

Alcohol and Memory for Crimes (non-blackout)

Alcohol, and the effects of alcohol on memory and general cognitive functioning, has been the subject of much research over the years.

Alcohol acts as a general central nervous system depressant, but it affects some areas of the brain more than others. Specifically, it leads to distraction and inattention and significantly inhibits neuronal activity in the hippocampus, which impairs memory encoding since the hippocampus plays an important role in the formation of new declarative memories. Because procedural memory functions more or less automatically, retrieval of procedural memory (“remembering how”) is not as severely impaired by alcohol as retrieval of declarative memory (“remembering what”).

Alcohol particularly impairs the encoding of episodic memory (that part of declarative memory that relates to our personal experiences and specific events in time), especially for certain types of recall, such as cued recall, the recognition of completed word fragments and free recall. A "blackout" is an example of a difficulty in the encoding of episodic memories due to high doses of alcohol. It is caused by a rapid increase in blood alcohol concentration, which in turn distorts the activity of neurons in the hippocampus, thus impairing person's ability to form new episodic memories. Alcohol also severely disrupts the encoding and storage process of new semantic memories (our memory of facts, meanings and acquired knowledge about the external world), although apparently not that of previously learned information.

Alcohol also impairs short-term (working) memory, although mainly by affecting certain mnemonic strategies and executive processes rather than by shrinking the basic holding capacity of working memory or by physically altering the structure of those parts of the brain which are critical for working memory function. Although light to moderate drinking does not appear to impair long-term cognitive functioning significantly (and according to some studies, may actually decrease the risk of cognitive decline), heavy drinking and chronic alcoholism is associated with long-term impairment in sustained attention and working memory function, especially visual working memory.

Serious over-consumption of alcohol, especially in comparison with the intake of other foods, can cause a thiamine deficiency, leading to a much more serious form of amnesia known as Korsakoff's syndrome.

The Human Memory website: http://www.human-memory.net/disorders_alcohol.html

Alcohol's Impact on Memory of Criminal Events (non-blackout)

- Research on *alcohol myopia* finds alcohol consumption decreases perceptual and cognitive functioning, and ultimately the amount of information that individuals can process. Consequently, when a person is intoxicated, the range of information they can pay attention to is restricted, such that they are able to attend to only some of the information that could be registered by a sober person. In addition, their ability to fully analyze registered information is impaired.
- This has important implications for memory encoding. With less perception, less data is available to be recorded into memory. Intoxicated witnesses can potentially be compromised in their ability to perceive and encode various details of an event.
- Alcohol affects women's reports more than men's, which may be because alcohol affects attention and memory consolidation more clearly at a lower dose for women than for men. (Karlén, 2015)
- Moderately and highly intoxicated individuals are less complete when recollecting crime details. (van Oorsouw, 2012)

- One study suggests that a second interview 24-hours after intoxication can produce additional details of a crime. (La Rooy, 2013)
- Severely intoxicated participants display a greater tendency to go along with suggestive cues compared with sober participants. Intoxication impaired memory and increased suggestibility during an immediate interview, and both effects persisted when sober again. (Van Oorsouw, 2015, but see Gawrylowicz, 2017)

Research Abstracts on Alcohol and Memory for Crimes

Alcohol myopia: Its prized and dangerous effects.

Steele, Claude M., Josephs, Robert A.

American Psychologist, (1990). 45(8), 921–933.

Abstract

This article explains how alcohol makes social responses more extreme, enhances important self-evaluations, and relieves anxiety and depression, effects that underlie both the social destructiveness of alcohol and the reinforcing effects that make it an addictive substance. The theories are based on alcohol's impairment of perception and thought—the myopia it causes—rather than on the ability of alcohol's pharmacology to directly cause specific reactions or on expectations associated with alcohol's use. Three conclusions are offered: (a) Alcohol makes social behaviors more extreme by blocking a form of response conflict. (b) The same process can inflate self-evaluations. (c) Alcohol myopia, in combination with distracting activity, can reliably reduce anxiety and depression in all drinkers by making it difficult to allocate attention to the thoughts that provoke these states. These theories are discussed in terms of their significance for the prevention and treatment of alcohol abuse.

Alcohol use in male spouse abusers and their female partners

Ola W. Barnett and Ronald W. Fagan

Journal of Family Violence. (March 1993). Volume 8, Issue 1, pp 1–25

Abstract

Patterns of alcohol use of 181 maritally violent and maritally nonviolent men and their female partners differed on subscales of the Quantity-Frequency Index. Two abuser groups (43 uncounseled and 46 counseled) drank significantly greater amounts and for different psychological reasons than two nonabuser groups (50 satisfactorily married and 42 discordant). However, group frequency rates did not vary. The abuser groups had experienced and observed significantly more violence during childhood than the nonabuser groups; further, they reported significantly more current life stress. The female partners of the abusers did not differ in global alcohol use; however, they drank substantially more than their counterparts. They were especially prone to drink in response to battering. About one fourth of the abusers and one fifth of their wives drank frequently during abusive episodes. Stressors and depressors most likely precipitated both drinking and battering, with strain, hostility, and alcohol myopia (altered perception) serving as intervening variables. Results clarify contradictory reports concerning the role of alcohol in family violence.

Alcohol-related sexual assault: a common problem among college students.

Antonia Abbey

Journal of Studies on Alcohol, Supplement, (2002). (s14), 118–128.

Abstract

Objective: This article summarizes research on the role of alcohol in college students' sexual assault experiences. Sexual assault is extremely common among college students. At least half of these sexual assaults involve alcohol consumption by the perpetrator, the

victim or both. Methods: Two research literatures were reviewed: the sexual assault literature and the literature that examines alcohol's effects on aggressive and sexual behavior. Results: Research suggests that alcohol consumption by the perpetrator and/or the victim increases the likelihood of acquaintance sexual assault occurring through multiple pathways. Alcohol's psychological, cognitive and motor effects contribute to sexual assault. Conclusions: Although existing research addresses some important questions, there are many gaps. Methodological limitations of past research are noted, and suggestions are made for future research. In addition, recommendations are made for college prevention programs and policy initiatives.

The intoxicated witness: Effects of alcohol on identification accuracy from showups.

Dysart, J. E., Lindsay, R. C. L., MacDonald, T. K., & Wicke, C.
Journal of Applied Psychology, (2002). 87(1), 170–175.

Abstract

The effect of alcohol on identification accuracy is potentially an important topic. This study examined the effects of alcohol consumption on identification accuracy from showups, the identification procedure most likely to be used by police with intoxicated witnesses. The blood alcohol level of people exposed to a target was measured. In the target-present showup condition, blood alcohol level was not significantly related to correct identification rate. In the target-absent showup condition, the higher the blood alcohol level, the more people were likely to make a false identification. Implications for law enforcement and future research directions are discussed.

Collegiate alcohol use and high-risk sexual behavior: A literature review.

Kaly, Perry W. Heesacker, Martin Frost, Hanna M.
Collegiate alcohol use and high-risk sexual behavior: A literature review. (2002). Journal of College Student Development, 43(6), 838–850.

Abstract

Studies concerning collegians' alcohol use and high-risk sexual behavior are summarized. Two theories of alcohol use and risky behavior are discussed: disinhibition theory and alcohol myopia theory. Suggestions for future research and implications for student personnel professionals are also provided.

Blind drunk: the effects of alcohol on inattentional blindness

Seema L. Clifasefi Melanie K. T. Takarangi Jonah S. Bergman
Applied Cognitive Psychology (July 2006). Vol. 20, Issue 5, pp. 697-704.

Abstract

Alcohol consumption is a major contributor to road accidents. While it is likely that perceptual processing deficits contribute to poorer driving performance among intoxicated individuals, we know little about alcohol's role in particular perceptual processes. For instance, we know that even sober individuals can fail to detect unexpected salient objects that appear in their visual fields, a phenomenon known as inattentional blindness (IB; Mack & Rock, 1998). We were interested in whether these visual errors become more or less likely when subjects are under the influence of alcohol or just think that they are drunk. We told half our subjects that they had received alcohol, and half that they had received a placebo. This information was either true or false. Intoxicated subjects (regardless of what they were told) were more likely to show 'blindness' to an unexpected object in their visual field. This finding has practical implications for human performance issues such as driving and eyewitness memory, and theoretical implications for visual cognition.

Alcohol's Effects on Sexual Decision Making: An Integration of Alcohol Myopia and Individual Differences

Kelly Cue Davis Christian S. Hendershot William H. George Jeanette Norris Julia R. Heiman
Journal of Studies on Alcohol and Drugs, 68(6), 843–851 (2007).

Abstract

Objective: We conducted an experiment to test the applicability of integrating individual perceptions of unprotected sex consequences with alcohol's myopic effects as an explanatory

framework for risky sexual decision making in young heterosexual men and women. Method: Male and female participants (N = 61) rated their perceptions of unprotected sex consequences, received alcoholic (target breath alcohol concentration = .10%) or nonalcoholic drinks, and completed a risky sexual decision-making task that included a quantitative measure of sexual decision-making cue attention. Results: Intoxicated participants were more attentive to impelling cues and reported greater sexual risk intentions than sober participants. Mediation analyses indicated that attention to cues fully mediated the alcohol-sexual risk intention relationship. Moderational analyses revealed that alcohol's focusing effect acts in conjunction with pre-existing individual perceptions to influence cue salience directly and sexual risk intentions indirectly. Conclusions: Findings demonstrate the importance of examining predispositional tendencies when investigating alcohol myopia as a mediating mechanism underlying the alcohol-risky sex relationship.

Alcohol Myopia Revisited: Clarifying Aggression and Other Acts of Disinhibition Through a Distorted Lens

Peter R. Giancola, Robert A. Josephs, Dominic J. Parrott.

Perspectives on Psychological Science. (May 18, 2010) Vol 5, issue 3, pp. 265-278.

Abstract

The alcohol myopia model (AMM; Steele & Josephs, 1990) is reviewed in light of its unique ability to account for a variety of alcohol and nonalcohol-related disinhibited behaviors, particularly aggression. The AMM posits that alcohol has a narrowing, or a "myopic," effect on one's ability to attend to competing instigatory and inhibitory cues. Disinhibited behavior is presumed to occur when attention is directed toward salient provocative or instigatory cues rather than inhibitory cues. AMM research is reviewed with regard to stress and anxiety, risky sexual behavior, drinking and driving, suicide, disinhibited eating, smoking, and alcohol-related aggression. The AMM is also expanded by proposing five key mechanisms (i.e., negative affect, angry affect, hostile cognitive rumination, self-awareness, and empathy) that are likely to explain how the model is specifically involved in the alcohol-aggression relation. Finally, a number of public health interventions, extrapolated from the AMM, are proposed to stimulate future research directed at reducing the prevalence of alcohol-related violence.

Alcohol Use and High-Risk Sexual Behavior Among Collegiate Women: A Review of Research on Alcohol Myopia Theory

Jessica A. Griffin MA, M. Renée Umstadtd PhD & Stuart L. Usdan PhD

Journal of American College Health. (Oct 2010). Vol 58, Issue 6, pp. 523-532

Abstract

A review of current English literature in the areas of high-risk alcohol use and sexual behavior was conducted from September 2007 to December 2008. Objective: The purpose was to specifically review studies that used alcohol myopia theory (AMT) as the theoretical perspective from which they were evaluated and analyzed. Participants: Collegiate women were the population of interest in the review. Methods: Literature was acquired through searches within the Academic Search Premier and PubMed databases using the keywords "college," "women," "risk," "alcohol," "sex," and "alcohol myopia." Results: Results articulate the high prevalence of negative sexual consequences related to alcohol use among college-aged women and the utility of AMT. Conclusions: Future interventions aimed at decreasing high-risk alcohol and sexual behaviors among college women should incorporate AMT. Continued theory-based research examining the relationship between alcohol use and sexual behavior is needed to inform future interventions and better understand why college women continue to consume high levels of alcohol and engage in risky sexual behaviors despite the threat of negative consequences.

Public house patrons' engagement in hypothetical sexual assault: a test of Alcohol Myopia Theory in a field setting

Heather D. Flowe, Jade Stewart, Emma R. Sleath, Francesca T. Palmer

Aggressive Behavior. (2011). Vol. 37, Issue 6, pp. 547-558.

Abstract

Previous research has found that drinking establishments are often antecedent to sexual aggression outcomes. In this study, male participants were randomly selected from public houses (i.e., "pubs")

and asked to imagine themselves in a hypothetical intimate encounter in which the female in the scenario stops consenting to sexual contact. Participants were given the option to continue making sexual advances up to and including sexual intercourse against the woman's will. It was hypothesized based on Alcohol Myopia Theory that participant blood alcohol concentration (BAC) levels would be associated with hypothetical sexual aggression when stereotypical cues of a woman's sexual availability (revealing clothing and alcohol use) were present in the scenario. Men's engagement in hypothetical sexual aggression was associated with BAC levels, but only when the woman was wearing revealing clothing. The sobriety of the female actor was not associated with sexual aggression. Results indicate that Alcohol Myopia Theory generalizes to a field setting.

Alcohol intoxication and memory for events: A snapshot of alcohol myopia in a real-world drinking scenario

Nadja Schreiber Compo, et. al.

Memory. (2011). Vol. 19, issue 2, pp. 202-210

Abstract

Alcohol typically has a detrimental impact on memory across a variety of encoding and retrieval conditions (e.g., Mintzer, 2007; Ray & Bates, 2006). No research has addressed alcohol's effect on memory for lengthy and interactive events and little has tested alcohol's effect on free recall. In this study 94 participants were randomly assigned to alcohol, placebo, or control groups and consumed drinks in a bar-lab setting while interacting with a "bartender". Immediately afterwards all participants freely recalled the bar interaction. Consistent with alcohol myopia theory, intoxicated participants only differed from placebo and control groups when recalling peripheral information. Expanding on the original hypervigilance hypothesis, placebo participants showed more conservative reporting behaviour than the alcohol or control groups by providing more uncertain and "don't know" responses. Thus, alcohol intoxication had confined effects on memory for events, supporting and extending current theories.

Understanding Acute Alcohol Effects on Sexual Behavior

William H. George & Susan A. Stoner

Journal Annual Review of Sex Research (Nov. 2012). Volume 11, 2000 - Issue 1

Abstract

Alcohol has been implicated as having a causal role in a variety of sexual processes and outcomes. We review nonexperimental research illustrating the nature of alcohol's association with sexuality. Methodological considerations limiting causal assertions permissible with nonexperimental data are discussed. We also review findings from experiments, mostly analogue paradigms, examining the effects of alcohol on genital arousal, sexual risk taking, and sexual assault. In each case, it is observed that alcohol can exert a causal effect on one or more of the constituent responses undergirding these phenomena. We conclude that alcohol does appear to have a causal impact on many sexuality indices studied in laboratory conditions. Both alcohol expectancy and alcohol myopia models have been applied to explain these causal linkages. Expectancy models seem to account well for postdrinking sexual reactions and perceptions. Overall, myopia analyses seem to offer the most persuasive explanations of postdrinking expressions of sexual risk taking and sexual assault.

The Effects of Alcohol on Crime-related Memories: A Field Study

van Oorsouw, Kim, Harald Merckelbach

Applied Cognitive Psychology, Vol 26(1), Jan-Feb, 2012 pp. 82-90. Publisher: John Wiley & Sons

Summary

This field study investigated to what extent memory of criminally relevant details is affected at (close to) zero ($M_{BAC} = 0.00\%$), moderate ($M_{BAC} = 0.06\%$), and high ($M_{BAC} = 0.16\%$) levels of alcohol intoxication. Participants ($N = 76$) were approached in bars and were invited to watch a mock crime from a perpetrator perspective. We also measured their blood alcohol concentration levels. After 3–5 days, when participants were sober, they underwent a free and cued recall task about the mock crime. **Compared with sober controls, both moderately and highly intoxicated individuals were less complete when recollecting crime details, recalling up to 33% fewer correct details. Overall, intoxicated participants were less accurate during the cued recall task (i.e. they produced more**

errors) relative to sober participants. These accuracy effects were dose-dependent for cued recall of salient features. Implications for police interrogations of defendants are discussed.

Effects of alcohol on sequential information processing: Evidence for temporal myopia.

Fleming, Kimberly A. Bartholow, Bruce D. Sable, Jeffrey Pearson, Melanie Fabiani, Monica Gratton, Gabriele

Psychology of Addictive Behaviors, (2013). 27(1), 184–190.

Abstract

Alcohol Myopia Theory (AMT) posits that alcohol restricts the focus of attention, such that behaviors are determined only by highly salient environmental cues. While AMT is most commonly understood in terms of spatial attention, the present study tested the effects of alcohol in the temporal domain of attention. Seventy-one participants consumed either a placebo beverage or one of two doses of alcohol (0.40g/kg or 0.80g/kg ETOH) before performing an auditory discrimination task while event-related potentials (ERPs) were recorded. Consistent with typical sequential effects, placebo participants showed increased P300 amplitude and slowed behavioral responses when the current target differed from the two-back tone. In contrast, alcohol caused increased P300 and response slowing when the target tone differed from the one-back tone. These findings suggest that alcohol increases the salience of more recently encountered information, consistent with the general tenets of AMT.

Bottled memories: On how alcohol affects eyewitness recall.

Hagsand, Angelica, et al.

Scandinavian Journal of Psychology, Vol 54(3), June, 2013. pp. 188-195.

Abstract:

This study investigated how different doses of alcohol affected eyewitness recall. Participants ($N = 126$) were randomly assigned to three groups with different blood alcohol concentration (BAC), either a control group (mean BAC 0.00%, $N = 42$), a lower alcohol dose group (mean BAC 0.04%, $N = 40$), or a higher alcohol dose group (mean BAC 0.06%, $N = 44$). After consumption, participants witnessed a movie of a mock crime and were interviewed one week later. The main results showed that witnesses with the higher intoxication level recalled fewer details compared to witnesses with the lower intoxication level. The amount of alcohol consumed did not have an impact on the accuracy rate. No sex differences were found. The results are discussed in the light of past research. We conclude that more studies are needed before recommendations can be made to an applied setting.

Intoxicated Eyewitnesses: The Effects of Alcohol on Eyewitness Recall across Repeated Interviews

La Rooy, D., Nicol, A., and Terry, P.

Open Journal of Medical Psychology, 02, 03, (107), (2013).

Abstract

The study evaluated the usefulness of repeat-interviewing of witnesses to crimes who were intoxicated by alcohol at the time of the incident and their first interview, and then re-interviewed when not intoxicated the following day. Sixty young, social drinkers were divided into three groups. One group was given a “placebo” (alcohol-like) beverage, a second was given a “low dose” of alcohol (0.2 g/kg men; 0.17 g/kg women), and a third was given a “high dose” of alcohol (0.6 g/kg men; 0.52 g/kg women) over a 15 minute period. Twenty minutes later they viewed a 4-minute video of a crime, and afterwards they were given two opportunities to recall everything that they could remember from the incident; the first opportunity was immediately after the event, and the second was 24 hours later. Analyses of the quantity and accuracy of the details recalled revealed no overall increase in the total amount of information recalled between the first and second recall opportunities. However, on average, 18% of the details recalled by participants in the second test were new and accurate. The incidence of contradictions between the first and second recall opportunities was less than 1%. Surprisingly, none of the effects were influenced by alcohol, even at the highest dose. The results imply that 1) memory for at least some incidents observed under the influence of alcohol is resilient even up to relatively high blood-alcohol levels; and 2) the repeated interviewing of witnesses who were intoxicated at the time of the crime can reveal

additional, reliable information that is not present at the initial interview, just as is the case for non-intoxicated witnesses.

Alcohol intoxicated eyewitnesses' memory of intimate partner violence.

Karlén, Malin Hildebrand, et al.

Psychology, Crime & Law, Vol 21(2), Feb, 2015. pp. 156-171.

Abstract:

Alcohol affects memory in many, and mostly negative, ways. This is a problem in legal contexts as many witnesses are alcohol intoxicated when taking part of the critical event. However, research is sparse regarding how, and under what circumstances, the reports of alcohol intoxicated witnesses differ from those of sober witnesses. This study investigated whether alcohol intoxicated and sober eyewitnesses differ regarding completeness, accuracy, and type of information reported, as well as whether gender influenced these variables. Eighty-seven healthy men ($n = 44$) and women ($n = 43$) received either an alcoholic beverage (0.7 g/kg) or a control (juice) in a laboratory setting before viewing a film picturing intimate partner violence. Ten minutes after viewing the film, they were interviewed. Reports by alcohol intoxicated women were less complete, but as accurate, as sober women's. In contrast, intoxicated and sober men did not differ regarding completeness or accuracy. Furthermore, compared with sober women, intoxicated women reported fewer actions but no difference was found between the groups regarding reported objects. At this moderate dose, alcohol affected women's reports more than men's, which may be because alcohol affects attention and memory consolidation more clearly at a lower dose for women than for men.

Alcohol intoxication impairs memory and increases suggestibility for a mock crime: A field study.

van Oorsouw, K., et al.

Applied Cognitive Psychology, Vol 29(4), Jul-Aug, 2015. pp. 493-501.

Abstract:

Defendants and witnesses are often intoxicated by alcohol. We investigated whether memory and resistance to suggestive cues are undermined at blood alcohol concentrations (BACs) that were (close to) zero ($M_{BAC} = 0.01\%$), moderate ($M_{BAC} = 0.06\%$), or high ($M_{BAC} = 0.16\%$). Participants ($N = 67$) were approached in bars and instructed to commit a mock crime. Immediately after this, their memory and susceptibility to suggestive questions were tested, and these were re-tested during a sober follow-up 3–5 days later. Compared with sober participants, moderate and severe intoxication was associated with lower levels of correctly recalled crime details during both test sessions (i.e. intoxicated and sober). Also, during both sessions, severely intoxicated participants displayed a greater tendency to go along with suggestive cues compared with sober participants. Thus, intoxication impaired memory and increased suggestibility during an immediate interview, and both effects persisted when sober again.

Intoxicated witnesses: Testing the validity of the Alcohol Myopia Theory.

Authors:

Crossland, Deborah, et al.

Applied Cognitive Psychology, Vol 30(2), Mar-Apr, 2016. pp. 270-281.

Abstract:

In an assessment of the Alcohol Myopia Theory (AMT), the effects of alcohol on an eyewitness's recall of high-salience and low-salience details were investigated. In a laboratory, Study 1 participants watched a staged videoed theft whilst either sober (control or placebo), above ($M_{BAC} = 0.09\%$) or below ($M_{BAC} = 0.06\%$) the UK drink-drive limit. A week later, a free recall and recognition tests were completed. Intoxication was not found to reduce recall accuracy using either recall task. In Study 2, whilst on a night out, participants watched the videoed theft with high ($M_{BAC} = 0.14\%$) or low ($M_{BAC} = 0.05\%$) blood alcohol concentrations (BACs). A week later, the free recall and recognition tests were attempted. High BACs were seen to impair recall when memory was assessed through free recall but not with the recognition test. Neither study found the attention narrowing predicted by AMT using either recall technique, although poor recall for low-salience details in all groups may have contributed to this result.

Booze cues and attentional narrowing: Neural correlates of virtual alcohol myopia.

By Gable, Philip A., Mechin, Nicole C., Neal, Lauren B.

Psychology of Addictive Behaviors, Vol 30(3), May 2016, 377-382

Abstract

Exposure to alcohol cues reduces the breadth of attentional scope, called “virtual myopia.” Past researchers have suggested approach motivation as a possible mechanism that underlies this myopia in response to alcohol cues. We expanded on these findings in the current study by identifying the neural underpinnings of the relationship between attentional narrowing, approach motivation, and exposure to alcohol cues. Participants completed 64 trials that consisted of neutral or alcohol-related stimuli followed by a measure of attentional narrowing (i.e., Navons letter task). Electroencephalography (EEG) was recorded during the experiment to assess greater left frontal hemispheric asymmetry, a measure of approach motivation. Results revealed that alcohol cues led to greater “virtual myopia” as measured by narrowed attentional scope. Greater left frontal activation to alcohol cues related to greater myopia, suggesting that approach motivation is associated with virtual myopia. Left frontal activation appears to be a neural correlate of cognitive narrowing related to approach motivation.

The effects of acute alcohol intoxication on the cognitive mechanisms underlying false facial recognition.

Colloff, Melissa F. and Flowe, Heather D.

Psychopharmacology, Vol 233(11), Jun, 2016. pp. 2139-2149.

Abstract:

Rationale: False face recognition rates are sometimes higher when faces are learned while under the influence of alcohol. Alcohol myopia theory (AMT) proposes that acute alcohol intoxication during face learning causes people to attend to only the most salient features of a face, impairing the encoding of less salient facial features. Yet, there is currently no direct evidence to support this claim.

Objectives: Our objective was to test whether acute alcohol intoxication impairs face learning by causing subjects to attend to a salient (i.e., distinctive) facial feature over other facial features, as per AMT.

Methods: We employed a balanced placebo design (N = 100). Subjects in the alcohol group were dosed to achieve a blood alcohol concentration (BAC) of 0.06 %, whereas the no alcohol group consumed tonic water. Alcohol expectancy was controlled. Subjects studied faces with or without a distinctive feature (e.g., scar, piercing). An old-new recognition test followed. Some of the test faces were 'old' (i.e., previously studied), and some were 'new' (i.e., not previously studied). We varied whether the new test faces had a previously studied distinctive feature versus other familiar characteristics.

Results: Intoxicated and sober recognition accuracy was comparable, but subjects in the alcohol group made more positive identifications overall compared to the no alcohol group.

Conclusions: The results are not in keeping with AMT. Rather, a more general cognitive mechanism appears to underlie false face recognition in intoxicated subjects. Specifically, acute alcohol intoxication during face learning results in more liberal choosing, perhaps because of an increased reliance on familiarity.

Alcohol-induced retrograde facilitation renders witnesses of crime less suggestible to misinformation.

Gawrylowicz, Julie., et al.

Psychopharmacology, Vol 234(8), Apr, 2017. pp. 1267-1275.

Abstract:

Rationale: Research has shown that alcohol can have both detrimental and facilitating effects on memory: intoxication can lead to poor memory for information encoded *after* alcohol consumption (anterograde amnesia) and may improve memory for information encoded *before* consumption (retrograde facilitation). This study examined whether alcohol consumed *after* witnessing a crime can render individuals less vulnerable to misleading post-event information (misinformation). Method: Participants watched a simulated crime video. Thereafter, one third of participants expected and received alcohol (alcohol group), one third did not expect but received alcohol

(reverse placebo), and one third did not expect nor receive alcohol(control). After alcohol consumption, participants were exposed to misinformation embedded in a written narrative about the crime. The following day, participants completed a cued-recall questionnaire about the event. Results: Control participants were more likely to report misinformation compared to the alcohol and reverse placebo group. Conclusion: The findings suggest that we may oversimplify the effect alcohol has on suggestibility and that sometimes alcohol can have beneficial effects on eyewitness memory by protecting against misleading post-event information.

Witnesses stumbling down memory lane: The effects of alcohol intoxication, retention interval, and repeated interviewing.

Hagsand, Angelica V., et al.

Memory, Vol 25(4), Apr, 2017. pp. 531-543.

Abstract:

Intoxicated eyewitnesses are often discredited by investigators and in court, but few studies have examined how alcohol affects witnesses' memory. The primary aim of the present study was to examine how intoxication (alcohol vs. control), retention interval (immediate vs. one week delay), and number of interviews (one vs. two interviews) affect witnesses' memory. The participants ($N = 99$) were randomly assigned to consume either orange juice or alcohol mixed with orange juice, and they all witnessed a filmed mock crime afterwards. The recall took place either (a) immediately and after a one week delay or (b) after a one week delay only. No main effect of alcohol was found on the quantity or quality of the witnesses' statements. Both intoxicated and sober witnesses recalled more details, and were more accurate, during immediate compared to delayed recall. For witnesses interviewed twice, an average of 30% new details were provided in the second compared to the first interview, and these were highly accurate. In sum, contrary to what one can expect, intoxicated witnesses with a low to moderate blood alcohol concentration (below 0.10%) were reliable witnesses.

Alcohol intoxicated witnesses: Perception of aggression and guilt in intimate partner violence.

Hildebrand Karlén, Malin, et al.

Journal of Interpersonal Violence, Vol 32(22), Nov, 2017. pp. 3448-3474.

Abstract:

Many witnesses to violent crimes are alcohol intoxicated, but research is lacking regarding how alcohol affects their perception of aggression and guilt. This study investigated to what extent alcohol intoxicated eyewitnesses differed from sober witnesses regarding how aggressive and guilty they perceived the involved parts in an intimate partner violence (IPV) situation. Eighty-seven healthy men ($n = 44$) and women ($n = 43$) were randomized to an alcohol group (0.7 g/kg) or a non-alcohol group. In a laboratory setting, alcoholic/non-alcoholic drinks were consumed before viewing a film depicting IPV between a man and a woman. Ten min after viewing, in an interview, the participants rated how aggressive and guilty they perceived the involved parts to be. Alcohol intoxicated participants perceived both parts' physically aggressive behavior as comparatively less severe, but their neutral behavior as more hostile. Sober witnesses perceived the man to be the most guilty part, whereas intoxicated witnesses distributed guilt more evenly. Alcohol had a strong but complex impact on the perception of aggression in IPV (i.e., heightened during the neutral interaction and lowered during physical aggression). These results may be explained by the cognitive consequences of alcohol's anxiety-dampening effects. Regarding the asymmetric difference in perceived guilt, stereotypical expectations of gender-appropriate behavior in an IPV situation may need to be considered.

Interviewing intoxicated witnesses: Memory performance in theory and practice.

Authors:

Hildebrand Karlén, Malin

Scandinavian Journal of Psychology, Nov 20, 2017.

Abstract:

Memory encoding and recall involving complex, effortful cognitive processes are impaired by alcohol primarily due to impairment of a select few, but crucial, cortical areas. This review shows

how alcohol affects some, but not all, aspects of eyewitnesses' oral free recall performance. The principal results, so far, are that: a) free recall reports by intoxicated witnesses (at the investigated BAC-levels) may contain less, but as accurate, information as reports by sober witnesses; b) immediate reports given by intoxicated witnesses may yield more information compared to reports by sober witnesses given after a one week delay; c) an immediate interview may enhance both intoxicated and sober witnesses' ability to report information in a later interview; and d) reminiscence seems to occur over repeated interviews and the new information seems to be as accurate as the previously reported information. Based on this, recommendations are given for future research to enhance understanding of the multifaceted impact of alcohol on witnesses' oral free recall of violent crimes.

The impact of own and others' alcohol consumption on social contagion following a collaborative memory task.

Thorley, Craig, and Christiansen, Paul.

Memory, Vol 26(6), Jul, 2018. pp. 727-740.

Abstract:

When one person alters his or her recollection of an event to be consistent with another person's erroneous account of the same event, social contagion has occurred. In two studies, we examined whether alcohol consumption influences the degree to which people engage in social contagion. In Study 1, participants consumed alcohol, an alcohol placebo, or a soft drink and then completed a collaborative recall test with a confederate who consumed a soft drink. In Study 2, participants consumed a soft drink and then completed a collaborative recall test with a confederate they believed had consumed a soft drink or alcohol (but no alcohol was ever consumed). In both studies, the confederate made scripted errors during the collaborative recall test. On post-collaborative individual recall and recognition tests, participants in both studies engaged in social contagion by including the confederate's errors in their own recollection. In Study 1, the drink participants consumed had no influence on social contagion. In Study 2, participants were less likely to engage in social contagion after collaborating with a confederate who had seemingly consumed alcohol. That same confederate was viewed as less accurate, trustworthy, and credible, which likely made participants less inclined to engage in social contagion.

Do intoxicated witnesses produce poor facial composite images?

Bayless, S. J., Harvey, A. J., Kneller, W., and Frowd, C. D.

Psychopharmacology, Vol 235(10), Oct, 2018. pp. 2991-3003.

Abstract:

Rationale: The effect of alcohol intoxication on witness memory and performance has been the subject of research for some time, however, whether intoxication affects facial composite construction has not been investigated. Objectives: Intoxication was predicted to adversely affect facial composite construction. Methods: Thirty-two participants were allocated to one of four beverage conditions consisting of factorial combinations of alcohol or placebo at face encoding, and later construction. Participants viewed a video of a target person and constructed a composite of this target the following day. The resulting images were presented as a full face composite, or a part face consisting of either internal or external facial features to a second sample of participants who provided likeness ratings as a measure of facial composite quality. Results: Intoxication at face encoding had a detrimental impact on the quality of facial composites produced the following day, suggesting that alcohol impaired the encoding of the target faces. The common finding that external compared to internal features are more accurately represented was demonstrated, even following alcohol at encoding. This finding was moderated by alcohol and target face gender such that alcohol at face encoding resulted in reduced likeness of external features for male composite faces only. Conclusions: Moderate alcohol intoxication impairs the quality of facial composites, adding to existing literature demonstrating little effect of alcohol on line-up studies. The impact of intoxication on face perception mechanisms, and the apparent narrowing of processing to external face areas such as hair, is discussed in the context of alcohol myopia theory.

The devil is not only in the details: Gist and detail elaboration in intoxicated witnesses' reports of interpersonal violence.

Hildebrand Karlén, Malin, et al.

Psychology, Crime & Law, Oct 2, 2018.

Abstract:

The empirical base relating to alcohol's effects on underlying memory mechanisms among witnesses is sparse. Therefore, the effect of alcohol intoxication on memory mechanisms was investigated, as well as how degree of intoxication and interview delay affected gist and detail elaboration in these witnesses' reports. Participants ($n = 136$) were randomized to an alcohol group (men: 0.8 g/kg, women: 0.75 g/kg) ($n = 70$) or a control group ($n = 66$), given juice. After consumption, they witnessed an intimate partner violence-scenario, and performed tasks assessing memory mechanisms. Half of the intoxicated and sober groups were interviewed immediately. The remaining participants were interviewed one week later. Inter alia, intoxication decreased total gist recall and elaboration capacity. In general, high intoxication ($BAC = 0.08\text{--}0.15$) made witnesses report fewer gist categories, and also to elaborate them less, but there were differences in gist/detail elaboration between levels of intoxication due to emotional context. Less reported information among intoxicated witnesses was caused both by omitting parts of the scenario and to less detailed elaboration. Emotional context influenced reporting among intoxicated witnesses on a gist and detail level. However, intoxication had less impact on gist/detail-elaboration than did a one week delay before interview, suggesting that witnesses should be interviewed immediately, despite intoxication.

Differential effects of alcohol on associative versus item memory.

Maylor, Elizabeth A., et al.

Applied Cognitive Psychology, Oct 29, 2018.

Abstract:

Summary Alcohol has detrimental effects on a range of cognitive processes, the most prominent being episodic memory. These deficits appear functionally similar to those observed within the normal aging population. We investigated whether an associative memory deficit, as found in older adults, would also be evident in young adults moderately intoxicated by alcohol. Participants were shown unrelated word pairs and then tested on both their item recognition (old/new item?) and associative recognition (intact/recombined pair?). Half the participants were under the influence of alcohol whereas the other half were sober. Alcohol impaired memory performance but significantly more so for associative than for item memory. Moreover, within the alcohol group, the associative memory deficit was significantly related to the amount of alcohol consumed. The findings suggest that not all aspects of episodic memory are equally impaired by alcohol, which may have practical implications for criminal investigations involving eye witnesses who have consumed alcohol.

Does alcohol loosen the tongue? Intoxicated individuals' willingness to report transgressions or criminal behavior carried out by themselves or others.

Mindthoff, Amelia, et al.

Applied Cognitive Psychology, Nov 21, 2018.

Abstract:

Summary Police commonly interview intoxicated suspects. This is concerning when suspects are innocent because intoxication often leads to a higher risk for impulsive decision making and reduces inhibition. However, the manner in which intoxication affects people's reporting of unethical or criminal actions carried out by themselves or others is unknown and was thus addressed in the current study. Participants ($N = 116$) were randomly assigned to one of six conditions based on a 2 (transgression: self, other) $\times$ 3 (alcohol condition: low-to-moderate intoxication, placebo, sober-control) between-participants design. After drinking their assigned beverages, participants were asked to disclose a transgression. No main effect of alcohol emerged. However, the odds that participants would report a transgression were significantly higher if they were asked to report a personal, rather than someone else's, transgression. Overall, low-to-moderate intoxication did not increase the likelihood of sensitive information disclosure in this initial study, but additional research is needed.