

Alcohol intoxicated eyewitnesses' memory

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Avhandling för avläggande av filosofie doktorsexamen i psykologi, som med vederbörligt tillstånd av samhällsvetenskapliga fakulteten vid Göteborgs Universitet kommer att offentligt försvaras torsdagen den 5 juni 2014 kl. 10.00 i sal F1, Psykologiska institutionen, Haraldsgatan 1, Göteborg.

Fakultetsopponent: Docent Nadja Schreiber Compo, Department of Psychology, Florida International University, USA.

Föreliggande uppsats grundar sig på följande tre artiklar:

- I. Hagsand, A., Roos af Hjelmsäter, E., Granhag, P.A., Fahlke, C., & Söderpalm Gordh, A. (2013). Do sober eyewitnesses outperform alcohol intoxicated eyewitnesses in a lineup? *The European Journal of Psychology Applied to Legal Context*, 5, 23-47.
- II. Hagsand, A., Roos af Hjelmsäter, E., Granhag, P.A., Fahlke, C., & Söderpalm Gordh, A. (2013). Bottled memories. On how alcohol affects eyewitness' recall. *Scandinavian Journal of Psychology*, 54, 188-195. doi: 10.1111/sjop.12035
- III. Hagsand, A., Roos af Hjelmsäter, E., Granhag, P.A., Fahlke, C., & Söderpalm Gordh, A. (2014). *Stumbling down memory lane: The advantages of interviewing witnesses while they are still under the influence of alcohol*. Manuscript submitted for publication.



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Abstract

Hagsand, A. (2014). *Alcohol-intoxicated eyewitnesses' memory*. Department of Psychology, University of Gothenburg, Sweden.

Eyewitnesses are an important source of information in many criminal investigations. However, the memory of an eyewitness is not always accurate, and errors may occur that have serious consequences. Alcohol-related crimes are common and therefore, intoxicated witnesses are common. However, only a handful of published studies have described how alcohol affects eyewitnesses' memory.

The overall aim of the research described in this thesis was to examine how alcohol affects eyewitnesses' memory. The thesis comprises three studies, which followed similar general procedures. The participants in the studies consumed an alcoholic or non-alcoholic beverage during a 15-minute period and then witnessed a film that depicting a staged kidnapping. The retention interval and recall format varied between the studies. The aim of **Study I** was to examine the influence of alcohol on eyewitnesses' performances in a line-up setting. The participants ($N = 123$) were randomly assigned to a 3 (Beverage: control [0.0 g/kg] versus lower alcohol dosage [0.4 g/kg] group versus higher alcohol dosage [0.7 g/kg] group) \times 2 (Line-up: target-present versus target-absent) between-subject design. One week after alcohol intoxication and the critical event, the participants were exposed to the line-up. The results showed no significant difference between the groups in terms of performance in the line-up, under either the target-present or the target-absent condition. In general, the participants performed better than chance at identifying the culprit. However, all witnesses performed quite poorly. **Study II** ($N = 126$) examined the effects of alcohol (Beverage: control [0.0 g/kg] versus lower alcohol dosage [0.4 g/kg] group versus higher alcohol dosage [0.7 g/kg] group) on the amount of information reported (completeness) and accuracy rate. There was no difference in the completeness between the control group and the higher alcohol dosage group or between the control group and the lower alcohol dosage group. When comparing the two alcohol groups, participants in the higher alcohol dosage group remembered fewer details than those in the lower alcohol dosage group. No differences were found between the beverage groups in recall accuracy. The aim of **Study III** ($N = 99$) was to elucidate the best time to interview intoxicated witnesses. Participants were randomly assigned to a 2 (Beverage: control [0.0 g/kg] versus alcohol dosage [0.7 g/kg] group) \times 2 (Recall: repeatedly, i.e., immediate plus delayed interviews versus single, i.e., delayed interview only) mixed design. Overall, alcohol-intoxicated eyewitnesses produced less accurate testimonies than the sober witnesses. Although the difference was significant, the intoxicated witnesses were only slightly less accurate in their recollections. Both the sober and the intoxicated witnesses recalled details with a relatively high accuracy. There was no difference with regards to the amount of information reported between the intoxicated and the sober witnesses. An immediate interview was more beneficial than a delayed interview. However, the best recall was by witnesses who were interviewed twice, and this was true for both the sober and the intoxicated witnesses. New details provided at the second interview, by either group, were often correct.

In summary, this thesis shows that alcohol consumption does not have a negative effect on either witness's line-up performance (recognition) or on the amount of information reported during investigative interviews (recall). However, the accuracy of their recall was slightly impaired by consumption of alcohol (Study III). This thesis shows that representatives of the legal system may expect that witnesses with low to moderate intoxication (blood alcohol concentration $<0.10\%$) will perform at approximately the same level as sober witnesses. It is however reasonable to assume that more profound memory impairments can be expected for witnesses with higher intoxication levels.

Key words: alcohol, intoxication, eyewitnesses, memory, recognition, recall, line-up, interview, crime
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