In the DNA Exoneration Cases, Eyewitness Memory was *Not* the Problem:

A reply to Berkowitz and Frenda (2018) and Wade, Nash and Lindsay (2018)

John T. Wixted,[1] Laura Mickes[2] & Ronald P. Fisher[3]

[1]University of California, San Diego

[2]Royal Holloway, University of London

[3]Florida International University

Author Note

John T. Wixted, Department of Psychology, University of California, San Diego. Laura Mickes, Department of Psychology, Royal Holloway, University of London. Ronald P. Fisher, Department of Psychology, Florida International University.

Correspondence concerning this article should be addressed to John T. Wixted (jwixted@ucsd.edu).

In the DNA Exoneration Cases, Eyewitness Memory was *Not* the Problem

We claim that in the lab and in the real world, when eyewitness memory is uncontaminated and properly tested, it is reliable (Wixted, Mickes & Fisher, 2018). This is true of both recall (police interviews) and recognition (eyewitness identifications from police lineups). In both cases, eyewitness memory is reliable in the sense that, on an initial test, low confidence implies low accuracy, whereas high confidence implies high accuracy.

In their commentaries, both Berkowitz and Frenda (2018) and Wade, Nash and Lindsay (2018) accept our claim in principle, but they worry that, in the real world, eyewitness memory is unreliable, either because it is often contaminated before the first official test or because the police often use improper testing procedures.

Being concerned that eyewitness memory might be unreliable in the real world seems perfectly reasonable to us, but police department field studies suggest that eyewitness memory for real crimes is often reliable. A notable feature of those studies is that, in one way or another, they actually measured the reliability of eyewitness memory on an initial test (e.g., Fisher, Geiselman & Amador, 1989). Berkowitz and Frenda (2018) and Wade et al. (2018) remain unconvinced by the available evidence, which is every scientist's right, but they offer no direct evidence that on the initial test of an actual police investigation eyewitness memory is in fact unreliable. Instead, they point to evidence that uncontaminated eyewitness memories and pristine testing conditions might be rare. As Wade et al. (2018) put it: "Wixted et al.'s (2018) reasoning implies that near-pristine conditions or uncontaminated memories are normative, but we doubt this."

In truth, our reasoning does not imply that near-pristine conditions or uncontaminated memories are normative (Mickes, Clark & Gronlund, 2017). It is tempting to view this issue in the following dichotomous terms:

1. Under pristine (or near-pristine) conditions, eyewitness memory on an initial test is reliable.
2. Under non-pristine conditions, eyewitness memory is unreliable.

It is true that under certain non-pristine conditions (e.g., unfair lineups), eyewitness memory is unreliable, but there is a third state of knowledge:

3. Under non-pristine conditions that have not yet been subjected to careful research, eyewitness memory on an initial test might still be reliable.

We fully endorse the use of pristine testing procedures, but Point #3 precludes the claim that the use of a non-pristine procedure automatically implies that eyewitness memory is unreliable. In this regard, Garrett (2011) documented how the eyewitness identification practices associated with the DNA exoneration cases often deviated wildly from what we would today regard as pristine. Even so, in every case in which initial eyewitness confidence could be determined (91 of 161 cases), the eyewitnesses appropriately expressed low confidence (if they identified the suspect at all). This is true even though, as Berkowitz and Frenda (2018) and Wade et al. (2018) contend, the memories of these eyewitnesses might very well have been contaminated before the first official test. Critically, *despite possible contamination and despite the non-pristine testing*

conditions, these witnesses unmistakably signaled the error-prone nature of their initial IDs. It was other actors in the legal system who unwittingly made the mistake of ignoring those inconclusive test results (namely, the low-confidence IDs) and who then compounded that mistake by relying on the results of later tests (e.g., at trial).

We agree that initial misidentifications made with high confidence, if they were the norm, would be an indictment of the reliability of eyewitness memory in the real world. But so far, those errors appear to be *rare*. Indeed, even though studies suggesting that collaboration among witnesses before a first police interview can reduce accuracy (e.g., Granhag, Ask, Rebelius, Ohman, & Giolla, 2013), it is not yet clear that the contaminated memories were recalled with high confidence. Except under conditions specifically designed to implant false memories (e.g., by *repeatedly* exposing participants to information *known to be false*), eyewitness memory may be sufficiently calibrated that, on an initial test, contaminated memories are usually recalled with low confidence. Analogously, eyewitness identification is robust to a variety of other forces ordinarily thought to reduce its reliability (Semmler, Dunn, Mickes & Wixted, in press). Thus, before rethinking the confident eyewitness in the real world, as Berkowitz and Frenda (2018) would like us to do, we should wait for data showing that high-confidence eyewitness memory on an initial test in the real world actually is unreliable.

Wade et al. (2018) ask “how reliable is reliable enough?” and then quote a sentence from Roediger, Wixted, & DeSoto, (2012) stating that high-confidence eyewitness memory is “simply not a reliable enough indicator of truth to unilaterally adjudicate guilt or innocence” (Roediger, Wixted, & DeSoto, 2012, p. 113). In retrospect, Roediger et al. (2012) should not have addressed this question because it confuses value judgments with scientific judgments (cf. Clark, 2012). It

is the job of judges and juries, not scientists, to make the difficult value judgment of deciding how reliable is reliable enough.

With regard to our analogy between eyewitness confidence and the DNA random match probability (RMP), Berkowitz and Frenda (2018) point out that "leading forensic DNA researchers have long-cautioned that analyzing DNA using RMPs alone is potentially misleading." We are acutely aware that the RMP, *alone*, can be misleading. Consider, for example, the case of Gary Leiterman (Wixted, Christenfeld & Rouder, 2018). The RMP in that case was an extraordinarily low 170.1 trillion to 1 (i.e., it was an extraordinarily high-confidence match), yet a consideration of other issues in that case points strongly in the direction of contamination arising from human error. Our point is that the RMP informs accuracy, not that it precisely quantifies the level of accuracy.

Just as a compelling DNA match will sometimes turn out to be wrong due to human error, it will surely sometimes happen that high-confidence eyewitness memory on an initial test will turn out to be wrong as well. Errors like that do not change the fact that, as a general rule, on an initial test, low confidence implies low accuracy, and high-confidence implies high accuracy. Obviously, future work may change that verdict, and we agree with Berkowitz and Frenda (2018) and Wade et al. (2018) that the available real-world evidence pointing to the reliability of eyewitness memory in the real world is too sparse to be taken as definitive. Thus, going forward, research investigating the reliability of high-confidence IDs under realistic conditions should be a high priority.

References

Berkowitz, S. & Frenda, S. (2018). Rethinking the confident eyewitness: A reply to Wixted, Mickes, and Fisher. *Perspectives on Psychological Science.*

Clark, S. E. (2012). Costs and benefits of eyewitness identification reform: Psychological science and public policy. *Perspectives on Psychological Science, 7,* 238-259.

Fisher, R. P., Geiselman, R. E. & Amador, M. (1989). Field test of the cognitive interview: enhancing the recollection of actual victims and witnesses of crime. *Journal of Applied Psychology, 74,* 722-727.

Garrett, B. (2011). *Convicting the Innocent: Where Criminal Prosecutions Go Wrong*. Cambridge, MA: Harvard University Press.

Granhag, P.A., Ask, K., Rebelius, A., Öhman, L. & Giolla, E. M. (2013) 'I saw the man who killed Anna Lindh!' An archival study of witnesses' offender descriptions. *Psychology, Crime & Law, 19,* 921-931

Mickes, L., Clark, S. & Gronlund, S. (2017). Distilling the Confidence-Accuracy Message: A Comment on Wixted and Wells (2017). *Psychological Science in the Public Interest, 18,* 6-9.

Roediger, H. L., Wixted, J. T. & DeSoto, K. A. (2012). The Curious Complexity between Confidence and Accuracy in Reports from Memory. In Nadel, Lynn, and Sinnott-Armstrong, Walter, (Eds.). *Memory and Law* (pp. 84 - 118). Oxford University Press, New York.

Semmler, C., Dunn, J., Mickes, L. & Wixted, J. T. (in press). The Role of Estimator Variables in Eyewitness Identification. *Journal of Experimental Psychology: Applied*.

Wade, K., Nash, R. & Lindsay, D. S. (2018). Reasons to doubt the reliability of eyewitness

memory: Commentary on Wixted, Mickes, and Fisher (2018). *Perspectives on Psychological Science.*

Wixted, J. T., Christenfeld, N. J. S. & Rouder, J. N. (2018). A Bayesian statistical analysis of the DNA contamination scenario. *Jurimetrics*.

Wixted, J. T., Mickes, L. & Fisher, R. P. (2018). Rethinking the reliability of eyewitness memory. *Perspectives on Psychological Science.*