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The Effects of Alcohol Priming on Age Perception and Attractiveness Ratings

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THE EFFECTS OF ALCOHOL PRIMING ON AGE PERCEPTION AND
ATTRACTIVENESS RATINGS

by

BROOKS B. KOLBERG

(Under the Direction of Jessica J. Brooks)

ABSTRACT

Sexual assault and alcohol have often been linked together (Abbey et.al, 2004; Collins & Messerschmidt, 1993). Also, 29% of rape victims are between the ages of 12 and 17 (Greenfield, 1997). Research suggests people who are more impulsive are more likely to be sexually aggressive (Mouilso, Calhoun, & Rosenbloom, 2013); however, less is known regarding the underlying mechanisms of the relationship between alcohol and sexual assault of minors. This study addressed this knowledge gap by (1) examining the effects of alcohol priming on attractiveness ratings and age perception of individuals who could be perceived as adolescent, and (2) investigating the role various facets of impulsivity play in the relationships between alcohol priming and age perception and attractiveness, respectively. A total of 97 participants, a majority being female (64.9%), freshman (58.8%), and under the age of 20 (94.8%), completed the study. Participants were assigned to one of three conditions (alcohol prime, mood prime, or no prime) and completed a variety of questionnaires and a visual facial rating task following a priming task. A one-way multivariate analysis of variance revealed no significant differences between conditions on measures of age perception and attractiveness following alcohol priming. Furthermore, moderation analyses revealed nonsignificant findings between impulsivity and attraction, and impulsivity and perceived age; thus, alcohol priming was not a moderator in either analysis. These results suggest alcohol priming does not influence people's perceptions of age and attractiveness levels; however, more research is needed across diverse populations to further our understanding of the roles alcohol, impulsivity, and attraction play in sexual assault of minors.

INDEX WORDS: Alcohol priming, Impulsivity, Sexual assault, Attraction, Age-perception

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BROOKS B. KOLBERG

B.S., University of Georgia, 2016

A Thesis Submitted to the Graduate Faculty of Georgia Southern University in Partial Fulfilment
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MASTER OF SCIENCE

STATESBORO, GEORGIA

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RATINGS

by

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Electronic Version Approved:
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DEDICATION

I would like to dedicate my thesis to my friends, family, cohort members, and amazing professors. Specifically, I really want to thank my parents, Rita Byrd and Marty Kolberg, for consistently supporting my goals and being my rock. Their constant dedication and love to me provided the support I needed to finish this project. I would also like to dedicate this thesis to Nic Bouwman for encouraging me to succeed at a point in my life where I thought I could do nothing but fail. Without him I doubt I would have gotten to graduate school, let alone finish this thesis. Finally, I would like to dedicate this thesis to my committee chair Dr. Jessica Brooks. Her help, guidance, patience, and overall positivity hugely impacted this project and my life as a whole. She helped me decide on a career path that I feel is right for me, and changed my view of how research is conducted. I am beyond grateful for the opportunity to have worked with her.

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CHAPTER 1

INTRODUCTION

It is estimated that at least half of all violent crimes involve alcohol consumption (Collins & Messerschmidt, 1993). For example, in one study conducted by Abbey, Beshears, Clinton-Sherrod, and McAuslan (2004) involving 272 American women found that in 17% of sexual assaults only the perpetrator drank and in 7% only the victim drank. However, in only 29% of sexual assaults did neither drink alcohol, and in 47% both drank alcohol. It is important to note that a majority of rape victims are female, which gives some relevancy to the research by Abbey et al. (2004). The percentage of rape victims who are female increases with age, with 69% of rape victims under age 6 being female to 95% being female at age 19 (Snyder, 2000). While alcohol use and sexual assault often occur together, alcohol use does not cause sexual assault. For example, if someone were to sexually assault someone else, they might drink alcohol beforehand to justify the action or the assailant might believe alcohol increases sexual desire and these expectations may increase the likelihood for sexual assault (Collins & Messerschmidt, 1993). However, alcohol is not the only factor implicated in sexual aggression.

Various personality features, such as high levels of impulsivity, are also linked with sexual aggression. One study involving 304 college men found measures of impulsivity differentiated perpetrators of sexual assault and non-perpetrators (Mouilso, Calhoun, & Rosenbloom, 2013). Specifically, Positive and Negative Urgency were found to be higher among perpetrators of sexual aggression than among non-perpetrators, and perpetrators also lacked Premeditation. To differentiate between perpetrators and non-perpetrators, researchers used a Sexual Experiences Survey to measure perpetration of nonconsensual sexual behavior and if participants engaged in

any nonconsensual behavior they were classified as perpetrators. Simply put, individuals who endorsed acting impulsively during intense emotional situations (i.e., Positive and Negative Urgency) and those who lacked Premeditation (i.e., the ability to consider consequences before action) were more likely to be sexually aggressive and classified as perpetrators than those who did not endorse acting impulsively.

Beyond behavioral and personality factors, other considerations of violence and sexual aggression include age and gender. Regarding age, teenagers are at risk for experiencing assault, with 29% of rape victims falling between the ages of 12 and 17 (Greenfield, 1997); however, very little available research examines whether or not alcohol is involved in the assaults among victims in this age group. In fact, most research on sexual assault examines pre-pubescent individuals (under 12) or people over the age of 18. One study attempted to look at attraction toward sexually mature individuals who were still below the age of consent. To do this the researchers used ten female faces, and transformed their faces using computer technology to make them appear younger or older than they actually were. The researchers found alcohol inflated attractiveness judgments for both men and women. However, the researchers noted alcohol affected women's age perception of the stimuli, but the same effect was not found in men (Egan & Cordan, 2009).

While this research was thorough and attempts to address the lack of research on post-pubescent, pre-age of consent sexual assault, the research is one-sided; that is, the study did not include male pictures being rated on attractiveness and age perception. This is increasingly important as men are more likely to be victims of sexual assault when they are younger (Snyder, 2000). The researchers also used computer altered images, which could further confound the results by making the stimuli artificially less mature, thereby removing some of the ambiguity of the adolescent age range. The current study attempted to bridge the gap between the effect of

alcohol (i.e., exposure to alcohol-related cues) on levels of sexual attractiveness and age perception on males and females who could be perceived as post-pubescent but pre-age of consent, while also investigating the extent to which the at-risk personality trait impulsivity moderates the relationship between alcohol cue exposure and sexual attraction.

Alcohol Use Prevalence Rates and Theoretical Conceptualizations

Alcohol is very much a part of the culture in the United States. In 2015, 86.4% of people over the age of 18 reported they drank alcohol at some point in their life. Also in 2015, 26.9% of people older than 18 reported they binge drank in the past month, according to the National Survey on Drug Use and Health (NSDUH; SAMHSA, 2015). Binge drinking, according to the National Institute on Alcohol Abuse and Alcoholism (NIAAA), is defined as drinking that brings the blood alcohol concentration to .08 g/dl (NIAAA, 2006). This leaves our country with a large percentage of the population at least somewhat disinhibited at some time. Alcohol consumption is consistently associated with increased impulsivity and poor executive functioning (i.e., decision making). The poor executive functioning and increased impulsivity can be observed from the high rate of drunk driving (i.e., 31% of overall driving fatalities in 2014; NCSA, 2015), or from the 188,000 under age individuals visiting the ER for alcohol-related injuries in 2011 (SAMHSA, 2015). Clearly alcohol use decreases inhibitions.

Various psychological models incorporate aspects of impulsivity in their conceptualizations of alcohol misuse and dependence; yet, investigating these models has proved challenging as a result of conflicting operational definitions of impulsivity. For example, some researchers believe impulsivity to be a single, narrow trait that deals solely with the cognitive, behavioral, or affective side, while others believe it to be multidimensional, in that impulsivity can be attributed to all three

of these facets (Eysenck & Eysenck, 1977; Whiteside & Lynam, 2001). Even the semantic meaning of impulsivity seems to differ among researchers and the public. For example, according to the most recent Oxford English Dictionary (2017), impulsivity generally means “a sudden strong and unreflective urge or desire to act”.

Eysenck, a prominent theorist in the field of personality, believed impulsivity in general is a narrow personality trait, involving risk taking, non-planning, and liveliness (Eysenck & Eysenck, 1977). Barratt (1985) developed a scale to measure impulsivity based on Eysenck’s three components of impulsivity: motor impulsiveness (doing things without thinking), cognitive impulsiveness (decisive and quick thinking), and non-planning impulsiveness (not making plans for the future). Others believe impulsivity is much more complicated, involving positive affect or negative distress, impulsive behavior, and sensation seeking behaviors and cognitions (Whiteside & Lynam, 2001).

According to Whiteside and Lynam (2001), impulsivity is not a single trait, but rather comprised of several distinct traits, or facets, including: Negative Urgency, Lack of Premeditation, Lack of Perseverance, and Sensation Seeking. *Negative Urgency* is the tendency for a person to act rashly when distressed in some way. If a person was feeling anxiety, for example, they might lash out without thinking if they are high in Negative Urgency. *Lack of Premeditation* is when a person does not think or plan ahead. A person lacking premeditation would be unlikely to think before acting in a given situation. *Lack of Perseverance* is a general lack of following through with tasks. This facet is mostly associated with people who are unlikely to see things through to the end, or who tend to give up fairly easily. Finally, *Sensation Seeking* is a facet associated with trying new things, or risk taking. A person high in Sensation Seeking, for example, would be more likely to try things that are scary for others, like skydiving. Recently, researchers added a fifth aspect of

impulsivity to this scale, *Positive Urgency* (Lynam, Smith, Whiteside, & Cyders, 2006). This aspect is similar to Negative Urgency, but instead of acting without thinking while distressed, Positive Urgency is related to acting without thinking while feeling happy. For example, people who score high on this facet are more likely to find themselves in negative situations when they are feeling good. This multi-faceted approach to impulsivity allows researchers to identify specific aspects of impulsivity to allow for a more nuanced understanding of how impulsivity plays a role in problematic behavior, like heavy alcohol use or sexual assault.

The UPPS-P (Urgency, Premeditation, Perseverance, Sensation Seeking, Positive Urgency) Impulse Behavior Scale assesses multidimensional aspects of impulsivity based on the model of impulsivity proposed by Whiteside and Lynam (2001), and has been used in numerous alcohol-related studies in the past. For example, Curcio and George (2011) found high levels of Sensation Seeking to be predictive of greater frequency and quantity of alcohol use, while Positive and Negative Urgency were predictors of alcohol-related problems (e.g., more likely to drink in risky contexts, more likely to use alcohol as a crutch for negative emotions, more likely to engage in rash behaviors that could have harmful consequences), but not alcohol use. These differentiations between the aspects further reinforces the idea that impulsivity is more complicated than just a single trait, and needs to be viewed as multi-dimensional.

In a large meta-analysis involving 96 studies, researchers found impulsivity is, in general, related to alcohol use. Drinking quantity was predicted by a Lack of Perseverance, and the remaining traits of impulsivity predicted drinking frequency. Positive and Negative Urgency were strongly related to the experience of alcohol-related problems, while alcohol dependence was related to Negative Urgency and Lack of Premeditation (Coskunpinar et al., 2013). These findings suggest people who endorse high levels of Negative Urgency are more likely to develop drinking

problems and alcohol dependence. Evidence also suggests people high in Negative Urgency have a larger increase in alcohol craving after an alcohol prime has been introduced in comparison to those who tend to not engage in impulsive behavior when distressed (VanderVeen et al., 2016). Thus, mere exposure to alcohol-related cues increases the desire to drink, especially in people with higher levels of negative urgency. This finding may explain how people who experience negative emotion maintain their alcohol-related behavior.

To summarize, alcohol use is prevalent in the United States. Consuming alcohol has consistently been shown to increase impulsivity and risk taking behaviors, which could lead to dangerous situations such as drunk driving. Impulsivity as a construct has been defined differently by many researchers. Some, like Eysenck, believe impulsivity is a narrow personality trait incorporating risk taking, non-planning, and liveliness (Eysenck & Eysenck, 1977). Others, like Whiteside and Lynam (2001), believe impulsivity is not a single trait but is rather composed of many different traits, or facets. This multi-faceted approach allows for more distinctions among different parts of impulsivity, such that researchers are able to attribute different facets of impulsivity to different cognitions and behaviors. A question left to be addressed is how disinhibition affects sexual deviance and assault.

Theories of Sexual Assault and Physical Aggression

Disinhibition, Sexual Deviance, and Alcohol Use

Pedophilia is a disorder described by the Diagnostic Statistical Manual, 5th Edition (DSM-5; APA, 2013) as an adult experiencing sexual attraction toward prepubescent individuals. While the current study is not specifically investigating pedophilia, deviant types of attraction toward individuals who are under the age of 18, and who are post-pubescent (above the age of 12), are of

interest. By researching what is theorized and known about pedophilia, extrapolations can be made about attraction toward post-pubescent individuals under the age of 18.

The Disinhibition Theory states the occurrence of pedophilic behaviors is the result of normal inhibitions that stop people from having sex with children being dismissed or non-existent. This theory states that some process, condition, or mechanism disinhibits sexual predators, and allows them to have sex with pre-pubescent children. This could be due to a personality disturbance, such as psychopathy, or to situational factors, such as consumption of alcohol or other drugs. Whatever the reason for the disinhibition, it allows the perpetrator to ignore otherwise salient cues (e.g., morality, empathy), and lets the perpetrator pay more attention to the sexual arousal and frustration they are feeling.

Alcohol may lead to lowering or ignoring inhibitions regarding pedophilic acts, making alcohol a form of crutch a perpetrator can lean on. One large review of evidence regarding pedophilia revealed different ways a person can be disinhibited (e.g., job stress, psychopathic tendencies, drugs, and alcohol). Of all the possible disinhibitors, alcohol disinhibition had the most empirical support (Araji & Finkelhor, 1985). Alcohol is implicated as a disinhibiting factor in pedophilic offenses, with either the perpetrator drinking at the time of the offense or with the perpetrator having a concurrent alcohol dependency issue. In an extensive review involving 11 U.S and two foreign studies, Aarens (1978) found the use of alcohol in 30 to 40% of pedophilic cases. Evidence also suggests female object people with pedophilia (i.e., people who prefer girls) are likely to use alcohol more frequently than male object people with pedophilia (Araji & Finkelhor, 1985). Not only can one be disinhibited by drinking alcohol, but by being primed with alcohol, participants have been shown to have lower social inhibitions (Freeman, Friedman, Bartholow, & Wulfert, 2010).

Beyond lowering inhibitions, researchers demonstrated that intoxicated individuals focus on salient cues which, for sexual assailants, are likely to be sexual arousal and anger, ultimately encouraging sexual aggression. Again, due to diminishing inhibitions, alcohol consumption in sexually aggressive individuals may contribute to the decrease in saliency of normative cues related to empathy and morality (Abbey et al., 2004). The effects of alcohol could allow perpetrators to put their morality aside in favor of their sexual arousal, enabling them to feel attraction towards underage individuals. To further support the idea that alcohol affects underage attraction, the DSM-5 (APA, 2013) identifies substance use disorders as a differential diagnosis for pedophilia because the disinhibiting effects of intoxication increase the likelihood someone will sexually approach a child, even if they are primarily attracted to adults (APA, 2013). This further suggests a link between substance use and sexual attraction to younger individuals.

Sexual Assault and Personality

One way to conceptualize sexual assault behavior through personality is with the concept of psychopathy. Psychopathy is often seen in sexually aggressive men. Men who score higher on measures of psychopathy are generally less empathetic, display less impulse control and are more manipulative than non-violent men. With those factors, sexually aggressive men become more likely to act on their desires. This implies sexually violent men are likely to have severe problems with impulsivity (Ouimette, 1997). Women who display psychopathy also display less impulse control, more sexual promiscuity, more verbally aggressive behaviors, and more manipulative behaviors than women who scored lower on measures of psychopathy (Wynn, Høiseth, & Pettersen, 2012). In a large community sample (n = 514), clinical psychopathy was found in 1 to 2% of the population (Neumann & Hare, 2008). Psychopathy was determined using the PCL:SV (Psychopathy Checklist: Screening Version), which gives a score from 0 to 24, with above 13

indicating clinical psychopathy. It is important to note that while two-thirds of the population scored under 2 on this measure, many people scored between 3 and 12, which indicates the presence of some psychopathic personality traits, or subclinical psychopathy.

Along with alcohol influencing underage sexual attraction, it is likely that a lack of impulse control contributes as well. The reason impulse control seems to contribute is because sexual desire is often seen as difficult to control, and therefore individuals with a lack of impulse control are more likely to act on these sexual desires. The lack of impulse control can increase the likelihood that people will be sexually deviant, or participate in a sexual act that is seen as culturally unacceptable. Due to the fact impulsivity has many facets, it is important to look at a variety of factors. It is likely that perpetrators of sexual assault have a distinct lack of premeditation because they do not think about the situation beforehand; they act in the moment. It is also possible people who commit sexually deviant acts have high levels of positive and negative urgency. This would mean that because sexual aggression happens out of impulse, it is more likely to occur because the perpetrator is feeling extreme emotions (either positively or negatively). This is all speculative; however, as sexual aggression is linked to higher impulsivity in both men and women (Spence, Losoff, & Robbins, 1991). Specifically, perpetrators of sexual aggression scored higher than non-perpetrators on measures of Negative Urgency, Positive Urgency, and lack of Premeditation. This implies these traits are most related to sexual aggression due to the perpetrator feeling extreme emotions, or because there was a lack of forethought (Mouilso, Calhoun, & Rosenbloom, 2013). More research needs to be conducted in this area to parse out how the facets of impulsivity play into sexual deviance and sexual assault, especially sexual deviance involving adolescent individuals.

Taken together, sexual assault may be related to certain personality aspects. Particularly, sexual assault is related to degrees of psychopathy and impulsivity. It might be the case that individuals with aspects of psychopathy tend to be more sexually aggressive because they have less impulse control; however, more research is needed on how impulsivity plays into sexual assault situations and sexually deviant behaviors. This is especially true when considering which facets of impulsivity specifically relate to sexually deviant behaviors and sexual assault situations.

Alcohol-related Priming

Priming is a general method used to influence the behavior and cognitions of an individual without the individual being consciously aware of the stimulus. Originally, researchers discovered that pairs of words semantically related, or words similar in meaning to one another, lead to a facilitation of recognition of the words (Meyer & Schvaneveldt, 1971). The researchers used a lexical decision task (i.e., a task to measure how quickly people can classify stimuli as real words or pseudo-words). Reaction times of participants when distinguishing between a word (e.g., nurse) preceded by an unassociated word (e.g., butter), versus a word (e.g., nurse) preceded by an associated word (e.g., doctor) were examined. The results of Meyer and Schvaneveldt (1971) reveal that the association between words has a large effect on speed of response; specifically, semantically-related first word sped up the response time to the second word. Theoretically, this is because the prime (i.e., the first word) affects the linking of the semantic network from one concept to another. The semantic network theory is that we retrieve information and knowledge from a mapping of different concepts in the brain. This creates a web, or network of different concepts. Priming works then by activating a node (or concept) in the semantic network which can be closely related to another word appearing after the prime, causing a speed up in information retrieval. This is known as spreading activation, which occurs from the point of the prime and

expands out into the network. See also Neely (1991) for a review of semantic priming effects based on word recognition and Collins & Loftus (1975) for a review on spreading-activation theory.

By using primes, researchers are able to determine how certain stimuli affect someone on an automatic level. For example, if a person was primed with the word “car,” they might react faster to the word “tire” than to another, unrelated word like “computer.” It is important to note there is a difference between positive primes and negative primes. A *positive prime* facilitates reaction time, while a *negative prime* will slow down reaction time. A positive prime is similar to the example describe above, while with a negative prime, the participant is presented the stimulus and then is instructed to ignore it (Mayr & Buchner, 2007). For example, if a participant was primed with a completely unrelated word, their semantic network already activated connections with that prime. So when the target word appears, the participant’s reaction time will slow down. In the current study, alcohol stimuli will be used as positive primes, meaning participants will simply presented the stimulus of alcohol prior to exposure to a second stimulus (i.e., faces). Alcohol primes work by priming the social expectancy of alcohol; if people expect alcohol to change aspects of their behavior (e.g., sexual expressiveness) or cognitions (e.g., decision making), then exposing people to alcohol primes might change those behaviors or cognitions.

The effects of alcohol priming are well established in impacting behavior, such as increasing aggression. Using priming theory, the extent to which alcohol affects the experience of aggression is demonstrated by shorter reaction times to aggressive words following an alcohol prime (Bartholow & Heinz, 2006), and an increase in the likelihood that participants would rate their experimenter poorly on an aggression-based manipulation after exposure to an alcohol prime (Friedman, McCarthy, Bartholow, & Hicks, 2007). Aggression expressed by participants is even

more likely to increase ambiguous provocation following exposure to alcohol primes (Pederson, Vasquez, Bartholow & Troung, 2014). Some evidence shows alcohol priming can affect sexual attraction, in that the stronger the expectancy that alcohol increases sexual desire, the higher the attractiveness rating participants gave after the alcohol prime (Friedman, McCarthy, Förster, & Denzler, 2005).

All of these studies utilized alcohol priming in some form or another. Some of the researchers opted for a visual stimulus of alcohol for the priming task (Bartholow & Heinz, 2006), while others used a lexical decision task to prime alcohol through semantically related words such as “vodka” or “beer” (Friedman et al., 2005; Friedman et al., 2007; Pederson et al., 2014). Priming can be done through either higher cognitive means of drawing semantic meanings from words or through simple visual stimuli of alcohol-related objects.

Purpose of Current Study

The connections between impulsivity, alcohol, and sexual aggression have all been established in the literature (e.g., Abbey et al., 1996; Collins & Messerschmidt, 1993; Mouilso, Calhoun, & Rosenbloom, 2013). Negative Urgency is one of the more relevant factors of impulsivity regarding alcohol use, as well as one of the most relevant components of sexual aggression. Alcohol itself plays a large role in sexual aggression by allowing the perpetrator to ignore salient cues (e.g., morality, empathy) related to the victim. Alcohol and impulsivity have been examined almost exclusively in sexual offenders who target prepubescent or adult individuals (e.g., Aarens et al., 1978; Abbey et al., 2004; Araj & Finkelhor, 1985; Collins & Messerschmidt, 1993). However, little research has investigated the links among sexual aggression, impulsivity, and alcohol within individuals who target post-pubescent adolescents. The small body of existing literature in this area is narrowly focused on using computer altered faces of females (Egan &

Cordan, 2009). The researchers also performed this experiment in a non-laboratory setting, which may confound the results by being unable to control for extraneous variables. Finally, the researchers were unable to determine whether the findings were due to the pharmacological effects or the social expectations of alcohol. The current study attempted to address this gap by using unaltered male and female faces, performing the experiment in a lab to control extraneous variables, and using alcohol primes instead of differing levels of intoxication to rule out pharmacological explanations. The specific goals of this study were threefold:

Aim 1. Determined the extent to which psychological variables (i.e., facets of impulsivity) relate to age perception and attraction.

Hypothesis 1.1. Level of attraction to facial stimuli would be positively correlated with Positive and Negative Urgency, Lack of Premeditation, and Sensation Seeking (Mouilso, Calhoun, & Rosenbloom, 2013).

Hypothesis 1.2. Age perception would be negatively correlated with Positive and Negative Urgency, Lack of Premeditation, and Sensation Seeking based on the theory of disinhibition (Araji & Finkelhor, 1985).

Aim 2. Examined alcohol-related priming effects on age perception and attraction.

Hypothesis 2.1. Alcohol priming would be positively related to age perception (Freeman, Friedman, Bartholow, & Wulfert, 2010). In contrast, the mood and control conditions would have no effect on age perception.

Hypothesis 2.2. Alcohol priming would be positively related to attraction (Abbey et al., 2004; Egan & Cordan, 2009). In contrast, the mood and control conditions would have no effect on level of attraction.

Aim 3. Determined to what extent condition (alcohol priming vs. mood vs. control) moderated the impulsivity-attraction relationship, assuming impulsivity was related to underage attraction.

Hypothesis 3.1. Condition would moderate the effect that Positive and Negative urgency has on attraction. That is, the alcohol prime condition would strengthen the relationship between Positive and Negative Urgency and attraction ratings.

Hypothesis 3.2. Condition would moderate the effect that Positive and Negative urgency has on age perception. That is, the alcohol prime condition would strengthen the relationship between Positive and Negative Urgency and age perception ratings.

CHAPTER 2

METHOD

Participants

A total of 97 undergraduate participants ($M_{age} = 19.2$; $SD = 1.21$) completed this study and were recruited through SONA, Georgia Southern University's Experiment Management System. The sample consisted of mostly female (64.9%, $n = 63$) and freshman (58.8%, $n = 57$) undergraduate students. This study also included mostly self-identified heterosexual individuals (89.7%, $n = 87$). Participants earned 1 credit for their participation; alternative options for class credit were available at the discretion of instructors for those unwilling to participate in research. Any one over the age of 18 was eligible to participate. All procedures were approved by the IRB at Georgia Southern University prior to data collection.

Measures

Demographics. A demographic questionnaire was developed for the purpose of this study. Participants provided information regarding age, sexual orientation, academic status, and gender.

Urgency, Premeditation, Perseverance, Sensation Seeking, Positive Urgency Impulse Behavior Scale (UPPS-P). The UPPS-P (Whiteside & Lynam, 2001) is used to measure the four facets of impulsivity. This enables an overall understanding of a person's level of impulsivity. The original measure contained four facets of impulsivity, including: Negative Urgency (a personality trait that leads to people acting rashly when distressed), Lack of Premeditation (the tendency to not think before acting), Lack of Perseverance (the tendency to not be able to remain focused on a difficult or boring task), and Sensation Seeking (the tendency to pursue exciting experiences and activities that may or may not be dangerous). This measure was validated by comparing other commonly used impulsivity measures at the time with the new UPPS (Whiteside & Lynam, 2001),

including the NEO-PI-R, a revised method of measuring the Big 5 Personality Traits (Costa & McCrae, 1992). Later, Muehlenkamp and Claes (2013) added a fifth dimension of Positive Urgency to the revised UPPS-P. The reliability of the UPPS-P in the current study was adequate across all five scales: Positive Urgency ($\alpha = .92$), Negative Urgency ($\alpha = .87$), Sensation Seeking ($\alpha = .85$), Lack of Premeditation ($\alpha = .84$), and Lack of Perseverance ($\alpha = .82$).

Level of Attractiveness Scale (LAS). A modified single-item self-report measure of subjective level of attraction, similar to that used by Egan and Cordan (2009), was used for the purpose of this study. The LAS consists of a single statement whereby the participant rates how attractive a stimulus picture is using a Likert-type scale ranging from 1 (“Not at all”) to 5 (“Very”). This item was administered for a total of 20 images (10 male and 10 female), and an average total score was calculated for overall level of attractiveness to all stimuli.

Age Perception Scale (APS). The APS is single-item self-report measure quantifying participants’ age-estimation of the visual facial stimuli (see Appendix A for facial stimuli). For every facial stimulus viewed, a participant entered the number of years they perceive the person’s age to be in an open-ended dialog box. This item was administered a total of 20 times, and an average total score was calculated for overall age perception to all stimuli.

Filler Items. Filler items were included to reduce the chance participants would guess the nature of the study, and thereby contribute to demand characteristics. Filler statements included: “This person is nice,” “This person is intelligent,” and “I would get along with this person.” These questions were randomly administered with the APS and LAS items following each facial stimulus and were on another Likert-type scale ranging from 1 (“Strongly Disagree”) to 7 (“Strongly Agree”).

Materials

Priming Task. The single-target IAT assesses implicit attitudes toward stimuli by examining an individual's reaction time to the stimuli. The faster an individual's reaction is, the more strongly associated the concepts are in their memory (Greenwald, McGhee, & Schwartz, 1988). However, for the purposes of this study, the IAT was used as a primer for either alcohol or positive mood, depending on participants' assigned condition. Research shows the IAT has convergent validity with other priming measures, such as *Category Priming* (i.e., two stimuli presented in close succession on a single trial) and *Response-Window Priming* (i.e., adding an external timing signal to maintain rhythm of responding; Mellott, 2003). Two single-target IATs were created to prime alcohol (IAT-EtOH) and positive mood (IAT-mood).

Both single-target IATs were similarly constructed. The IAT-EtOH prime contained practice blocks and two critical test blocks. Practice blocks helped orient participants to the nature of the task and allowed them to practice, ensuring adequate performance of the task. The related critical block followed the practice block, and the critical blocks were presented in random order. The first, or "congruent," critical block required participants to categorize alcohol-related words (e.g., beer, whiskey, martini) and positive attribution words (e.g., good, okay, acceptable) using the same "e" key, and categorize only negative attribution words using the "i" key (e.g., bad, negative, inappropriate). In contrast, the second, or "incongruent," critical block required participants to categorize negative attribution words and alcohol-related words using the "i" key, and only positive attribution words using the "e" key of the keyboard. The IAT-mood prime also contained practice blocks and two critical test blocks. The first, congruent, critical block required participants to categorize positive mood-related words (e.g., happy, pleasant, ecstatic) and positive attribution words (e.g., good, okay, acceptable) on the same "e" key, and only negative attribution words

(e.g., bad, negative, inappropriate) using the “i” key. Conversely, the second, incongruent, critical block required participants to categorize positive mood words and negative attribution words using the same “i” key, and only positive attribution words on the “e” key. Each block was presented random 8 targets (i.e., positive mood or alcohol-related words) and 16 positive or negative attribution words. Traditionally a reaction time score is calculated by taking the average response times of the critical congruent block (e.g., alcohol and good) and dividing it by the critical incongruent block (e.g., alcohol and bad) to reveal the strength and direction of the association of the target-attribute combination in memory; however, for the purposes of the current study, repeated exposure to the target words served as the prime and traditional reaction time scores were not included in the final analyses.

Facial Stimuli. A set of young looking facial stimuli, consisting of both male and female individuals selected from a lifespan facial database (Minear & Park, 2004), was used for this study. The facial stimuli included faces with proportionally large eyes, a rounder chin, and thicker lips—common features associated with youth (Lorenz, 1943). The facial stimuli set included 10 men and 10 women for a total of 20 individual faces. For consistency, all pictures were frontward facing toward the camera, with a neutral background in black and white (see Appendix A for facial stimuli). While the faces in the stimuli set include younger-looking individuals, all are over the age of 18. Stimuli were presented in random order on a PC computer via MediaLab software.

Procedures

This study was conducted in the Alcohol, Mental, and Physical (AMP) Health Laboratory of the Psychology Department at Georgia Southern University, Statesboro Campus. One-to-two participants completed the study at a time. When there were two participants in the lab, the participants sat on opposite ends facing away from the others computer so they could not see what the other participant was doing. After reviewing the informed consent sheet, participants were randomly assigned to one of three conditions prior to completing the experiment: Control, Alcohol Prime, or Mood Prime.

Participants in the Control condition received no manipulation (i.e., exposure to priming stimuli), and only completed the self-report measures and evaluation of facial stimuli. Participants in the Alcohol Prime condition were primed with alcohol-related stimuli using the IAT-EtOH in order to examine the effect of alcohol priming on age perception and attractiveness ratings. In contrast, participants in the Mood Prime condition were exposed to positive mood words using the IAT-mood to determine if effects found are due to alcohol priming and not due to the participants being primed in general. In all three conditions, the participants viewed a variety of facial stimuli on the computer. As participants viewed the stimuli, they rated the perceived ages, levels of attraction, likability, intelligence, and friendliness of the faces. Following the rating of the stimuli, participants completed the UPPS-P and AUDIT in random order to account for ordering effects. Lastly, participants provided demographic information including age, gender, academic status, and sexual orientation before being debriefed.

CHAPTER 3

RESULTS

Relationships between Impulsivity, Attractiveness Ratings and Age Perception

To test aim one, a bivariate correlational analyses was used to identify relationships among facets of impulsivity, attractiveness ratings and age perception. The analysis revealed that overall rating of attractiveness was not correlated with any facet of impulsivity as measured by the UPPS-P. See Table 1 (Appendix B) for correlational results. The analysis also revealed that age perception was not correlated with any facet of impulsivity as measured by the UPPS-P. See Table 2 (Appendix B) for correlational results.

Priming Effects on Age Perception and Attractiveness Ratings

To test aim two, a one-way multivariate analysis of variance was used to analyze the effect of condition (Alcohol, Mood, and Control) on mean age perception and attractiveness ratings. Findings revealed no significant effect of condition on the combination of dependent variables (age perception and attractiveness rating), Wilk's $\Lambda = 0.95$, $F(4, 186) = 1.24$, $p = .29$, partial $\eta^2 = .03$. Participants in the Alcohol condition produced similar ratings of attractiveness ($M = 2.30$, $SD = .12$) to those in the Mood ($M = 2.19$, $SD = .122$) and Control ($M = 2.49$, $SD = .12$) conditions. Similarly, those in the Alcohol condition produced similar ratings of age perception ($M = 21.81$, $SD = .43$) to those in the Mood ($M = 21.89$, $SD = .44$) and Control ($M = 21.0$, $SD = .44$) conditions.

Effects of Alcohol Priming on the Urgency-Perceived Attraction Relationship

To test aim three, a moderation analysis via hierarchical multiple regression was conducted to test the hypothesis that alcohol priming would moderate the relationship between a combined impulsivity score, consisting of negative and positive urgency, and rating of attractiveness. In the first step, two variables were included: positive/negative urgency and Alcohol condition. These variables accounted for a nonsignificant amount of variance in attractiveness ratings, $R^2 = .001$, $F(2, 94) = .04$, $p = .85$, $f^2 = .001$. Next, the interaction term between Alcohol condition and positive/negative urgency was added to the regression model, which also accounted for a nonsignificant amount of variance, $\Delta R^2 = .02$, $\Delta F(1, 93) = .06$, $p = .95$. The first model was not significant in accounting for attractiveness ratings, thus the alcohol priming condition was not found to be a significant moderator of the impulsivity (urgency)-attractiveness relationship.

Effects of Alcohol Priming on the Urgency-Age Perception Relationship

To test aim three, moderation analysis via hierarchical multiple regression was conducted to test the hypothesis that alcohol priming would moderate the relationship between a combined impulsivity score (negative/positive urgency) and perceived age. In the first step, two variables were included: positive/negative urgency and the Alcohol condition. These variables accounted for a nonsignificant amount of variance in age perception ratings, $R^2 = .01$, $F(2, 94) = 1.66$, $p = .20$, $f^2 = .006$. Next, the interaction term between Alcohol condition and positive/negative urgency was added to the regression model. The interaction term also accounted for a nonsignificant amount of variance, $\Delta R^2 = .01$, $\Delta F(1, 93) = -.003$, $p = .18$. The second model was not significant in accounting for perceived age ratings, thus the alcohol priming condition was not found to be a significant moderator of the impulsivity (urgency)-perceived age relationship.

CHAPTER 4

DISCUSSION

The purpose of this study was to add to the limited research on sexual assault cases involving victims under 18. The current study examined the extent to which alcohol priming affects age perception and level of attraction. This study also examined if alcohol priming changes the strength and direction of the relationship between impulsivity (negative and positive urgency) and age perception and level of attraction, respectively, in an attempt to expand the literature on how alcohol priming effects can play a role in sexual assault cases; particularly cases involving victims who are under 18. By investigating these psychological factors, researchers gain an understanding of factors that lead an individual to engage in sexual assault, specifically of an underage individual. Research in this area is necessary for helping professionals to create well-informed and effective treatment interventions and protocols for perpetrators in the future.

Impulsivity, Attractiveness, and Age Perception

This study examined the extent to which level of attraction and age perception is related to various facets of impulsivity. Attractiveness ratings were hypothesized to be positively correlated with impulsivity, specifically Positive and Negative Urgency, Lack of Premeditation, and Sensation Seeking subscales of the UPPS-P. Inconsistent with literature linking sexual aggressiveness and impulsivity (Mouilso et al., 2013), traits of impulsivity were not correlated with rating facial stimuli as more attractive. It is possible these results are more reflective of the types of measurements used rather than the absence of a true relationship. That is, the measurement of attraction used in the current study does not encapsulate sexual aggressiveness, nor does it tease out differences between sexual attraction and generalized attractiveness ratings.

Previous research investigating alcohol, impulsivity, and perceptions of attraction has its limitations. Potential differences between general attractiveness and sexual attractiveness as an operational construct have been overlooked, and arguably this study tapped into generalized attractiveness. That is, much like the research done by Egan and Cordan (2009) and Friedman, McCarthy, Förster, and Denzler (2005), this study used a single-item rating of attractiveness which might not have been nuanced enough to pick up on significant differences between general attractiveness and sexual attractiveness. Using other methods, such as computer-assisted interviewing procedures used in human sexuality research (e.g., Chandra, Copen, & Mosher, 2013; Smith, Rissel, Richters, Grulich, & Visser, 2003), to tap into sexual attraction and related behaviors could yield more meaningful results. More nuanced ratings of attractiveness must be used in future research in this area in order to determine the extent to which sexual attraction is impacted by both experimental manipulation and psychological characteristics, such as impulsivity.

Age perception was also hypothesized to be negatively correlated with impulsivity, specifically Positive and Negative Urgency, Lack of Premeditation, and Sensation Seeking. In other words, it was expected that as levels of impulsivity increase, the younger the facial stimuli would be perceived. This hypothesis was also unsupported by the current results, which suggests an absence of relationship between age perception and traits of impulsivity. These null findings refute the primary tenets posited by the disinhibition theory of pedophilia (Araji & Finkelhor, 1985), namely the claim that while offenders may recognize the person is underage, they choose to ignore social cues of youth due to the disinhibiting effects of alcohol and/or their lack of inhibition from personality traits (e.g., impulsivity).

Evidence suggests people's beliefs and expectations of the effects of alcohol have a powerful influence on subsequent behaviors. For instance, those who hold expectations that alcohol will increase sexual desire are linked to rating others as more attractive (Friedman, McCarthy, Förster, & Denzler, 2005). Moreover, research also suggests a subset of people view alcohol as an excuse for engaging in socially unacceptable behaviors, including sexual aggression (Abbey, Ross, McDuffie, & Mcaulsan, 1996). Literature linking alcohol with pedophilia (e.g., Aarens, 1978) suggests perpetrators do not, in fact, have a skewed sense of reality by interpreting potential victims as older; rather, the perpetrator might expect that by ingesting alcohol they can "excuse" their actions to enable commitment of sexual assault in spite of the cues of youth. Thus, it is possible that in the current study unassessed alcohol expectations impacted the results in unforeseen ways. In other words, the sample may have generally weak alcohol-related expectations regarding alcohol as effective in increasing sexual desire, therefore attraction ratings were unaffected. Furthermore, the absence of consumption of alcohol may have removed the use of alcohol as a scapegoat for participants' to engage in undesirable behaviors (i.e., rating youthful stimuli as young and attractive).

In sum, it is possible that traits of impulsivity alone do not relate to one's perception of age or attractiveness to youthful faces, but other psychological variables, such as alcohol-related expectations, might. Evidence suggests it is possible to excuse undesirable actions while under the influence of alcohol (alcohol-related beliefs), which enables the person to sexually assault a victim under the age of 18. It is also possible impulsivity plays a role in sexual assault, but perhaps this relationship is context-dependent (i.e., consumption of alcohol vs. alcohol priming). More research is needed to draw any definitive conclusions.

Alcohol Priming, Attraction, and Age Perception

A primary aim of this study was to determine the effects of alcohol priming on age perception and attractiveness ratings. It was predicted that facets of positive and negative urgency (impulsivity) would be related to both higher scores of attractiveness and younger perceptions of age when viewing the facial stimuli, and the strength of these relationships would be moderated by exposure to an alcohol priming task. The current findings do not support these hypotheses. Priming condition was not found to moderate the relationship between impulsivity and attraction, or impulsivity and age perception, as the result of the absence of a significant relationship between impulsivity and age perception and attraction, respectively.

Several possible explanations may account for the lack of effect of alcohol priming on age perception and attractiveness ratings. It is possible that because participants did not ingest alcohol, they were not sufficiently disinhibited, which may be required for the supposed effect of alcohol priming on age perception and attractiveness ratings. Very little research has investigated priming effects on impulsivity in the context of sexual attraction to youth. The nonsignificant findings in the current study may suggest more robust priming methods may be required for disinhibition to occur. For example, using visual stimuli of alcohol as in Bartholow and Heinz (2006), or even the actual ingesting of alcohol similar to Egan and Cordan (2009) might have elicited significant results.

Although additional research is needed in the area of alcohol priming, impulsivity, and attraction to youth, the current findings could be the result of alcohol priming having truly no impact on the assessment of one's age perception and attractiveness ratings. Some research suggests consumption of alcohol does not change the way a person views another individual (e.g., Egan & Cordan, 2009). This research might add to the literature that social and pharmacological effects of alcohol do not relate to attraction towards youth.

Limitations

Given that this is a relatively untapped area of investigation, this study is not without its limitations. The failing of this study to produce significant results may be more due to methodological considerations than an absence of true relationships between attraction, age perception, impulsivity, and alcohol priming. For instance, nonsignificant results could be due to an ineffective priming task as a manipulation. Furthermore, use of alternative measures to assess attraction or other forms of impulsivity may yield more fruitful results.

Additional limitations involve the sample of the current study, both in terms of size and composition. First, a total of 137 participants were needed in the final data analyses to reach adequate power, yet only 97 participants were recruited due to time constraints. Second, a notable gender difference leading to an unequal representation of the population was also present, with 65% of participants being women. This could have impacted the results in unforeseen ways because statistics reveal men tend to be the perpetrators of sexual violence more often than women (Walters, Jenkins, & Merrick, 2012). Third, most of the participants were under the age of 21, and this study was focused on sexual abuse of younger individuals. The age gap between 21 and 12-17 is fairly close, therefore differences in age may not have been apparent. If the sample was older or more diverse, the results may have been different such that participants might interpret the stimuli as being significantly younger in comparison to themselves.

Future Directions

This study attempted to expand the literature on the effects of alcohol priming, specifically as it relates to sexual aggression in youth ages 12-17, while simultaneously understanding the role

of impulsivity as it relates to sexual assault. Moving forward in this research, a number of methodological issues should be considered in the experimental design. For instance, future research is needed to determine the most salient priming methods, perhaps by using physical primes (e.g., a bar or cans of beer) instead of lexical-based primes, to ensure effective manipulation across conditions. This study did not assess the effectiveness of the alcohol prime, so it might be beneficial for future studies to include a manipulation check. One way to do this would be to include a task similar to Bartholow & Heinz, (2006) which assess for reaction to aggressive words. If the alcohol prime was successful, participants in the Alcohol condition should react faster to aggressive words than participants in the other conditions. More research is also needed regarding alcohol's effects when it comes to the sexual assault of underage individuals. Perhaps using a similar experiment of rating facial stimuli (but with a younger database), actual alcohol, and an older sample might yield significant results. Another important area of research is to develop standardized measures of sexual aggression and attraction in the specific context of youths between the ages of 12-17, both for research and intervention purposes. Lastly, more research is needed across diverse samples to determine the extent to which demographic variables, such as age of a participant, influences the extent to which stimuli is viewed as more mature, particularly following exposure to an alcohol-related priming task. Another population that should be looked at are actual perpetrators of sexual assault. It could be that these effects are only found in people who have committed some form of sexual assault.

Conclusion

The purpose of this study was to investigate the relationship between alcohol and sexual assault of underage individuals. While there were no significant results, this research further contributes to the literature on what could lead to sexual assault. This research does not support the

theory of disinhibition because higher levels of impulsivity did not correlate with age perception. However, this could mean that while people who commit these acts are more disinhibited (Abbey et al., 2004), they do not necessarily delude themselves into thinking the victim is older than he or she appears. Instead, perpetrators may use the alcohol as a possible excuse to commit the crime, while also being more willing to commit sexual assault from the disinhibition caused by alcohol ingestion. More research in this area is desperately needed, as sex crimes continue to occur. This type of research can help facilitate treatment plans for offenders by understanding different contributing factors to their actions.

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Appendix A
Sample Female Faces



Sample Male Faces



Appendix B: Tables

Table 1.
Relationship between Impulsivity and Attractiveness Ratings

	Attractiveness Ratings	Perseverance	Negative Urgency	Premeditation	Sensation	Positive Urgency
Attractive	—	—	—	—	—	—
Perseverance	-0.068	—	—	—	—	—
Negative	-0.032	-0.009	—	—	—	—
Premeditation	0.087	.316**	-.339**	—	—	—
Sensation	0.06	-0.059	0.124	-.279**	—	—
Positive	0.012	-0.076	.711**	-.417**	.352**	—

Scores with ** are significant at the $p < .01$ level.

Table 2.
Relationship between Impulsivity and Age Perception

	Age Perception	Perseverance	Negative Urgency	Premeditation	Sensation	Positive Urgency
Age Perception	—	—	—	—	—	—
Perseverance	0.026	—	—	—	—	—
Negative	0.07	-0.009	—	—	—	—
Premeditation	-0.13	.316**	-.339**	—	—	—
Sensation	-0.036	-0.059	0.124	-.279**	—	—
Positive	-0.071	-0.076	.711**	-.417**	.352**	—

Scores with ** are significant at the $p < .01$ level.