In the otherwise forgettable Star Wars prequel “The Phantom Menace,” Jedi Knight Qui-Gon Jinn instructs a young Anakin Skywalker to “always remember: your focus determines your reality.”

Qui-Gon’s insight is an important one, but you need not be a Jedi to recognize this basic principle of human psychology: You tend to find evidence of whatever it is you already believe, whether it’s proof that your boss undervalues your work, or evidence that a job candidate who looks right for the job also possesses the necessary skills.

This effect—what psychologists call “confirmation bias”—is just as strong when we look backwards in time. Thucydides, the great historian of the Peloponnesian War, observed that “people make their recollections fit with their suffering.” In other words, our perception of the past similarly bends to conform to what we “know” in our hearts to be true.

This tendency to find confirmation for facts already “known” is at the heart of the phenomenon known as “hindsight bias.”\(^1\) Decades of psychological research have proven the universal tendency not only to look for evidence to confirm a conclusion you have already reached, but also to greatly overestimate how foreseeable an outcome was once you know that the outcome has taken place.\(^2\)

The effects of hindsight bias are particularly significant in criminal investigations and, as I’m going to discuss, in white-collar investigations most of all. Those of us who practice in this area quickly learn that white-collar criminal investigations are often heavily outcome-driven, leaving them especially vulnerable to the distortions of fairness and rationality that hindsight bias can produce. The problem is not insoluble, but solving it requires a broader awareness of hindsight bias, a greater understanding of the depth and
dimensions of the issue among the white-collar community, and consideration of the range of potential solutions.

The Problem of Hindsight In White-Collar Crime

Hindsight bias infects white-collar investigations so meaningfully for two principal reasons. The first is that in financial fraud, more often than not, guilt or innocence turns not on what a defendant did, but on the defendant’s mental state in doing it: with what intent did he or she make a statement in a securities filing, push for a particular accounting treatment, approve a payment to a third party, or perform some other job function that now appears suspect? That intent must usually be inferred from an ambiguous factual record, further amplifying the subjective nature of the fact finder’s job. The result is that innocent mistakes, poor judgment, or even negligence can look like intentional conduct when viewed through the magnifying lens of hindsight.

Even worse, the degree to which a particular event is judged to have been improper after the fact and the notoriety it generates have an outsized impact on what inferences criminal investigators draw about the mental state of the persons involved. As discussed below, empirical studies have shown that the more negative the outcome, the more pronounced the hindsight bias. Real life examples of this phenomenon are not hard to come by. When Bernie Madoff’s 48-year-old Wall Street firm was revealed to have been a Ponzi scheme of historic proportions, law enforcement agencies immediately set out to prove that the banks and investment advisors who had worked with Madoff knew what he was up to. This, in spite of the fact that government agencies had themselves failed to detect Madoff’s fraud, despite having received complaints and warnings years earlier. Given the magnitude of the fraud and the media attention it drew, liability on the part of financial institutions that dealt with Madoff felt inevitable.

Hindsight Bias In Legal Settings

Numerous empirical studies have documented the effects of hindsight bias on the judgment of both experts and laypeople in situations that involve medical diagnoses, political strategy, and more. Its impact in judgments of legal culpability by both juries and judges has been shown to be equally pervasive. Typical “mock jury” studies ask subjects to evaluate the reasonableness of a defendant’s decision. Evaluators are randomly divided into a “foresight group,” which is given all the information available to the defendant at the time of the decision, and a “hindsight group,” which is additionally told the outcome. These tests have consistently shown that the hindsight group—the group playing the role of typical investigators, judges, and juries—will view the outcome as more likely and the defendant as more culpable than the foresight group. And the more negative the outcome, the more pronounced the bias. One example involved the choice of whether to undertake expensive precautions against the threat of a flood. It found that three quarters of the foresight group determined that flooding was too unlikely to justify extra precautions, while a majority of the hindsight group instead estimated a significantly higher probability of flooding and found negligence in the failure to take precautions. Empirical analyses of decisions by actual juries and judges show similar results.

In certain fields, such as civil litigation, lawmakers have recognized the problem and developed rules—or “de-biasing” methods, in the jargon of psychologists—to mitigate the effects of hindsight bias. Federal judges and legislators have designed pleading requirements for securities fraud class actions to deter suits premised solely on “fraud by hindsight,” in Judge Henry Friendly’s famous phrase. Various legal rules aim to de-bias hindsight assessments of a defendant’s level of care. One method is to restrict the information available to the factfinder—for example, the inadmissibility of subsequent remedial measures evidence in negligence cases. Another is to relax the standard of review or defer to professional norms—for example, the business judgment rule applicable to corporate officers. Nevertheless, hindsight bias has proven extremely difficult to combat. Studies have found little success with jury instructions that merely warn about its influence. In the flood precautions study, for example, instructions cautioning that “hindsight vision is always 20/20” and urging jurors to “think of all the ways in which the event in question may have happened differently or not at all” failed to eliminate hindsight bias. On the other hand, more elaborate de-biasing procedures than those typically used in court—requests for jurors to list alternative explanations along with specific evidence supporting each counterfactual—have proven more successful.

Addressing Hindsight Bias In White-Collar Practice

Given that white-collar crime displays virtually every feature shown empirically to intensify or entrench hindsight bias, it is hardly surprising that this area of the law suffers from the problem. As noted, white-collar criminal and regulatory enforcement depends chiefly on after-the-fact judgments of foreseeability and state of mind. Major white-collar investigations often follow the kinds of extreme outcomes—a company’s collapse, a Ponzi scheme’s unraveling, a full-blown financial
activity. And even though criminal charges full knowledge of the customer's criminal read later by investigators possessing the gest indifference or willful blindness when risk posed by a customer can falsely sug-
raneous communications concerning the explanations that now appear implausible real time, suspicions that were allayed by notorious customer
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of their bank's customers, they will find
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tor controls be "risk based" and not foolproof. But compliance officers know that if a terror-
laundering must sift through millions of daily transactions to try to find evidence of criminal activity. In view of
the enormonousness of the data haystack, the law requires that a bank's internal con-
trols be "risk based" and not foolproof. But compliance officers know that if a terrorist attack, large-scale narcotics bust, or massive fraud reveals connections to one of their bank's customers, they will find themselves under the intense spotlight of criminal, regulatory, and sometimes political investigations. And they know that those connections, no matter how difficult to detect at the time, will appear glaring in the harsh light of hindsight. Worst of all for the compliance officer is the nightmare scenario where a now-notorious customer did raise suspicions in real time, suspicions that were allayed by explanations that now appear implausible or pretextual to investigators viewing the facts retrospectively. Innocent contemporaneous communications concerning the risk posed by a customer can falsely suggest indifference or willful blindness when read later by investigators possessing the full knowledge of the customer's criminal activity. And even though criminal charges in such circumstances are thankfully rare, the emotional and professional price paid by compliance officers put through the "near death experience" of such investigations is high.
Given the prevalence of hindsight bias in white-collar criminal enforcement, the law's failure to adapt is regrettable. Any strategy to combat cognitive bias, psychologists have found, requires not only awareness of the bias, but also awareness of its magnitude and direction, a motivation to correct it, and some means of correcting it. And although some areas of law have shown a capacity to address hindsight bias—for example, through evidentiary rules and judicial instructions in simple negligence cases, or pleading and burden-shifting rules in corporate governance and securities litigation—white-collar criminal law lags behind in tackling or even recognizing these vulnerabilities. Neither the rules of criminal procedure or evidence, nor criminal statutes themselves, take into account the pernicious effect of hindsight bias in financial fraud cases. As noted above, a simple reminder of 20/20 hindsight in jury instructions is not effective. Given this reality, the responsibility falls to defense attorneys to posit alternative theories and to urge prosecutors, judges, and juries to view the facts at the time the events occurred, rather than through the lens of hindsight.
Compounding the problem is the infre-

To its credit, the DOJ has acted recently to address unconscious racial, ethnic, gender and other biases among all of its law enforcement agents and prosecutors. It should do the same with respect to cognitive biases like hindsight bias. DOJ prosecutors and law enforcement agents should be trained on how to de-bias their evaluation of evidence—for example, by engaging in formal exercises to create and test counterfactuals and alternative hypotheses, including by employing “Devil's Advocate” teams to challenge prosecutorial theories.

Notwithstanding the difficulties, legal rules and practitioners in the area of white-collar criminal enforcement can and should adapt to reduce hindsight bias—not simply to ensure that white-collar criminal enforcement is fair and rational, but also to ensure that it achieves its critical function of deterrence. If hindsight bias undermines the law's ability to distinguish lawful conduct from wrongdoing, it weakens the deterrent value of compliance defenses, for example in the anti-corruption and anti-money laundering contexts. Hindsight bias does not only undercut the law's effectiveness in conveying legal risk. It also fundamentally hampers our ability to understand and learn from past experience. Social scient-
ists have amply demonstrated that even the most experienced, objective, and well-meaning decision makers will systemati-
cally overestimate the foreseeability of bad outcomes once they have occurred. If the law fails to correct for this error, then legal decision makers have little chance of encouraging rational risk-mitigation and ensuring the fair administration of justice.

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1. There’s a reason why hindsight bias also goes more colloquially by the name “Monday morning quarterbacking”: When Super Bowl LI reached its improbable conclu-
sion, millions of football fans—including those who had
turned the game off in the third quarter because it was clear that New England had no hope of coming back—quickly took to criticizing Atlanta's decision to continue to throw the ball late in the fourth quarter instead of running the ball and settling for a field goal.


(i) first, adjusting the perceived probability of an event after learning it has occurred; second, failing to realize that learning the outcome has altered one's perception, and so mistakenly believing that one's ex ante and ex post judgments would be similar (sometimes referred to as the "I knew it all along" effect); and third, concluding that another person would likewise have made equivalent ex ante and ex post judgments. See Reid Hastie, David A. Schkade, & John W. Payne, "Looking Backward in Punitive Judgments: 20-20 Vision?", in PUNITIVE DAMAGES: HOW JURIES DECIDE 96, 107 (Cass R. Sunstein et al., eds., 2002).


5. Christine Jolls, “Debiasing Through Law” (John M. Olin Koehler & Nigel Harvey eds., 2004); Cass R. Sunstein & Ofer Gneezy, “The Psychology of Judging in Hindsight,” 65 U. CHI. L. REV. 571 (2004) (finding that subjects considered the evidence in a criminal trial more incriminating when they were told the defendant was found guilty and less incriminating when they were told the defendant was found not guilty, as compared to subjects given only the evidence and not the outcome); Mitu Gulati, Jeffrey J. Rachlinski, & Donald C. Langevoort, “Fraud by Hindsight,” 98 NW. U. L. REV. 773 (2004) (studying judges’ strategies to correct for hindsight bias in securities fraud cases); Chris Guthrie, Jeffrey J. Rachlinski, & Andrew J. Wistrich, “Inside the Judicial Mind,” 86 CORNELL L. REV. 777 (2001) (finding federal magistrate judges susceptible to hindsight bias, though to a lesser extent than lay decision makers); Hattie, Schkade, & Payne, supra note 2, at 96-108 (finding substantial hindsight bias in jury determinations of recklessness and liability for punitive damages); Reid Hastie & W. Kip Viscusi, “What Juries Can’t Do Well: The Jury’s Performance as a Risk Manager,” 40 ARIZ. L. REV. 901 (1998) (concluding that hindsight bias in punitive damages determinations was more pronounced for juries than experienced judges); Marianne M. Jennings et al., “Causality as an Influence on Hindsight Bias: An Empirical Examination of Judges’ Evaluation of Professional Audit Judgment,” 21 J. OF ACCT. & PUB. POL’Y 143 (1998) (observing hindsight bias in judges’ evaluations of auditing opinions).

6. See Rachlinski, supra note 4, at 602-24 (explaining how the law has adapted to accommodate hindsight bias).

7. See Denny v. Barber, 576 F.2d 465, 470 (2d Cir. 1978) (affirming the dismissal of a securities class action where the lead plaintiff had “simply seized upon disclosures made in later annual reports and alleged that they should have been made in earlier ones”); Rachlinski, supra note 4, at 616-17 (analyzing heightened pleading requirements in §10(b) cases as a response to hindsight problems); Gulati, Rachlinski, & Langevoort, supra note 9, at 775 (finding that federal courts cited concerns with hindsight in nearly a third of all published securities class action opinions).


9. See Rachlinski, supra note 4, at 619-23 (on the business judgment rule); see also id. at 608-13 (on legal defenses based on compliance with regulation or custom, in cases involving commercial or medical decisions). Delaware courts have specifically cited the problems of hindsight bias and judicial competence as rationales for applying the business judgment rule in cases alleging failures of director oversight. See In re Citigroup Deriv. Litig., 964 A.2d 106, 124 (Del. Ch. 2009) (“[T]he doctrine follows from the inadequacy of the Court, due in part to a concept known as hindsight bias, to properly evaluate whether corporate decision-makers made a ‘right’ or ‘wrong’ decision.”); Stone v. Ritter, 911 A.2d 362, 373 (Del. 2006) (“With the benefit of hindsight, the plaintiffs’ complaint seeks to equate a bad outcome with bad faith.”).

10. See, e.g., Baruch Fischhoff, “Debiasing,” in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 422 (Daniel Kahneman, Paul Slovic, & Amos Tversky eds., 1982) (reviewing various strategies to reduce hindsight bias, including warnings about its effects, and finding that only intensive personalized feedback reduced the bias); Merrie Jo Stallard & Debra L. Worthington, “Reducing the Hindsight Bias Utilizing Attorney Closing Arguments,” 22 L. & HUM. BEHAV. 671 (1998) (in a study of jury determinations of director liability, finding some success in reducing hindsight bias through the defense’s closing argument and little success through jury instructions warning against the use of hindsight).


12. See, e.g., Hal R. Arkes et al., “Elminating the Hindsight Bias,” 73 J. APPLIED PSYCHOL. 305 (1988) (finding that where foresight and hindsight subjects had to estimate the probability of different medical diagnoses, hindsight bias was lower for hindsight subjects asked to state reasons why different possible diagnoses might be correct); Martin F. Davies, “Reduction of the Hindsight Bias by Restoration of Foresight Perspective: Effectiveness of Foresight Encoding and Hindsight-Retrieval Strategies,” 40 ORG. BEHAV. & HUM. DECISION PROCESSES 50 (1987) (finding reduction of hindsight bias where subjects listed supporting facts for various potential outcomes). But see Lawrence J. Sanna, Norbert Schwarz, & Shevuan L. Stocker, “When Debiasing Backfires: Accessible Content and Accessibility Experiences in Debiasing Hindsight,” 28 J. EXPERIMENTAL PSYCHOL. 497 (2002) (finding that attempts to reduce hindsight bias by considering alternative outcomes exacerbated the bias and attributing this result to the perceived difficulty of listing counterfactuals).


15. For a similar point regarding securities regulation, see Gulati, Rachlinski, & Langevoort, supra note 9, at 774 (“The hindsight bias … creates a considerable obstacle to the fundamental task in securities regulation of sorting fraud from mistake.”).