assault. In the adjoining table column, we present how these principles have been previously studied in psychology. In the final column, we cite research directly investigating the situational configuration or mental process in the domain of sexual assault. We hope that psychologists will be able to look at Table 1, identify areas related to their own expertise, and find novel avenues to extend and test their own theories in the domain of sexual assault, thus taking a behavioral science approach.

Situational Configurations

The category “situational configurations” is meant to be taken literally and figuratively—this is a category of ways to describe physical spaces like the party, street, and dormitory described in our opening example. As psychologists, we cherish the idea that the “situation matters,” and yet too often the situation is reduced to one factor that is manipulated by the experimenter. Psychological theory asserts that aspects of the environment shape our mental processes, but theoretical projects often skip a description of the physical environment in service of describing individuals’ perceptions of their situation. This common approach misses an appreciation of how the physical space matters for these perceptions in the first place. Previous attempts to build a descriptive framework of situations has paradoxically focused on patterns of interpersonal interactions that come to characterize the situation, rather than the physical attributes of the situation itself (e.g., situations featuring independence, mutual partner control,

joint control, and the like; Kelley, Holmes, Kerr, Reis, Rusbult, van Lange, 2003). Our framework seeks out objective properties of the situations that may trigger mental processes likely associated with sexual assault, as well as some of the social characteristics of situations. We thus organize the category “situational configurations” into geographic configurations, situationally determined power, local social expectations, and informational cues. As illustrated in our opening example with Darren and Alysha, by geographical arrangements we mean, for example, the presence or absence of communal space in a residence; by situationally-determined power we mean for example the capacity to decide who can enter a party. We also include local social expectations, by which we mean for example, the theme of a party; and by informational cues we mean cues like signage pointing individuals to sexual assault resources.

Mental Processes

The category “mental processes” contains a list more familiar to research psychologists. It is a collection of psychological constructs, each described by a number of theories that describe and make predictions about these constructs. While some have been applied to the study of sexual assault, others have not but are likely very relevant to explaining particular situation-based perceptions and motivations that result in sexual assault. We list the following constructs as mental processes: social norms, (specifically perceptions of what behaviors are typical or desirable), goals (e.g., consent as a shared goal representation), person perception (e.g., partner’s behavior can shape perceptions of self), and moral reasoning (e.g., disengaging from the moral implications of one’s own behavior).

How to use Table 1.

There are many ways to use this table. Research psychologists in particular may want to examine the list of relevant mental processes, and focus on those for which they have particular

1
2
3 expertise. In the third column, psychologists will find examples of how their areas of expertise
4 have or have not already been applied to the problem of sexual assault. This third column
5
6 provides the most promising place to look for crossover between general principles in
7
8 psychology and connections to understanding sexual assault. Finally, the rightmost column
9
10 provides examples of research already done in this area, and can provide an entry point to
11
12 existing literature.
13
14
15

16
17 If you are a practitioner seeking to innovate on preventative or interventionist techniques
18
19 for sexual assault, we suggest that you look at the column on situational configurations, to see
20
21 which situations resemble the context or groups of contexts you hope to address. What mental
22
23 processes are potentially sparked by these situations? What can the theoretical and empirical
24
25 literatures tell you about how to reshape these mental processes and behaviors by reshaping the
26
27 situation? Finally, if you are interested in some of the promising work that investigates sexual
28
29 assault using relevant variables from a behavioral science perspective, we recommend paying
30
31 special attention the rightmost column. We encourage collaborations between psychologist and
32
33 behavioral scientists to help you to design and to evaluate interventions that are suited for the
34
35 contexts you seek to address.
36
37
38

39
40 **Conclusion**
41

42 With this paper, we aim to demonstrate and operationalize a behavioral science
43
44 framework for understanding sexual assault, one that integrates the theoretical landscape in
45
46 psychology. We believe that our review showcases the unique power of behavioral science to
47
48 tackle this complex and urgent societal problem. Undoubtedly our list of mental processes and
49
50 situational configurations is not exhaustive, but we understand it as an important project of
51
52 behavioral science to combine and juxtapose perspectives to account for more variance in total—
53
54
55
56
57
58
59
60

1
2
3 and more accuracy in behavioral prediction. Time will tell if we have created a predictive and
4
5 generative framework as we collect more evidence on interventions to reduce sexual assault.
6

7
8 We see many advantages to this approach from a theoretical standpoint. First, a
9
10 behavioral science framework ties multiple psychological processes together. We highlight how
11
12 the same situation may trigger different mental processes for two people, and how different
13
14 situations may trigger similar mental processes. Furthermore, by combining multiple theoretical
15
16 perspectives, we invite researchers to consider how their own theoretical perspective relates. In
17
18 this way, we hope to maximize the likelihood that we will find which theories and which
19
20 connections among those theories are the most consequential for describing assault patterns and
21
22 finding the best targets for intervention. Finally, we hope that our behavioral science approach is
23
24 a useful meta-theoretical tool as well. We began with a social problem, examined the situation,
25
26 and brought multiple psychological theories to bear on it. At the very least, we believe this same
27
28 approach can be easily applied to workplace harassment and misconduct (see Annan et al., under
29
30 review, for a behavioral science approach to gender-based violence in fragile and conflict states).
31
32
33
34

35 Of course, by beginning with a problem, this work is aimed toward generating solutions.
36
37 At the moment, we do not feel that the science is available to proscribe new behavioral
38
39 interventions that we expect to work. We lay out this framework as a call for researchers to
40
41 accumulate more data in a principled and programmatic manner, as a way toward designing new
42
43 interventions that are mindful of these behavioral regularities.
44
45
46

47 We see distinct advantages of the behavioral science approach. Indebted to feminist
48
49 thought and activism that was imported into the social sciences (e.g., Crawford & Unger, 1997;
50
51 Dworkin, 1987; Mackinnon, 1979; Brownmiller, 1975, Collective, 1977), intervention-oriented
52
53 theories and models for understanding sexual assault have grown under the clinical and lifespan
54
55
56
57
58
59
60

perspectives (e.g., Malamuth & Hald, 2017) and under the broad umbrella of cultural or ecological approaches (e.g., Heise, 1998; Armstrong, Hamilton, & Sweeney, 2006; Banyard, 2011; Moylan & Javorka, 2020). Our approach is not meant to supplant these models but to serve as a complement. A behavioral science approach invites scholars to examine the immediate situation, with careful attention to immediate motivational and normative forces that could facilitate or block the effects of an intervention. Other approaches tend to focus more on individual traits (Briere & Malamuth, 1983; Lisak & Miller, 2002; Lisak, 2011; Outimette, 1997; Lisak & Ivan, 1995; Scully, 1988; Kosson, Kelly, & White, 1997; Prentky & Knight, 1991) or broader societal forces (Heise, 1998; Armstrong, Hamilton, & Sweeney, 2006; Casey & Lindhorst, 2009; Banyard, 2011; Moylan & Javorka, 2020). The behavioral science approach focuses on changing the immediate situation, and aims to harness pre-existing momentum for positive change, whether that momentum is from people, their immediate situation, or the product of the two.

Although this paper cannot end on a series of intervention recommendations, we believe that a behavioral science approach can generate context-sensitive and testable interventions that may differ from other approaches. For example, clinical and lifespan models focus on perpetrator characteristics, whereas ecological or cultural models recommend a wide range of activities, a behavioral science model suggests a very targeted and tailored approach for different contexts within university settings that respond to particular situations and the people in those settings.

We have taken our own advice, and from conversations with students we have already heard of novel interventions worthy of study at the level of both physical configurations and mental processes. As mentioned above, a change could be made to the physical spaces on campus, such as common social spaces for students that are not bedrooms (Hirsch, Khan,

Wamboldt, & Mellins, 2018; Hirsch & Khan, 2020). In terms of mental processes, we can target how students perceive the issue of consent on campus. In our own recent work, we conducted two behaviorally driven field experimental interventions to bring consent to the forefront of students' minds during campus parties. The students generated their own intervention—to have students read aloud a definition of consent before entering a party—and we conducted experiments with students and their institutions to understand and evaluate this practice. Our evidence suggests that the very same wording of a definition of consent may be received differently in different social spaces, even in a seemingly homogenous campus environment (Gantman & Paluck, 2018; Gantman et al., in prep).

This paper is an operationalization of a behavioral science approach to reducing sexual assault on campus; that is to say, it is based on the idea of the power of the situation and the mental processes triggered by that situation. This move, to use the power of the situation in analyzing the social problem of sexual assault, holds a great deal of power. For example, legal discourse about responsibility for sexual assault is heavily focused on individuals; legal procedures often invite a character witness to testify on behalf of the perpetrator or against the victim. Depositions in support of the alleged perpetrator emphasize his role as a good community member or 'good kid,' based on the implicit assumption that only 'bad people' commit rape (Krakauer, 2015), thereby acquitting those who do not fit the idea of a 'real' rapist. The behavioral science approach emphasizes the irrelevance of this logic, by highlighting the power of the situation over individuals. In other words, "good" people commit sexual assault, and individuals can and will refrain from assault within culturally "bad" institutions. A behavioral science approach to campus sexual assault halts the essentializing of perpetrators and institutions

as "bad" (Gantman & Paluck, *in press*), and brings back to the fore a central theme of social psychology—the power of the situation (Milgram, 1963), and the banality of evil (Arendt, 1963).

References

Abbey, A. (1982). Sex differences in attributions for friendly behavior: Do males misperceive females' friendliness?. *Journal of Personality and Social Psychology*, 42, 830-838.

Abbey, A., McAuslan, P., Zawacki, T., Clinton, A. M., & Buck, P. O. (2001). Attitudinal, experiential, and situational predictors of sexual assault perpetration. *Journal of Interpersonal Violence*, 16, 784-807.

Abbey, A., Zawacki, T., & McAuslan, P. (2000). Alcohol's effects on sexual perception. *Journal Of Studies on Alcohol*, 61, 688-697.

Adams-Curtis, L. E., & Forbes, G. B. (2004). College women's experiences of sexual coercion: A review of cultural, perpetrator, victim, and situational variables. *Trauma, Violence, & Abuse*, 5, 91-122.

Annan, J., Neel, A., Paluck, E.L., & Tankard, M. (under review). Reducing gender based violence in fragile and conflict affected states.

Arendt, H. (1963). *A Report on the Banality of Evil*. Faber.

Armstrong, E. A., Hamilton, L., & Sweeney, B. (2006). Sexual assault on campus: A multilevel, integrative approach to party rape. *Social Problems*, 53, 483-499.

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review*, 3, 193-209.

Banyard, V. L. (2011). Who will help prevent sexual violence: Creating an ecological model of bystander intervention. *Psychology of Violence*, 1, 216-229.

- Banyard, V. L., Demers, J. M., Cohn, E. S., Edwards, K. M., Moynihan, M. M., Walsh, W. A., & Ward, S. K. (2020). Academic correlates of unwanted sexual contact, intercourse, stalking, and intimate partner violence: An understudied but important consequence for college students. *Journal of interpersonal violence*, 35(21-22), 4375-4392.
- Bargh, J. A., Raymond, P., Pryor, J. B., & Strack, F. (1995). Attractiveness of the underling: An automatic power → sex association and its consequences for sexual harassment and aggression. *Journal of Personality and Social Psychology*, 68, 768-781.
- Bellis, A. L., Swartout, K. M., & Salazar, L. F. (2020) College-level perceptions of drinking, binge drinking, and sexual violence perpetration: A multilevel mediation model, *Journal of American College Health*, DOI: [10.1080/07448481.2020.1818756](https://doi.org/10.1080/07448481.2020.1818756)
- Blair, G., Littman, R., & Paluck, E. L. (2019). Motivating the adoption of new community-minded behaviors: An empirical test in Nigeria. *Science Advances*, 5, eaau5175.
- Bird, E. R., Gilmore, A. K., George, W. H., & Lewis, M. A. (2016). The role of social drinking factors in the relationship between incapacitated sexual assault and drinking before sexual activity. *Addictive behaviors*, 52, 28-33.
- Bonnefon, J., Feeney, A., & De Neys, W. (2011). The risk of polite misunderstandings. *Current Directions in Psychological Science*, 20, 321-324.
- Boswell, A. A., & Spade, J. Z. (1996). Fraternities and collegiate rape culture: Why are some fraternities more dangerous places for women? *Gender & Society*, 10, 133-147.
- Bouffard, J. A., & Miller, H. A. (2014). The role of sexual arousal and overperception of sexual intent within the decision to engage in sexual coercion. *Journal of Interpersonal Violence*, 29, 1967-1986.

- Boyle, K. M., Barr, A., & Clay-Warner, J. (2017). The effects of feminist mobilization and women's status on universities' reporting of rape. *Journal of School Violence, 16*, 317-330.
- Brecklin, L. R., & Ullman, S. E. (2001). The role of offender alcohol use in rape attacks: An analysis of National Crime Victimization Survey data. *Journal of Interpersonal Violence, 16*, 3-21.
- Brecklin, L. R., & Ullman, S. E. (2002). The roles of victim and offender alcohol use in sexual assaults: results from the National Violence Against Women Survey. *Journal of Studies on Alcohol, 63*, 57-63.
- Brecklin, L. R., & Ullman, S. E. (2010). The roles of victim and offender substance use in sexual assault outcomes. *Journal of Interpersonal Violence, 25*, 1503-1522.
- Briere, J., & Malamuth, N. M. (1983). Self-reported likelihood of sexually aggressive behavior: Attitudinal versus sexual explanations. *Journal of Research in Personality, 17*, 315-323.
- Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. Cambridge, England: Cambridge University Press.
- Brownmiller, S. (1975). *Against our will: Men, women, and rape*. New York, NY: Fawcett Books.
- Bruneau, E. G., Pluta, A., & Saxe, R. (2012). Distinct roles of the 'shared pain' and 'theory of mind' networks in processing others' emotional suffering. *Neuropsychologia, 50*, 219-231.
- Burgess, D., & Borgida, E. (1999). Who women are, who women should be: Descriptive and prescriptive gender stereotyping in sex discrimination. *Psychology, Public Policy, and Law, 5*, 665-692.

- Buttner, O. B., Wieber, F., Schulz, A. M., Bayer, U. C., Florack, A., & Gollwitzer, P. M. (2014). Visual attention and goal pursuit: Deliberative and implemental mindsets affect breadth of attention. *Personality and Social Psychology Bulletin*, 40, 1248-1259.
- Casey, E. A., & Lindhorst, T. P. (2009). Toward a multi-level, ecological approach to the primary prevention of sexual assault: Prevention in peer and community contexts. *Trauma, Violence, & Abuse*, 10, 91-114.
- Cass, A. I. (2007). Routine activities and sexual assault: An analysis of individual-and school-level factors. *Violence and Victims*, 22, 350-366.
- Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology*, 55, 591-621.
- Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. *Advances in Experimental Psychology* 24, 201-234.
- Cikara, M., Eberhardt, J. L., & Fiske, S. T. (2011). From agents to objects: Sexist attitudes and neural responses to sexualized targets. *Journal of Cognitive Neuroscience*, 23, 540-551.
- Cohen, D. K. (2016). *Rape During Civil War*. Ithaca: Cornell University Press.
- Cooley, C. H. (1902). *Human Nature and the Social Order*. New York: Scribner's, 179-185.
- Copenhaver, S., & Crauerholz, E. (1991). Sexual victimization among sorority women: Exploring the link between sexual violence and institutional practices. *Sex Roles*, 24, 31-41.
- Cranney, S. (2015). The relationship between sexual victimization and year in school in US colleges: Investigating the parameters of the "red zone". *Journal of Interpersonal Violence*, 30, 3133-3145.

- Crawford, M., & Unger, R. K. (Eds.) (1997). In Our Own Words: Readings on the Psychology of Women and Gender. 1st ed. New York: McGraw-Hill.
- Crosset, T. W., Benedict, J. R., & McDonald, M. A. (1995). Male student-athletes reported for sexual assault: A survey of campus police departments and judicial affairs offices. *Journal of Sport and Social Issues*, 19, 126-140.
- Datta, S., & Mullainathan, S. (2014). Behavioral design: A new approach to development policy. *The review of income and wealth*, 60, 7-35.
- Davis, K. C., Neilson, E. C., Kirwan, M., Eldridge, N., George, W. H., & Stappenbeck, C. A. (2020). Alcohol-involved sexual aggression: Emotion regulation as a mechanism of behavior change. *Health psychology*. Advance online publication <https://doi.org/10.1037/hea0001048>
- Davis, K. C., Hendershot, C. S., George, W. H., Norris, J., & Heiman, J. R. (2007). Alcohol's effects on sexual decision making: An integration of alcohol myopia and individual differences. *Journal of Studies on Alcohol and Drugs*, 68, 843-851.
- Deaux, K., & Major, B. (1987). Putting gender into context: An interactive model of gender related behavior. *Psychological Review*, 94(3), 369-389.
- De Witt Huberts, J. C., Evers, C., & De Ridder, D. T. D. (2013). "Because I am worth it": A theoretical framework and empirical review of a justification-based account of self-regulation failure. *Personality and Social Psychology Review*, 18, 119-138.
- Diekmann, A. B., & Eagly, A. H. (2000). Stereotypes as dynamic constructs: Women and men of the past, present, and future. *Personality and Social Psychology Bulletin*, 26, 1171-1188.
- Dietze, P., & Knowles, E. D. (2016). Social class and the motivational relevance of other human

- beings: Evidence from visual attention. *Psychological Science*, 27, 1517-1527.
- Duval, S., & Wicklund, R. A. (1972). *A theory of objective self awareness*. Oxford, England: Academic Press.
- Dworken, A. (1987). *Intercourse*. New York: Free Press.
- Eyal, T., Liberman, N., & Trope, Y. (2008). Judging near and distant virtue and vice. *Journal of Experimental and Social Psychology*, 44, 1204-1209.
- Felton, L. (2018). How colleges foretold the #MeToo movement. *The Atlantic*. Retrieved from <https://www.theatlantic.com/education/archive/2018/01/how-colleges-foretold-the-metoo-movement/550613/>.
- Festinger, L., Schachter, S., & Back, K. (1950). *Social pressures in informal groups; a study of human factors in housing*. Oxford, England: Harper.
- Fisher, B. S., Daigle, L. E., & Cullen, F. T. (2010). What distinguishes single from recurrent sexual victims? The role of lifestyle-routine activities and first-incident characteristics. *Justice Quarterly*, 27, 102-129.
- Fitzsimons, G. M., Finkel, E. J., & vanDellen, M. R. (2015). Transactive goal dynamics. *Psychological Review*, 122, 648-673.
- Ford, J., & Soto-Marquez, J. G. (2016). Sexual assault victimization among straight, gay/lesbian, and bisexual college students. *Violence and Gender*, 3, 107-115.
- Ford, J. V. (2017, June). Sexual assault on college hookups: The role of alcohol and acquaintances. In *Sociological Forum* (Vol. 32, No. 2, pp. 381-405).
- Gantman, A. P., & Paluck, E. L. (2018, February 8). *Sexual assault on college campuses: A behavioral approach* [Powerpoint slides]. Talk given at the Harvard Kennedy Center Women and Public Policy Program. Retrieved from:

<https://static1.squarespace.com/static/56c3b822746fb994f0998d6d/t/601ad9d199f213278b5507d4/1612372435953/GantmanPaluckHKSWAREPPFeb2018.pdf>

Gantman, A. P., Duker, A., Starck, J., & Paluck, E. L. (in prep). Moralizing consent: Two field experiments testing a student-led intervention at university parties.

Gantman, A. P., & Paluck, E. L. (in press). What is the psychological appeal of the serial rapist model? Worldviews predicting endorsement. *Behavioral Public Policy*.

Gantman, A. P., & Van Bavel, J. J. (2016). Exposure to justice diminishes moral perception. *Journal of Experimental Psychology: General*, 145, 1728-1739.

George, W. H., & Marlatt, G. A. (1986). The effects of alcohol and anger on interest in violence, erotica, and deviance. *Journal of Abnormal Psychology*, 95, 150.

George, W. H., & Norris, J. (1991). Alcohol, disinhibition, sexual arousal, and deviant sexual behavior. *Alcohol Health & Research World*, 15, 133-139.

George, W. H. (2019). Alcohol and sexual health behavior: "What we know and how we know it". *The Journal of Sex Research*, 56, 409-424.

George, W. H., Stoner, S. A., Norris, J., Lopez, P. A., & Lehman, G. L. (2000). Alcohol expectancies and sexuality: a self-fulfilling prophecy analysis of dyadic perceptions and behavior. *Journal of studies on alcohol*, 61(1), 168-176.

George, W. H., Stoner, S. A., Norris, J., Lopez, P. A., & Lehman, G. L. (2000). Alcohol expectancies and sexuality: a self-fulfilling prophecy analysis of dyadic perceptions and behavior. *Journal of Studies on Alcohol*, 61, 168-176.

George, W. H., Gournic, S. J., & McAfee, M. P. (1988). Perceptions of Postdrinking Female Sexuality: Effects of Gender, Beverage Choice, and Drink Payment 1. *Journal of Applied Social Psychology*, 18, 1295-1316.

- Gibson, J. J. (1977). The theory of affordances. *Hilldale, USA, 1*, 67-82.
- Gidycz, C. A., Warkentin, J. B., & Orchowski, L. M. (2007). Predictors of perpetration of verbal, physical, and sexual violence: A prospective analysis of college men. *Psychology of Men & Masculinity, 8*, 79.
- Goff, P. A., Thomas, M. A., & Jackson, M. C. (2008). "Ain't I a woman?": Towards an intersectional approach to person perception and group-based harms. *Sex Roles, 59*, 392-403.
- Gollwitzer, P. M. (2012). Mindset theory of action phases. In P. A. M. Van Lange, A. W. Kruglanski, E. T. Hiddins (Eds.), *Handbook of theories of social psychology* (pp. 526-545). Thousand Oaks, CA: Sage Publications Ltd.
- Gollwitzer, P. M., & Bayer, U. (1999). Deliberative versus implemental mindsets in the control of action. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 403-422). New York, NY, US: Guilford Press.
- Graham, J., Waytz, A., Meindl, P., Iyer, R., & Young, L. (2017). Centripetal and centrifugal forces in the moral circle: Competing constraints on moral learning. *Cognition, 167*, 58-65.
- Gray, K., Knobe, J., Sheskin, M., Bloom, P., & Feldman Barrett, L. (2011). More than a body: Mind perception in the nature of objectification. *Journal of Personality and Social Psychology, 101*, 1207-1220.
- Gray, K., Young, L., & Waytz, A. (2012). Mind perception is the essence of morality. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory, 2*, 101-124.
- Guinote, A. (2017). How power affects people: Activating, wanting, and goal seeking. *Annual*

- Review of Psychology*, 68, 353-381.
- Haslam, N., & Loughnan, S. (2014). Dehumanization and inhumanization. *Annual Review of Psychology*, 65, 399-423.
- Heise, L. L. (1998). Violence against women: An integrated, ecological framework. *Violence Against Women*, 4, 262-290.
- Hirsch, J. S., & Khan, S. (2020). *Sexual citizens: A landmark study of sex, power, and assault on campus*. WW Norton & Company.
- Jacques-Tiura, A. J., Abbey, A., Parkhill, M. R., & Zawacki, T. (2007). Why do some men misperceive women's sexual intentions more frequently than others do? An application of the confluence model. *Personality and Social Psychology Bulletin*, 33, 1467-1480.
- Kaczkowski, W., Brennan, C. L., & Swartout, K. M. (2017). In good company: Social network diversity may protect men against perpetrating sexual violence. *Psychology of Violence*, 7, 276-285. <https://doi.org/10.1037/a0040295>
- Kang, S. K., & Bodenhausen, G. V. (2015). Multiple identities in social perception and interaction: Challenges and opportunities. *Annual Review of Psychology*, 66, 547-574.
- Katz, J., Merrilees, C., Hoxmeier, J. C., & Motisi, M. (2017). White female bystanders' responses to a black woman at risk for incapacitated sexual assault. *Psychology of Women Quarterly*, 41, 273-285.
- Kelley, H. H., Holmes, J. G., Kerr, N. L., Reis, H. T., Rusbult, C. E., & Van Lange, P. A. M. (2003). *An atlas of interpersonal situations*. New York, NY, US: Cambridge University Press.
- Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review*, 110, 265-284.

- Kosson, D. S., Kelly, J. C., & White, J. W. (1997). Psychopathy-related traits predict self-reported sexual aggression among college men. *Journal of Interpersonal Violence*, 12, 241-254.
- Koss, M. P., & Cleveland, M. P. (1997). Stepping on toes: Social roots of date rape lead to intractability and politicization. In M. D. Schwartz (Ed.), *Researching sexual violence against women: Methodological and personal perspectives* (p. 4–21). Thousand Oaks, CA: Sage
- Krakauer, J. (2015). *Missoula: Rape and the justice system in a college town*. New York, NY: Doubleday.
- Krebs, C. P., Lindquist, C. H., Berzofsky, M., Shook-Sa, B., & Peterson, K. (2016). Campus Climate Survey Validation Study Final Technical Report. Bureau of Justice Statistics.
- Krebs, C. P., Lindquist, C. H., Warner, T. D., Fisher, B. S., & Martin, S. L. (2007). The Campus Sexual Assault (CSA) Study. National Institute of Justice.
- Lakey, B. (1989). Personal and environmental antecedents of perceived social support developed at college. *American Journal of Community Psychology*, 17, 503-519.
- Langton, L., & Sinozich, S. (2014). Rape and sexual assault among college-age females, 1995-2013. Bureau of Justice Statistics.
- Liberman, V., Samuels, S. M., & Ross, L. (2004). The name of the game: Predictive power of reputations versus situational labels in determining prisoner's dilemma game moves. *Personality and Social Psychology Bulletin*, 30, 1175-1185.
- Lin, S., Keysar, B., & Epley, N. (2010). Reflexively mindblind: Using theory of mind to interpret behavior requires effortful attention. *Journal of Experimental Social Psychology*, 46,

551-556.

Lindo, J. M., Siminski, P., & Swensen, I. D. (2018). College party culture and sexual assault.

American Economic Journal: Applied Economics, 10, 236-265.

Lisak, D. (2011). Understanding the predatory nature of sexual violence. *Sexual Assault Report*, 14, 49-64.

Lisak, D., & Ivan, C. (1995). Deficits in intimacy and empathy in sexually aggressive men.

Journal of Interpersonal Violence, 10, 296-308.

Lisak, D., & Miller, D. (2002). Repeat rape and multiple offending among undetected rapists.

Violence and Victims, 17, 73-84.

Loh, C., Gidycz, C. A., Lobo, T. R., & Luthra, R. (2005). A prospective analysis of sexual assault perpetration: Risk factors related to perpetrator characteristics. *Journal of*

Interpersonal Violence, 20, -1325-1348.

Looser, C. E., & Wheatley, T. (2010). The tipping point of animacy: How, when, and where we perceive life in a face. *Psychological Science*, 21, 1854-1862.

Lorenz, K., & Ullman, S. E. (2016). Alcohol and sexual assault victimization: Research findings and future directions. *Aggression and Violent Behavior*, 31, 82-94.

Mackinnon, C. (1979). Sexual harassment of working women: A case of sex discrimination.

New Haven, CT: Yale University Press.

Malamuth, N. M., Hald, G. M. (2017). The confluence mediational model of sexual aggression.

In Beech, A. R., Ward, T. (Eds.), *The Wiley handbook on the theories, assessment and treatment of sexual offending*: Vol. I. Theories (2nd ed., pp. 53-71). John Wiley.

- 1
2
3 Malamuth, N. M., Linz, D., Heavey, C. L., Barnes, G., & Acker, M. (1995). Using the
4
5 confluence model of sexual aggression to predict men's conflict with women: A 10-year
6
7 follow-up study. *Journal of Personality and Social Psychology*, 69, 353.
8
9
10 Major, B., Quinton, W. J., & McCoy, S. K. (2002). Antecedents and consequences of attributions
11
12 to discrimination: Theoretical and empirical advances.
13
14
15 Martin, P. Y. (2016). The rape prone culture of academic contexts: Fraternities and
16
17 athletics. *Gender & Society*, 30, 30-43.
18
19
20 McCray, K. L. (2015). Intercollegiate athletes and sexual violence: A review of literature and
21
22 recommendations for future study. *Trauma, Violence, & Abuse*, 16, 438-443.
23
24
25 Mellins, C. A., Walsh, K., Sarvet, A. L., Wall, M., Gilbert, L., Santelli, J. S., ... & Hirsch, J. S.
26
27 (2017). Sexual assault incidents among college undergraduates: Prevalence and factors
28
29 associated with risk. *PLoS one*, 12, e0186471.
30
31
32 Merritt, A. C., Effron, D. A., & Monin, B. (2010). Moral self-licensing: When being good frees
33
34 us to be bad. *Social and Personality Psychology Compass*, 4, 344-357.
35
36
37 Milgram, S. (1963). Behavioral study of obedience. *The Journal of Abnormal and Social*
38
39 *Psychology*, 67, 371-378.
40
41
42 Moylan, C. A., & Javorka, M. (2020). Widening the lens: An ecological review of campus sexual
43
44 assault. *Trauma, Violence, & Abuse*, 21, 179-192.
45
46
47 Mullainathan, S., & Shafir, E. (2013). Scarcity: Why having too little means so much.
48
49 Macmillan.
50
51
52 Muelenhard, C. L., & Linton, M. A. (1987). Date rape and sexual aggression in dating situations:
53
54 Incidence and risk factors. *Journal of Counseling Psychology*, 34, 186-196.
55
56
57
58
59
60

- Murnen, S. K., & Kohlman, M. H. (2007). Athletic participation, fraternity membership, and sexual aggression among college men: A meta-analytic review. *Sex Roles, 57*, 145-157.
- Niemi, L., & Young, L. (2016). When and why we see victims as responsible: The impact of ideology on attitudes towards victims. *Personality and Social Psychology Bulletin, 42*, 1227-1242.
- Norris, J., Nurius, P. S., & Dimeff, L. A. (1996). Through her eyes: Factors affecting women's perception of and resistance to acquaintance sexual aggression threat. *Psychology of Women Quarterly, 20*, 123-145.
- O'Neill, M. J. (1991). Effects of signage and floor plan configuration on wayfinding accuracy. *Environment and Behavior, 23*, 553-574.
- Orchowski, L. M., Untied, A. S., & Gidycz, C. A. (2013). Factors associated with college women's labeling of sexual victimization. *Violence and Victims, 28*, 940-958.
- Ortiz, R. R., & Shafer, A. (2018). Unblurring the lines of sexual consent with a college student driven sexual consent education campaign. *Journal of American College Health, 66*, 450-456.
- Ouimette, P. C. (1997). Psychopathology and sexual aggression in nonincarcerated men. *Violence and Victims, 12*, 389-395.
- Page, T. E., Pina, A., & Giner-Sorolla, R. (2015). "It was only harmless banter!" The development and preliminary validation of the moral disengagement in sexual harassment scale. *Aggressive Behavior, 42*, 254-273.
- Paluck, E. L., Shepherd, H., & Aronow, P. M. (2016). Changing climates of conflict: A social network experiment in 56 schools. *Proceedings of the National Academy of Sciences of the United States of America, 113*, 566-571.

- Perilloux, C., Easton, J. A., & Buss, D. M. (2012). The misperception of sexual interest. *Psychological Science*, 23, 146-151.
- Peterson, Z. D., & Muehlenhard, C. L. (2011). A match-and-motivation model of how women label their nonconsensual sexual experiences. *Psychology of Women Quarterly*, 35, 558-570.
- Prentice, D. A., & Carranza, E. (2002). What women and men should be, shouldn't be, are allowed to be, and don't have to be: The contents of prescriptive gender stereotypes. *Psychology of Women Quarterly*, 26, 269-281.
- Prentice, D. A., & Miller, D. T. (1993). Pluralistic ignorance and alcohol use on campus: Some consequences of misperceiving the social norm. *Journal of Personality and Social Psychology*, 64, 243-256.
- Prentky, R. A., & Knight, R. A. (1991). Identifying critical dimensions for discriminating among rapists. *Journal of Consulting and Clinical Psychology*, 59, 643-661.
- Pryor, J. B., Giedd, J. L., & Williams, K. B. (1995). A social psychological model for predicting sexual harassment. *Journal of Social Issues*, 51, 69-84.
- Pryor, J. B., LaVite, C. M., & Stoller, L. M. (1993). A social psychological analysis of sexual harassment: The person/situation interaction. *Journal of Vocational Behavior*, 42, 68-83.
- Purdie-Greenaway, V., & Eibach, R. P. (2008). Intersectional invisibility: The distinctive advantages and disadvantages of multiple subordinate-group identities. *Sex Roles*, 59, 377-391.
- Ross, L., & Nisbett, R. E. (1991). *The person and the situation: Perspectives of social psychology*. New York, NY, England: McGraw-Hill Book Company.

- Rudman, L. A., & Glick, P. (2002). Prescriptive gender stereotypes and backlash toward agentic women. *Journal of Social Issues, 57*, 743-762.
- Sanday, P. R. (1990). Fraternity gang rape: Sex, brotherhood, and privilege on campus. (1st ed.). New York, NY, US: New York University Press.
- Scully, D. (1988). Convicted rapists' perceptions of self and victim: Role-taking and emotions. *Gender & Society, 2*, 200-213.
- Sevincer, A. T., Oettingen, G., & Lerner, T. (2012). Alcohol affects goal commitment by explicitly and implicitly induced myopia. *Journal of Abnormal Psychology, 121*, 524-529.
- Sinozich, S., & Langton, L. (2014). Rape and sexual assault victimization among college-age females, 1995-2013. Washington, DC: US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.
- Steele, C. M., & Josephs, R. A. (1990). Alcohol myopia: Its prized and dangerous effects. *American Psychologist, 45*, 921-933.
- Sundstrom, E., Bell, P. A., Busby, P. L., & Asmus, C. (1996). Environmental Psychology 1989-1994. *Annual Review of Psychology, 47*, 485-512.
- Stotzer, R. L., & MacCartney, D. (2016). The role of institutional factors on on-campus reported rape prevalence. *Journal of Interpersonal Violence, 31*, 2687-2707.
- Swartout, K. M. (2013). The company they keep: How peer networks influence male sexual aggression. *Psychology of Violence, 3*, 157-171.
- Szymanski, D. M., Moffitt, L. B., & Carr, E. R. (2011). Sexual objectification of women: advances to theory and research 1ψ7. *The Counseling Psychologist, 39*, 6-38.

- Taylor, S. P., & Chermack, S. T. (1993). Alcohol, drugs and human physical aggression. *Journal of Studies on Alcohol, Supplement*, 11, 78-88.
- Tice, D. M. (1992). Self-concept change and self-presentation: The looking glass self is also a magnifying glass. *Journal of Personality and Social Psychology*, 63, 435-451.
- Ullman, S. E. (2003). A critical review of field studies on the link of alcohol and adult sexual assault in women. *Aggression and Violent Behavior*, 8, 471-486.
- Ullman, S. E., Karabatsos, G., & Koss, M. P. (1999). Alcohol and sexual assault in a national sample of college women. *Journal of Interpersonal Violence*, 14(6), 603-625.
- Ullman, S. E., Karabatsos, G., & Koss, M. P. (1999). Alcohol and sexual assault in a national sample of college women. *Journal of Interpersonal Violence*, 14, 603-625.
- Ullman, S. E., Karabatsos, G., & Koss, M. P. (1999). Alcohol and sexual aggression in a national sample of college men. *Psychology of Women Quarterly*, 23, 673-689.
- Untied, A. S., Orchowski, L. M., & Lazar, V. (2013). College men's and women's respective perceptions of risk to perpetrate or experience sexual assault: The role of alcohol use and expectancies. *Violence against women*, 19, 903-923.
- Wade, L. (2017). *American hookup: The new culture of sex on campus*. New York, NY: W.W. Norton & Co.
- Wamboldt, A., Khan, S. R., Mellins, C. A., & Hirsch, J. S. (2018). Friends, strangers, and bystanders: Informal practices of sexual assault intervention. *Global Public Health*, 7, 1-12.
- Walsh, K., Sarvet, A. L., Wall, M., Gilbert, L., Santelli, J., Khan, S., ... & Mellins, C. A. (2019). Prevalence and correlates of sexual assault perpetration and ambiguous consent in a

representative sample of college students. *Journal of Interpersonal Violence*,
0886260518823293.

Walsh, K., Choo, T.-H., Wall, M., Hirsch, J. S., Ford, J., Santelli, J. S., Gilbert, L., Thompson,
M. P., Reardon, L., & Mellins, C. A. (2020). Repeat sexual victimization during college:
Prevalence and psychosocial correlates. *Psychology of Violence*, 10(6), 676–686.

Williams, M. J., Gruenfeld, D. H., & Guillory, L. E. (2017). Sexual aggression when power is
new: Effects of acute high power on chronically low-power individuals. *Journal of*
Personality and Social Psychology, 112, 201-223.

Wilson, T. D., & Gilbert, D. T. (2003). Affective forecasting.

Woodzicka, J. A., & LaFrance, M. (2002). Real versus imagined gender harassment. *Journal of*
Social Issues, 57, 15-30.

	Theories and studies describing these behavioral principles	Relevance to sexual assault (examples)	Studies explicitly relating these factors to sexual assault or misconduct
Situational configurations			
Geographical configurations	<p>Noise creates cognitive load (Sundstrom et al., 1996)</p> <p>--</p> <p>Students living in more socially dense residence halls perceive less social support (Lakey, 1989)</p> <p>--</p> <p>People who live near staircases know more people on other floors (Festinger, Schacter, & Back, 1950).</p>	<p>Spaces differ in terms of: lighting, ability to call to other people, the perceived presence of others, distance to and from home, noise levels.</p> <p>--</p> <p>Parties are not allowed at sororities, meaning women in this scene never have parties at home.</p> <p>--</p> <p>Student residences with little common space, make socializing outside of parties more likely to take place in bedrooms.</p>	<p>High rates of sexual assault of sorority women at fraternity houses (Copenhaver & Grauerholz, 1991).</p> <p>--</p> <p>Universities with a higher percent of students living on campus have more reported incidents of assault (Stotzer & MacCartney, 2016)</p>
Situation-based Power	<p>Power enhances pursuit of focal goals (Guinote, 2017)</p> <p>--</p> <p>Reduced power translates into inhibition; enhanced power translates to approach behavior (Keltner, Gruenfeld, & Anderson, 2003).</p>	<p>Situation-based power advantages occur when a student is: host of a party, the person who owns the car used for transport, the only person who knows the way home, the larger person in the situation, the person who knows others in the room, who is not a numeric minority in the room in terms of gender, race, etc.</p>	<p>Situational power predicted sexual harassment (Pryor, Geddes, & Williams, 1995).</p> <p>--</p> <p>Men with chronically low (vs. high) power, when made to feel acutely high power, reported more hostile sexism and greater likelihood to sexually harass (Williams, Gruenfeld, & Guillory, 2017).</p> <p>--</p> <p>Dates in which men initiated the date, drove, and paid for expenses were associated with greater risk of sexual aggression (Muehlenhard & Linton, 1987).</p> <p>--</p>

			When men who are likely to sexual harass were primed with power, they found women with less power more attractive (Bargh, Raymond, Pryor, 1995)
Local social expectations	<p>The local situation can shift people’s attention to the construct of gender (Deaux & Major 1987)</p> <p>--</p> <p>Situational cues focus individuals on “local norms” (Cialdini, Kallgren, & Reno, 1991)</p> <p>--</p> <p>The “name of the game” changes the way people play (Lieberman, Samuels, & Ross, 2004)</p>	<p>On certain nights, bars and clubs advertise discounted entry for women only, with the expectation their presence is functional for a good party.</p> <p>--</p> <p>A hotel room can be labeled as hotel vs. work space</p> <p>--</p> <p>Parties have labels (themes), e.g.. Stoplight party (partygoers instructed to wear green if “available”) or “Playboy Mansion” themed party</p>	<p>Party themes expected women and not men to reveal their bodies (Armstrong, Hamilton & Sweeney, 2006)</p> <p>--</p> <p>Certain campus social spaces announced expectations for respect, consent (Gantman & Paluck, 2018, Gantman et al., in prep)</p>
Informational cues	<p>Clear and pictorial signs facilitate formation of cognitive maps (O’Neill, 1991)</p> <p>--</p> <p>Physical features of environment can simplify and encourage behaviors (Lewin, 1944; Blair et al., 2017)</p>	<p>Signs featuring a map to the health center or a sexual assault hotline.</p> <p>--</p> <p>Smart phone app that allows students to report sexual assault with a guiding form (see projectcallisto.org)</p>	<p>Campuses differ in the availability and efficacy of campuses resources for those who experience assault (Moylan & Javorka, 2020)</p>

Mental processes			
<p>Perceived social norms and schemas</p>	<p>Stereotypes inform people who women and men are, and should be (Diekmann & Eagly, 2000; Prentice & Carranza, 2002; Burgess & Borgida 1999)</p> <p>--</p> <p>People can misperceive the social norm; when private attitudes conflict with perceived community norms, behavior conformed to inaccurate norm perception (Miller & Prentice, 1993)</p> <p>--</p> <p>Women and men can be punished for violating perceived prescriptive gender norms (Rudman & Glick, 2001)</p>	<p>Students on different campuses perceive different rates and consensus attitudes about sex and sexual assault</p> <p>--</p> <p>A stable set of ideas (schema) about what constitutes "real" rape includes strangers and back alleys rather than acquaintances and familiar settings.</p> <p>--</p> <p>Students endorse different ideas about appropriate sexual behavior for men and women students</p> <p>--</p> <p>Students' (mis)perceptions of the commonality and frequency of sex (and how much is desirable for men vs. women)</p> <p>--</p> <p>Students rely on norms of and social scripts for politeness and gratitude even when feeling uncomfortable</p> <p>--</p> <p>Men may perceive (or rationalize) women's resistance as "token" or insincere as part of their script for how women are supposed to behave regarding sex</p>	<p>Perceptions of the typicality and desirability of gender-based violence is linked to actual violence (Ball et al., 2012)</p> <p>--</p> <p>The (un)equal status of women on campus (e.g., proportion of women in leadership positions) is related to how comfortable women feel disclosing experiences of assault (Boyle, Barr, & Clay-Warner, 2017)</p> <p>--</p> <p>A person was more likely to label non-consensual experiences as rape if the experience fit their schema (Peterson & Muelenhard, 2011)</p> <p>--</p> <p>Peer attitudes toward sexual aggression influence individual attitudes (Swartout, 2013; Abbey et al., 2001)</p> <p>--</p> <p>Presence of sexually explicit materials in the workplace (graffiti, office decoration) can signal harassment norms (Pryor, Geddes, Williams, 1995)</p> <p>--</p> <p>Perceptions of token resistance were retrospectively predictive of men's likelihood of perpetration (Loh, Gidycz, Lobo, & Luthra, 2005).</p>
Goals	Shared goal representations can be mutually	People in a sexual encounter with one another share a goal of	Gang rape serves goal of male group cohesion in war (Cohen, 2016) and at

	<p>reinforcing and enhance self-regulation (Fitzsimmons, Finkel, & vanDellen, 2015)</p> <p>--</p> <p>Objective self awareness increases behavior in line with ideals and values (i.e., activates the 'ought self,' Duval & Wicklund, 1982)</p> <p>--</p> <p>Once a person commits to a goal, activation of reasons to quit are inhibited (Gollwitzer, 2012)</p> <p>--</p> <p>Alcohol leads to myopia (e.g., over-focus on proximal goals and desirability over feasibility; (Sevincer, Oettingen, & Lerner, 2012; Steele & Josephs, 1990)</p> <p>--</p> <p>Context can activate justifications to permit otherwise disallowed behavior (de Witt Huberts, Evers & de Ridder, 2014)</p>	<p>making sure their partner is willing and enthusiastic throughout (i.e., consenting)</p> <p>--</p> <p>Being unobserved by peers, or "alone in a crowd" deactivates intentions to act as your best self</p> <p>--</p> <p>When one person decides to "make a move", they are focused on their goal and may not notice reasons and signals to stop</p> <p>--</p> <p>Drinkers become highly committed and overly focused on low probability goals and blind to signals that they should stop goal pursuit (Sevincer, Oettingen, & Lerner, 2012)</p> <p>--</p> <p>Women who want or need to maintain their relationship with their assailant but also want to say no likely experience goal conflict</p> <p>--</p> <p>Justifications to perpetrate (e.g., victim blaming thoughts) may come to mind in the moment to self-license the behavior</p>	<p>fraternities (Sanday, 1990), women used as means.</p> <p>--</p> <p>American students' goals to have the "right kinds" of college experience participate in hookup culture, which harbors rape permissive ideas (Wade, 2017)</p> <p>--</p> <p>Intentions to report harassment did not translate to actual reporting in a situation with unwanted touching (e.g., interviews; Woodzicka & LaFrance, 2001)</p> <p>--</p> <p>Alcohol myopia is associated with risk taking and sexual assault (George & Stoner, 2000)</p>
Person perception	<p>The ability to read the mental states of others is needed to assess their comfort level (Bruneau, Pluta, Saxe, 2011)</p>	<p>A student reads his partner's nonverbal expressions of hesitation or discomfort and stops</p> <p>--</p>	<p>Men over-perceived female interest in a speed dating environment (Perilloux, Easton, & Buss, 2012)</p> <p>--</p>

	--	College men and women hold different expectations and stereotypes about black and white women and men as partners	Rates of incidence of sexual assault on campus are higher for some sexual and racial minorities (Krebs et al., 2016; Black et al., 2011; for a review, Moylan & Javorka, 2020)
	Black women are perceived differently than white women, for example in perceptions of femininity which may lead to unique harms in terms of "erasure of womanhood" (Goff, Thomas, & Jackson, 2008)	--	--
	Simulating another's mind (Lin, Keysar, & Epley, 2010), maintaining politeness scripts (Bonnefon, Feeney, & De Neys, 2011) and maintaining face (Brown & Levinson, 1987) create cognitive load.	A woman is saying no while also guessing another person's intentions, maintaining a politeness script and saving face for the potential perpetrator	Sexual objectification is a form of dehumanization (Haslam & Loughnan, 2014). Instrumentalization of women who are dressed in revealing clothing (Cikara, Eberhardt, & Fiske, 2011)
	--	--	--
	Actions done in public (vs. private) have a greater impact on the self (Tice, 1992); our self-concept is partially determined by how others see us (Cooley, 1983)	Women are more likely to see themselves as sexual objects when men treat them that way	Women were less likely to report they would directly resist rape if they were also concerned about being rejected by their assailant (Norris, Nurius, & Dimeff, 1996).
	--	--	--
	Powerful people think of others as instruments (Guinote, 2017) and social class makes people less likely to consider others' minds (Dietze & Knowles, 2016)	After having spent hours deciding who can and cannot enter a party, a person might experience difficulty humanizing the people around them	

Moral reasoning	<p>People vary to the degree that they extend their 'moral circle' or (Graham et al., 2017)</p> <p>--</p> <p>Strategies to disengage from moral control enable inhumane behavior (Bandura, 1999)</p> <p>--</p> <p>People more readily apply moral principles to psychologically distant (vs. near) events (Eyal, Liberman, & Trope, 2008)</p> <p>--</p> <p>Many factors contribute to whether an event will be perceived as morally relevant (e.g., previous moral or immoral behavior; Merritt, Effron, & Monin, 2010; harm; Gray, Young, & Waytz, 2012; motivational context; Gantman & Van Bavel, 2016;)</p>	<p>A person meeting someone new for the first time (e.g., friend of friend, someone from another campus) may fail to consider them worthy of care and protection</p> <p>--</p> <p>Perpetrators may downplay the seriousness of the event by blaming the victim, dismissing assault behavior with notions like "boys will be boys," and holding "real rape" as the standard of judgment so another incident is permissible by comparison</p> <p>--</p> <p>Moral principles are more likely to apply when thinking about sexual assault in the past or future vs. in the moment</p> <p>--</p> <p>A man chivalrously walks a woman home, and feels his position as a gentleman is secure which licenses persistent requests that push a woman's boundaries</p>	<p>Students not considered in the same social circle as a fraternity may be regarded as unworthy of protection (Sanday, 1990)</p> <p>--</p> <p>People likely to sexually harass employ moral disengagement strategies to justify their behavior (Page, Pina, & Giner-Sorolla, 2015)</p> <p>--</p> <p>Endorsement of moral values of loyalty, purity, and authority (vs. values of harm and care) predict perceptions of victims as contaminated and blameworthy (Niemi & Young, 2016)</p>
-----------------	---	---	---