Comment

Applied Eyewitness Research: The Other Mission*

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The use of scientific methods to explore issues in eyewitness memory has been one of the most visible research endeavors in psychology and law over the last two decades. This research is vital, as it has been estimated that eyewitness evidence plays a major role in over 75,000 cases a year in the U.S. alone (Goldstein, Chance, & Schneller, 1989), and mistaken eyewitness identification has been identified as the single most important factor leading to false convictions (see Rattner, 1988). In spite of the fact that eyewitnesses can be highly prone to error (see Wells, 1993), eyewitness evidence remains invaluable to the criminal justice system. Such observations have led researchers to treat eyewitness accuracy as more than just a theoretical issue: A premium has been placed on the question of what can be done to minimize mistakes that the justice system might be making in its current reliance on eyewitnesses. This, in turn, has led to considerable debate in the published literature regarding the question of whether or how expert testimony should be given to assist triers of fact in their assessments of eyewitness evidence (e.g., Loftus, 1983; McCloskey & Egeth, 1983; and see a special issue of Law and Human Behavior edited by McCloskey, Egeth, & McKenna, 1986). The debate has changed little over the years, and recent examples can be found in this journal (Elliot, 1993; Kassin, Ellsworth, & Smith, 1994).

Debates in the published literature often draw attention to a narrowly focused set of issues. We argue that the expert testimony debate has served to obscure an important mission of eyewitness research that does not depend on the question of whether or not expert testimony can assist the triers of fact. Our concern is that the debate regarding what experts should or should not tell jurors about eyewitness reliability may lead many readers to assume that this type of expert testimony is somehow synonymous with the question of whether eyewitness research has practical value. Although the idea of correcting jurors' misperceptions of eyewitness accuracy has historical roots in psychology dating back to the early

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part of this century (e.g., Munsterberg, 1908), a great deal of modern eyewitness research is modeled on a quite different approach, one that has become known as system variable research (Wells, 1978).

The premise of the system variable approach is that it is possible to increase the accuracy of eyewitness identifications long before they become courtroom evidence. Once a false identification has been made, it might be too late to counteract its effects. We have learned, for example, that people cannot effectively discriminate between accurate and inaccurate eyewitness identification testimony (e.g., Lindsay, Wells, & Rumpel, 1981). Expert testimony informs the triers of fact about variables that can influence the probability that such errors may have occurred. The debate about the efficacy of expert testimony concerns its ability to serve a corrective function of this sort.

In contrast, the goal of the system variable approach is to prevent eyewitness identification errors from occurring (Wells, 1978), rather than to inform jurors about potential errors that might have occurred. This distinction between the system variable and expert testimony approaches is critical not only in terms of underlying philosophy, but also in terms of the differential capability of each approach to generalize from research to application. In the next section, we give a brief sampling of some of the advances in system variable eyewitness research. We then discuss the major problem with using eyewitness research to calibrate a jury, and argue that this problem is not germane to system variable applications. Finally, we discuss the close relation between the system variable approach and the concept of procedural justice.

Examples of System Variable Research

The assumption underlying the system variable approach to eyewitness research is that eyewitness error has two sources: The methods used by the legal system to obtain eyewitness evidence, and the inherent limits of the cognitive system. The former is controllable by the legal system whereas the latter is not. By focusing on the methods used by police to obtain eyewitness evidence, system variable research can test ways to increase the accuracy (or minimize the errors) of eyewitness accounts.

In fact, the system variable approach has proven quite successful in studying factors under the control of the legal system that can affect eyewitness error. Consider some of the prime conclusions reached by system variable research in the past 15 years. The instructions given to eyewitnesses prior to their viewing a lineup can affect the likelihood of obtaining a false identification (e.g., Malpass & Devine, 1981), as can the choice of which distractors to use in a lineup (e.g., Wells, Rydell, & Seelau, 1993). Blank lineups can be used to screen eyewitnesses who are likely to make false identifications (see Wells, 1984). The use of a sequential procedure for presenting a lineup or photospread yields fewer false identifications than does the simultaneous procedure that is used routinely by police (Lindsay and Wells, 1985). The cognitive interview, a procedure for questioning eyewitnesses, has proven to be more successful than the usual methods used by police to interview eyewitnesses (see Fisher & Geiselman, 1992). Elizabeth Lof-
tus, who has often been a target of critics in the expert testimony debate, has also made a major contribution to system variable research. Her work on misleading questions demonstrates how the intentional and unintentional use of certain types of questions with eyewitnesses can lead to errors of testimony (e.g., Loftus, 1979).

The point of this brief sampling of system variable findings is to highlight the fact that the value of eyewitness research is not fully captured in the question of what an eyewitness expert can tell a jury. Much eyewitness research is targeted at the question of how to increase the accuracy of eyewitnesses so that the validity of the testimony given in court is thus improved. In this way eyewitness research might have a substantial positive impact on the likelihood of correct verdicts without ever being communicated to a jury or judge at all. We believe that the extant debate regarding expert testimony as it relates to eyewitness research obscures a primary function of eyewitness research: To keep the eyewitness expert out of the courtroom by increasing a priori the probability of accurate identifications. Thus the system variable approach has utility independent of what a jury might or might not be told.

In the following section, we discuss a major problem with the use of eyewitness research to inform a jury about potential effects of certain variables on eyewitness accuracy. We then discuss the question of whether this same problem is applicable to system variables.

Using Experimental Data in a World of Natural Confounds

Experiments manipulate a focal variable independently of other influential variables, whereas the same variable may be naturally confounded with such other variables in actual cases. This creates a significant problem for purposes of giving information to a jury. Consider, for instance, how an experiment might test the role of stress on eyewitness accuracy. High- and low-stress groups would be carefully equated on such variables as opportunity to view the culprit, distance between the witness and the culprit, and so on. This type of control is necessary in order to draw conclusions about the causal status of the manipulated variable. Experiments of this sort generally conclude that high stress causes lower eyewitness accuracy (see Deffenbacher, 1983). Unfortunately, the very features that make the experiment a clean test of the causal status of the focal variable might make it misleading in terms of prediction. In actual cases, stress is commonly caused by the presence or absence of other variables that might themselves be associated with greater rather than lesser accuracy. Indeed, in an analysis of an actual shooting in which there were numerous eyewitnesses, those who reported the highest levels of stress were the most accurate (Yuille & Cutshall, 1986). Presumably, this positive relation between stress and accuracy resulted from a natural confound: Eyewitnesses who had the best view were the closest to the shooting, and were thereby more stressed than those further away. This does not negate the fact that high stress (when independently manipulated) tends to cause lower accuracy in eyewitnesses, but it illustrates the fact that experiments are not ideal models for predicting the role of variables that freely covary in actual cases.
This presents problems when experimental evidence is used to inform a jury about the role of a particular variable in a real case.

A similar problem emerges when trying to use effect sizes from experiments to estimate effect sizes in actual cases. Effect size estimates are sensitive to the amount of uncontrolled variation in a given set of data. An experiment tries to hold uncontrolled variation at a minimum and hence can overestimate the effect size for a predictor variable in actual cases. The cross-race identification effect, for example, seems to account for about 10% of the variance in identification accuracy in experiments (see Bothwell, Brigham, & Malpass, 1989). Such experiments, however, control for differences between subjects in their viewing times, distance from the target person, attention to the target face, delay to testing, and so on. If these factors were not controlled, the proportion of variance in accuracy attributable to the cross-race variable would drop dramatically. Because there are so many other variables that cannot be controlled in actual cases, the cross-race variable might account for only 5% or even 1% of the variance in the real world.

We argue that multicolinearity and effect size problems are much less applicable to the system variable approach than they are to the expert testimony approach. We contend that there is a parallelism between the methods used in system variable experiments and the application of those methods in real cases. In particular, it is possible for the justice system to control focal variables in the same way that they are controlled in experiments. Suppose, for example, an experiment shows that false identifications are reduced by selecting lineup distractors who match the verbal description of the culprit given earlier by an eyewitness. The system variable approach would argue that this information should be used by police investigators in the way that experiments have found to be the most beneficial. Specifically, the variable should be controlled and fixed at the level that favors the greatest accuracy. To the extent that this recommendation is accepted and used uniformly, natural confounds with other variables would be greatly decreased. And although we still could not make firm conclusions about real-world effect size based on such an experiment, there would be no need to “calibrate” a jury on the magnitude of the effect. As long as we could conclude that the directional effect is toward reduced error, we could recommend that the system should adopt the procedure.

In summary, we argue that the use of experimental methods, which manipulate variables to assess their causal status, is weakly suited to the task of calibrating a jury regarding the role of these variables in actual cases. When the experimentally manipulated variable can be similarly manipulated in an actual case (i.e., fixed at its optimal level), however, the logic of the experiment and the logic of its application are parallel in ways that avoid many of the criticisms applicable to the estimation approach.

System Variable Testimony?

Although the argument for research on system variables was described originally as an alternative to giving expert testimony in court (Wells, 1978), it is somewhat ironic that system variable findings might end up to be the strongest
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argument for expert testimony. Expert testimony on system variables need not be justified purely on grounds of calibrating a jury (a distributive justice matter) but can be justified on grounds of concern over due process (a procedural justice issue). Distributive justice is concerned with the accuracy of a verdict, whereas procedural justice is concerned with the fairness of the process that led to the verdict (see Thibaut & Walker, 1975). Expert testimony that focuses on system variables, such as presence of bias in a lineup procedure, speaks to the issue of due process. Regardless of whether the defendant is guilty or innocent, whether the eyewitness made an accurate or inaccurate identification, one can question the methods that were used to obtain the identification. At this point, the issue becomes one of due process: Given that there was an alternative way to conduct the lineup that would have been free of the bias (and was both available and known to those who conducted the lineup), the fairness of the process can be called into question. The issue is not whether or not such testimony will calibrate a jury, an issue that critics of expert testimony have chosen to stress, but whether or not the procedure was fair to the accused.

CONCLUSION

We have argued that ongoing debates in the eyewitness literature risk leaving readers with the impression that the sole purpose of eyewitness research lies in the ability of eyewitness experts to assist the triers of fact in evaluating eyewitness accuracy. However, there is a broader mission of much eyewitness research that is often overlooked in these debates. System variable research seeks not to improve the accuracy of juror discriminations, but to improve the accuracy of eyewitness identifications. The fundamental distinction between a system variable and an expert testimony approach is one of procedural versus distributive justice. Most of the criticisms regarding expert testimony on the reliability of eyewitness identifications become irrelevant when the focus is shifted onto procedural justice concerns.

REFERENCES


