Sending Students into Bars for Science: Learning about the Impact of Alcohol on Bystanders

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Abstract

The bystander approach is a promising strategy for preventing sexual violence (Banyard, 2011; McMahon, 2015; White House Task Force to Protect Students from Sexual Assault, 2014). Because sexual violence often occurs in alcohol-rich contexts (Lawyer et al., 2010; Testa & Cleveland, 2017), it is likely that bystanders to sexual violence will often be under the influence of alcohol. However, little is known about the effects of alcohol intoxication on bystanders to situations involving risk for sexual violence. To explore how naturalistic alcohol intoxication can impact perceptions of sexual assault risk and hypothetical willingness to intervene, our research team, led by one undergraduate student, visited a bar, a music festival, and a football game armed with survey packets and a breathalyzer. Participants (N = 106) read one of two scenarios describing risk for sexual assault and responded to questions assessing perceived risk and willingness to intervene. Next, BAC was measured and recorded. Participants were compensated with food vouchers. The experience taught students about research design, integrity, and ethics. Researchers and participants enjoyed the experience and valuable information was learned. Specifically, perceptions of risks and willingness to intervene were high in both scenarios, and were uncorrelated with BAC. This implies that young adults are able to recognize risk for violence and willing to intervene even when intoxicated.

Introduction

This paper presents the results of a study that was funded by Undergraduate Research Mini-Grant funds in 2015-2016. It also reflects on the experience of doing hands-on social science research with undergraduate students.

The Problem of Sexual Violence Among Young Adults

Sexual assault is a significant social, legal, and health concern that is particularly prevalent among young-adult (ages 16-24) women (Bureau of Justice Statistics, 2011). Large national studies indicate that between 11% and 15% of young women have experienced a completed rape (Kilpatrick et al., 2007; Koss et al., 1987; Tjaden & Thoennes, 1998). As many as 50% of college women have experienced some form of sexual victimization (Koss et al., 1987, Messman-Moore & Brown, 2006). Alcohol plays a prevalent role in sexual assaults, particularly those occurring among college students (Testa & Livingston, 2009).

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In an attempt to combat the widespread problem of sexual assault among college students, universities, researchers, and activists have instituted various sexual assault prevention programs. Programs may be targeted toward women, toward men, or to both genders. Typically, these programs provide information about sexual assault, including facts that challenge rape myths (stereotypical beliefs about rape); some programs aim to promote empathy with victims or teach skills to reduce sexual assault risk (Anderson & Whitson, 2005). Reviews indicate that educational programs appear to have some success at improving knowledge about rape and reducing rape-supportive attitudes on campus, but show limited success at changing actual behaviors or at reducing the incidence of sexual assault (Anderson & Whitson, 2005; Breitenbecher, 2000). Self-defense based programs aimed at women have been shown to be more successful at improving self-efficacy and assertiveness but still have not been consistently shown to actually reduce the incidence of sexual victimization (Lonsway et al., 2009; Orchowski, Gidycz, & Raffle, 2008).

Perhaps because of the limited success of sexual assault prevention programs that focus on teaching young adults how to avoid becoming victims or perpetrators of sexual assault, programs are increasingly incorporating an approach based on empowering bystanders to confront and prevent sexual assault (Banyard, Plante, & Moynihan, 2004; Berkowitz, 2002; Foubert, Langhinrichsen-Rohling, Brasfield, & Hill, 2010; Katz, 1995; McMahon, Postmus, & Koenick, 2011; Potter, Moynihan, Stapleton, & Banyard, 2009). There are a number of reasons to target bystanders for sexual assault prevention efforts. Young adults typically operate under an illusion that they are invulnerable to negative events, but will readily admit that negative events can happen to others (Weinstein, 1980). Consequently, young adults may be more open to monitoring their peers' behavior than their own behavior (Banyard et al., 2004). Furthermore, a focus on bystanders not only targets potential offenders, but also empowers the more responsible, non-offending audience members (Banyard et al., 2004; Berkowitz, 2003). Because sexual assault among college students often occurs in a social context (e.g., parties; Lawyer, Resnick, Bakanic, Burkett, & Kilpatrick, 2010; Testa & Cleveland, 2017), it is reasonable to expect that there are often witnesses, at least to the behaviors leading up to a potential sexual assault, who could intervene. Research indicates that bystander education programs can be effective at improving bystander attitudes and behaviors (Banyard, Moynihan, & Plante, 2007; Banyard, Moynihan, & Crossman, 2009; Senn & Forrest, 2016).

Bystander Intervention Against Sexual Violence

Social psychological research on bystander intervention began in the aftermath of the 1964 murder of Kitty Genovese in New York City, in which dozens of neighbors heard her cries but failed to intervene. Hundreds of studies were conducted to better understand why bystanders often fail to intervene in emergencies, and under what conditions they may be more likely to intervene. One of the more influential models that emerged from this line of research was Latané and Darley's (1970) situational model of bystander intervention. Latané and Darley described a series of steps that a person must progress through before they intervene in an emergency situation. Before bystanders will intervene, they must (1) notice the event in the first place, (2) identify it as a situation in which intervention is necessary, (3) take personal responsibility for intervening, (4) decide how to respond, and finally (5) implement that decision.

Other models of bystander intervention have expanded upon Latané and Darley's (1970) situational model. The arousal:cost-reward model (Dovidio, 1984) proposes that emotional and

motivational factors also play important roles in helping. According to the arousal:cost-reward model, witnessing another person in need causes arousal, and arousal leads to increases in helping. Factors that can increase arousal include higher levels of danger faced by the victim and feelings of empathy toward the victim. However, bystanders are also sensitive to the costs associated with helping. Costs of helping can include time, effort, and potential danger to the bystander. Helping will be most likely when arousal is high and costs are low; helping will be least likely when arousal is low and costs are high.

Recent research has found that elements of both the situational model and the arousal:cost-reward model are relevant in bystander intervention against sexual violence. Barriers to intervention in this context include failure to notice potential sexual assault, failure to identify situations as needing intervention, and failure to take responsibility for intervening (Burn, 2009; Koelsch, Brown, & Boisen, 2012). In qualitative research on bystander intervention against sexual violence, participants reported being aware of the potential costs of intervening, such as fear for one's personal safety after confronting an aggressive male and embarrassment after interfering with private relationship matters, and reported less willingness to act in situations involving high costs (Koelsch et al., 2012). Other variables shown to be related to bystander intentions (stated willingness to intervene) and/or bystander behaviors (actual experience with intervention) in the domain of sexual violence include confidence in one's ability to engage in prosocial bystander behaviors (Banyard, 2008; Banyard & Moynihan, 2011) and empathy for rape victims (Katz, Pazienza, Olin, & Rich, 2015; McMahon, 2010).

Research on bystander intervention against sexual violence has focused primarily on intrapersonal variables, such as empathy, perceived ability to intervene, and perceived costs. Situational variables have also been studied, including the number of other bystanders present and the relationship between victim and perpetrator (Banyard, 2011; Latané & Nida, 1981). One situational variable that has received less attention in previous work on bystander intervention in the context of sexual violence, but which likely plays an important part in determining willingness to intervene and the effectiveness of any intervention decisions, is the degree of alcohol intoxication of bystanders.

The Effects of Alcohol on Bystanders

The majority of sexual assaults among college students are alcohol- or drug-facilitated, and these assaults occur most frequently at house parties, followed by bars and restaurants (Lawyer et al., 2010). This implies that opportunities for bystander intervention against sexual violence often occur in social situations, in which bystanders and targets have been drinking.

According to alcohol myopia theory (Steele & Josephs, 1990) alcohol interferes with people's ability to process conflicting cues, with the result that people tend to act on whatever cues are most salient. Typically, this leads to riskier behavior than people would engage in while sober, as impelling cues tend to be more salient than inhibitory cues (MacDonald, Fong, Zanna, & Martineau, 2000; Steele & Josephs, 1990; Steele & Southwick, 1985). In situations in which there is subtle risk for sexual assault, intoxicated observers may have difficulty recognizing cues suggestive of danger or sexual assault. In support of this notion, experimental studies of perceptions of sexual assault show that intoxication is associated with more acceptance of sexual violence, less sensitivity to cues signaling sexual violence, and less empathy for victims (Abbey, Buck, Zawacki, & Saenz, 2003; Davis, Stoner, Norris, George, & Masters, 2009; Gross, Bennett, Sloan, Marx, & Juergens, 2001; Johnson, Noel, & Sutter-Hernandez, 2000; Norris, George,

Davis, Martell, & Leonesio, 1999; Testa, VanZile-Tamsen, Livingston, & Buddie, 2006). This research suggests that intoxicated observers may be less willing to intervene against potential sexual violence, possibly as a result of decreased perceptions of risk or empathy toward a potential victim. In other domains, alcohol intoxication has been shown to be negatively related to intervening against drunk-driving (Newcomb, Rabow, Hernandez, & Monto, 1997), and negatively related to concern for and ability to recognize symptoms of alcohol poisoning (Oster-Aaland, Lewis, Neighbors, Vangsness, & Larimer, 2009). One recent study suggested that, in alcohol-rich contexts such as parties, ambiguity regarding risk is likely to prevent bystanders from intervening against sexual violence (Pugh, Ningard, Vander Ven, & Butler, 2016).

However, when strong situational or dispositional factors encouraging intervention are salient, intoxication may actually increase the likelihood of bystander intervention intentions, as cues inhibiting intervention (perceived costs) are not fully processed (Hirsh, Galinsky, & Zhong, 2011). In an investigation of alcohol intoxication and general helping behavior, Steele, Critchlow, and Liu (1985) found that intoxication increased helping in situations with competing cues. In an unpublished study, participants were asked to recall how intoxicated they were during recent experiences of (a) intervening against sexual violence and (b) failing to intervene when given the opportunity (Brown, 2013). Intoxication levels were higher during intervention acts than during missed opportunities, but this was only the case for people who reported both intervention behaviors and missed opportunities. Although this finding suggests that intoxication can facilitate bystander intervention, typical drinking behavior was uncorrelated with intervention acts and positively correlated with missed opportunities, suggesting that heavier drinkers have more opportunities to intervene, perhaps by virtue of their attendance at parties and bars, but do not always act on those opportunities. Finally, other research (Orchowski, Berkowitz, Boggis, & Oesterle, 2016; Fleming & Weirsma-Mosely, 2015) has found that men who drink more report lower intentions to intervene in the context of sexual violence than men who drink less. However, this effect was only found among men who imagined intervening against a known perpetrator; typical drinking had no impact on women or people who imagined intervening against a stranger (Fleming & Weirsma-Mosely, 2015). Thus, it is important to better understand the relationship between intoxication and bystander intervention, particularly regarding when and how intoxication either encourages or inhibits intervention.

There are at least four mechanisms that could account for the relationship between levels of intoxication and intention to intervene. Theoretically and empirically, willingness to intervene is related to (1) perceptions of danger and concern for a victim, (2) perceived costs of intervening, and (3) perceived responsibility for intervening (Banyard & Moynihan, 2011; Burn, 2009; Dovidio, 1984; Latané & Darley, 1970). Alcohol intoxication could impact any or all of these factors. Alcohol intoxication should be negatively related to perceptions of danger/concern and responsibility (Abbey et al., 2003; Davis et al., 2009; Norris et al., 1999). Because perceiving costs of intervention should require greater cognitive processing of the situation, it is likely that intoxication would be negatively related to perceived costs.

Study Aims and Hypotheses

The purpose of the current study was to investigate the extent to which alcohol intoxication impacted bystander perceptions and intentions. In particular, we were interested in the relation between intoxication and (a) perceptions of danger and concern for a potential victim, (b) perceived costs of intervening, and (c) willingness to intervene. Previous studies have

explored the impact of typical drinking behavior or recalled intoxication level on bystander intentions and behaviors, but no known studies have measured bystander responses while participants were under the influence of alcohol.

We hypothesized that intoxication level would be negatively associated with perceptions of danger/concern and with perceived costs. In turn, danger/concern would be positively associated with willingness to intervene and perceived costs would be negatively associated with willingness to intervene. We predicted only a weak direct relationship between intoxication and willingness to intervene, as we expected opposing indirect effects as mediated by perceptions of concern and costs.

Method

Participants

Participants were 106 young adults recruited from a bar or public events featuring alcohol consumption (i.e., a music festival and football games). The participants ranged in age from 17-35 (M = 22.34, SD = 3.09). Most participants (n = 62, 58.5%) indicated that they were currently enrolled as undergraduate students in a college or university. Other participants indicated that they already had a degree from a four-year college or university (n = 16, 15%) or were currently enrolled in graduate school (n = 14, 13%); the rest reported partial or no higher-education experience. The majority of the participants indicated their race/ethnicity as Caucasian (n = 86, 81.1%), followed by multi-ethnic (n = 7, 6.6%), African American (n = 6, 5.7%), Hispanic (n = 4, 3.8%), and Asian (n = 2, 1.9%).

Measures

A brief questionnaire assessed participant's demographic characteristics such as age, gender, race, and level of education received. Following questions assessed drinking behaviors such as number of drinks per week, typical level of intoxication, and levels of drinking in social settings. Participants were also assessed on previous sexual violence training and alcohol training.

Next, participants received one of two randomly-assigned scenarios. In the bar scenario, the participant imagines seeing an unknown man leading a very intoxicated female acquaintance out of a bar. It is stated that earlier the woman was observed expressing disinterest in the man. In the party scenario, the participant imagines walking into a bedroom and seeing a male acquaintance on top of an unknown girl on a bed. The participant also imagines that the girl is not into it by pushing him away and asking him to stop. The scenarios differ in a number of cues that could be relevant: whether the male or female character is known to the actor, whether the risk of sexual assault comes from physical pressure or the woman's intoxication, and the immediacy of the sexual assault risk. After reading the scenario, participants rated their agreement (using a 1-5 scale) with several statements. Participants responded to three items tapping concern for the female character (e.g., "This situation is pretty dangerous for the girl in the story"; bar α = .60, party α = .85), two items tapping perceptions of social costs (e.g., "I would worry about embarrassing myself or one of the other people if I stepped in"; bar α = .65, party α = .82), and five items tapping willingness to intervene (e.g., "I would be willing to step in and do something in this situation"; bar α = .64, party α = .73). A final question presented

seven behavioral responses and asked respondents how likely they would be to choose each one (on a 1-7 scale anchored at "not at all likely" and "very likely").

Finally, participants completed a shortened (17-item) version of the Bystander Intention to Help Scale (BIHS; Banyard, 2008) to assess general willingness to intervene in potential real life scenarios in the months to come (e.g., "Making sure friends leave the party with the same people they came with"; $\alpha = .79$). Participants rated on a 1-5 scale how much they agreed with each statement.

Procedure

Research assistants went to several locations near the University where it was expected that college-aged adults would be consuming alcohol. Specific locations included a local music festival, college football game, and a night life bar downtown during evening hours. Upon arriving at each location, research assistants looked for young adults and invited individuals to participate in a psychology study. Research assistants informed participants that they would not be able to consume alcohol for the duration of the study. After receiving verbal consent, participants filled out an informed consent that contained a specific statement in the middle of the paper asking the participant to write an X next to the statement. This tactic was used to ensure participants were in fact reading the consent form and would be able to read and respond to the subsequent questionnaires. If the informed consent did not have an X next to the statement, research assistants thanked the individual for offering to participate but had to inform them that they may not be able to provide sufficient responses. A total of three potential participants failed to make the required X mark after being asked to read the consent form again and were thus not allowed to participate. Participants who successfully marked an X next to the statement and provided an agreement to participate by checking an "I consent to participate" box on the informed consent paper then received a questionnaire packet. After completing the questionnaire, a hand held breath alcohol tester (Intoximeters™ FST) was used to assess the blood alcohol content of each participant. Once a participant successfully provided a BAC level, they received a five-dollar gift card to a local coffee shop or restaurant.

Results

Research Results

Mean BAC for the sample was .057 (*SD* = .06). Means and standard deviations for perceptions of danger/concern (concern), perceived costs of intervening (costs), and willingness to intervene (willingness) in the two scenarios is presented in Table 1. In both scenarios, concern for the female character was very high: people recognized that the situation was one high in risk for sexual violence. Perceived costs were fairly low, and willingness to intervene was reasonably high. No variables differed significantly between scenarios.

First, we examined correlations between BAC and each DV in each scenario. Contrary to predictions, BAC was unrelated to concern, costs, or willingness in either scenario (see Table 2). As predicted, willingness to intervene was positively related to perceptions of concern and negatively related to perceptions of costs. But because BAC was unrelated to anything, mediational analyses could not be performed.

Table 1. Means and standard deviations for party and bar scenarios

	Party Scenario (n = 53)	Bar Scenario (n = 53)
Concern	4.29 (.92)	4.57 (.54)
Costs	1.73 (1.03)	1.72 (.93)
Willingness	4.13 (.75)	4.21 (.66)

Table 2. Correlations between study variables

	BAC	Concern	Costs	Willingness
BAC	1	-.01	.06	.14
Concern	-.20	1	-.16	.46**
Costs	-.11	-.20	1	-.41**
Willingness	-.10	.51**	-.50**	1

Note: Correlation coefficients (rs) for the party scenario are presented below the diagonal. Coefficients for the bar scenario are presented above the diagonal.
** $p < .01$.

Table 3. Mean likelihood ratings for various bystander responses and correlations between responses and BAC

Party Scenario			Bar Scenario		
Response	*M*	*r*	Response	*M*	*r*
Close the door and walk away.	1.85	.40**	Tell him to leave her alone and that you will find another ride home for her.	4.55	.09
Physically pull him off of her.	3.53	.04	Check with her other friends to confirm his story.	4.12	-.03
Go look for someone else to help break them up.	3.90	.07	Let him take her home.	1.68	-.01
Walk in and ask where the bathroom is, hoping your presence makes him stop.	3.32	.24	Get a bouncer to stop him from leaving with her.	3.39	-.01
Tell him to leave her alone.	4.31	-.22	Ignore him and check on her to see if she is okay.	3.76	-.37**
Check and see if she is okay.	4.58	-.08	Ride along with them to make sure he actually takes her home.	2.59	.27
Keep watching to see what happens.	2.32	.06	Punch him or push him out of the way.	2.39	.28*

Second, we examined correlations between BAC and likelihood of engaging in various bystander responses. For the most part, BAC was unrelated to likelihood of responses, but there were some exceptions. Although "close the door and walk away" (party scenario option) was rated fairly low in likelihood, the more intoxicated participants were, the more likely they were to choose this response. In the bar scenario, BAC was negatively correlated with likelihood of checking on the female character's well-being and positively correlated with likelihood of engaging in physical aggression against the potential perpetrator.

Third, we examined the correlation between BAC and BIHS scores and found no relationship between intoxication level and general willingness to intervene, $r(105) = .05$, $p = .63$. However, BIHS scores were significantly correlated (rs > .4, ps < .01) with concern and willingness in both scenarios.

Finally, we examined gender differences on bystander perceptions and intentions. Men and women did not significantly differ on concern, cost, or willingness in either scenario. However, women ($M = 4.32$, $SD = .66$) did report greater willingness to intervene than did men ($M = 3.94$, $SD = .76$) on the BIHS, $t(103) = 2.75$, $p = .007$.

Experience Results

The first author, an associate professor, and the second author, an undergraduate student, were co-PIs on this study. Although the first author came up with the idea for the study and did most of the background work, the second author was influential in designing some aspects of the study. The second author helped make connections with the manager at the bar where most of the data were collected to get permission to do the study. The experience was very valuable for both authors. The first author benefited from having help manage the details of data collection, and also in learning the necessary value of being able to relinquish control! The second author benefited from taking on the responsibility of managing a field study, and from seeing how psychological science works from various angles: through working on this project, she learned about research design, research ethics, participant and data management, data analysis, data presentation, and writing.

The second author shared the responsibility of going out to field settings for data collection with several other students: most data collection shifts had three students at a time working together to recruit subjects, explain the study, distribute and collect consent forms, distribute and collect study materials, and take and record BAC readings. The students involved enjoyed the learning experience. However, they also had to manage challenges, primarily regarding collecting data from intoxicated people. One student team leader recalled a participant who repeatedly made sexist comments regarding the content of the study and tried to get the one male member of the research team to agree with him. The second author reflected on the difficulty of maintaining control of the research situation at times, given the intoxication level of participants and the noisiness of the bar environment. However, she also appreciated some of the surprises that can come from working with humans in natural environments. She noted the biggest surprise was checking the BAC level of one participant, who seemed quite functional, and learning that her BAC was well above the legal limit—indeed, it was one of the highest readings collected during the entire study. Despite a few surprises and awkward experiences, members of the research team also enjoyed how eager many young adults were to participate. They noted how many people were more motivated to learn their BAC than to get the food coupon at the end.

In sum, both authors, as well as the entire research team (as well as many of the participants) gained valuable lessons and research experience from this process.

Discussion

This study was somewhat surprising in that intoxication was largely unrelated to bystander perceptions or intentions. This may be due in part to the small sample size. Because we did not want to overburden our research participants, each participant only read one of the two scenarios. Thus, although our total sample size was 106, the effective sample size for almost all analyses was only 53. However, it is also possible that this effect is valid. Perhaps alcohol use does not have a large effect on bystander perceptions and willingness to intervene. Most of the relevant previous research has looked at the relationship between reports of typical drinking and bystander perceptions and willingness, and even this research has found significant relations only under certain conditions (Brown, 2013; Fleming & Weirsma-Mosely, 2015; Orchowski et al., 2016).

If bystander drinking does not greatly affect students' ability to notice sexual assault risk and take action against it, this is a promising state of affairs. This means bystander education efforts can be meaningful to all students, regardless of their drinking behavior. Of course, drinkers may need specific education on how to intervene effectively, even under the influence of alcohol. Our data suggests that more intoxicated individuals may choose less-than-optimal intervention strategies.

To whatever extent that drinking impacts bystanders, educational efforts should provide tools and strategies to mitigate those effects. One promising technique was used by Dal Cin and colleagues: they provided students who had attended a training program on safe-sex behaviors with wristbands to wear as a reminder of their program participation. Program participants did not show the typical declines in safe-sex behavior when under the influence of alcohol (Dal Cin, MacDonald, Fong, Zanna, & Elton-Marshall, 2006).

The current study should be considered in light of some limitations. As previously noted, the sample size was fairly small, which resulted in low statistical power. Second, although the vignettes have been validated and used in several studies, and have been found to be believable and realistic, they may not mimic any real-life situations that participants have or could experience. Relatedly, although testing people in a natural environment should produce more ecologically-valid results than testing people in a lab (Testa et al., 2006), it is likely that the situation still felt quite unnatural, and this could have affected people's responses. In a similar vein, most of the research assistants were female, perhaps prompting participants to consider more socially-desirable response; participants might have artificially inflated their ratings of concern and willingness to intervene because of this. No measures to control for social desirability were employed.

Future research should endeavor to study the effects of alcohol on willingness to intervene in even more realistic situations. Although staging an actual sexual assault might be practically and ethically impossible, there are possible ways to increase realism. A lab-based alcohol administration study could include confederates who stage a situation involving sexual harassment to see how people respond when intoxicated compared to sober. Virtual reality techniques could also be employed to put people in a highly controlled but highly immersive environment in order to measure responses to sexual assault risk.

Although desirable, techniques involving staged emergencies or virtual reality are expensive and time-consuming. In the absence of high-impact experiments on bystander intervention in the context of alcohol and sexual violence, we can still rely on a convergence of evidence from different types of studies: our lab and other researchers have conducted studies measuring alcohol use as (a) self-reports of typical drinking, (b) recalled event-level intoxication, and (c) intoxication following drinking in a natural environment. Bystander attitudes and behavior have been measured as (a) self-reported willingness to intervene, (b) self-reports of previous bystander behavior, and (c) hypothetical perceptions and behavior in a scenario. Unfortunately, the convergence of data across studies presents an unclear picture: some studies show that men (but maybe not women) who drink more report less willingness to intervene (at least when the hypothetical perpetrator is known; Fleming & Weirsma-Mosely, 2015; Orchowski et al., 2016); others show that typical drinking is negatively related to willingness to intervene for both men and women (Brown, 2013). Some research shows that intoxication levels were higher when people intervened compared to when they did not (Brown, 2013), but we showed here that actual intoxication is mostly unrelated to hypothetical intervention. We are left with the conclusion that alcohol *might* impair willingness to intervene, but it might not. More studies will be needed to clarify the picture and to uncover the moderating factors that influence when and for whom alcohol does and does not impact bystander intervention.

The final conclusion of this study is that research involving undergraduate students is rewarding and valuable. Faculty should welcome the opportunity to involve students in research projects. Not only does the experience provide invaluable educational opportunities for students, it can also be enlightening for faculty.

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