

- Deutsch, D., Henthorn, T., & Dolson, M. (1999). Absolute pitch is demonstrated in speakers of tone languages. *Journal of the Acoustical Society of America*, 106, 2267.
- Deutsch, E.O. (1990). *Mozart: A documentary biography* (3rd ed.). London: Simon and Schuster.
- Gregersen, P.K., Kowalsky, E., Kohn, N., & Marvin, E.W. (1999). Absolute pitch: Prevalence, ethnic variation, and estimation of the genetic component. *American Journal of Human Genetics*, 65, 911–913.
- Halpern, A.R. (1989). Memory for the absolute pitch of familiar songs. *Memory & Cognition*, 17, 572–581.
- Jusczyk, P.W., Friederici, A.D., Wessels, J., Svenkerud, V.Y., & Jusczyk, A.M. (1993). Infants' sensitivity to sound patterns of native language words. *Journal of Memory and Language*, 32, 402–420.
- Levitin, D. (1994). Absolute memory for musical pitch: Evidence for the production of learned melodies. *Perception & Psychophysics*, 56, 414–423.
- Njegovan, M., Ito, S., Mewhort, D., & Weisman, R. (1995). Classification of frequencies into ranges by songbirds and humans. *Journal of Experimental Psychology: Animal Behavior Processes*, 21, 33–42.
- Profita, J., & Bidder, T.G. (1988). Perfect pitch. *American Journal of Medical Genetics*, 29, 763–771.
- Saffran, J.R., & Griepentrog, G.J. (2001). Absolute pitch in infant auditory learning: Evidence for developmental reorganization. *Developmental Psychology*, 37, 74–85.
- Schlaug, G., Jancke, L., Huang, Y., & Steinmetz, H. (1995). In vivo evidence of structural brain asymmetry in musicians. *Science*, 267, 699–701.
- Takeuchi, A.H., & Hulse, S.H. (1993). Absolute pitch. *Psychological Bulletin*, 113, 345–361.
- Terhardt, E., & Seewann, M. (1983). Aural key identification and its relationship to absolute pitch. *Music Perception*, 1, 63–83.

Illusory Causation in the Courtroom

G. Daniel Lassiter¹

Department of Psychology, Ohio University, Athens, Ohio

Abstract

A large body of evidence indicates that people attribute unwarranted causality (influence) to a stimulus simply because it is more noticeable or salient than other available stimuli. This article reviews recent research demonstrating that this *illusory-causation* phenomenon can produce serious prejudicial effects with regard to how people evaluate certain types of legal evidence. Specifically, evaluations of videotaped confessions can be significantly altered by presumably inconsequential changes in the camera perspective taken when the confessions are initially recorded. Videotaped confessions recorded with the camera focused on the suspect—compared with videotapes from other camera points of view (e.g., focused equally on the suspect and interrogator) or with more traditional presentation formats (i.e., transcripts and audiotapes)—lead

mock jurors to judge that the confessions were more voluntary and, most important, that the suspects are more likely to be guilty. Because actual criminal interrogations are customarily videotaped with the camera lens zeroed in on the suspect, these findings are of considerable practical significance.

Keywords

illusory causation; videotaped confessions; bias

In 1935, Koffka noted that objects that stand out in our visual field, or are the focus of our attention, are more likely than less conspicuous objects to be judged the originators of a physical event, even when there is no objective basis for such a conclusion. For example, when placed in a darkened room, people judge that a widening gap between two pinpoints of light is caused by the one that they happen to be looking

at regardless of whether it is actually the one moving.

This phenomenon, referred to as illusory causation (McArthur, 1980), is not limited to cases involving interactions among simple physical objects. Research indicates that it affects people's causal attributions for more complex social interactions as well. In the first systematic demonstration of illusory causation in the social domain, Taylor and Fiske (1975) had observers view a casual, two-person conversation. The vantage point of the observers was varied by seating them in different locations around the two interactants. After the conversation ended, observers rated each interactant in terms of the amount of causal influence he or she exerted during the exchange. The results revealed that greater causality was attributed to whichever person observers happened to be facing, which, of course, was determined by their seating position—an entirely incidental factor that logically should have had no bearing on their causal judgments.

Misidentifying which of multiple points of light is moving in a darkened room, or even overestimating the causal influence of a particular participant in a "getting acquainted" interaction, I daresay, is not an error in judgment that is

likely to keep us awake at night. Is the illusory-causation phenomenon, then, simply an intriguing psychological quirk that has essentially no impact on matters of true substance? I posed this question nearly 20 years ago, and the answer provided by two decades of subsequent research is both surprising and disturbing.

RELEVANCE OF ILLUSORY CAUSATION FOR OUR SYSTEM OF JUSTICE

As of May 2002, the Death Penalty Information Center had documented 101 cases in which death-row inmates (from 24 states) were set free because new evidence (e.g., DNA test results) conclusively established their innocence. In many instances, the cause of such wrongful convictions can be traced back to the interrogation phase of criminal investigations (Dwyer, Neufeld, & Scheck, 2000).² There is now incontrovertible proof that false confessions are sometimes extracted from detained crime suspects during this critical stage of the judicial process. Numerous legal scholars, criminal-justice practitioners, political leaders, and social scientists have called for the videotaping of all police interrogations as a solution to the problem of some innocent people being induced to incriminate themselves when confronted by standard police interrogation tactics. Those who advocate videotaping interrogations argue that the presence of the camera will deter the use of coercive methods to induce confessions and will provide complete and objective records of the interrogations so that judges and jurors can evaluate thoroughly and accurately the voluntariness and veracity of any confessions.

Under certain circumstances, I have no doubt that the videotape method, compared with more traditional methods of evidence presentation, can improve assessment of the voluntariness and reliability of confessions. Certainly, if interrogators use obviously assaultive coercion, any reasonable observer will recognize the illegitimacy of the confession. However, such third-degree intimidation has been replaced by nonassaultive psychological manipulation that is not always recognized as coercive but, as research has shown, can nonetheless lead to false admissions of guilt (cf. Kassir & Kiechel, 1996). In this age of psychologically oriented interrogation techniques, videotaping interrogations and confessions may not be a surefire preventive against convicting the truly innocent. In the United States and in many other countries (such as Canada, Australia, and the United Kingdom), videotaped interrogations and confessions are typically recorded with the camera focused on the suspect. Positioning the camera in this manner seems straightforward and logical because trial fact finders presumably need to see directly what the suspect said and did to best assess the voluntariness and veracity of his or her statements.

The illusory-causation phenomenon, however, suggests the alarming possibility that the default camera perspective taken when recording criminal confessions (i.e., focused on the suspect) could have an unintended prejudicial effect on trial participants' subsequent evaluations of the voluntariness of the confessions. More specifically, observers of a videotaped confession recorded with the camera focused on the suspect, compared with the same confession recorded from a different camera perspective, might be more likely to judge the confession as voluntary (i.e., attributable to the suspect). I now describe

a systematic program of research that indicates that this is not simply a possibility; it is in fact a reality.

EVIDENCE FOR A BIASING EFFECT OF CAMERA PERSPECTIVE ON EVALUATIONS OF VIDEOTAPED CONFESSIONS

The research (Lassiter, Geers, Handley, Weiland, & Munhall, 2002; Lassiter, Geers, Munhall, Handley, & Beers, 2001; Lassiter, Geers, Munhall, Ploutz-Snyder, & Breitenbecher, 2002) proceeded in three stages. Stage One focused on establishing the existence and robustness of the camera-perspective bias in videotaped confessions. Stage Two examined the extent to which the bias generalized to more real-world contexts. Finally, Stage Three investigated the mechanisms hypothesized to underlie the biasing effect of camera perspective.

Summary of Stage One Experiments

Stage One of the research comprised eight studies that were, for the most part, relatively simple in their design and in the stimulus materials used. The mock confessions that were constructed for five of the experiments were designed to be composites of various elements that have been documented to occur in real interrogations or that police manuals advise should occur. None of the stimulus tapes resulting from these staged interrogations and confessions lasted longer than 5 min. (Leo, 1996, reported that interrogations of this length are not typical, but they do occur.) For the remaining three experiments, the confession stimulus was developed from the transcript of an actual police interrogation and was approximately 30 min in duration.

Seven of the experiments in Stage One employed only continuous (rating scale) measures of participants' judgments because such ratings often exhibit greater sensitivity than dichotomous responses and because they are amenable to more powerful statistical analyses. (In a true courtroom, judgments concerning voluntariness and guilt would ultimately be rendered in a dichotomous fashion. However, at this point the primary concern was to detect the bias, if it actually existed. Issues of external validity could always be addressed later—and were in Stage Two.) Finally, all participants in the Stage One experiments were college students recruited from introductory psychology courses.

Consistent with the largely innocuous instances of illusory causation described earlier, the Stage One experiments revealed that videotaped confessions recorded with the camera focused on the suspect—compared with videotapes from other camera points of view (i.e., focused equally on the suspect and interrogator or focused solely on the interrogator) or with more traditional presentation formats (i.e., transcripts and audiotapes)—resulted in the judgment that the confessions were more voluntary. This biasing effect of camera perspective proved to be quite robust and pervasive. It influenced not only judgments of voluntariness, but also perceived likelihood of guilt and sentencing recommendations—perceived likelihood of guilt was greater and recommended sentences were more severe when the suspect-focus videotape of a confession was viewed. It generalized across confessions dealing with such crimes as shoplifting, burglary, drug trafficking, rape, and manslaughter. It affected the judgments of individuals who were naturally motivated to be effortful and critical thinkers, as well as the judgments of individuals who lacked such motivation. It was not reduced by

the opportunity for decision makers to deliberate before rendering their judgments, and it persisted even when they believed they would have to justify their evaluations to a local judge. Finally, urging mock jurors to concentrate on the content of the confession, rather than the manner in which it was presented, did not diminish the prejudicial effect of camera perspective.

Summary of Stage Two Experiments

Diamond (1997) has argued that trial simulations, at Stage One of a research program, that involve relatively "easy" methods (e.g., using college-student participants and brief stimulus materials) should be followed up with Stage Two research that involves more elaborate, representative methods (e.g., using community members as participants and extensive videotaped trials as stimuli). As Bornstein (1999) has noted, courts are more likely to be receptive to psycholegal research findings that are of the Stage Two variety.

The Stage Two portion of this research, then, comprised three experiments that are notable for their, in Bornstein's (1999, p. 88) words, "harder, more representative methods." All three studies involved extensive videotaped trial simulations that required from 3 to 5 hr of participants' time. In two of the experiments, all participants were nonstudent, jury-eligible adults recruited from both rural and urban communities in Ohio. In the other experiment, both nonstudent and student participants were used so that a systematic comparison of their responses could be made. In all Stage Two studies, participants made dichotomous judgments (e.g., guilty or not guilty). In addition to addressing these issues of external validity, the Stage Two experiments continued to explore possible ways of preventing camera perspective

from influencing the judgment process of observers.

Even though these studies used realistic, videotaped simulations of actual trials that included the direct testimony and cross-examination of several witnesses, the presentation of physical evidence, prosecution and defense arguments, judicial rulings on points of law, and most of the other trappings associated with such legal proceedings, camera perspective still swayed mock jurors' judgments. The magnitude of the bias under these conditions was remarkable; in one instance, the simple change from an equal-focus confession to a suspect-focus confession doubled the conviction rate! Furthermore, this effect was impervious to various debiasing attempts. Judicial instruction emphasizing the need to be cognizant of reliability and fairness concerns in evaluating the confession and, in some cases, directly alerting mock jurors to the potentially prejudicial effect of camera perspective did not mitigate the bias. This was true whether the judicial instruction preceded or followed the presentation of the confession. Allowing mock jurors to view the videotaped confession a second time also failed to attenuate the biasing effect of camera perspective. Finally, gender was not a significant factor, and jury-eligible adults in their 40s and 50s fared no better (or worse) than their college-age counterparts.

Summary of Stage Three Experiments

The findings of the first two stages of research clearly demonstrated the practical significance of illusory causation. The final stage of the research was more theoretical in that it focused on identifying the processes mediating this phenomenon.

Early attempts to specify a mediator of illusory causation emphasized memory processes (cf. McArthur,

1980). Generally, it was argued that salient information tends to be more memorable than nonsalient information, and this difference in memory is responsible for the greater causality ascribed to salient information. Later, Newtonson (Newtonson, Rindner, Miller, & La-Cross, 1978) and McArthur (1980) suggested that illusory causation may have more to do with how people initially pick up or register information from an observed interaction than with how they subsequently remember that information. That is, Newtonson and McArthur argued that the point of view from which individuals observe an interaction influences the initial registration or perceptual organization of information from the ongoing interaction, which in turn directly influences causal attributions and related judgments.

Stage Three, then, comprised four experiments whose main purpose was to assess the relative tenability of the memory-mediated and perception-mediated explanations of illusory causation. Like the Stage One studies, these experiments used rather simple stimulus materials and participants drawn from college populations. Because the focus of this stage of the research was on pinning down the basic mechanisms underlying the illusory-causation phenomenon, the stimuli used in three of the experiments were similar to those in the original studies conducted by Taylor and Fiske (1975)—that is, 5-min “getting acquainted” conversations between two college students. The remaining experiment, however, demonstrated that the same basic effects found with these stimuli do generalize to the kinds of videotaped confession materials that were used in Stage One.

The results indicated that illusory causation, to paraphrase Gilbert (1995), is less a species of memory and more a species of perception. That is, taken together, the four ex-

periments provided considerable support for the notion that a person’s literal point of view (which, in these instances, was determined completely by the camera’s perspective) affects how he or she initially registers, or extracts, information from an observed interaction, which in turn affects his or her judgments regarding the causal influence exerted by each interactant.

POLICY IMPLICATIONS

Earlier in this article, I noted that many scientific, legal, and political experts have called for the universal adoption of videotaping as a “quick fix” for the problem of some innocent people being induced to incriminate themselves when confronted by standard police interrogation tactics. The research I have summarized, however, indicates that the indiscriminate application of videotaping to solve the problem of coerced or false confessions slipping through the system could exacerbate the situation.

Am I thus recommending that videotaped interrogation and confession evidence not be used in courts of law? No, because the research does not paint an entirely negative picture with regard to introducing videotaped confessions in the courtroom. It was found that videotaped confessions that focused on the suspect and the interrogator equally generated judgments that were comparable to those based on more traditional presentation formats—that is, audiotapes and transcripts. Thus, it is clear that the videotaping procedure per se is not inherently prejudicial. Rather, it is the manner in which the videotaping procedure is implemented that holds the potential for bias. It appears, then, that the advantages associated with the videotape method—for example, a more detailed record of the interrogation is provided to

trial participants—can be maintained without introducing bias if an equal-focus perspective is taken by the video camera.

RESEARCH DIRECTIONS

Videotaping is only one of several technologies that have found their way into the courtroom. Computer simulations, videoconferencing, and even virtual-reality technology are currently, or soon will be, used in trial settings. As noted by Federal Judicial Center researcher Meghan Dunn, “to preserve the sanctity of the legal process, we need to know how that technology is affecting trial participants” (quoted in Carpenter, 2001, p. 31). For example, can videoconferencing diminish the perceived legitimacy of court proceedings? Do computer simulations facilitate jurors’ comprehension of complex evidence or testimony? Does the degree of familiarity with new technology influence trial participants’ receptivity to evidence presented in a high-tech manner? Will the use of virtual reality in trials erode the objectivity that jurors are supposed to maintain as triers of fact? Further research is needed to answer these and related questions concerning the impact of technology on American jurisprudence.

Recommended Reading

- Dwyer, J., Neufeld, P., & Scheck, B. (2000). (See References)
- Kassin, S.M. (1997). The psychology of confession evidence. *American Psychologist*, 52, 221–233.
- Lassiter, G.D., Geers, A.L., Munhall, P.J., Handley, I.M., & Beers, M.J. (2001). (See References)
- Lassiter, G.D., Geers, A.L., Munhall, P.J., Ploutz-Snyder, R.J., & Breitenbecher, D.L. (2002). (See References)
- Zebrowitz, L.A. (1990). *Social perception*. Pacific Grove, CA: Brooks/Cole.

Notes

1. Address correspondence to G. Daniel Lassiter, Department of Psychology, Ohio University, Athens, OH 45701; e-mail: lassiter@ohio.edu.

2. Additional factors responsible for miscarriages of justice identified by Dwyer et al. (2000) include egregiously incompetent defense lawyers, erroneous eyewitness accounts, scientifically unreliable evidence, and prosecutorial misconduct.

References

- Bornstein, B.H. (1999). The ecological validity of jury simulations: Is the jury still out? *Law and Human Behavior, 23*, 75–91.
- Carpenter, S. (2001, October). Technology gets its day in court. *Monitor on Psychology, 32*, 30–32.
- Diamond, S.S. (1997). Illuminations and shadows from jury simulations. *Law and Human Behavior, 21*, 561–571.
- Dwyer, J., Neufeld, P., & Scheck, B. (2000). *Actual innocence*. New York: Doubleday.
- Gilbert, D.T. (1995). Attribution and interpersonal perception. In A. Tesser (Ed.), *Advanced social psychology* (pp. 99–147). New York: McGraw-Hill.
- Kassin, S.M., & Kiechel, K.L. (1996). The social psychology of false confessions: Compliance, internalization, and confabulation. *Psychological Science, 7*, 125–128.
- Koffka, K. (1935). *Principles of gestalt psychology*. New York: Harcourt Brace.
- Lassiter, G.D., Geers, A.L., Handley, I.M., Weiland, P.E., & Munhall, P.J. (2002). Videotaped interrogations and confessions: A simple change in camera perspective alters verdicts in simulated trials. *Journal of Applied Psychology, 87*, 867–874.
- Lassiter, G.D., Geers, A.L., Munhall, P.J., Handley, I.M., & Beers, M.J. (2001). Videotaped confessions: Is guilt in the eye of the camera? In M.P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 33, pp. 189–254). New York: Academic Press.
- Lassiter, G.D., Geers, A.L., Munhall, P.J., Ploutz-Snyder, R.J., & Breitenbecher, D.L. (2002). Illusory causation: Why it occurs. *Psychological Science, 13*, 299–305.
- Leo, R.A. (1996). Inside the interrogation room. *The Journal of Criminal Law and Criminology, 86*, 266–303.
- McArthur, L.Z. (1980). Illusory causation and illusory correlation: Two epistemological accounts. *Personality and Social Psychology Bulletin, 6*, 507–519.
- Newton, D., Rindner, R.J., Miller, R., & LaCross, K. (1978). Effects of availability of feature changes on behavior segmentation. *Journal of Experimental Social Psychology, 14*, 379–388.
- Taylor, S.E., & Fiske, S.T. (1975). Point of view and perceptions of causality. *Journal of Personality and Social Psychology, 32*, 439–445.

Making Group Brainstorming More Effective: Recommendations From an Associative Memory Perspective

Vincent R. Brown and Paul B. Paulus¹

Department of Psychology, Hofstra University, Hempstead, New York (V.R.B.), and Department of Psychology, University of Texas at Arlington, Arlington, Texas (P.B.P.)

Abstract

Much literature on group brainstorming has found it to be less effective than individual brainstorming. However, a cognitive perspective suggests that group brainstorming could be an effective technique for generating creative ideas. Computer simulations of an associative memory model of idea generation in groups suggest that groups have the potential to generate ideas that individuals brainstorming alone are less likely to generate. Exchanging ideas by means of writing or computers, alternating solitary and group brainstorming, and using heterogeneous groups appear to be useful approaches

for enhancing group brainstorming.

Keywords

brainstorming; cognitive stimulation; groups; group creativity

There is a general belief in the efficacy of collaboration for projects involving innovation or problem solving (Bennis & Biederman, 1997; Sutton & Hargadon, 1996). Although there is some evidence for the effectiveness of collaborative science and teamwork (Paulus, 2000), the enthusiasm for collective work may not always be justified. Controlled studies of idea sharing in groups have shown that groups often overestimate their ef-

fectiveness (Paulus, Larey, & Ortega, 1995). Experiments comparing interactive brainstorming groups with sets of individuals who do not interact in performing the same task have found that groups generate fewer ideas and that group members exhibit reduced motivation and do not fully share unique information (e.g., Mullen, Johnson, & Salas, 1991). The strongest inhibitory effect of groups may be production blocking, which is a reduction in productivity due to the fact that group members must take turns in describing their ideas (Diehl & Stroebe, 1991).

One area in which these problems are most evident is the study of group creativity. Most research on creativity has examined individual creativity because it is typically seen as a personal trait or skill. However, today much creative work requires collaboration of people with diverse sets of knowledge and skills. How can such groups overcome the inevitable liabilities of group interaction to reach their creative potential? Is it possible to demonstrate that group interaction can lead to enhanced creativity? Examining these questions has been the aim of our program of re-