

# This Week's Citation Classic

**Fischhoff B.** Hindsight ≠ foresight: the effect of outcome knowledge on judgment under uncertainty. *J. Exp. Psychol.-Hum. Percep. Perf.* 104:288-99, 1975. [Department of Social & Decision Sciences, Department of Engineering & Public Policy, Carnegie Mellon University, Pittsburgh, PA]

Subjects read brief descriptions of obscure historical events (e.g., a war between British and Gurka forces). Foresight subjects assessed the probability of four possible outcomes, without knowing what actually happened. Hindsight subjects were told that one of the four outcomes had occurred. They were then asked to respond as they would had they not been told. Subjects consistently overestimated how predictable the reported outcome would have seemed. The article discusses how a relatively surprise-free past might lead to a surprise-full future. [The SSCI<sup>®</sup> and the SCI<sup>®</sup> indicate that this paper has been cited in more than 215 publications.]

## Hindsight: Thinking Backwards?

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After completing an undergraduate degree in 1967 in mathematics at Wayne State University, I decided to spend the rest of my life on a kibbutz. That life revolved around mixed agricultural work and intensive group processes. After a time, I realized that the number theory that I loved was too far removed from the social issues that I really cared about. So, I returned to school in psychology, at the Hebrew University of Jerusalem. There, I was fortunate to stumble into Daniel Kahneman and Amos Tversky's research group during the exciting period in which they hammered out their influential approach to judgment under uncertainty.<sup>1</sup> This looks for systematic biases in people's judgments for clues to underlying cognitive processes.

As a graduate student, my task was, crudely speaking, to find myself a bias and domesticate it for psychology—to the point where it could be studied experimentally and interpreted in the context of psychological theory. As an individual, my task was to link the life that I once planned with the one I now planned to live. While on the kibbutz, I had written a book (of sorts) on teaching history to adolescents. Its challenge

was how to help kids care about their history and draw useful lessons from it. During the writing, I read a good deal of historiography, much of which could be construed as expressing theories of judgment—the ruminations of historians on how to discipline one's mind, in order to avoid playing new tricks on the dead in every generation. The most widely recognized threat is hindsight bias: being unable to reconstruct the situation facing historical figures, knowing the outcomes of their actions.

One day at a research seminar, Danny Kahneman told an anecdote about psychiatrists' fluency at second-guessing the diagnoses made by their colleagues, once they knew how a case had turned out. Suddenly, I realized that hindsight could be "my" bias. One challenge facing my research was distinguishing actual from illusory learning from history. A second challenge was finding a way to measure the size, hence significance, of the bias. A third was determining whether being set in the past by itself, changes how events are viewed. A fourth was finding procedures for helping people reduce the bias by using their minds more effectively. Those procedures might incorporate some of the historiographers' suggestions, but with added assurance provided by this kind of evaluation. Following ungrounded advice can leave one worse off, by increasing confidence in judgments that are just as biased.<sup>2</sup>

In this *Classic* paper and several that followed, I had something to say about each of these issues. Subsequent investigators have added a great deal.<sup>3,4</sup> The topic may have attracted attention because it has some of the properties of a good problem: the basic results from my studies replicate reliability; the effects change in interesting ways with some, but not all, manipulations; and, the bias threatens enough everyday activities to be worth treating.

Although my own work soon shifted to other topics,<sup>5,6</sup> I hope one day to return the favor to historiography and write a fuller psychological account of historical judgment.<sup>7</sup> For now, my brushes with history mainly involve shelving my quarterly issues of *History and Theory*.

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3. Hoch S & Loewenstein G. Outcome feedback: hindsight and information. *J. Exp. Psychol. Learn. Mem. Cogn.* 15:605-19, 1989.

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