



## Lineup identification accuracy: The effects of alcohol, target presence, confidence ratings, and response time



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### ABSTRACT

Despite the intoxication of many eyewitnesses at crime scenes, only four published studies to date have investigated the effects of alcohol intoxication on eyewitness identification performance. While one found intoxication significantly increased false identification rates from target absent showups, three found no such effect using the more traditional lineup procedure. The present study sought to further explore the effects of alcohol intoxication on identification performance and examine whether accurate decisions from intoxicated witnesses could be postdicted by confidence and response times. One hundred and twenty participants engaged in a study examining the effects of intoxication (control, placebo, and mild intoxication) and target presence on identification performance. Participants viewed a simultaneous lineup one week after watching a mock crime video of a man attempting to steal cars. Ethanol intoxication (0.6 ml/kg) was found to make no significant difference to identification accuracy and such identifications from intoxicated individuals were made no less confidently or slowly than those from sober witnesses. These results are discussed with respect to the previous research examining intoxicated witness identification accuracy and the misconceptions the criminal justice system holds about the accuracy of such witnesses.

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### La precisión de la identificación en las ruedas de reconocimiento: efectos del alcohol, la presencia del objetivo, la valoración de la confianza y el tiempo de respuesta

### RESUMEN

A pesar de la existencia de intoxicación etílica en muchos testigos oculares de escenas de crimen, hasta la fecha solo hay cuatro estudios publicados que investigan sus efectos en la intervención de los testigos oculares durante la identificación. Solo uno de ellos halló que la intoxicación aumentaba de modo significativo la proporción de identificaciones falsas a partir de presentaciones en ausencia del objetivo y los otros tres no hallaron dicho efecto utilizando el clásico procedimiento de ruedas de reconocimiento. Este estudio ha intentado ampliar la exploración de los efectos de la intoxicación etílica en la actuación en identificaciones y analizar si se podrían conjeturar decisiones precisas por parte de testigos presenciales intoxicados a partir de la confianza y de los tiempos de respuesta. En el estudio para analizar los efectos de la intoxicación participaron 120 personas (control, placebo e intoxicación leve), con presencia del objetivo en la tarea de identificación. Los participantes vieron una rueda de reconocimiento simultánea una semana después, presenciando un vídeo que simulaba un delito cometido por un hombre que intentaba robar coches. Se encontró que la intoxicación etílica (0.6 ml/kg) no suponía diferencia significativa alguna en la precisión de la identificación, además de que tales identificaciones de personas intoxicadas no

#### Palabras clave:

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se llevaban a cabo de un modo menos fiable o lento que las de testigos sobrios. Se comentan los resultados en relación a investigaciones previas, analizando la precisión de la identificación de testigos intoxicados y las falsas creencias que el sistema de justicia penal mantiene acerca de la precisión de tales testigos.

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Research suggests that approximately half of all violent crimes committed in the UK are perpetrated by individuals under the influence of alcohol (Kershaw, Nicholas, & Walker, 2008), and in many of these cases victims and witnesses were also intoxicated (Murdoch et al., 1990, cited in Finney, 2004). A similar pattern is found in the USA, where Evans, Schreiber-Compo, and Russano (2009) found that nearly 53% of law enforcement officers surveyed routinely dealt with intoxicated witnesses and suspects, interviewing an average of four drunken witnesses per week. As many of these encounters result in a police investigation and subsequent prosecution (e.g., Mohler-Kuo, Dowdall, Koss, & Weschler, 2004), obtaining accurate evidence from intoxicated victims and witnesses is obviously extremely important.

### Identification Accuracy of Intoxicated Witnesses

The adverse impact of alcohol on memory performance is well documented (e.g., Craik, 1977; Petros, Kerbel, Beckwitha, Sacksa, & Sarafolean, 1984; White, Signer, Kraus, & Swartzelder, 2004), specifically the detrimental effect that intoxication has on the ability to encode episodic memories (Mintzer, 2007) and form new long-term memories (White, 2003). In fact, such is the influence of this evidence that 90% of legal experts questioned that this state is of sufficient strength to report in court that alcohol impairs eyewitness performance (Kassin, Tubb, Hosch, & Memon, 2001). Furthermore, studies have found that potential jurors not only agree with expert witness views regarding alcohol and memory (Benton, Ross, Bradshaw, Thomas, & Bradshaw, 2006), but also that they perceive intoxicated witnesses to be more cognitively impaired than sober ones (Evans & Schreiber Compo, 2010). Despite these widespread beliefs, specific evidence linking alcohol intoxication to poorer eyewitness identification performance is lacking. Only four studies have examined the effects of alcohol intoxication on face identification using forensically valid eyewitness identification procedures (Dysart, Lindsay, MacDonald, & Wicke, 2002; Hagsand, Roos-af-Hjelmsater, Granhag, Fahlke, & Soderpalm-Gordh, 2013; Harvey, Kneller, & Campbell, 2013; Yuille & Tollestrup, 1990), and only one has revealed a negative effect of alcohol intoxication on face identification (Dysart et al., 2002). Dysart et al. (2002) employed a pair of female recruiters to invite patrons of two local bars to take part in their study. Volunteers were introduced to an experimenter in an adjoining room where they were given a breathalyzer test, a filler task then, crucially, a memory test in which they were required to state whether a photograph of a female presented to them either was or was not one of the recruiters they had met earlier (a procedure known as a show-up). Participants' ability to identify the recruiter from her true photographic image was the same regardless of their breath alcohol concentration (BrAC), but individuals with higher BrAC readings were significantly more likely to falsely identify the recruiter from a photograph showing a different (albeit similar looking) female.

In accounting for their findings, Dysart et al. (2002) refer to the Alcohol Myopia Theory (AMT) of Steele and Josephs (1990), suggesting that alcohol decreases the attentional capacity of eyewitnesses to the extent that only the most immediate, central or striking target stimulus features are processed. Once encoded, these salient facial cues, Dysart et al. suggest, are sufficient for discriminating a perpetrator when s/he is present in a lineup, but

the absence in memory of more subtle or peripheral facial details impairs the drinker's ability to spot the absence of the perpetrator from a lineup. This theoretical conclusion was, however, formed on the basis of the showup method, a highly suggestive identification procedure for which the risk of a false positive identification is substantially higher than for the lineup procedure in which multiple individuals are presented to the witness (Cicchini & Easton, 2010). Dysart et al. also administered the showup shortly after their participants were initially exposed to the target, when the alcohol group remained intoxicated. Hence, the results of this study may reflect an adverse effect of alcohol on processes of face memory retrieval rather than face encoding. It is also important to note that alcohol participants in this field study had estimated breath alcohol concentrations ranging from 0.01% to 0.20% so some were likely to have been substantially more intoxicated than participants in more recent lab-based studies in which no effects of intoxication were observed (e.g., Hagsand et al., 2013; Harvey et al., 2013). It is therefore possible that any attentional narrowing effects of alcohol on to specific facial features may only begin to occur at relatively high levels of intoxication.

On balance, from the research outlined above, it seems that the face identification skills of moderately intoxicated witnesses are quite reliable – provided witnesses are sober during the retrieval process – a conclusion that contradicts the views of many expert witnesses (Kassin et al., 2001) and jurors who question the testimony of intoxicated witnesses (Evans & Schreiber Compo, 2010). This is not to suggest that the testimony of moderately intoxicated is not problematic (cf. Dysart et al., 2002; Hilliar, Kemp, & Denson, 2010), but that the important issue is distinguishing the reliable intoxicated witness from the unreliable. One approach to this problem is to examine those factors, or postdictors, that previous research suggests may be indicative of accurate identification decisions.

### Confidence-Accuracy Relationship

Juries are often persuaded by confident witnesses (Boyce, Beaudry, & Lindsay, 2007); however, studies of the relationship between witness confidence and identification accuracy report that the relationship between post-decision confidence and accuracy is only small to medium at best (e.g.,  $r = .25$ , Bothwell, Deffenbacher, & Brigham, 1987;  $r = .28$ , Sporer, Penrod, Read, & Cutler, 1995), although shown to vary depending on the circumstances. For example, Sporer et al. (1995) reported that the confidence-accuracy relationship was stronger for choosers (i.e., those witnesses who make a selection from a lineup) than non-choosers (i.e., those who reject the lineup). This finding is also supported by more recent research using the calibration approach, which compares both the objective and subjective probabilities of the decision being correct, then determines the proportion of correct responses at each confidence interval measured, typically on a 0–100% scale (e.g., Sauer, Brewer, Zweck, & Weber, 2010; Sauerland & Sporer, 2009; Weber & Brewer, 2006). This is forensically important as choosers appear in court more often than non-choosers because non-identifications do not support criminal prosecutions. In their recent study, Hagsand et al. (2013) examined identification confidence across intoxication levels, but they did not explore its relationship with identification accuracy nor, hence, its usefulness as a postdictor of accuracy.

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