Journal of Applied Research in Memory and Cognition 5 (2016) 270–276

Contents lists available at ScienceDirect

Journal of Applied Research in Memory and Cognition

journal homepage: www.elsevier.com/locate/jarmac

The Effects of Verbal Descriptions on Eyewitness Memory: Implications for the Real-World☆

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The criminal justice system depends on verbal accounts of crimes. Can the act of reporting a crime harm eyewitness memory for the perpetrator of that crime? The answer is yes according the *verbal overshadowing effect*. The verbal overshadowing effect describes the finding that memory is adversely affected after verbally describing a previously presented item (e.g., face). Often in studies of the verbal overshadowing effect, participants watch a video of a mock crime, describe the perpetrator (verbal condition) or engage in another task (control condition). In many of these studies, including the original (Schooler & Engstler-Schooler, 1990) and replication studies (Alogna et al., 2014), memory for a perpetrator is tested on target-present lineups, and, if described, the perpetrator is less often identified. However, it is unknown whether or not the lower identification rate is due to reduced discriminability or due to more conservative responding after providing a description. The verbal overshadowing effect ought to be defined as a reduction in discriminability, which is measured by taking both the correct ID rates (from target-present lineups) and false ID rates (from target-absent lineups) into consideration. Another important and independent measure is the reliability of identifications (i.e., the positive predictive value of a suspect identification made with a given level of confidence). As matters stand, the take-home message is this: too little information currently exists to allow for an assessment of the effects of verbal descriptions on discriminability and reliability; thus, the field is not yet in a position to offer clear guidance for practice in the criminal justice system.

Keywords: Eyewitness memory, Verbal overshadowing, Discriminability, Reliability, Confidence–accuracy relationship, Policy recommendations

Reporting Crimes and Making Identifications

From a criminal offence to completion of the ensuing court case, the criminal justice system follows a linear process. The entire process usually takes at least several months, and as shown in Figure 1 may include the crime, report, investigation (if deemed worthy by the police), eyewitness identification (ID) procedure administration, formal charge against the suspect, and court case. The timescale in Figure 1 represents averages of indicted cases in the UK (UK Ministry of Justice, 2011). Reporting a crime to the authorities inevitably involves describing details of the crime and the perpetrator(s). Emergency services, call dispatchers, and investigating officers are trained to ask questions about the crime in such a way that as much accurate information as possible is gathered in a non-suggestive way (Technical Working Group for Eyewitness Evidence, 1999), and online self-report forms follow a similar structure (College of Policing, 2013). To answer questions about the perpetrator, eyewitnesses are asked to describe the individual. If needed, eyewitnesses are prompted to consider the perpetrator's age, gender, ethnicity, height, build, distinguishing characteristics, etc. (Association of Chief Police Officers, 2016). If police later identify a suspect, as part of the investigation, a lineup procedure may be administered to eyewitnesses.

A lineup consists of the police suspect (who may or may not be the perpetrator) and several other individuals who physically resemble the perpetrator, called "fillers." The lineup members

Author Note

This work was supported by the Economic and Social Research Council [ES/L012642/1]. The content is solely the responsibility of the author and does not necessarily reflect the views of the Economic and Social Research Council.

☆ Please note that this paper was handled by the current editorial team of JARMAC.

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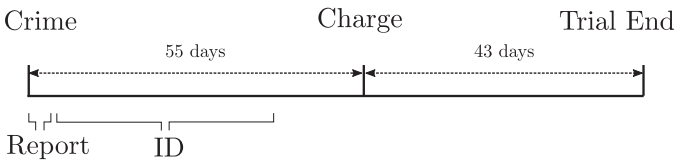

Figure 1. Criminal justice system case progression in the UK.

are all presented via photos or videos, and the witness attempts to identify the perpetrator (ID in Figure 1). What if the task of verbally describing the perpetrator has a detrimental effect on memory for that very perpetrator?

The Verbal Overshadowing Effect

That is the implication of a finding first reported nearly 30 years ago (Schooler & Engstler-Schooler, 1990). In a set of experiments, participants viewed a video of a mock robbery during the study phase, and either described the perpetrator (verbal condition) or engaged in a control task (control condition). Memory for the perpetrator, or target, was tested on an 8-person simultaneous target-present lineup. Surprisingly, participants in the verbal condition were less able to correctly identify the target than those who were not asked to verbally describe the perpetrator. This counterintuitive finding, termed the *verbal overshadowing effect*, inspired much followup research with mixed results (e.g., Dodson, Johnson, & Schooler, 1997; Finger, 2002; Finger & Pezdek, 1999; Kitagami, Sato, & Yoshikawa, 2002; Nakabayashi, Lloyd-Jones, Butcher, & Liu, 2012; Smith & Flowe, 2014; Wickham & Swift, 2006). Because of this, and because a meta-analysis revealed a much smaller effect than the original experiments (Meissner & Brigham, 2001), two of the original experiments were the object of a large direct replication effort (Alogna et al., 2014).

Figure 2 shows a schematic of the experimental design of the two replication experiments. In both experiments, the procedure was delineated by the study phase (presentation of the mock crime video) and the test phase (memory tested on an 8-person lineup). The only difference between the experiments was the timing of the experimental manipulation (where participants either verbally described the perpetrator or did not). Clearly, the experimental analog is a much shorter version of the protracted criminal justice system in Figure 1, which is a point discussed later. In Experiment 1, the experimental manipulation occurred immediately after the study phase (Figure 2A) and in Experiment 2, the experimental manipulation occurred 20 min after the study phase (Figure 2B). The effect replicated. In both experiments, the correct ID rate (i.e., the proportion of guilty suspects identified from target-present lineups) was lower in the verbal condition, but markedly lower when the verbal description was given 20 min after the study phase and immediately before the test (and the effect sizes were small, especially in Experiment 1).

However, by comparing only correct ID rates, it is unclear whether the difference is due to a difference in discriminability (the ability to distinguish innocent from guilty suspects) or response bias (the likelihood of choosing a lineup member)

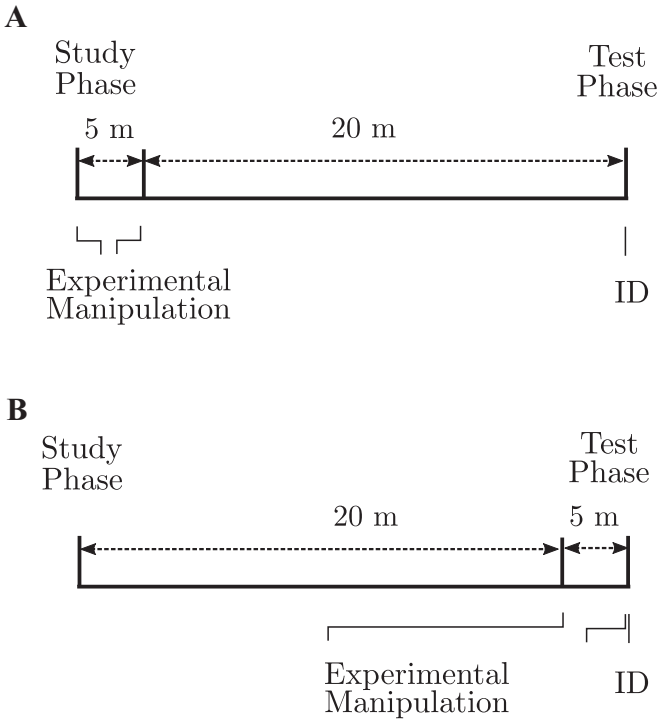

Figure 2. Procedural order of the replication studies for Experiment 1 (A) and Experiment 2 (B) in Alogna et al. (2014).

(Clare & Lewandowsky, 2004; Meissner & Brigham, 2001). To disentangle the two possible explanations for the difference, it is necessary to include target-absent lineups in the experimental design. By doing so, false ID rates (i.e., the proportion of innocent suspects identified from target-absent lineups) can be taken into account and discriminability can be measured separately from response bias (Mickes & Wixted, 2015).

Discriminability in Verbal Overshadowing: A Matter of Concern for Policymakers

A veridical verbal overshadowing effect ought to be defined by a reduction in discriminability (i.e., lower correct ID rates and higher false ID rates) in the verbal condition compared to the control condition. Discriminability cannot be measured by only a reduction in correct ID rates. It follows that the results of the replication studies cannot inform whether or not discriminability is affected after providing a verbal account (Mickes & Wixted, 2015; Rotello, Heit, & Dube, 2015). To be informed about discriminability, receiver operating characteristic (ROC) analysis, which measures objective discriminability of lineup data, needs to be conducted (Gronlund, Wixted, & Mickes, 2014; National Research Council, 2014; Wixted & Mickes, 2012).

ROC analysis was recently introduced to measure discriminability in lineup data (Wixted & Mickes, 2012), and there is currently some resistance to its use in the field of eyewitness identification research (Wells, Smalarz, & Smith, 2015; Wixted & Mickes, 2015a, 2015b). Some researchers continue to support the use of the diagnosticity ratio (DR; correct ID rate/false ID rate) to measure discriminability in preference to ROC analysis, arguing that ROC analysis is not appropriate for lineups (Wells