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Bridging the Gaps: Cognitive Constraints on Corporate Control & Ethics Education

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BRIDGING THE GAPS: COGNITIVE CONSTRAINTS ON
CORPORATE CONTROL & ETHICS EDUCATION

*Michael B. Metzger**

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“The first of all moral obligations is to think clearly.”¹

I. INTRODUCTION

In the latest of our long history of skirmishes between the regulators and the regulated, Congress predictably reacted to the scandals surrounding Enron, WorldCom, and Arthur Andersen by enacting

1. MICHAEL NOVAK, *THE SPIRIT OF DEMOCRATIC CAPITALISM* 20 (1982). Massimo Piattelli-Palmarini recognizes the intimate link between good thinking and morality when he observes that the “aim of expanding reason” has “a *moral* dimension: to restore our decisional health.” MASSIMO PIATTELLI-PALMARINI, *INEVITABLE ILLUSIONS* 3-4 (1994). He finds some explanatory support from research in the field of evolutionary psychology. Robert Wright observes that: “In this sense . . . we are moral: we have, at least, the technical capacity for leading a truly examined life; we have self-awareness, memory, foresight, and judgment.” ROBERT WRIGHT, *THE MORAL ANIMAL* 344 (1994). The fly in the ointment is that:

Chronically subjecting ourselves to a true and bracing moral scrutiny, and adjusting our behavior accordingly, is not something we are designed for. We are potentially moral animals — which is more than any other animal can say — but we aren’t naturally moral animals. *To be moral animals, we must realize how thoroughly we aren’t.*

Id. (emphasis added). Such self-knowledge, however, may not be something that we are naturally inclined to attain, because as Wright explains:

Much of the relevant history of our species took place before our ancestors were smart enough to ask much of anything. And even in the more recent past, after the arrival of language and self-awareness, there has been no reason for every evolved behavioral tendency to fall under conscious control. In fact, sometimes it is emphatically *not* in our genetic interest to be aware of exactly what we are doing or why.

Id. at 36-37 (original emphasis). It is nonetheless critical that we try to attain it, he argues, because “[u]nderstanding the often unconscious nature of genetic control is the first step toward understanding that — in many realms, not just sex — we’re all puppets, and our best hope for even partial liberation is to try to decipher the logic of the puppeteer.” *Id.* at 37.

legislation, the Sarbanes-Oxley Act,² aimed at increasing the transparency of corporate financial accounting and thereby restoring confidence in U.S. financial markets. Equally predictably, this legislation has generated a host of commentary, both supportive³ and critical.⁴ Some critics have called for

2. Sarbanes-Oxley Act, 15 U.S.C. §§ 7201-7266 (2004).

3. See, e.g., John Holcomb, *Corporate Governance: Sarbanes-Oxley Act, Related Legal Issues, and Global Comparisons*, 32 DENV. J. INT'L L. & POL'Y 175, 230 (2004) ("Most acknowledge it is the most important corporate reform legislation since the Securities and Exchange Act of 1933, and its impact is bolstered by shareholder activism and litigation, by state and federal regulatory authorities, by increased penalties and criminal prosecutions, and by more aggressive stock exchanges."); Brian Kim, *Recent Development: Sarbanes Oxley Act*, 40 HARV. J. ON LEGIS. 235, 252 (2003) (arguing that the Sarbanes-Oxley Act substantially achieves a balance by fighting fraud without shutting out creativity); Robert Prentice, *Review Essay: Enron: A Brief Behavioral Autopsy*, 40 AM. BUS. L.J. 417, 444 (2003) ("Sarbanes-Oxley will likely influence in a beneficial direction what both businesspeople and others view as acceptable business behavior in the future."); Judith Burns, *Is Sarbanes-Oxley Working? We Asked a Variety of Experts; Most of Them said Yes with Some Caveats*, WALL ST. J., June 21, 2004, at R8 (discussing interviews with a variety of experts, most of whom are generally positive about the Act); Bob Greifeld, *The View from NASDAQ*, WALL ST. J., July 30, 2004, at A10 (stating that implementing Sarbanes-Oxley "is painful and time-consuming" but it should restore public confidence in U.S. capital markets); Andrew Parker & David Wighton, *Donaldson Laments U.S. Chiefs' Lack of Ethical Leadership*, FIN. TIMES, Sept. 20, 2004, at 1 (S.E.C. chairman denying critics' claims that regulatory pendulum had swung too far and lamenting lack of ethical leadership by corporate leaders).

4. See, e.g., John C. Coffee, Jr., *What Caused Enron? A Capsule Social and Economic History of the 1990's*, 89 CORNELL L. REV. 269, 305 (2004) (arguing that "Sarbanes-Oxley failed to address: (1) increasing the legal threat to deter gatekeeper acquiescence in managerial fraud; (2) reducing the perverse incentives created by the unconstrained use of stock options; and (3) deal with the structural conflicts that cause herding, analyst bias, and an excessive market bias towards optimism"); Thomas L. Greaney, *Essay: Looking Beyond the Evildoers: Sarbanes-Oxley and the Future of Corporate Law*, 47 ST. LOUIS U. L.J. 961 (2003) (arguing that problems infecting modern corporate governance are systemic and suggesting that they are not remedied by legislation that relies exclusively on punishing evildoers or improving information dissemination); Holman W. Jenkins, Jr., *Thinking Outside the Sarbox*, WALL ST. J., Nov. 24, 2004, at A13 (stating that the annual bill for compliance is "going through the roof" and that the bill did not fix "real problems"); John Thain, *Sarbanes-Oxley: Is the Price Too High?*, WALL ST. J., May 27, 2004, at A20 (CEO of NYSE arguing costs of compliance with Sarbanes-Oxley are too high). Whatever one may think of the cost-benefit ratio associated with the Act, the costs are real, and being felt in surprising places. For example, a small, locally owned community bank in the author's town recently announced plans to become a private company, primarily because of increased costs associated with compliance with Sarbanes-Oxley. The bank estimated that compliance with new reporting obligations in 2005 would cost approximately \$200,000. Press Release, United Commerce Bank, Company Press Release (Oct. 25, 2004) (on file with author). There is also some indication that a backlash against adding to the regulatory burden may be starting to build. See Deborah Solomon & Michael Schoeder, *Back Off! Businesses Go Toe to Toe with SEC*, WALL ST. J., Oct. 27, 2004, at C1 ("As the number of high-profile corporate accounting scandals starts to diminish, business groups are starting to challenge the authority of regulators to impose new rules and restrictions.").

a renewed emphasis in America's business schools on instruction in ethics⁵ and law.⁶ While some of the assumptions implicit in these critics' reasoning are perhaps unjustified,⁷ their concern for improving the ethics of future managers *is* well founded. There seems little reason to doubt that the most effective and efficient control of corporate behavior would be exercised by persons inside business organizations. This is so not only because of the well-known difficulties of effectively applying legal sanctions against either business corporations⁸ or individual managers,⁹ but also because of the significant advantages corporate insiders potentially enjoy over any extra-organizational entity when it comes to shaping the behavior of corporate employees.¹⁰

The "Association to Advance Collegiate Schools of Business" (AACSB), the leading accreditor of business schools, has responded with

5. See, e.g., Amitai Etzioni, *When It Comes to Ethics, B-Schools Get an F*, WASH. POST, Aug. 4, 2002, at B4 (alleging that current business school efforts to teach ethics are token only and claiming that more needs to be done); Ian I. Mitroff & Diane L. Swanson, *An Open Letter to the Deans and the Faculties of American Business Schools: A Call for Action*, 35 ACAD. MGMT. NEWS 7 (2004) (arguing that business school curricula are flawed, because, among other things, some theories taught embody "a mean-spirited and distorted view of human nature" and because they embody "a narrow, outdated, and repudiated notion of ethics"); Eric Orts, *Law Is Never Enough to Guarantee Fair Practice*, FIN. TIMES, Aug. 23, 2002, at 9 (arguing that the Enron collapse demonstrates the need for teaching ethics to business managers); see also AACSB Task Force Report, quoted in *infra* text accompanying notes 12 & 20.

6. See, e.g., Robert Prentice, *An Ethics Lesson for Business Schools*, N.Y. TIMES, Aug. 20, 2002, at A19. "[B]usiness students do not need to study business ethics so much as they need to study business law." *Id.* Prentice argues that scandals at Enron, WorldCom, and ImClone "involved serious ethical lapses," but "they also involved serious violations of business laws" which occurred "at least in part, because their participants had an insufficient knowledge of, appreciation for and, yes, fear of the law." *Id.* By not requiring their students to take more law courses, he argues, "Business schools have played a role in this disaster." *Id.*

7. If one believes more ethics or legal instruction would have avoided or minimized these scandals one must assume, at a minimum, that those who perpetrated them did not know that what they were doing was unethical and illegal and that they could have been motivated to be ethical and law-abiding. There is reason to believe that these are heroic assumptions.

8. For a discussion of the problems associated with effectively imposing criminal fines on corporations, see Michael B. Metzger & Charles R. Schwenk, *Decision Making Models, Devil's Advocacy, and the Control of Corporate Crime*, 28 AM. BUS. L.J. 323, 327-32 (1990); see also *infra* text accompanying note 584.

9. For a discussion of the limited ability of the law to reach individual corporate managers, see Metzger & Schwenk, *supra* note 8, at 333-36.

10. See, e.g., Christopher Stone, *The Place of Enterprise Liability in the Control of Corporate Conduct*, 90 YALE L.J. 1, 26 (1980) (employer and employment environment have stronger, more immediate hold over employee than law does). See also *infra* text accompanying notes 496-98.

a task force report,¹¹ the main purpose of which is “to urge and encourage administrators and faculty in business education to contemplate their current approaches to ethics education and to explore methods to strengthen this vital part of the curriculum.”¹² While some business schools appear to have responded to this call, it is unclear how many will ultimately do so.¹³ It is also unlikely that significant behavioral changes would result from their doing so unless the instruction departs from what has heretofore been the norm.¹⁴ This can be accomplished by taking into account the picture of human decisionmaking which has emerged from the research of cognitive psychologists over the last several decades.¹⁵ This is because the model of decisionmaking implicit in traditional business ethics instruction,¹⁶ as well as in many legal approaches to regulating business,¹⁷ is fundamentally inaccurate. Worse yet, the nature of this inaccuracy is such that it will seriously limit the effectiveness of both educational¹⁸ and

11. REPORT OF THE ETHICS EDUCATION TASK FORCE TO THE AACSB INTERNATIONAL’S BOARD OF DIRECTORS, ETHICS EDUCATION IN BUSINESS SCHOOLS (2004) [hereinafter ETHICS TASK FORCE REPORT].

12. *Id.* at 7.

13. *See, e.g.*, Tim Goral, *Trends & Trendsetters*, U. BUS., Mar. 2004, at 52 (noting that several major business schools have responded to recent corporate scandals by adding a core ethics course to their curricula); Christopher S. Stewart, *A Question of Ethics: How to Teach Them?*, N.Y. TIMES, Mar. 21, 2004, at BU11 (detailing responses from some schools to Enron & WorldCom, but says others have made no curricular changes). Students at one major school are apparently not pleased by their institution’s response. Mica Schneider, *Poor Marks for Ethics Teaching*, BUS. WK., June 14, 2004, at 16 (discussing criticism by Columbia MBA students of the school’s first required business ethics course).

14. *See infra* text accompanying notes 22-63.

15. *See infra* text accompanying notes 69-82 & 89-573.

16. *See infra* text accompanying note 22 & 49-75.

17. Consider, for example, the threat of criminal fines, a major tool of business regulation. According to the economic formula for deterrence, the expected punishment cost (the penalty discounted by the likelihood of apprehension and conviction) of committing an offense must exceed the gains anticipated from its commission. RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 165-67 (2d ed. 1977); John Coffee, “No Soul to Damn: No Body to Kick.” *An Unscandalized Inquiry into the Problem of Corporate Punishment*, 79 MICH. L. REV. 386, 389 (1981). A necessary condition of the effectiveness of such a threat is the would-be wrongdoer’s ability to do the required calculation in an objective, unbiased fashion. In other words, legal regulatory schemes tend to assume that business organizations and the individuals who run them are rational actors. For a thorough discussion of the limitations of this model when applied to organizations, see Michael B. Metzger, *Organizations and the Law*, 25 AM. BUS. L.J. 407, 420-33 (1987). The greater portion of the remainder of this Article is devoted to describing its shortcomings when applied to human actors.

18. It seems reasonable, for example, to believe that, as David Messick and Max Bazerman have put it: in at least some cases “unethical business decisions may stem not from the traditionally assumed trade-off between ethics and profits or from a callous disregard of other people’s interests

legal¹⁹ attempts at improving managerial behavior. Only instruction that is aimed at offsetting the negative effects of human cognitive frailty, as we now understand it, offers much hope for bridging the gap between the level of organizational ethicality and legal compliance that we aspire to and the level that we currently experience.

Yet despite the fact that the task force's report seeks "to stimulate interest in alternative approaches and models for developing the design, delivery, and evaluation of business ethics instruction,"²⁰ it gives no indication that its drafters are aware of the cognitive constraints on managers' ability to do effective ethical reasoning.²¹ To understand why

or welfare, but from psychological tendencies that foster poor decision making." David M. Messick & Max H. Bazerman, *Ethical Leadership and the Psychology of Decision Making*, 37 SLOAN MGMT. REV. 9, 9 (1996); see also Max H. Bazerman et al., *Why Good Accountants Do Bad Audits*, 80 HARV. BUS. REV. 97 (2002). These researchers attribute many accounting scandals to the operation of auditors' unconscious biases, arguing that "even seemingly egregious accounting scandals, such as Andersen's audits of Enron, may have at their core a series of unconsciously biased judgments rather than a deliberate program of criminality." *Id.* at 97. This leads them to conclude:

[A]uditors must come to appreciate the profound impact of self-serving biases on judgment. Professional schools have begun to take ethics seriously in recent years, but teaching auditors about ethics will not have an impact on bias. What's needed is education that helps auditors understand the unconscious errors they make and the reasons they make them.

Id. at 102; see generally Prentice, *supra* note 6 (analyzing the Enron scandal through the lens of behavioral decision theory).

19. "Because the reforms in the Sarbanes-Oxley Act and those proposed by others do not address the fundamental problem of bias, they will not solve the crisis in accounting in the United States." Bazerman et al., *supra* note 18, at 101; see also Holman W. Jenkins, Jr., *How Could They Have Done It?*, WALL ST. J., Aug. 28, 2002, at A15:

Whatever else it was, the activities of Enron's finance department — people like Andrew Fastow and Michael Kopper, with the presumed if uncertain participation of CEO Jeff Skilling — amounted to a colossal misjudgment. Their company is bankrupt instead of thriving. Its senior employees are jobless, their wealth is under attack and they face criminal prosecution and jail. Presumably, these are not the results Enron executives intended.

Jenkins concludes: "What business schools can do . . . is teach students to be aware of the systematic errors in people's thinking that can start a basically normal person down the slippery slope to unethical decisions." *Id.*

20. ETHICS TASK FORCE REPORT, *supra* note 11, at 7.

21. The authors do, however, acknowledge that some expectations regarding ethics instruction are implausible, noting that "[a]lthough ethics education is vital, it is unrealistic to

failing to correct this fundamental misperception would doom us to “business (ethics) as usual” and to further regulatory skirmishes, we must first examine the shortcomings of traditional business ethics instruction.

II. BUSINESS ETHICS INSTRUCTION: THE LIMITS OF THE TRADITIONAL APPROACH

The general approach to instruction that all business schools follow, to varying degrees, is to teach students some theory and some analytical tools derived from that theory (for example, regression analysis, economic value added analysis, SWOT analysis, and Five Forces analysis). Students are then shown how to apply those tools to some recurring kinds of problems that they are likely to encounter in “the real world.” This approach implicitly assumes the following basic model of behavior on the part of business students when they graduate and assume decisionmaking responsibilities: 1. Decisionmaker constantly scans the environment for problems, 2. Decisionmaker identifies a problem, 3. Decisionmaker classifies the problem, 4. Decisionmaker searches his/her mental inventory for appropriate information and analytical tool(s) to apply to the problem, 5. Decisionmaker skillfully applies the appropriate information and analytical tools, 6. Decisionmaker makes decision, and 7. (really smart, exceptional) Decisionmaker tests outcomes by considering the weaknesses/limitations of the information and tools employed.

This same model of behavior is also assumed by much of the ethics instruction that occurs in business schools (and elsewhere, no doubt). Students are exposed to one or more basic ethics theories,²² and to some discussion of the relative theoretical strengths and weaknesses of each as

expect that it can, with a single stroke, negate the likelihood of management wrongdoing.” *Id.* at 13.

22. The AACSB Task Force notes that “[b]usiness schools typically teach multiple frameworks for improving students’ ethical decision-making skills,” and that those frameworks have traditionally included “consequentialist, deontological, and virtue ethics approaches.” *Id.* at 12. In most cases, the theory taught is likely to be Kant’s Categorical Imperative and the consequentialist theory of utilitarianism in one or more of its variations. In the author’s possibly nonrepresentative experience, virtue ethics approaches are less commonly encountered. The inclusion of Kantian and utilitarian perspectives reflects the ongoing struggle in contemporary moral philosophy between adherents of consequentialist moral theories (which argue that an action’s moral worth can only be evaluated by referring to its consequences) and the advocates of a deontological approach to moral evaluation (which stresses the intrinsic rightness or wrongness of actions, irrespective of their consequences). *See, e.g.*, WILLIAM K. FRANKENA, *ETHICS* chs. 2 & 3 (1973) (contrasting these divergent ethical approaches).

a guide to moral problem-solving.²³ They are then given some frameworks for systematically applying those theories, and some practice in doing so.²⁴ After this, they are set loose upon a world in which it is profoundly hoped that this training will have some positive impact on their approach to moral problem-solving and, thus, upon their behavior.

This principle-based approach to the solution of moral problems has not been without its critics. For example, the Aristotelian critique of the emphasis on moral principle²⁵ as a guide to moral action²⁶ suggests that moral principles, such as Kant's Categorical Imperative or utilitarianism, present numerous practical difficulties in application²⁷ and make dubious

23. See, e.g., TOM L. BEAUCHAMP & NORMAN E. BOWIE, *ETHICAL THEORY AND BUSINESS* 8 (3d ed. 1988) ("*General normative ethics* is a prescriptive study that attempts to formulate and defend basic moral norms governing moral life. Normative moral philosophy thus aims at determining what *ought* to be done. . . ."); W. MICHAEL HOFFMAN & JENNIFER MILLS MOORE, *BUSINESS ETHICS* 8 (2d ed. 1990) ("Spelled out and applied consistently, ethical theories can serve as guidelines for disciplined and informed ethical decision making.").

24. See, e.g., LINDA K. TREVINO & KATHERINE A. NELSON, *MANAGING BUSINESS ETHICS* 94-100 (2004) (identifying the following "eight steps to sound ethical decision making in business": 1) Gather the facts, 2) Define the ethical issues, 3) Identify the affected parties, 4) Identify the consequences, 5) Identify the obligations, 6) Consider your character and integrity, 7) Think Creatively about potential actions, and 8) Check your gut.

25. See, e.g., Joseph R. DesJardins, *Virtues and Business Ethics, in CORPORATE GOVERNANCE AND INSTITUTIONALIZING ETHICS* 135 (W. Michael Hoffman et al. eds., 1984):

As understood by many philosophers working in business ethics, the goal of ethical theory is to identify and defend some fundamental principle that can serve as the foundation for all morality. Such a principle will provide a foundation if it can, first, be defended as categorically binding on all rational agents; and, second, be capable of moving such agents to specific acts required by the principle. Generally this second goal is achieved if the principle can function as a major premise from which specific practical conclusions can be deduced.

Id.

26. "Given this principle-based understanding of ethical theory, the means for institutionalizing ethical responsibility within corporations is clear. The task is to get the corporation to accept some ethical principle as the guide for the activities of its members." *Id.* at 136.

27. Joseph DesJardins argues that "in practice, ethical principles seldom give any unambiguous practical advice." *Id.* Instead, he says that "[a] seemingly endless series of problems arises when one attempts to derive from such principles as the categorical imperative or the principle of utility, solutions to ethical problems faced by businesspeople." *Id.* at 136-37. This means that "unambiguously correct or even generally accepted answers occur very seldom." *Id.* at 137. The "radical inconclusiveness of ethical debates," he argues, "should at least suggest that something is wrong with our approaches to moral problems." *Id.*

assumptions about the nature of morality.²⁸ Such principles, it is argued, are philosophically unjustified²⁹ (if not unjustifiable)³⁰ and impersonal,³¹

28. See the following observation by Jonathan Glover:

Different ethical theories base morality either on self-interest or else on one of the moral resources. They tend to urge the claims of one of these factors to be *the* basis of morality. Deals based on self-interested calculation are at the heart of the contractarian theory. Sympathy for others is at the heart of utilitarianism. Respect for other people, as a form of recognition of their moral standing, is the centre of Kantian ethics and of moralities based on rights. Concern with one's own moral identity is one source of ethics centred on virtues.

JONATHAN GLOVER, *HUMANITY: A MORAL HISTORY OF THE TWENTIETH CENTURY* 28 (2000). Glover argues that: "Despite the popularity of theories proposing a single basis for morality, self-interest and the different moral resources all have a role to play. Together they help explain why, in most societies, skepticism about the moral law has not resulted in unlimited conflict and social breakdown." *Id.* Joseph DesJardins asks: "Why should we assume that the moral world is unambiguous? In light of the vast number of experiences that have given rise to the rapid recent growth of applied ethics, should we not assume just the opposite?" DesJardins, *supra* note 25, at 137. Rather, he suggests that:

[T]here may not *be* clear moral answers waiting to be discovered if only we use the right kind of methodology. Principle-based ethics encourages us to think that there are such answers. He holds that if only we apply the right principle carefully enough, we can determine the moral status of each individual action.

Id.

29. "[N]o ethical principle has yet been established in any plausible fashion as categorically binding on all people. Philosophers have failed to justify the principles that they apply in business ethics." DesJardins, *supra* note 25, at 137.

30. Some would argue that such justification can never be forthcoming.

In thinking about ultimate goals, we are beyond the realm of rationality. A given goal can only be defended in terms of a superior goal: one cannot as the saying goes "get an 'ought' from an 'is.'" In Pascal's words, "The heart has its reasons that reason knows not of." Hence, ultimate goals cannot be defended: by their nature they have no superior goals in terms of which they can be justified.

See, e.g., STUART SUTHERLAND, *IRRATIONALITY: WHY WE DON'T THINK STRAIGHT* 7 (1994). Noted English philosopher G.E.M. Anscombe raised a very different, but equally fundamental, objection to the project of modern moral philosophy by suggesting that "modern moral philosophy is misguided because it rests on the incoherent notion of a 'law' without a lawgiver." JAMES RACHELS, *THE ELEMENTS OF MORAL PHILOSOPHY* 161 (2d ed. 1993).

31. DesJardins, *supra* note 25, at 138. DesJardins argues that:

A second, not unrelated, problem concerns the impersonal nature of principles. Principles are separate from the people who are to use them; they are external rules to be internalized, adopted, accepted as one's own, and applied. This creates

ignoring the yawning motivational gap between person and principle.³²

Ethicist Patricia Werhane has identified a somewhat different gap — a gap “between the general (moral rules, principles, rights, and virtues), and the particular . . . wherein it is difficult, at best, to translate general precepts into particular applications.”³³ The culprits in many ethics failures, she argues, are “moral amnesia”³⁴ and the absence of the “moral imagination”³⁵ necessary to bridge the gap.³⁶ While acknowledging the

a gap between person and principle, a gap that underlies some of the most serious problems in ethics.

Id.

It is possible to assume too readily that a set of moral principles simply needs to be “applied.” The result can be the mechanical application of some form of utilitarianism, or list of precepts about justice, autonomy, benevolence and so on. When this happens, the direction of thought is all one way. The principles are taken for granted, or “derived” in a perfunctory way, and practical conclusions are deduced from them. What is missing is the sense of two-way interaction. The principles themselves may need modifying if their practical conclusions are too Procrustean, if they require us to ignore or deny things we find we care about when faced with the practical dilemmas.

GLOVER, *supra* note 28, at 6.

32. DesJardins, *supra* note 25, at 138. “Even if moral principles were plausibly justified as binding on all rational agents . . . the motivation question remains. ‘Why should I do what is required by this principle?’” *Id.* This leads DesJardins to conclude that: “Principle-based ethics leaves us with an unbridgeable motivational gap between the applied principle and the action.” *Id.* (emphasis added). Henry Sidgwick served that “we cannot help believing what we see to be true, but we can help doing what we see to be right or wise, and in fact often do what we know to be wrong or unwise.” HENRY SIDGWICK, *THE METHODS OF ETHICS* 5 (7th ed. 1966). “Men never ask,” he said, “‘Why should I believe what I see to be true?’ but they frequently ask, ‘Why should I do what I see to be right?’” *Id.*; see also *infra* text accompanying notes 670-73.

33. Patricia H. Werhane, *Moral Imagination and the Search for Ethical Decision Making in Management*, BUS. ETHICS Q., The Ruffin Series, Special Issue No. 1, 75, 81 (1998). This suggests the existence of another gap between principles and persons — the possibility of personal legislation when we attempt to apply moral rules to nontypical situations. See MARK JOHNSON, *MORAL IMAGINATION* 88-91 (1993) (discussing the debate between H.L.A. Hart and Lon Fuller); see also Bazerman et al., *supra* note 18, at 98 (unconscious biases thrive where there is a possibility of interpreting information in different ways).

34. By “moral amnesia” Werhane means “an inability to remember past mistakes and to transfer that knowledge when fresh challenges arise.” Werhane, *supra* note 33, at 75.

35. Mark Johnson defines “moral imagination” as “an ability to imaginatively discern various possibilities for acting within a given situation and to envision the potential help and harm that are likely to result from a given action.” JOHNSON, *supra* note 33, at 202. Werhane notes that “a condition for being morally imaginative is the awareness that one has possibilities beyond those seemingly prescribed or proscribed by one’s context or role.” Werhane, *supra* note 33, at 85.

36. “[I]t is imagination, moral imagination, that *bridges the gap* between moral theories,

“temptation to appeal to traditional moral education” as a way of preventing specific organizational ethical lapses,³⁷ Werhane doubts that such instruction is up to the job,³⁸ as it fails to give adequate weight to the role that individuals’ cognitive schemas play in shaping their perceptions and actions.³⁹

moral principles, common sense morality, and practical decision-making. . . .” Werhane, *supra* note 33, at 81 (emphasis added).

37. *Id.* at 80. How would this traditional approach work? Werhane suggests the following:

[L]et us talk to people at Kidder and GE about professional and moral responsibility, diagnose what went wrong at Kidder, and locate the moral culprits. We will then test their stage of moral development, (e.g., are they egoists, conformists, rule followers, law-abiders, precedent setters, or philosophers) and give them a workshop in moral reasoning. We will present some ethical theories, (e.g., utilitarianism, deontology, perhaps some virtue theory) with which to solve dilemmas, and illustrate problems with other cases and examples, discuss professional and institutional codes of ethics, and engage these organizations in a series of practice sessions that apply moral theories to case studies.

Id. at 80-81.

38. She observes that:

[t]he simple teaching and application of moral principles or rules may not alleviate this problem, since it is not always lack of logic nor ignorance of moral principles that causes moral amnesia but their specificity in application. This specificity has not so much to do with the particular situation at issue, *per se*, but rather with how the situation is perceived and framed by its protagonists.

Id. at 76.

39. “Our conceptual schemes function in a variety of ways. In selecting, focussing, framing, organizing, and ordering what we experience they bracket and leave out data, and emotional and motivational foci taint or color experience.” *Id.* at 79. Thus, she argues, “some individuals and institutions are trapped in the framework of history, organization, culture, and tradition of which they are only at best, vaguely aware, a framework that often they allow to drive their decision-making to preclude taking into account moral concerns.” *Id.* at 76.

Central to this concept of moral imagination is the importance of questioning prevailing organizational problem-solving scripts. *Script*, an important construct in both cognitive and social psychology, is defined here as: *A cognitive framework for understanding information and events that provides guidance for appropriate behavior in specific situations, thus serving as a bridge between cognition and action.*

Deborah Vadiver Cohen, *Moral Imagination in Organizational Problem-Solving: An Institutional Perspective*, 1998 BUS. ETHICS Q., The Ruffin Series, Special Issue No. 1, 123, 124 (1998); see *infra* text accompanying notes 549-72 (discussing mental models).

Other critics have alleged that traditional principle-based ethics instruction takes insufficient account of the organizational context in which business ethics problems arise and the role that context plays in shaping the behavior of business people.⁴⁰ In a somewhat similar vein, some also argue that ethics instruction that ignores the reality of most organizations' moral climates is dangerously naive,⁴¹ and risks sending those students who are predisposed to behave ethically "into the maze like lambs to the slaughter."⁴²

Finally, some mention should be given to those who question the efficacy of ethics instruction on the grounds that business students' moral character (whatever it may be) is not amenable to improvement by ethics instruction because it is more or less fixed before such instruction occurs.⁴³ While much of what follows will lend some support to this position in the sense that it will show how difficult it is to change most people's significant beliefs about anything,⁴⁴ for the purposes of this Article two things suffice to dispose of this position. First, one should note the existence of studies purporting to document increases in moral growth as a result of ethics instruction.⁴⁵ Second, one need not disagree with

40. See, e.g., ROBERT JACKALL, *MORAL MAZES: THE WORLD OF CORPORATE MANAGERS* 5 (1988) (noting that the business ethics movement has "done little detailed investigation of the day-to-day operations, structure, and meaning of work in business and of how the conditions of that work shape moral consciousness"); Michael B. Metzger & Michael J. Phillips, *Corporate Control, Business Ethics Instruction, and Intraorganizational Reality: A Review Essay*, 29 *Am. Bus. L.J.* 127, 154 (1991) ("[E]thics instruction is unlikely to deliver the goods unless it becomes more attentive to the environment in which its tenets must operate.").

41. See Metzger & Phillips, *supra* note 40, at 151.

[W]hile moral instruction may reinforce those with a predisposition to behave ethically, its ability to change the actual behavior of their more self-interested counterparts is questionable. As a result, the continuing dominance of the self-interested may ensure that those who *are* willing to walk the plank for a principle will have to do exactly that.

Id.

42. *Id.*

43. See, e.g., Edward J. Conry & Donald R. Nelson, *Business Law and Moral Growth*, 27 *AM. BUS. L.J.*, 1, 5-6 nn.22-23 (1989), and sources cited therein.

44. See, e.g., *infra* text accompanying notes 202-42 (discussing belief bias and confirmation bias).

45. See, e.g., Conry & Nelson, *supra* note 43, at 15-36. An important point to note here is that such studies tend to measure students' ability to engage in moral reasoning rather than their propensity to engage in ethical behavior. *Id.* at 33. Thus, they do not necessarily suggest that the motivational gap identified by DesJardins has been bridged. See *supra* text accompanying note 32. As Joseph Adelson observes: "[T]his approach, taken by itself, tells us something about how respondents *talk* about moral questions but little about how they would *act* facing a serious moral

Aristotle's position that "the mass of mankind are evidently quite slavish in their tastes, preferring a life suitable to beasts"⁴⁶ to a life of virtue, to believe that some students are intentionally ethical⁴⁷ and that these students could potentially benefit from ethics instruction.⁴⁸

This Article raises some more fundamental problems with the principle-based approach to ethics instruction — problems that, to varying degrees, also afflict the approaches suggested by the critics. The problems relate to accuracy of the behavioral model assumed by the principle-based approach in particular, and by the business school model of instruction in general.⁴⁹ This model necessarily assumes that the decisionmaker is more or less rational, and more or less objective. Advocates of principle-based instruction are quite explicit about the important role that logic,⁵⁰ reason,⁵¹

choice. Talk is cheap." Joseph Adelson, *The Psychology of Altruism*, COMMENTARY, Nov. 1988, at 40 (emphasis added).

46. ARISTOTLE, *THE NICOMACHEAN ETHICS* 6 (D. Ross trans., Oxford ed. 1987).

47. See, e.g., Metzger & Phillips, *supra* note 40, at 147-48 n.89 ("We believe many students are intendedly ethical; that is, they see themselves as the kind of person who wants to do the 'right thing.' This is true, we feel, even though students have been so inoculated with . . . relativism . . . as to have doubts that there *is* a right thing.").

48. See *id.* "A predisposition to behave rightly, however, hardly suffices. As Aristotle observed: 'It is difficult sometimes to determine what should be chosen at what cost, and what should be endured in return for what gain, and yet more difficult to abide by our decisions. . . .' (reference omitted)." Ethics instruction, however, can respond to such problems. It can sensitize such students to the moral dimensions of business behavior, minimizing the possibility of inadvertently unethical behavior. It can also improve students' ability to grapple effectively with ethical issues by giving them some tools to apply to such issues (ethical theory), and enabling them to apply such tools to concrete moral dilemmas. ARISTOTLE, *supra* note 46, at 49.

49. See *supra* Part II through text preceding and accompanying note 22. The recognition that these criticisms applied virtually to the entire business curriculum led to the insertion of a critical thinking module into the MBA core curriculum at the author's school.

50. See, e.g., LARUE TONE HOSMER, *THE ETHICS OF MANAGEMENT* 91 (1987) ("[M]oral reasoning" consists of "logically working from a first principle through to a decision on the duties we owe to others."); JOSEPH W. WEISS, *BUSINESS ETHICS: A MANAGERIAL, STAKEHOLDER APPROACH* 62 (1994) ("A major aim of ethical reasoning is to gain a clearer and sharper logical focus on problems in order to act in morally responsible ways."); see also RACHELS, *supra* note 30, at 11 ("There are bad arguments as well as good ones; and much of the skill of moral thinking consists in discerning the difference."). It follows, then, that those with a poor understanding of logic are unlikely to make consistently good moral decisions.

51. See, e.g., BEAUCHAMP & BOWIE, *supra* note 23, at 49 ("Philosophy can help us find a reasoned and systematic approach to moral problems. . . ."); RACHELS, *supra* note 30, at 10 ("Morality is, first and foremost, a matter of consulting reason: the morally right thing to do, in any circumstance, is determined by what there are the best reasons for doing.").

rationality,⁵² and objectivity⁵³ play in their brand of moral problem solving.⁵⁴ They also acknowledge that accurate factual understanding is a necessary precondition of the effective application of ethical norms.⁵⁵

52. See, e.g., HOSMER, *supra* note 50, at 90 (“[p]hilosophic analysis” is “based on rational thought processes”); WEISS, *supra* note 50, at 61 (“Ethical standards used in a person’s reasoning should be consistent. When inconsistencies between one’s ethical standards in an argument or decision are discovered, one or more of the standards must be modified.”).

53. See, e.g., RACHELS, *supra* note 30, at 11 (“[T]he facts exist independently of our wishes, and responsible moral thinking begins when we try to see things as they are.”). This means that “[W]e cannot rely on our feelings, no matter how powerful they may be. In the first place, they may be irrational: they may be nothing but the products of prejudice, selfishness, or cultural conditioning.” *Id.* at 10. Thus, to Rachels, “[t]he conscientious moral agent is someone who is concerned impartially with the interests of everyone affected by what he or she does. . . .” *Id.* at 13. Jonathan Glover’s bleak moral history of the twentieth century has led him to spot another sort of gap that merits our consideration and that leads him to reject any moral theory that does not aspire to impartiality. GLOVER, *supra* note 28, at 28. He observes that: “Many moralities are ‘internal,’ giving weight to the interests of those inside a community, but doing little against the common indifference or even hostility towards those outside. It is increasingly obvious that this *moral gap* is a human disaster.” *Id.*

54. Given the centrality of reason to the virtue ethics tradition, it comes as no surprise to find that Aristotelians likewise see it as playing a key role in the development of the moral person and in determining the moral course of action. See, e.g., HENRY B. VEATCH, *RATIONAL MAN: A MODERN INTERPRETATION OF ARISTOTELIAN ETHICS* 111 (paperback ed. 1962) (“The moral virtues, then, are to be regarded simply as learned habits and dispositions that are directed solely toward letting reason and intelligence come into play in the determination of our choices of what to do and what not to do.”); DesJardins, *supra* note 25, at 139 (“The good person would also foster her intellectual abilities; reason and intelligence can contribute much [but not all] to the good life.”); RACHELS, *supra* note 30, at 160 (“The Greeks . . . viewed reason as the source of practical wisdom — the virtuous life was, for them, inseparable from the life of reason.”).

55. See, e.g., RICHARD T. DEGEORGE, *BUSINESS ETHICS* 83 (3d ed. 1990) (“In attempting to solve any case, we must first get the facts of the case clear and try to ascertain all the relevant facts. If we cannot get all the relevant facts, then we must see what plausible assumptions we can make about the missing facts and acknowledge that these are assumptions.”); RACHELS, *supra* note 30, at 11 (“The first thing is to get the facts straight.”); WEISS, *supra* note 50, at 61 (“Factual evidence cited to support a person’s judgment should be accurate, relevant, and complete.”). Joanne B. Ciulla observes that, “[P]eople don’t always act unethically because they lack imagination, sometimes they act unethically because they have moral imagination, but they somehow get the story wrong.” Joanne B. Ciulla, *Imagination, Fantasy, Wishful Thinking and Truth*, 1998 *BUS. ETHICS Q.*, The Ruffin Series, Special Issue No. 1, 99, 99 (1998). Indeed, she argues that, “in many cases the truth or falsity of statements about one’s perceptions are so central to the morality of an action that they are virtually indistinguishable from the morality or immorality of the action itself.” *Id.* Even in the absence of some of the cognitive and behavioral impediments to actual factual understanding discussed in this Article, acquiring accurate factual understanding is “[o]ften not as easy as it sounds.” RACHELS, *supra* note 30, at 11. Why? Because, as Rachels notes, “[o]ne source of difficulty is that the ‘facts’ are sometimes hard to ascertain — matters may be so complex and difficult that not even experts can agree about what the facts are.” *Id.* Factual complexity, however, is far from the only obstacle to accurate factual understanding, as Rachels clearly understands when

Rationality and objectivity are also given an important place in the approach of those who stress the importance of moral imagination.⁵⁶ Scholars working in this tradition also emphasize the importance of memory⁵⁷ and retrospection in the development of moral imagination.⁵⁸ Similarly, Jonathan Glover, who emphasizes the central role of “the human responses”⁵⁹ and individual “moral identity”⁶⁰ in shaping human action, stresses the role of self-objectivity⁶¹ and critical reason in strengthening individuals’ willingness to resist pressures for immoral action.⁶²

he observes: “Another source of difficulty is human prejudice. Often we will *want* to believe some version of the facts merely because it supports our preconceptions.” *Id.* As we shall see later in the Article, Rachels’ “human prejudice,” along with some facts about human perception and cognition, may sometimes help explain why the “experts” often fail to agree.

56. “[A] less biased rational perspective, while crucial to moral imagination and moral decision-making, may not be enough, by itself, to avoid moral disasters.” Werhane, *supra* note 33, at 89.

57. Ciulla, *supra* note 55, at 102. “Memory is another avenue for obtaining the truth necessary for moral imagination. Memory facilitates moral learning by allowing us to draw analogies between past triumphs and mistakes and current ethical problems.” *Id.* If individual or organizational memory fails, Ciulla notes, then past mistakes may be repeated. *Id.* (“General Electric may remember its mistakes, but forget the conditions that led to those mistakes that would allow them to create a new environment.”); see also *supra* text accompanying note 34.

58. See Werhane, *supra* note 33, at 85.

According to Kekes, one of the ways to develop moral imagination, that is, to expand the scope of one’s beliefs and thus one’s possibilities from the point of view of what a reasonable agent would do, is to engage in retrospection. This process, Kekes contends, gives one a better understanding of how one’s belief structure operated, and helps on to redirect that belief structure in the future.

Id.

59. GLOVER, *supra* note 28, at 22. The human responses are “the tendency to respond to people with certain kinds of respect” and “sympathy: caring about the miseries and the happiness of others, and perhaps feeling a degree of identification with them.” *Id.*

60. “We have a conception of what we are like, and of the kind of person we want to be, which may limit what we are prepared to do to others.” *Id.* Note that moral identity, properly constructed, can bridge the gap DesJardins identified between moral principles and individual motivation. See *supra* text accompanying note 32. As Glover observes, “[t]he question of the sort of person you want to be is central to the argument given by Socrates against the view that it is in our interest to seem moral but not to *be* moral.” GLOVER, *supra* note 28, at 27.

61. Glover notes that “[t]he restraining effects of moral identity can be weakened by evading any clear recognition of what you are doing.” GLOVER, *supra* note 28, at 101. He points out the critical link between objective truth and moral identity: “As self-deception feeds on itself, there is less and less to stop beliefs about one’s moral identity [from] becoming systematically false. The growth of such a delusional system is a personal moral disaster.” *Id.* at 282. On the other hand, “[m]oral identity can prompt people not to give up on truth.” *Id.*

62. *Id.* at 116. According to Glover, moral identity:

The problem with all this is that, as our personal experience, our knowledge of human history, and the current world situation perhaps ought to tell us, the pivotal assumptions of human rationality and objectivity simply are not accurate for most individuals much of the time.⁶³ This suggests the existence of another “gap” of crucial significance: even if we are intendedly ethical⁶⁴ and thus need not be concerned about the motivational gap,⁶⁵ there remains “the gap between the abstract principles proposed by philosophers and the ways in which people actually think.”⁶⁶ One need not rely, however, on either our personal experience, or knowledge of human history, or the current world situation to confirm the fact that human rationality and objectivity tend to be subject to significant impairments — there is now an ample body of research to document it.⁶⁷

[C]an be strengthened or weakened by thought and discussion. This is of some importance, particularly in view of the assumptions behind some popular ways of weakening the restraints of moral identity in war. When explicitly spelled out, appeals to institutional momentum and moral inertia, to the fragmentation of responsibility, and to relative moral identity all invite criticism. This part of our psychology does not have to be taken as given.

Id. at 115. Further, Glover argues that “[t]o resist propaganda, people need the ability to think critically.” *Id.* at 360. History shows, however, that another unfortunate gap exists here, because “[t]o resist propaganda, people have to *want* to think critically. Some Nazis, like Albert Speer, found it a relief *not* to think.” *Id.* at 361 (emphasis added).

63. “Pace Aristotle, it can be argued that irrational behavior is the norm not the exception.” SUTHERLAND, *supra* note 30, at vii. We can also find acknowledgment of such human frailties in the work of some moral philosophers. See generally G.J. WARNOCK, THE OBJECT OF MORALITY 14 (1971); *infra* text accompanying note 495 (describing human nature).

64. See *supra* text accompanying note 47.

65. See *supra* text accompanying notes 22 & 60.

66. GLOVER, *supra* note 28, at 295. There are two sorts of gap here. One has to do with the shortcomings to which actual human reasoning is subject. See ROBYN M. DAWES, RATIONAL CHOICE IN AN UNCERTAIN WORLD, at vii (1988) (noting a “discrepancy” between the basic principles of rationality and actual behavior in reaching decisions); RONALD T. KELLOGG, COGNITIVE PSYCHOLOGY 391 (2d ed. 2003) (“[P]eople . . . are poor at reasoning, at least when the task is defined in the classical sense of the philosophers.”); see also *infra* text accompanying notes 583-601. Feminist scholars, among others, have suggested that another sort of gap exists here because many humans do not reason about moral issues primarily on the basis of abstract moral principles. See *infra* text accompanying note 679.

67. Some readers may nonetheless find much of what follows difficult to accept. Massimo Piattelli-Palmarini offers one explanation for the resistance this research has engendered: “The main resistance to rationality in this new field of cognitive studies is our insistence on the correctness of our intuitive strategies, our pseudo-reasoning: we exercise considerable ingenuity in demonstrating that these are not so ‘disorderly as they seem.’” PIATTELLI-PALMARINI, *supra* note 1, at 3. But whence derives this insistence? Piattelli-Palmarini answers that “[b]etween rationality and our cognitive pride, we will choose the latter, and are willing to pay whatever the price for so doing.” *Id.*; see also *infra* text accompanying Part III.B.2.e. & notes 375-405 (discussing belief bias

The researchers whose work provides this documentation are not in complete agreement about *why* humans' brains work the way in which they do,⁶⁸ but there are several core findings about which there is significant agreement: 1. People tend to have a poor understanding of logic.⁶⁹ This is true even of trained research scientists and their understanding of the basic logical principles that ought to govern sound scientific research.⁷⁰ 2. People tend to have a poor understanding of the basic principles of probability that must be understood to perform many

and self-esteem maintenance). Whatever the source of the resistance, its existence may furnish at least a partial explanation for the interesting fact that "more or less 20 years after these illusions were first discovered, and after dozens of books and hundreds of articles have been printed on the subject of cognitive illusions, almost no one except for a select circle of specialists seems to have taken this discovery seriously." PIATTELLI-PALMARINI, *supra* note 1, at x.

68. There are two prominent schools of thought. Some theorists stress the role that motivations (particularly the self-esteem motivator) play in distorting our perceptions, memory, and reasoning. See discussion, *infra* text accompanying notes 375-426. Others favor cognitive explanations, that is, those attributing reasoning and perceptual problems to some basic limitations on the operation of our cognitive and perceptual faculties. See discussion, *infra* text accompanying Parts IV.C & D. For the purposes of this Article this ongoing debate is unimportant, except as it bears on attempts to debias human reasoning. See discussion, *infra* text accompanying notes 603-69.

69. For example, Kellogg notes that "people have a very difficult time determining how to deduce the proper conclusions" and that they "make decisions in ways that do not fit with the optimal ways prescribed by mathematics" KELLOGG, *supra* note 66, at 392. For example, one study demonstrated that only ten percent of college students who had not been trained in logic could correctly identify valid and invalid conclusions without error. *Id.* at 367 (citing R.L. Dominowski, *Reasoning*, 11 INTERAMERICAN J. PSYCHOL. 68 (1977)).

70. See Leslie H. Kern et al., *Scientists' Understanding of Propositional Logic: An Experimental Investigation*, 13 SOC. STUD. SCI. 131 (1983) and the other studies referenced therein. The authors note that "[t]he ideal scientist is seen as a rational, emotionally neutral, open-minded investigator seeking to discover invariant principles about reality." *Id.* at 132. Empirical studies, however, have shown that many scientists have difficulty distinguishing between logically valid and invalid forms of reasoning. *Id.* at 133-35. Approximately one quarter of the subjects in the instant study (all research-active scientists at a major Midwestern university) identified two invalid forms of reasoning, denying the antecedent (If A, then B. Not A ∴ Not B.) and affirming the consequent (If A, then B. B ∴ A.), as valid. *Id.* at 140. More striking, the researchers found that "nearly half of the scientists [failed] to recognize the logical validity of *modus tollens* [denying the consequent] (If A, then B. Not B ∴ Not A). This is particularly noteworthy given the normative view that disconfirmation should play a major role in theory and hypothesis testing." *Id.* at 142. For a concise discussion of the critical role of disconfirming logic in hypothesis testing, see Kern et al., *supra*, at 132. In short, the problem with affirming the consequent is that "no general hypothesis can ever be completely confirmed — one may always come across something that is an exception to it." SUTHERLAND, *supra* note 30, at 136. It follows that "[t]o establish that a rule is likely to be true . . . one must try to prove it false." *Id.*; see also *infra* text accompanying notes 202-22 (discussing confirmation bias).

reasoning tasks effectively.⁷¹ 3. People tend to make reasoning mistakes in consistent and predictable ways (called biases).⁷² 4. People tend to have very little awareness of their own mental processes.⁷³ As urged by the all too familiar commercial, when it comes to thinking, we tend to “just do it” rather than to think about how we do it.⁷⁴ 5. People tend to be

71. “A . . . contribution to human irrationality is our failure to use elementary probability theory and elementary statistics and the concepts to which they have given rise.” SUTHERLAND, *supra* note 30, at 320-21; *see also* discussion, *infra* text accompanying Part III.B.2.f.

72. For example, Kern, Mirels, and Hinshaw found that the scientist subjects in their study were prone to “a confirmatory problem-solving bias” because they sought to find data consistent with their hypotheses (which would be logically inconclusive) rather than data that would conclusively disprove their hypotheses. Kern et al., *supra* note 70, at 143. A leading authority on the subject defines a bias as “a systematic tendency to take account of factors irrelevant to the task at hand or to ignore relevant factors.” JONATHAN ST. B.J. EVANS, *BIAS IN HUMAN REASONING* 9 (Lawrence Erlbaum Assocs. 1994). He notes: “There is, . . . , sufficient evidence of widespread mistakes and biases in human reasoning — on very robust criteria of measurement — to justify a systematic attempt to classify such phenomena and consider both the theoretical origins and practical implications of such findings.” *Id.* at 10; *see also* DAWES, *supra* note 66, at viii (“our thinking processes are limited in systematic ways”); *see infra* text accompanying Part III.B.2 (discussing biases).

73. Evans observes that all the studies of actual human decisionmaking point to “severe limitations in people’s knowledge of their own thought processes.” EVANS, *supra* note 72, at 16. This is certainly so of our knowledge of the defects in our thought processes. Speaking of the various cognitive illusions that afflict our thinking, Piattelli-Palmarini says that “we are deluded in complete innocence, in good faith, not even realizing that we are so misled.” PIATTELLI-PALMARINI, *supra* note 1, at x. Our thought processes are not the only things that are obscure to us. Consider Robert Wright’s observation that “[a]s Freud saw, we are oblivious to our deepest motivations — but in ways more chronic and complete (and even, in some cases, more grotesque) than he imagined.” WRIGHT, *supra* note 1, at 10.

74. “[P]eople are generally unaware of *how* they make decisions and often *why* they prefer one alternative to others.” ROBIN HOGARTH, *JUDGMENT AND CHOICE*, at ix (2d ed., John Wiley & Sons 1987) (1980). Worse yet, “they show little concern for the quality of their own decision-making processes (although the failures of others are often indicated with haste).” *Id.*

overconfident about their own knowledge, skills, and reasoning ability.⁷⁵ This holds true of well-educated people. In fact, most of the subjects in the studies from which these findings were derived were college students, professors, or managers.

There is also a wealth of extant research that demonstrates that human perception is limited⁷⁶ and distorted⁷⁷ in various ways (self-deception being perhaps the basic human trait).⁷⁸ Extant memory research also raises serious doubts about the reliability of this essential source of information.⁷⁹ It should be obvious that, even in the absence of the above-mentioned problems with human cognitive processes, flaws in the human perceptual apparatus raise serious obstacles in the path of rational action. After all, “[a]ll behavior, everywhere and under all circumstances, is a function of the behaving organism’s information state”⁸⁰ and all living organisms only have three sources of information available to them — inherited (genetic), stored (retrievable memory), and immediate (perceptions).⁸¹ This suggests

75. Evans says:

[T]he evidence is clear that we often hold false beliefs about our own cognitive processes. In most cases, these false beliefs are self-flattering. We are convinced of the rationality of our reasoning, highly adept at constructing plausible explanations for our decision behavior, too confident that our judgments are correct, convinced that we could have predicted uncertain matters after the event, and so on.

EVANS, *supra* note 72, at 109; *see also* GARY BELSKY & THOMAS GILOVICH, WHY SMART PEOPLE MAKE BIG MONEY MISTAKES 154-55 (1999) (“[M]ost people . . . consistently overrate their abilities, knowledge, and skill, at whatever level they might place them.”); *see infra* text accompanying Parts III.B.2.c & III.B.3 (discussing overconfidence bias and positive illusions).

76. *See* discussion, *infra* text accompanying notes 123-28.

77. *See* discussion, *infra* text accompanying notes 129-51.

78. “If there is such a thing as a basic human quality, self-deception is it.” DAVID NYBERG, THE VARNISHED TRUTH 81 (Univ. of Chi. Press 1994) (1993) (quoting Colin M. Turnbull). That this is so has long been known. *See, e.g.,* Demosthenes’ statement from his *Third Olyntiac* [348 B.C.] that: “We believe whatever we want to believe” or Jean de la Fontaine’s observation from *Fables*, XI [1671] that: “Everyone believes very easily whatever he fears or desires.” *See also* A NEW DICTIONARY OF QUOTATIONS 96 (H.L. Mencken ed., Alfred A. Knopf 1991) (1942). *And see* this personal favorite from Francis Bacon’s *Aphorisms*: “Man prefers to believe what he prefers to be true.” *See also* BERGEN EVANS, DICTIONARY OF QUOTATIONS 54 (Delacorte Press 1978) (1968). The problem is that though we have long known this to be so, we have failed to appreciate its implications fully, probably at least in part because we tend to believe it true of everyone but ourselves. *See also* discussion, *infra* text accompanying notes 202-42.

79. *See* discussion, *infra* text accompanying notes 152-62.

80. LOYAL RUE, BY THE GRACE OF GUILÉ 87 (1994).

81. *Id.* Regarding inherited information, Rue says that: “[E]ven genetic information may be construed as a set of propositions about the world.” *Id.*

the existence of another, fundamental “gap” — a gap between reality and our perceptions of it.⁸²

When you combine warped input with an inadequate understanding of logic,⁸³ and an unjustified confidence in our personal decisionmaking and evaluative skills, high quality decisions are not a likely outcome of the process. If our first moral obligation is indeed to think clearly,⁸⁴ then it should be obvious that these cognitive and perceptual problems, left uncorrected, will likely lead us to frequently breach that duty, however honorable our intentions may be. Thus, even if we could successfully bridge the motivational gap,⁸⁵ ethically problematic behavior could still be expected to persist.⁸⁶ This should be a matter of grave concern to anyone

82. “[T]he differences in what people filter out ‘would then appear to produce a different consciousness of the external environment, each person biasing his admission or rejection of sensory signals.’” DANIEL GOLEMAN, *VITAL LIES, SIMPLE TRUTHS: THE PSYCHOLOGY OF SELF-DECEPTION* 21 (1985) (quoting neuroscientist Monte Buchsbaum). Please note that the claim here is not that objective reality is nonexistent. Rather, it is that, assuming objective reality’s existence, our individual perceptual biases affect our ability to perceive it accurately — the proverbial story of the blind men and the elephant comes to mind. What then is objective reality? For the purposes of this discussion, Rue’s definition will serve: “[R]eality may be regarded as *the sum total of potential information on offer to any and all perceivers from the world around.*” RUE, *supra* note 80, at 88. Rue distinguishes reality from appearance, which is “*the sum total of information encoded by a living organism.*” *Id.* at 87. It follows that “since no stock of information is ever completely adequate to reality, all organisms can be said to exist in a state of relative ignorance or delusion — ignorance when information is lacking, delusion when the information is wrong.” *Id.* at 88. The width of this gap between appearance and reality varies across organisms and, where individual organisms are concerned, may vary over time. *Id.* (“[A]ny organism’s information state may be either enhanced or debased — that is, it can be rendered more or less adequate to reality.”); see also discussion, *infra* text accompanying notes 560-72.

83. See LUCKHARDT & BECHTEL, *infra* note 112 and accompanying text (discussing the importance of accurate premises to good reasoning).

84. See *supra* note 1 and accompanying text.

85. See *supra* text accompanying notes 32 & 60.

86. One suspects that in many cases ethical frailty combines with impaired decisionmaking to produce the business scandals that are such a common feature of modern life, but to the extent that problematic behavior stems from defective cognitive processes rather than conscious choices, reform efforts aimed at the latter are unlikely to be effective. See Bazerman et al., *supra* note 18, at 101-02.

concerned about the human condition in general,⁸⁷ and about her own moral/intellectual condition in particular.

Those concerned with bridging the gap between their current moral status and their potential as moral beings,⁸⁸ and with helping others bridge it via some form of moral education, face several other obstacles to doing so. If we are to improve the quality of human reasoning about ethical issues (or anything else, for that matter), we will need a fuller understanding of the nature of those obstacles, and of their implications for moral behavior and moral instruction. First, let us more closely examine the impediments that tend to afflict human decisionmaking to see what we are up against. Subsequent sections of the article will then explore the behavioral impact of these afflictions when left uncorrected, and various approaches to beginning the debiasing process.

III. SOURCES OF PROBLEMATIC HUMAN REASONING

A. An Overview

From a thinking quality perspective, error can be introduced in every phase of the human thought process. Much of the critical action in decisionmaking of all sorts occurs in the problem identification and classification stages.⁸⁹ Do we even admit that we have a problem,⁹⁰ and if

87. The stakes are quite high:

Unfortunately, the incoherence of our choices, both individual and collective, extends to many fields and has disastrous social, economic, and political results. Even if we eliminated dishonesty and unbridled egotism, these tunnels of the mind would still be with us. These are errors . . . made in good faith; they can only be rectified by becoming conscious of the elementary mechanisms, many of them innate, of our thought.

PIATTELLI-PALMARINI, *supra* note 1, at 14-15; *see also* discussion, *infra* text accompanying notes 752-56.

88. *See supra* note 1 and accompanying text.

89. *See* the assumed model of decisionmaker behavior, *supra* text accompanying note 22.

90. When our senses present us with highly unwelcome information we can either change our beliefs to take that new information into account or preserve our assumptions by discounting or ignoring the unwelcome information. Denial is an extreme strategy employed to pursue the latter course. Rue defines denial as "a refusal to assimilate the reality presented by . . . perceptual experience," and notes that it is a form of self-deception. RUE, *supra* note 80, at 170. Denial, or something quite like it, surfaces frequently in the business context as well. Many companies ignore evidence that business strategies are failing, that new and/or profitable products are underperforming or defective in some way, or that "stars" may be generating big profits by questionable

we do, how do we classify it and the people involved?⁹¹ Individual desires⁹² and bias⁹³ can play a pivotal role in both problem identification and problem framing.⁹⁴ Even things such as the language we use to describe the problem can have a powerful impact on our final decision.⁹⁵

methods. Analysts and testers of all sorts often engage in “data-dredging,” highlighting data/test results consistent with their desired ends and discounting or ignoring all inconsistent data/test results. Certainly, many of the people who do this are consciously doing it in response to pressure from superiors who are engaging in denial. Note, however, the strong psychological incentives such individuals have to convince themselves that there is not a problem. *See infra* text accompanying notes 384-405 (discussing self-esteem motivator). According to Rue, one major symptom of denial is constricted thought, “the failure to explore likely avenues of meaning other than the obvious one at hand, an abbreviated range of flexibility.” RUE, *supra* note 80, at 171. It should be obvious that decisionmakers in the grip of denial are unlikely to make good decisions.

91. Jackall discusses how managers caricature their perceived adversaries as a way of minimizing the legitimacy their claims:

[M]ost government regulators are brash, young, unkempt hippies in blue jeans who know nothing about the businesses for which they make rules; Consumer activists . . . want to save the universe but not give up their own creature comforts. Workmen’s compensation lawyers are out-and-out crooks who prey on corporations to appropriate exorbitant fees for unwary clients whom they fleece next. Labor activists are radical troublemakers who want to disrupt harmonious industrial communities; Academics who criticize business may be able to conjugate difficult Greek verbs; unfortunately many of them cannot tie their own shoelaces. Most environmental activists — the bird and bunny people — are soft-headed idealists who want everybody to live in tents, burn candles, ride horses, and eat berries.

JACKALL, *supra* note 40, at 147-48; *see also* GLOVER, *supra* note 28, at 50, 57-58, 175 & 339 (showing numerous chilling historical examples of the role that dehumanizing descriptions of others have played in abetting atrocity).

92. *See* discussion, *infra* text accompanying notes 133-37.

93. *See* discussion, *infra* text accompanying notes 140-50.

94. *See infra* text accompanying notes 343-64 (discussing framing effects on decisionmaking).

95. Jackall discusses one manager’s perspective on how his company should respond to evidence of serious hearing loss in workers in one of its plants, which led him to conclusions at variance with his colleagues’:

White’s moral squint on the hearing issue, manifested by his obvious emotional commitment to the problem and his insistence on the company’s obligation to workers, made other managers uncomfortable. The only publicly acceptable way to discuss such an issue . . . is in rational/technical, emotionally neutral terms like “liability consequences,” the “trade-off between noise reduction and efficiency,” or the “linkage of compliance with regulation to productivity improvement;” such desiccated language permits a freer exercise of functional rationality and the necessary calculation of the real costs of resolving the problem.

If our attention is selective,⁹⁶ then we may not register all of the relevant data available in our external environment.⁹⁷ If our memories are also selective and frequently inaccurate,⁹⁸ this can be expected to have a consequent negative effect on our ability to bring our past experience to bear in solving current problems.⁹⁹ Further, our desire to maintain our self-esteem¹⁰⁰ may lead us to accept dubious arguments and data,¹⁰¹ to reject compelling arguments and data,¹⁰² and to persist in behaviors and strategies long after an objective observer would have concluded that they were ineffective.¹⁰³

Even in circumstances where our memories are accurate, our initial perceptions are complete, and our egos are in check, other threats to good decisionmaking exist. In the heuristic phase of our reasoning process,

JACKALL, *supra* note 40, at 104. Alfred Z. Carr conceives the way in which an ethically motivated manager should go about making moral arguments without impairing his career prospects:

Asking management flatly to place social values ahead of profits would be foolhardy, but if he can demonstrate that, on the basis of long-range profitability, the concept of corporate efficiency needs to be broadened to include social values, he may be able to make his point without injury — indeed, with benefit — to his status in the company.

Alfred Z. Carr, *Can An Executive Afford a Conscience?* HARV. BUS. REV., July-Aug. 1970, at 58, 64; *see also* GLOVER, *supra* note 28, at 352 (discussing the role euphemisms played in Nazi atrocities).

96. *See* discussion, *infra* text accompanying notes 124-26.

97. *See* discussion, *infra* text accompanying notes 127-29.

98. *See* discussion, *infra* text accompanying notes 152-62.

99. *See* discussion, *infra* text accompanying notes 153-57.

100. "Although . . . other factors play a part, it is hard to believe that the desire to be right or the wish to support one's self-esteem do not play some part in people's reluctance to give up a hypothesis, to change a bad decision, or to see a house they have just bought for what it is." SUTHERLAND, *supra* note 30, at 321. *See also infra* text accompanying notes 384-405 (discussing the self-esteem motivator).

101. "Men quite gladly believe what they want to believe." JULIUS CAESAR, DE BELLO GALLICO III.xviii, *quoted in* DICTIONARY OF QUOTATIONS, *supra* note 78, at 54; *see also infra* text accompanying notes 202-21 (discussing belief bias).

102. "Where belief is painful, we are slow to believe." OVID, HEROIDES II.ix, *quoted in* DICTIONARY OF QUOTATIONS, *supra* note 78, at 54.

103. The phenomenon referred to here is escalation of commitment. For a thorough discussion of it, *see* Barry Staw, *The Escalation of Commitment to a Course of Action*, 6 ACAD. MGMT. REV. 577 (1981).

preconscious mental programs called heuristics¹⁰⁴ retrieve relevant information from memory and identify which bits of externally available information are relevant, and therefore subject to further processing.¹⁰⁵ Heuristics are necessary parts of human cognition for at least two reasons. First, they are essential elements in maintaining some semblance of cognitive economy. We each have limited processing power, and thinking shortcuts¹⁰⁶ that require no conscious thought can be a very efficient way to process information.¹⁰⁷ Second, without some device to screen information, we would quickly suffer cognitive overload from the millions of bits of information embedded in our consciousness and in our environment.¹⁰⁸

104. The word derives from the Greek term *eureka*, meaning “discover.” PIATTELLI-PALMARINI, *supra* note 1, at 19; J. EDWARD RUSSO & PAUL J.H. SCHOEMAKER, *DECISION TRAPS* 81 (paperback ed. 1990); *see infra* text accompanying notes 430-548 (discussing various judgmental heuristics).

105. *See, e.g.*, discussion, *infra* text accompanying notes 460-67.

106. “To reduce the need for hard, prolonged thought, we have developed a number of tricks for taking quick decisions. These are called ‘heuristics,’ that is, ways of thinking that usually produce a passable but not perfect result quickly.” SUTHERLAND, *supra* note 30, at 320; *see also* MAX BAZERMAN, *JUDGMENT IN MANAGERIAL DECISION MAKING* 40-41 (1988) (“Our minds adopt these heuristics because, on average, any loss in quality of decisions is outweighed by the time saved.”). *See* PIATTELLI-PALMARINI, *supra* note 1, at 43 for the observation that:

[C]ognitive illusions are the product of the demon of mental facility (the technical term for which is *mental economy*) — that is, certain routine mental calculations, those that come to us with the greatest of ease and spontaneity and that seem so irresistible that we barely know we possess, use, or abuse them.

Id. (original emphasis); *see also* discussion, *infra* text accompanying notes 125-26.

107. Sutherland notes that “the brain processes of which we are unconscious operate with enormous speed, efficiency and ease whereas most people have to force themselves to labour through the conscious thought processes needed to solve a difficult problem or make a difficult decision.” SUTHERLAND, *supra* note 30, at 320. The problem is that “unless this effort is made many decisions will be irrational and many problems will go unsolved.” *Id.* at 320. As Jonathan Evans puts it, “[A]ny non-trivial problem involves searching through a vast range of alternative possible solution paths. Such a search could not be performed exhaustively but must perforce require the development of selective processing strategies capable of achieving solutions in a realistic time, but liable to failure.” EVANS, *supra* note 72, at 112.

108. Hogarth puts it this way:

Perception of information is not comprehensive but *selective*. For example, it has been estimated that only about 1/70th of what is present in the visual field can be perceived at any one time. Thus since we are literally bombarded with information we have to select; however, to select it is necessary to know what to select.

HOGARTH, *supra* note 74, at 4. *See also* EVANS, *supra* note 72, at 112:

But while heuristics are essential and may work well most of the time, they can sometimes result in bias¹⁰⁹ in our reasoning.¹¹⁰ So, the information that seems “relevant” to us psychologically may not necessarily be what is relevant logically.¹¹¹ If this happens, no amount of good reasoning in the conscious, analytical phase of our decisionmaking is likely to lead to a correct solution. Why? Good reasoning based on bad information is unlikely to lead to good conclusions.¹¹² Information can be “bad” if it is

The human being, viewed as an information processing system, faces a massive problem of information reduction. Both the formation and manipulation of mental representations must be carried out in a highly selective manner using some form of heuristic process. We must similarly have intelligent, selective search strategies for retrieving from our vast memories of factual and procedural knowledge just those items relevant to the problem at hand. It is little surprising that such a system is vulnerable to bias and error.

109. See *supra* text accompanying note 72 (defining bias); see PIATTELLI-PALMARINI, *supra* note 1, at 19 (observing that: “Heuristics are specific mental strategies used to solve specific problems. A heuristic might be said to be something we ‘do,’ whereas a bias is something that ‘happens’ to us.”).

110. “[P]eople rely on a limited number of heuristic principles which reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations. In general, these heuristics are quite useful, but sometimes they lead to severe and systematic errors.” JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES, at xii (Daniel Kahneman et. al. eds., 1994) [hereinafter JUDGMENT UNDER UNCERTAINTY]. For a different, more positive perspective on heuristics, see generally Gerd Gigerenzer & Peter M. Todd, *Fast and Frugal Heuristics: The Adaptive Toolbox*, in GERD GIGERENZER ET AL., SIMPLE HEURISTICS THAT MAKE US SMART 3-34 (1999).

111. Evans argues that:

[T]he major cause of bias in human reasoning and judgement lies in factors which induce people to process problem information in a selective manner. Such selection may arise either in the process of forming mental representations of the information presented in the problem or else in the actual manner in which it is subsequently processed.

EVANS, *supra* note 72, at 19.

112. Logically sound arguments have true premises and valid logical structures. C. GRANT LUCKHARDT & WILLIAM BECHTEL, HOW TO DO THINGS WITH LOGIC 19 (1994). They always have true conclusions. *Id.* at 21. Logically valid arguments are those that will always produce true conclusions if their premises are accurate. Valid arguments with inaccurate premises can lead us to highly questionable conclusions. Consider this example:

All saints are holy.

Bill Clinton is a saint.

∴ Bill Clinton is holy.

inaccurate or incomplete, but it can also be “bad” if it is complete and completely accurate, but not really germane to the thinking task at hand.

Even if our information is accurate and complete, and our selection of it is free of bias, we may nonetheless make thinking mistakes during the conscious, analytical phase of the thought process if our grasp of logic, basic probability principles, or statistics is poor, or if certain aspects of the problem prevent us from bringing our full reasoning powers to bear on it.¹¹³ Because it is conscious, and because everyone can learn to improve her logical reasoning ability and improve her understanding of basic statistical principles,¹¹⁴ the analytical phase of the reasoning process should be the phase that is most amenable to improvement.

The heuristic phase is, by definition, more problematic because it is unconscious.¹¹⁵ As a leading authority on bias puts it, “the representational

Whatever one may think about our former President, it would probably be quite difficult to find anyone who accepts the conclusion of this argument. Yet it is logically identical to the following argument, which has long been a staple of logic instruction:

All men are mortal.
Aristotle is a man.
 ∴ Aristotle is mortal.

113. This might be because it touches one of our mental “hot” buttons in some way. *See, e.g., infra* text accompanying notes 203-42 (discussing belief bias and confirmation bias).

114. *See, e.g.,* Geoffrey T. Fong et al., *The Effects of Statistical Training on Thinking About Everyday Problems*, in *DECISION MAKING: DESCRIPTIVE, NORMATIVE, AND PRESCRIPTIVE INTERACTIONS* 299, 327 (David E. Bell et al. eds., 1988):

It is heartening to discover that a 25-min session on the law of large numbers can serve to significantly enhance people’s use of statistical thinking, and that a formal course in introductory statistics can lead to a greater appreciation of variability of judgments, even those made outside the context of the classroom or laboratory.

See SUTHERLAND, *supra* note 30, at 321 (suggesting “[t]he root cause [of our lack of understanding of basic probability principles] . . . would appear to be ignorance, which can in turn be largely attributed to our educational system.”); *see also infra* text accompanying notes 581-646 (discussing debiasing approaches). For some interesting suggestions about improving students’ statistical reasoning ability, see GERD GIGERENZER, *CALCULATED RISKS: HOW TO KNOW WHEN NUMBERS DECEIVE YOU* 229-46 (2002).

115. “Most of us are unaware of their existence and their ongoing impact upon our decisionmaking. The difficulty with heuristics is that we typically do not recognize that we are using them, and we consequently fail to distinguish between situations in which their use is more and less appropriate.” BAZERMAN, *supra* note 106, at 41. Piattelli-Palmarini puts it somewhat more colorfully:

The image of one who uses such shortcuts (which in jargon we call “heuristics”) or one of those “tunnels” (which we call “biases”) and follows it through is *not*

heuristics responsible for many biases constitute preconscious processes. Subjects are aware of that to which they are attending but not of the selective process directing their attention."¹¹⁶

There are, however, some grounds for hope because there is some connection between the two phases. Some biases may explain our propensity to make certain logical errors.¹¹⁷ It is also possible that exposure to the principles of logic may be an antidote to some kinds of bias.¹¹⁸ Finally, though something more than instruction may be required to debias our reasoning processes, it seems reasonable to believe that learning about the biases to which our reasoning processes are susceptible is a necessary first step in the debiasing process.¹¹⁹

B. Biases, Illusions, and Other Cognitive Pitfalls

1. A Camera?

People who have never engaged in any sustained and systematic thinking about how they think tend to suffer from serious overconfidence in their perceptions, memories, and judgments.¹²⁰ This is in part because they naively believe that their processes of perception, cognition, and retention are neutral, accurate recording devices much like a camera.¹²¹ For example, numerous studies have been done on eyewitness certainty (the

that of a man who is perplexed by a problem he faces, or that of the man whose mental eye has explored a number of solutions and, not knowing how to decide which is best, simply picks one at random. [W]e instead feel like someone who knows exactly how to respond. We feel that our shortcuts, on which we base our replies, are so correct as to be incontestable.

PIATTELLI-PALMARINI, *supra* note 1, at 7 (original emphasis).

116. EVANS, *supra* note 72, at 16.

117. See, e.g., *infra* text accompanying notes 213-15 (discussing the relationship between confirmation bias and the false causes fallacy).

118. See discussion, *infra* text accompanying note 629.

119. See PIATTELLI-PALMARINI, *supra* note 1, at 15 (heuristics "are hard to correct spontaneously, but they can, with a little steady work, be put right by anyone who becomes aware of them"); see also *infra* text accompanying notes 603-673 (discussing debiasing).

120. See *infra* text accompanying notes 182-202 (discussing overconfidence bias).

121. See LUCKHARDT & BECHTEL, *supra* note 112, at 188 (it is naive to think either a camera or human perception are neutral, accurate recording devices); see also Leda Cosmides & John Tooby, *Knowing Thyself: The Evolutionary Psychology of Moral Reasoning and Moral Sentiments*, BUS., SCI., & ETHICS (The Ruffin Series No. 4) 93, 98 (2004) ("The mind is not like a video camera, passively recording the world but imparting no content of its own.").

strength of a witness's belief) that show a poor correlation between witness accuracy and witness certainty.¹²²

Return to the camera metaphor for a moment. Cameras only record a small fraction of the important phenomena that are part of our physical world, while utterly omitting many others (sound, heat, radiation, and odor). Even where things that *are* visible to the naked eye are concerned, cameras only record a portion of the events on a particular occasion (that portion they happen to be focused on), which in some cases may not be the critical portion (the security camera caught the death of the victim, but not the image of the murderer). If the critical event is captured by the lens, the quality of the final image depends upon the nature and quality of the lens (did it distort the image?), the skill and judgment of the photographer (did she use the right film and shutter speed?), and the quality of the developing process.

Research on human perception and cognition indicates that the camera metaphor,¹²³ properly understood, can be useful in helping us understand the limits of our own perception. The key thing to understand is that

122. LUCKHARDT & BECHTEL, *supra* note 112, at 198. Memory researcher Daniel Schacter puts it this way:

Retrieving an experience repeatedly can make us feel certain that we are correct when we are plainly wrong. The tenuous correlation between a person's accuracy and confidence is especially relevant to eyewitness testimony. Witnesses who rehearse their testimony again and again in interviews with police officers and attorneys may become extremely confident about what they say — even when they are incorrect. The consequence of rehearsal is especially important because numerous studies have shown that juries are powerfully influenced by confident eyewitnesses.

DANIEL L. SCHACTER, *SEARCHING FOR MEMORY: THE BRAIN, THE MIND, AND THE PAST* 111 (1996). In fact, some studies (those where witnesses were given post-event information before being quizzed about what they saw) have detected an inverse relationship between certainty and accuracy. LUCKHARDT & BECHTEL, *supra* note 112, at 198. For recent research on the relationship between eyewitness accuracy and eyewitness confidence, see Robert K. Bothwell et al., *Correlation of Eyewitness Accuracy and Confidence: Optimality Hypothesis Revisited*, 72 J. APPLIED PSYCHOL. 691 (1987); Saul M. Kassin et al., *The Accuracy-Confidence Correlation in Eyewitness Testimony: Limits and Extensions of the Retrospective Self-Awareness Effect*, 61 J. PERSONALITY & SOC. PSYCHOL. 698 (1991); Siegfried Ludwig Sporer et al., *Choosing, Confidence, and Accuracy: A Meta-Analysis of the Confidence-Accuracy Relation in Eyewitness Identification Studies*, 118 PSYCHOL. BULL. 315 (1995); Gary L. Wells, *What Do We Know About Eyewitness Identification?*, 48 AM. PSYCHOLOGIST 553 (1993).

123. When psychologists speak of "perception," they mean "a field of study that lies midway between the study of sensation (the functioning of sense organs and their receptors) and the study of cognition (reasoning and problem solving)." RUE, *supra* note 80, at 84.

“perception *is* selection.”¹²⁴ We are constantly bombarded with thousands of bits of information about our environment, only a fraction of which registers on our consciousness. If for no other reason than cognitive economy, our limited personal processing power demands that some filters be in place on our awareness.¹²⁵ But while some filtering out of information is desirable and necessary, “the very capacity of the brain to do so makes it vulnerable to skewing what is admitted to awareness.”¹²⁶

The process is largely unconscious. Our attention “defines *what* we notice, but with such subtlety that we rarely notice *how* we notice.”¹²⁷ Attention “is the frame around [our] experience,”¹²⁸ and distortions in our frame can warp that experience.¹²⁹ Yet what we “select” is not just a

124. GOLEMAN, *supra* note 82, at 21 (original emphasis added); *see also* SCOTT PLOUS, THE PSYCHOLOGY OF JUDGMENT AND DECISION MAKING 21 (1993) (“Perceptions are, by their very nature, selective.”). Some brain researchers think that the usual way we tend to think about consciousness and perception is exactly reversed. For example, Rue, in speaking of the work of William Calvin, says that “our conscious thoughts are the ones that make it through the editorial processes and, on occasion, are ‘gated out’ into motor activity.” RUE, *supra* note 80, at 89. This means that:

the clarity and distinctness of our conscious life have their primitive origins in a cacophony of more or less random synaptic activity in the brain, and it *becomes* focused only as a result of selective interactions within the ecology of the brain’s memory systems. Consciousness is entirely a product of cognitive selection, not its directive source.

Id. at 89-90.

125. “Some filters on awareness are essential by virtue of the flood of data available at each moment to our senses.” GOLEMAN, *supra* note 82, at 20. Goleman quotes neuroscientist Monte Buchsbaum to the effect that “filtering or coping with the tremendous information overload that the human eye, ear, and other sense organs can dump upon the central nervous system may be one of the major functions of the cerebral cortex.” *Id.* at 21; *see also supra* text accompanying notes 106-08.

126. GOLEMAN, *supra* note 82, at 21.

127. *Id.* at 20; *see also* LUCKHARDT & BECHTEL, *supra* note 112, at 191: “What we observe is not only a function of what we are able to observe, but what we focus our attention on. Our focus of attention can be either conscious or unconscious.” It follows that “by focusing one’s attention on certain aspects of a situation, we may become oblivious to others.” *Id.* As Jonathan Evans points out, “it is clear that conscious attention is selective and that pre-attentive processes, *i.e.*, those which determine what we attend to, must themselves be unconscious (or preconscious) or we would have an infinite regress.” EVANS, *supra* note 72, at 92. This leads him to “the more controversial proposal that we are not aware of the nature of any perceptual or cognitive process but only in the *product* which it places in consciousness.” *Id.* at 92-93.

128. GOLEMAN, *supra* note 82, at 20.

129. Goleman quotes William James as observing that: “My experience is what I agree to attend to. Only those items I notice shape my mind.” *Id.* at 21. This leads Daniel Dennett to conclude, somewhat disturbingly, that: “You are *not* authoritative about what is happening in you,

function of what we are (human beings, with all of the limits on our senses that entails), but also of who we are. We see what we are conditioned to see and what we expect to see;¹³⁰ worse yet, in some cases we see what we want to see.¹³¹ Researchers have, for example, documented what they call expectancy bias — a tendency for people to see what they expect to see rather than what is actually there.¹³²

Our wishes and desires have also been linked to two perceptual biases that “can be particularly dangerous when [they occur] . . . among people in positions of authority or power[:]”¹³³ wishful thinking¹³⁴ and aversive

but only about what *seems* to be happening in you.” DANIEL C. DENNETT, *CONSCIOUSNESS EXPLAINED* 96 (1991).

130. “What we can see or hear is to a large extent determined by what we are prepared to see or hear.” LUCKHARDT & BECHTEL, *supra* note 112, at 190. Thus, “[p]reparation, training, and experience can make a great deal of difference in what we can observe.” *Id.*

131. Plous puts it this way:

If you are like most people, your perceptions are heavily influenced by what you expect to see. Even when something is right before your eyes, it is hard to view it without preconceived notions. You may feel that you are looking at things in a completely unbiased way, but . . . it is nearly impossible for people to avoid biases in perception. Instead, people selectively perceive what they expect and hope to see.

PLOUS, *supra* note 124, at 15. Plous observes that “motivational” as well as cognitive factors can bias our perceptions. *Id.* at 18. By “motivational” he means factors “that deal with hopes, desires, and emotional attachments.” *Id.* Of course, cognitive psychologists are far from the first to make such an observation. Friedrich Nietzsche was admirably concise when he said: “The world is interpreted by our wants.” RUE, *supra* note 80, at 157. On the influence of the self-esteem motivator on human perceptions, see discussion, *infra* text accompanying notes 388-402.

132. See, e.g., LUCKHARDT & BECHTEL, *supra* note 112, at 190 (discussing “closure”). To illustrate, Luckhardt and Bechtel observe: “Closure is a phenomenon that proofreaders must fight against at every turn. Many of us tend to ‘close’ the misspelled word ‘against’ in the previous sentence by supplying the missing ‘n,’ but proofreaders try to avoid the tendency.” *Id.* This (along with an understandable dread of going through it one more time) probably explains why proofreading one’s own work is so difficult. Readers are accordingly urged to relieve the author of some of the blame for typographical errors they discover in this Article. In classic early expectancy experiments subjects were given brief glances at playing cards and asked to identify them. Some cards were wrong, such as a black King of Hearts, but subjects identified them without noticing the difference. Jerome S. Bruner & Leo Postman, *On the Perception of Incongruity: A Paradigm*, 18 *J. PERSONALITY* 206, 209-12 (1949); PLOUS, *supra* note 124, at 15-16.

133. LUCKHARDT & BECHTEL, *supra* note 112, at 193.

134. Madsen Pirie treats both behaviors as wishful thinking and classifies it as among the many informal logical fallacies. Wishful thinking, he says, occurs when “we accept [reject arguments or ideas] because we would like [them] to be true, [false] rather than because of the . . . evidence which support [or reject them]. . . . Our wishes rarely bear directly on the question of whether a thing is true or false.” MADSEN PIRIE, *THE BOOK OF THE FALLACY* 179 (1985).

thinking.¹³⁵ Either malady can lead powerful people to make decisions based on an imaginary world rather than on the real one in which their responsibilities lie, with possibly disastrous consequences¹³⁶ to those who depend on them for effective action.¹³⁷

Our emotional state can also play a major role in shaping our perceptions and our thought processes. In 1757, Edmund Burke said, “No passion so effectually robs the mind of all its powers of acting and reasoning as fear.”¹³⁸ Subsequent research confirms Burke’s observation.¹³⁹

Given that our desires, our conditioning, our expectations, and our emotional states vary across human beings and that they, to some extent, distort what each of us perceives, it logically follows that reality, as experienced by each of us, differs as well.¹⁴⁰ Depressingly, the research literature provides ample support for this conclusion.¹⁴¹ Consider recent

135. LUCKHARDT & BECHTEL, *supra* note 112, at 193.

136. Why is wishful thinking often likely to lead to disaster? Because, as Madsen Pirie so aptly puts it, “[I]f you want one thing, and the universe wants another, there is a conflict of interests which is not going to be resolved in your favour.” PIRIE, *supra* note 134, at 180.

137. Luckhardt and Bechtel observe:

Wanting to hear evidence that the company is prospering, and being averse to evidence that it is not doing well, a manager or officer of a company will often convey this quite unconsciously to the employees. Picking up this message, they will then tell the manager only the good news, giving in effect what the manager wanted all along. When the company folds because proper protective measures were not taken, it is then difficult to decide how to assign responsibility. The fairy tale of the Emperor’s New Clothes is a perfect illustration of this phenomenon.

LUCKHARDT & BECHTEL, *supra* note 112, at 193. Managers are far from the only group vulnerable to such behavioral distortions. The authors note that: “Scientists who call a halt to an experiment the instant they have gotten the data they want, without letting it run on to see whether conflicting data might also result in the long run are probably more guilty of this bias than of deliberate fraud.” *Id.*; see also *infra* text accompanying notes 203-22 (discussing confirmation bias).

138. EDMUND BURKE, ON THE SUBLIME AND BEAUTIFUL, pt.2, § 2 (1757), cited in OXFORD DICTIONARY OF QUOTATIONS 158 (4th ed. 1992).

139. “Several studies have shown that when subjects are aroused by threats, their cognitive processes simplify considerably, thus reducing the complexity of factors that might otherwise be involved in decision making.” RUE *supra* note 80, at 167. The *Yerkes Dodson law* says that while moderate amounts of emotional arousal can heighten perception, greater amounts of stress and fear tend to reduce our ability to perceive what is going on around us accurately. LUCKHARDT & BECHTEL, *supra* note 112, at 190.

140. See *supra* text accompanying note 82.

141. The classic study in this area involved the 1951 Princeton/Dartmouth football game (a very rough game that resulted in serious injuries to players on both sides and many penalties). Researchers showed identical game films to Princeton and Dartmouth students, who were asked to record any infractions on the film. Albert Hastorf & Hadley Cantril, *They Saw a Game: A Case*

experiments involving student perceptions about biases in media coverage. Students who had been pre-screened for their attitudes on the Arab-Israeli conflict were shown identical stories and asked to rate them for bias. Pro-Israeli students saw the stories as pro-Arab, and pro-Arab students saw the stories as biased in favor of Israel.¹⁴² The researchers dubbed this phenomenon “the hostile media effect,” and said that they expected similar perceptual biases to arise in any situations where the parties have a significant personal investment in prior positions.¹⁴³

These results are consistent with the research on cognitive dissonance,¹⁴⁴ which demonstrates that “when people become committed to a particular cause or a course of action, their perceptions often change in order to remain consistent with this commitment.”¹⁴⁵ Cognitive dissonance has post-decisional as well as pre-decisional effects, a finding of particular interest to ethicists.¹⁴⁶ People who have committed themselves to a course of action are likely to increase their commitment to that course of action.¹⁴⁷ Thus, while we normally expect changes in

Study, 49 J. ABNORMAL & SOC. PSYCHOL. 129 (1954). Although the students used the same rating system, they reached very different results — so different, that the researchers concluded:

It seems clear that the “game” actually was many different games. . . . It is inaccurate and misleading to say that different people have different “attitudes” concerning the same “thing.” For the “thing” simply is *not* the same for different people whether the “thing” is a football game, a presidential candidate, Communism, or spinach.

PLOUS, *supra* note 124 at 19-20 (original emphasis).

142. Robert P. Vallone et al., *The Hostile Media Phenomenon: Biased Perception and Perceptions of Media Bias in Coverage of the Beirut Massacre*, 49 J. PERSONALITY & SOC. PSYCHOL. 577 (1985). For a discussion of this research, see PLOUS, *supra* note 124, at 20-21.

143. PLOUS, *supra* note 124, at 21. Consider the implications of these experiments for judges, mediators, and arbitrators — it is possible that even the most objective decisions and evenhanded treatment would not be seen as such by the contending parties, both of whom may be dissatisfied with the outcome. *See id.*

144. *See id.* The theory of cognitive dissonance was first proposed by Leon Festinger. *See generally* LEON FESTINGER, A THEORY OF COGNITIVE DISSONANCE (1957). It says that people are motivated to avoid or reduce psychological inconsistencies and therefore experience cognitive dissonance when they simultaneously hold two thoughts that are inconsistent. *See* PLOUS, *supra* note 124, at 22-30.

145. PLOUS, *supra* note 124, at 21.

146. *Id.* at 28-29.

147. *See* Oded J. Frenkel & Anthony N. Doob, *Post-Decision Dissonance at the Polling Booth*, 8 CANADIAN J. BEHAV. SCI. 347 (1976); Ronald E. Knox & James A. Inkster, *Postdecision Dissonance at Post Time*, 8 J. PERSONALITY & SOC. PSYCHOL. 319 (1968) (discussing the behavior of voters and bettors, respectively). PLOUS, *supra* note 124, at 21.

attitude to lead to changes in behavior, “changes in attitude can also *follow* changes in behavior” because “the pressure to feel consistent will often lead people to bring their beliefs in line with their behavior.”¹⁴⁸ So, for example, persons who have compromised their ethical standards in response to organizational pressures¹⁴⁹ can be expected to change their standards over time to justify their behavior.¹⁵⁰

So, the lens of our personal camera may be warped, presenting us with a distorted view of reality.¹⁵¹ Unfortunately, this is not the end of our problems. Our ability to recall accurately what we have observed is also limited. Studies have shown, not surprisingly, that the longer the gap between our original observation and our reporting of the memory (the retention interval), the more we forget (the forgetting curve).¹⁵² Time lapse

148. PLOUS, *supra* note 124, at 30.

149. See, e.g., Metzger & Phillips, *supra* note 40, at 129-39 (discussing such pressures and their impact on managerial behavior).

150. As a leading dissonance researcher puts it: “If you want someone to soften his moral attitude toward some misdeed, tempt him so that he performs that deed. . . .” ELLIOT ARONSON, *THE SOCIAL ANIMAL* 108 (1972). The converse is also true, a point that is relevant to the business of moral evaluation. Aronson says that: “[I]f you want someone to harden his moral attitudes toward a misdeed, tempt him — but not enough to induce him to commit the deed.” *Id.*

151. There is another layer of complexity here that will be explored subsequently. The information that is available to us is often distorted before our perceptual apparatus has any chance to add its own distortions. Consider, for example, the criteria that are used by newspaper editors and television news producers to determine which events are “newsworthy.” See, e.g., Tunku Varadarajan, *Hooray for the Lowbrow Media*, WALL ST. J., July 17, 2001, at A18. How dangerous is flying, really? Far less dangerous than driving your car to the airport, but it does not seem that way to many of us. Imagine how perceptions would change if your daily newspaper carried the flight numbers of all the commercial flights that took off and landed safely every day all over the world, placing in bold print only those where an accident occurred. Then you would have the information to make an accurate judgment about the risks inherent in commercial aviation. But those pages of numbers, while more informative regarding the issue of risk assessment, would be far less vivid (and memorable) than one picture of wreckage and bodies strewn across a field. *Infra* text accompanying notes 438-55 (showing the impact of available information on our judgments). Consider also that many of the “studies” so eagerly reported by the media come from groups with an obvious agenda that may shape which “facts” are reported. Would you, for example, really expect a study funded by the Citizens for Sane Handgun Laws to give you accurate data on the number of crimes prevented by armed citizens each year? For the other side of this particular argument, see generally JOHN R. LOTT, JR., *MORE GUNS, LESS CRIME: UNDERSTANDING CRIME AND GUN-CONTROL LAWS* (1998). Can you realistically expect an ad paid for by the Clamshell Antinuclear Alliance to tell you about all the risks associated with the continued use of fossil fuels? For a discussion of those risks, see SUTHERLAND, *supra* note 30, at 253-55.

152. LUCKHARDT & BECHTEL, *supra* note 112, at 195. The forgetting curve varies “from person to person and event to event and detail of event to detail of event.” *Id.* “Details that were observed but not focused on as strongly as others will usually not be remembered as long, and details for which there was wishful thinking will in general be remembered longer than those for which there was not.” *Id.* There *are* ways to cope with this. One device that can have high value

is not the only source of memory distortion, however.¹⁵³ Memory researchers have found, for example, that we are more likely to remember events or arguments that support our views than we are those that contradict them.¹⁵⁴ Charles Darwin was self-objective enough to diagnose this problem in his own memory. In one of his diaries he noted that he tended to forget arguments or data that seemed contrary to his theories. As a result, he consciously developed the habit of immediately writing such things down.¹⁵⁵ This can help, but if we have a tendency not to even register data that conflicts with our beliefs,¹⁵⁶ then we have no hope of remembering it.

Research has also shown that we are more likely to remember decisions or situations in which we performed or behaved well than those in which we performed poorly.¹⁵⁷ Ego obviously has a lot to do with this selective

to managers is keeping notes when significant events occur to help preserve their recollections. Lawyers commonly advise business clients to keep such notes whenever they sense that trouble may be brewing downstream. In some states, managers' notes may even be admissible as evidence in subsequent litigation. *Id.*

153. See SCHACTER, *supra* note 122, at 9 ("Accumulating evidence suggests that we are usually correct about the general character of our pasts, but are susceptible to various kinds of biases and distortions when we recount specific experiences.").

154. LUCKHARDT & BECHTEL, *supra* note 112, at 196-97. Robert Wright illustrates the point with this observation:

In one experiment, people with strongly held positions on a social issue were exposed to four arguments, two pro and two con. On each side of the issue, the arguments were of two sorts: (a) quite plausible, and (b) implausible to the point of absurdity. People tended to remember the plausible arguments that supported their views and the implausible arguments that didn't, the net effect being to drive home the correctness of their position and the silliness of the alternative.

WRIGHT, *supra* note 1, at 280-81 (citing ARONSON, *supra* note 150, at 109). This is not a conscious process. As Wright notes, people "simply find themselves constantly in touch with all the evidence supporting their position, and often having to be reminded of all the evidence against it." WRIGHT, *supra* note 1, at 280.

155. WRIGHT, *supra* note 1, at 280 (recounting the story).

156. See Confirmation Bias, *infra* Part III.B.2.d.

157. See generally Anthony G. Greenwald, *The Totalitarian Ego: Fabrication and Revision of Personal History*, 35 AM. PSYCHOLOGIST 603 (1980). According to the *Wall Street Journal's* Jonathan Clements, selective investor memory is one of the reasons investors have problems effectively managing their portfolios. See Jonathan Clements, *Patience Can Be a Virtue in Investing, Too; Stock Owners Should Ask Themselves Six Questions Before Deciding to Trade in Their Vehicle for a New Model*, CHI. TRIB., Mar. 4, 1999, at C3. He quotes Gerald Perritt, editor of the *Mutual Fund Letter*, saying: "You can con yourself into thinking you're doing pretty well. . . . You remember the big winners and forget about all the losers along the way." *Id.* Peggy Ruhlin, a Columbus, Ohio, financial planner, says:

forgetfulness, and when it fails to blot out memories entirely it can serve to distort them.¹⁵⁸ As Professor Henry L. Roediger III, a memory researcher, puts it: “Over time, people may forget things that did happen and remember things that didn’t.”¹⁵⁹ Another memory researcher says that: “We know enough about how memories are stored and retrieved to demolish another long-standing myth: that memories are passive or literal recordings of reality.”¹⁶⁰ Instead, he says, “[i]t is now clear that we do not store judgment-free snapshots of our past experiences but rather hold on to the meaning, sense, and emotions these experiences provided us.”¹⁶¹

“One thing I’ve advised some really nervous clients to do is keep a diary. Investors suffer from selective memory. They remember that they thought about selling all their stocks on July 17. But they forget that they had that same thought 10 other times. By keeping a diary, they can see how often their hunches are wrong.

Jonathan Clements, *Rock-Solid Investing Guidelines for Uncertain Times*, WALL ST. J., Oct. 13, 1998, at C1.

158. Friedrich Nietzsche put it this way: “‘I have done that,’ says my memory. ‘I cannot have done that,’ says my pride, and remains adamant. At last — memory yields.” FRIEDRICH NIETZSCHE, *BEYOND GOOD AND EVIL* 72 (R.J. Hollingdale trans., 1973).

159. Christopher Shea, *A New Book Explores the Fragility of Memory*, CHRON. HIGHER EDUC., July 26, 1996, at A8.

In his book *Memory*, Ian Hunter tells the story of two British psychologists who secretly recorded a discussion that took place after a meeting of the Cambridge Psychological Society. Two weeks later, the psychologists contacted all the participants and asked them to write down everything they could remember about the discussion. When these accounts were checked against the original recording, it turned out that respondents typically omitted more than 90 percent of the specific points that had been discussed. Moreover, of the points that were recalled, nearly half were substantially incorrect. Respondents remembered comments that were never made, they transformed casual remarks into lengthy orations, and they converted implicit meanings into explicit comments.

PLOUS, *supra* note 124, at 37. Plainly, “[m]emory, that complex and usually reliable asset, can sometimes deceive us badly.” SCHAFTER, *supra* note 122, at 7.

160. SCHAFTER, *supra* note 122, at 5.

161. *Id.* The essence of memory, as researchers currently understand it, is admirably captured by the following statement:

Memory is basically a “reconstructive” process. Thus, our experience is often recalled inaccurately. . . . The problem is particularly acute because our recall is often organized in ways that “make sense of” the present — thus reinforcing our belief in the conclusions we have reached about how the past has determined the present. We quite literally “make up stories” about our lives, the world, and reality in general. The fit between our memories and the stories enhances our belief in

The reconstructive nature of memory is evident in other people's ability to influence our memories as well. Numerous well-publicized cases of bogus sexual abuse allegations have served to highlight cognitive scientists' observations about the potentially biasing influence of suggestion on what we recall. Recent experiments by memory researchers found that "[g]iven a few bogus details and a little prodding, about a quarter of adults can be convinced they remember childhood adventures that never happened."¹⁶²

them. Often, however, it is the story that creates the memory, rather than vice versa.

DAWES, *supra* note 66, at 107. For example, Schacter talks about a classic study that shows people's recollection of their past attitudes is heavily influenced by their present attitudes:

In a 1973 study, people were asked to rate their attitudes toward five salient social issues: guaranteed jobs, rights of accused people, aid to minorities, legalization of marijuana, and equality of women. In 1982, many of these people were asked to make the same ratings. In addition, they were asked to indicate what their attitudes were back in 1973. Participants' recollections of their 1973 attitudes were much more closely related to their current views than to their past views. The views that people held in 1973 had little to do with how they remembered those views in 1982.

SCHACTER, *supra* note 122, at 105-06 (citing Gregory B. Marcus, *Stability and Change in Political Attitudes: Observed, Recalled and "Explained,"* 8 POL. BEHAV. 21 (1986)). The same study is also discussed in DAWES, *supra* note 66, at 107-08.

162. *False Memories Common, Studies Suggest*, SUNDAY HERALD TIMES, Feb. 16, 1997, at A8. In another experiment with memory reconstruction, students viewed a film of a traffic accident. They were later asked, in various ways, to estimate the speed the cars in the film were traveling. Those who were asked, "About how fast were the cars going when they *smashed into* each other?" estimated the cars' speed as 9 mph faster than those who were asked, "About how fast were the cars going when they *contacted* each other?" See PLOUS, *supra* note 124, at 32. For the original study, see Elizabeth F. Loftus & John C. Palmer, *Reconstruction of Automobile Destruction: An Example of the Interaction Between Language and Memory*, 13 J. VERBAL LEARNING & VERBAL BEHAV. 585 (1974). Schacter discusses a similar study by the same researcher:

In classic studies on eyewitness memory by Elizabeth Loftus and her colleagues, people viewed slides in which a car is involved in an accident after coming to a halt at a stop sign. After witnessing the event, some people were asked, "What happened to the car after it stopped at the stop sign?" and others were asked a question containing a misleading suggestion: "What happened to the car after it stopped at the yield sign?" Later, everyone was asked whether the car had come to a halt at a stop sign or a yield sign. People who had been asked the misleading question tended to remember having seen a yield sign.

The distortions produced by after-acquired information are not limited to the realm of memory. Other cognitive processes can be influenced as well. Two examples that should be of particular concern to managers, legal policymakers, and business ethicists are hindsight bias and outcome bias because they “reduce our ability to learn from the past and to evaluate objectively the decisions of ourselves and others.”¹⁶³ It is to these and the other documented biases in human reasoning that we now turn.

2. Biases

a. Hindsight Bias

Hindsight bias refers to the observed tendency for people “with outcome knowledge (hindsight) to claim that they would have estimated the probability of occurrence for the reported outcome that is higher than they would have estimated in foresight (without the outcome information).”¹⁶⁴ This tendency has also been called the “knew it all along” effect,¹⁶⁵ “the Monday morning quarterback syndrome,”¹⁶⁶ and “creeping determinism.”¹⁶⁷ After a strategy has failed, everybody who initially went along with it suddenly knew it would never work from the beginning. We regularly witness hindsight bias in operation in media and public reactions following any disaster. Everyone now believes that more should have been

SCHACTER, *supra* note 122, at 115 (citing Elizabeth F. Loftus & David G. Miller, *Semantic Integration of Verbal Information Into a Visual Memory*, 4 J. EXPERIMENTAL PSYCHOL.: HUM. LEARNING & MEMORY 19 (1978); Elizabeth F. Loftus et al., *MEMORY DISTORTION: HOW MINDS, BRAINS, AND SOCIETIES RECONSTRUCT THE PAST* 47 (Daniel L. Schacter et al. eds., 1995)). One may assume that while trial lawyers may not be familiar with this research, they have a firm understanding of the psychological principle in operation.

163. BAZERMAN, *supra* note 106, at 38.

164. Scott A. Hawkins & Reid Hastie, *Hindsight: Biased Judgments of Past Events After the Outcomes Are Known*, 107 PSYCHOL. BULL. 311, 311 (1990). For the article where the term first appeared, see Baruch Fischhoff, *Hindsight ≠ Foresight: The Effect of Outcome Knowledge on Judgment Under Uncertainty*, 1 J. EXPERIMENTAL PSYCHOL.: HUM. PERCEPTION & PERFORMANCE 288 (1975).

165. Hawkins & Hastie, *supra* note 164, at 312; see also BAZERMAN, *supra* note 106, at 37 (citing Gordon Wood, *The Knew-It-All-Along Effect*, 4 J. EXPERIMENTAL PSYCHOL.: HUM. PERCEPTION & PERFORMANCE 345 (1978)).

166. BAZERMAN, *supra* note 106, at 37 (citing Baruch Fischhoff, *The Silly Certainty of Hindsight*, PSYCHOL. TODAY, Apr. 1975, at 71). In other words, we all tend to be “Monday morning quarterbacks” who know the play call that should have been made once a call has been made.

167. *Id.* (citing Baruch Fischhoff, *For Those Condemned to Study the Past: Reflections on Historical Judgment*, in NEW DIRECTIONS FOR METHODOLOGY OF BEHAVIORAL SCIENCE: FALLIBLE JUDGMENTS IN BEHAVIORAL RESEARCH 79 (R.A. Schweder & D.W. Fiske eds., 1980)).

done to prevent the mishap, even if the probability of its occurrence was minimal. Once *X* has happened, we find it difficult to imagine that *Y* or *Z* could have happened. Past events “will *always* look less random than they were.”¹⁶⁸

Hindsight bias has disturbing implications for companies involved in defending negligence or product liability suits. In these suits, liability may hinge on a jury’s judgment about whether a particular accident or product-related injury was “foreseeable” by the defendant. Jurors possessing information about the outcome of a decision will tend to evaluate it differently than people who only have the information that managers and engineers had at the time they made the decision.¹⁶⁹

Fundamentally, hindsight bias can be a real obstacle to learning from experience because “the false clarity of hindsight creates the illusion that there is no lesson to be learned.”¹⁷⁰ Considering the effects of hindsight bias in conjunction with those of selective memory,¹⁷¹ it is hard to escape the conclusion that “[t]he degree to which we can ‘learn from experience’ is suspect.”¹⁷²

168. NASSIM NICHOLAS TALEB, *FOOLED BY RANDOMNESS: THE HIDDEN ROLE OF CHANCE IN LIFE AND IN THE MARKETS* (2d. ed. 2004). The core of effective probabilistic thinking, he says, is “considering that alternative outcomes could have taken place, that the world could have been different. . . .” *Id.* at xxii.

169. See generally Clifton E. Brown & Ira Solomon, *Effects of Outcome Information on Evaluations of Managerial Decisions*, 62 ACCT. REV. 564; Jonathan D. Casper et al., *Juror Decision Making, Attitudes, and the Hindsight Bias*, 13 L. & HUM. BEHAV. 291 (1989); John G. Wermert, *An Examination of the Role of Outcome Knowledge in the Evaluation of Auditor Performance in Trial Settings* (1995) (unpublished Ph.D. dissertation, Indiana University Kelley School of Business) (on file with author).

170. RUSSO & SCHOEMAKER, *supra* note 104, at 183; see also BAZERMAN, *supra* note 106, at 38 (stating that among the advantages of hindsight is that “it is very flattering to believe that your judgment is far better than it actually is”). However, not everyone agrees that hindsight bias is an unalloyed problem. See generally Ulrich Hoffrage & Ralph Hertwig, *Hindsight Bias: A Price Worth Paying for Fast and Frugal Memory*, in *SIMPLE HEURISTICS THAT MAKE US SMART*, *supra* note 110, at 191.

171. See *supra* text accompanying notes 152-57.

172. DAWES, *supra* note 66, at 120; see also BAZERMAN, *supra* note 106, at 38 (“hindsight bias reduces our ability to learn from the past”). These and the other things that can make it difficult for us to learn the right lessons from our experience have led Robyn Dawes to conclude that: “[W]hat we often must do is to learn how to *avoid* learning from experience.” DAWES, *supra* note 66, at 120 (original emphasis). For a thorough discussion of all of the impediments to accurate experiential learning, see *id.* at 100-20. This is all quite troubling, for as Dawes points out: “[O]ur experience is the stuff of reality. We have only our personal experience; even the vicarious experience that we believe we possess is based on our own personal contact with it. We are stuck.” *Id.* at 120.

b. Outcome Bias

Outcome bias is a close cousin of hindsight bias, but where the latter focuses on our personal sense that we “knew it all along,” the former addresses the effect of outcome information on our evaluation of decision quality.¹⁷³ In other words, decisionmakers who are associated with good outcomes tend to get better performance evaluations than decisionmakers who are associated with bad outcomes. What could possibly be wrong with that? In short, this jeopardizes our ability to understand something fundamental about decisionmaking — good decisions do not always have good outcomes. Given that most important decisions are made under conditions of uncertainty, and that luck often plays a major role in success or failure, by definition, some good decisions will not work out.¹⁷⁴ Also, by definition, some bad decisions will nonetheless work out well.¹⁷⁵ As one prominent researcher notes: “A good decision cannot guarantee a good outcome. All real decisions are made under uncertainty. A decision is therefore a bet, and evaluating it as good or not must depend on the stakes and the odds, not on the outcome.”¹⁷⁶

173. See generally Jonathan Baron & John C. Hershey, *Outcome Bias in Decision Evaluation*, 54 J. PERSONALITY & SOC. PSYCHOL. 569 (1988) (investigating outcome bias by observing the direct effect of outcome information on decision evaluation while holding the probabilities of judged events constant).

174. See, e.g., BAZERMAN, *supra* note 106, at 38 (“[R]esults are affected by a variety of factors outside the direct control of the decision maker”); RUSSO & SCHOEMAKER, *supra* note 104, at 207 (“[c]hance confuses the link between good decisions and good outcomes”).

175. Taleb cautions us, for example, that “at any point in time, a large section of businessmen with outstanding track records will be no better than randomly thrown darts.” TALEB, *supra* note 168, at 24. We are not, however, inclined to see it this way, especially when our own decisions are at stake. Instead, we have a powerful tendency toward self-serving explanations of our experience. So, we will naturally believe that “[o]ur successes are due to skill, our failures to bad luck.” RUSSO & SCHOEMAKER, *supra* note 104, at 180. This can also have a negative impact on our ability to learn from own experience. *Id.* at 176. The tendency to “attribute your successes to skills but failures to randomness” is called “attribution bias.” TALEB, *supra* note 168, at 224; see also discussion, *infra* Part III.B.3 (discussing positive illusions).

176. Ward Edwards, *How to Make Good Decisions*, in “What Constitutes a Good Decision?”, 56 ACTA PSYCHOLOGICA 5, 7 (1984).

The quality of a decision cannot be determined unambiguously by its outcome. For example, most of us believe it would be very silly to accept an even wager that the next time we throw a pair of unloaded dice we will roll “snake eyes.” Moreover, we would regard the person who accepted such a gamble as foolish — even if he happened to roll snake eyes.

DAWES, *supra* note 66, at 7. Stuart Sutherland observes that: “Rational thinking leads to the conclusion that is most likely to be correct, *given the knowledge one has.*” SUTHERLAND, *supra*

If we are engaged in the evaluation of decisionmakers, we then need to guard against distortion of our evaluations by hindsight and outcome bias. If we fail to do so, we are likely to subject decisionmakers to an unfair standard of behavior.¹⁷⁷ Instead, we should focus on the “process and logic” of their decision.¹⁷⁸ Was the decision rational¹⁷⁹ given the information available to the decisionmaker at the time the decision was made?¹⁸⁰

Sadly, the distorting effect of after-acquired information on our judgment is not the only source of bias identified by cognitive psychologists. Three other well-documented biases — overconfidence bias, confirmation bias, and belief bias — can interfere with our ability to

note 30, at 4 (emphasis added). But “[n]either rational thinking nor rational decision-making necessarily leads to the best outcome.” *Id.* at 5. However, he also is quick to add: “[O]ver a lifetime chance tends to even out, and if you want to achieve your ends to the greatest possible extent, you had better take the rational decision as often as you can even though on occasion a different decision would have led to a better result.” *Id.* at 6.

177. “Claiming that what has happened was predictable based on foresight knowledge puts us in a position of using hindsight to criticize another’s foresight judgment.” BAZERMAN, *supra* note 106, at 38. Messick and Bazerman observe that “[w]e fail to appreciate the role of chance if we assume that every event that occurred was, in principle, predictable.” Messick & Bazerman, *supra* note 18, at 12.

178. See also RUSSO & SCHOEMAKER, *supra* note 104, at 206 (“[y]ou have to focus not on learning from outcomes but learning through analysis of the decision process itself.”).

179. There are many available definitions of rationality. For the purposes of this Article, we will rely on the three criteria for a rational decision enumerated by Robyn Dawes:

A *rational* choice can be defined as one that meets three criteria:

1. It is based on the decisionmaker’s *current assets*. Assets include not only money, but physiological state, psychological capacities, social relationships, and feelings.
2. It is based on the possible consequences of the choice.
3. When these consequences are uncertain, their likelihood is evaluated without violating the basic rules of probability theory. (And whatever our philosophical positions about determinism versus indeterminism or free will, the consequences of our choices from our perspective are usually uncertain.)

DAWES, *supra* note 66, at 8.

180. “[I]t is the potential outcomes, their probabilities, and their values to the decision maker at the time the decision is made that lead us to judge a particular choice to be wise or foolish.” *Id.* at 7; see also SUTHERLAND, *supra* note 30, at 4 (“Rationality can only be assessed in the light of what a person knows.”); TALEB, *supra* note 168, at 58 (“A mistake is not something to be determined after the fact, but in the light of the information until that point.”).

gather and evaluate the information necessary to make good decisions or judgments.¹⁸¹

c. Overconfidence Bias

Confucius said, “[t]o know that we know what we know and that we do not know what we do not know, that is true knowledge.”¹⁸² Before we can make good decisions, we need metaknowledge — knowledge about the state of our knowledge.¹⁸³ If we think we know more than we actually know, we will not know if we have all the information we need to make a good decision.¹⁸⁴ Worse yet, if some of what we know is wrong, our decisions can hardly be expected to be good. But most humans appear to lack this knowledge.¹⁸⁵ Instead, “we tend to have a deeply rooted overconfidence in our beliefs and judgments.”¹⁸⁶ In tests of over two thousand managers, “[n]o group of managers . . . tested ever exhibited adequate metaknowledge.”¹⁸⁷

Yet because we do not know that we do not know, “overconfidence has remained a hidden flaw in managerial decision making.”¹⁸⁸ Managers who fail to understand that “most people’s beliefs are distorted by deep-seated overconfidence”¹⁸⁹ are likely to fall into a trap¹⁹⁰ that can have serious consequences for their ability to discharge their professional obligations

181. Quality information is the *sine qua non* of quality decisionmaking since an argument or chain of reasoning can be completely logical but can nonetheless lead to an untrue conclusion if its premises are inaccurate. See LUCKHARDT & BECHTEL, *supra* note 112, at 19.

182. J. Edward Russo & Paul Schoemaker, *Managing Overconfidence*, SLOAN MGMT. REV., Winter 1992, at 7.

183. “Good decision making requires more than knowledge of facts, concepts, and relationships. It also requires *metaknowledge* — an understanding of the limits of our knowledge.” *Id.* (emphasis added).

184. “If one has reason to believe one’s knowledge is insufficient, then it is rational, particularly in the case of important decisions, to seek out more evidence. . . .” SUTHERLAND, *supra* note 30, at 6.

185. “Dozens of studies have demonstrated that virtually all people put too much trust in their opinions.” RUSSO & SCHOEMAKER, *supra* note 104, at 70; see also BAZERMAN, *supra* note 106, at 33 (observing that “overconfidence has been identified as a common judgmental pattern and demonstrated in a wide variety of settings”).

186. Russo & Schoemaker, *supra* note 182, at 7.

187. *Id.* at 9. This was true even when the questions related to their own industry or company, as “every group believed it knew more than it did about its industry or company.” *Id.*

188. *Id.* at 7.

189. *Id.* at 8.

190. RUSSO & SCHOEMAKER, *supra* note 104, at 68 (identifying “overconfidence in your judgment” as a major trap managers fall into).

effectively.¹⁹¹ Those of us who are not managers might like to think that overconfidence is confined to that group, or to those of our students who will become part of that group in the future.¹⁹² Unfortunately, that is not the case. Physicians, scientists, and “experts” of all sorts have been shown to be overconfident.¹⁹³ The historical record fairly groans with the weight of erroneous statements confidently made by authorities who were seemingly oblivious to the possibility that they could be mistaken and that their errors would thereby be memorialized for all posterity.¹⁹⁴

While some of the heuristics discussed later in this Article provide a partial explanation for our tendency toward overconfidence,¹⁹⁵ several of the phenomena previously discussed are also likely contributors. If we are more likely to remember instances when our judgments were right than those when they were wrong,¹⁹⁶ then we are using a biased sample to reach

191. “[I]n business, overconfidence usually leads to wrong decisions, shrinking profit margins, firings, or bankruptcies.” *Id.* at 73.

192. Harvard MBAs, asked to give answers that they were 98% sure were correct, were wrong 46% of the time. *Id.* at 72. MBA students at Cornell and Chicago fared no better. *Id.*

193. *Id.* at 73. See also SUTHERLAND, *supra* note 30, at 242 (“It has been found that doctors, engineers, financial advisers and others have an unwarranted confidence in their judgements [sic].”).

194. For an exhaustive compendium of these, that should give pause to any of us who are occasionally tempted to opine publicly about anything, see CHRISTOPHER CERF & VICTOR NAVASKY, *THE EXPERTS SPEAK* (1998). A personal favorite is the final statement of Union General John B. Sedgwick at the Battle of Spotsylvania: “They couldn’t hit an elephant at this dist. . . .” RUSSO & SCHOEMAKER, *supra* note 104, at 74.

195. Russo and Schoemaker suggest, for example, that the availability heuristic plays a role in some sorts of overconfidence:

A major reason for overconfidence in predictions is that people have difficulty in imagining all the ways that events could unfold. Psychologists call this the availability bias: what’s out of sight is often out of mind. Because we fail to envision important pathways in the complex net of future events, we become unduly confident about predictions based on the fewer pathways we actually do consider.

The limited paths that are evident (*e.g.*, the expected and the ideal scenarios) may exert more weight on likelihood judgments than they should.

Russo & Schoemaker, *supra* note 182, at 11. This failure of imagination is aided and abetted by the fact that “in many if not most cases, it is impossible to discover what the consequences of a different decision would have been.” SUTHERLAND, *supra* note 30, at 244. Russo and Schoemaker also suggest that the anchoring heuristic can bias some predictions. Russo & Schoemaker, *supra* note 182, at 11; see *infra* Part IV.C.2. (discussing anchoring).

196. See *supra* note 157 and accompanying text.

conclusions about the general quality of our judgment.¹⁹⁷ Hindsight bias¹⁹⁸ can operate to further bias that sample by leading us to believe that we “knew it all along” when we actually knew nothing of the kind.¹⁹⁹ Self-esteem maintenance²⁰⁰ probably also plays a role,²⁰¹ as does our next subject, confirmation bias.²⁰²

d. Confirmation Bias

Even when we know that we need more information before making a decision, the evidence indicates that we are also strongly predisposed against seeking out information that would contradict our beliefs. Instead, we are strongly motivated to search out information that confirms our beliefs.²⁰³ Studies of college students who had taken a college-level logic

197. We are also likely to bias that sample in other ways. Stuart Sutherland notes that “people are likely to distort both their memories and any new evidence received in such a way as to fit in with their beliefs and decisions.” SUTHERLAND, *supra* note 30, at 244. He also observes that “people will build up a causal story in their heads that explains why their judgment is right.” *Id.*

198. See discussion, *supra* text accompanying note 163 & Part III.B.2.a.

199. “Hindsight makes us believe that the world is more predictable than it really is. What happened often seems more likely afterwards than it did beforehand, since we fail to appreciate the full uncertainty that existed at the time.” Russo & Schoemaker, *supra* note 182, at 12. Thus, “[h]indsight instills an illusion of omniscience.” *Id.* Stuart Sutherland observes that “[o]ne aspect of overconfidence is hindsight . . . believing that an event that has already happened was inevitable and could have been predicted, given the initial circumstances. . . .” SUTHERLAND, *supra* note 30, at 236. Baruch Fischhoff, a prominent researcher in the area puts it:

When we attempt to understand past events, we implicitly test the hypotheses or rules we use both to interpret and to anticipate the world around us. If, in hindsight, we systematically underestimate the surprises that the past held and holds for us, we are subjecting those hypotheses to inordinately weak tests and, presumably, finding little reason to change them. Thus, the very outcome knowledge which gives us the feeling that we understand what the past was all about may prevent us from learning anything from it.

Baruch Fischhoff, *For Those Condemned to Study the Past: Heuristics and Biases in Hindsight, in JUDGMENT UNDER UNCERTAINTY*, *supra* note 110, at 335, 343.

200. See discussion, *infra* text accompanying notes 375-426.

201. See SUTHERLAND, *supra* note 30, at 244 (explaining “nobody likes to be wrong”).

202. “[P]eople fail to look for evidence that would reduce their faith in their own judgment.” *Id.* at 243.

203. Thomas Gilovich notes that “[p]eople exhibit a . . . tendency to focus on positive or confirming instances when they *gather* . . . information relevant to a given belief or hypothesis.” THOMAS GILOVICH, *HOW WE KNOW WHAT ISN'T SO* 33 (1st ed. 1991) (original emphasis). Put another way, this means that “people ask questions or seek information for which the equivalent of a ‘yes’ response would lend credence to their hypothesis.” *Id.*; see also BAZERMAN, *supra* note 106, at 35 (“Most of us seek confirmatory evidence and exclude the search for disconfirming

course and of tenured researchers in scientific fields have shown that substantial percentages of both groups tended to use invalid affirmation of the consequent logic (rather than the logically valid denying the consequent form) to test the truth of their conclusions.²⁰⁴ Ronald Kellogg notes that in social psychology experiments on persuasion, “people pay more attention to evidence that confirms their beliefs than evidence that undermines them.”²⁰⁵ Looking at the results of these and other studies, he concludes: “Humans are, it seems, less a thinking species than a believing one.”²⁰⁶

Why are we this way? Some authorities argue that confirming evidence gives us a mental reward, saying “[y]ou’re on the right track,” while disconfirming evidence says “your idea wasn’t as good as you thought.”²⁰⁷ Apparently, the self-esteem motivator does not like disconfirming feedback.²⁰⁸ Karl Popper, the philosopher of science who argued for the power of disconfirming evidence, agreed, saying: “We hate the very idea that we may be mistaken, so we cling dogmatically to our conjectures.”²⁰⁹

information from our decision process.”) (emphasis omitted); KELLOGG, *supra* note 66, at 405 (observing that “people pay more attention to evidence that confirms their beliefs than to evidence that undermines them.”).

204. KELLOGG, *supra* note 66, at 378 (citing Patricia W. Cheng et al., *Pragmatic Versus Syntactic Approaches to Training Deductive Reasoning*, 18 *COGNITIVE PSYCHOL.* 293 (1986)); see *supra* note 70 and accompanying text. Some readers can be expected to doubt their personal vulnerability to confirmation bias. If you are one, take the following test: Assume that you have four cards in front of you. You know that the cards have a letter on one side and a number on the other. Your task is to test the hypothesis “*If a card has a vowel on one side, then it has an even number on the other side*” by turning over the fewest cards necessary. The cards facing you are showing an *E*, *K*, *4*, and *7*. Which cards would you turn over? This is the famous (and much employed) Wason four-card test. Only 4% of experimental subjects get the right answer here — which is to turn over the *E* and the *7*. PLOUS, *supra* note 124, at 231-32 (noting that only 5 of the 128 subjects chose the correct cards). For a discussion of the test in its many variations, see BAZERMAN, *supra* note 106, at 34-36; KELLOGG, *supra* note 66, at 402-05.

205. KELLOGG, *supra* note 66, at 405.

206. *Id.*

207. RUSSO & SCHOEMAKER, *supra* note 104, at 76.

208. In some cases, “[e]vidence that disconfirms our beliefs may well be actively avoided.” KELLOGG, *supra* note 66, at 405. Consider, for example, the newspapers and magazines that we regularly read. How many of us subscribe to periodicals whose primary editorial thrust is contrary to, or at least substantially different from, our basic political values? Instead, do we not tend to subscribe to those whose articles and editorial stances are likely to assure us that we are on the “right” side of the issues? For a discussion of the self-esteem motivator, see discussion, *infra* Part IV.B.

209. Gregg Easterbrook, *Theories That Run Hot and Cold*, U.S. NEWS & WORLD REP., Nov. 10, 1997, at 11.

He called the process of starting with your conclusion and seeking consistent data “pre-scientific thinking.”²¹⁰

There is also a cognitive explanation for our bias toward confirmatory evidence. Some theorists think that our brains simply cannot process negative information very well.²¹¹ For example, we can more easily comprehend the statement “all Greeks are mortals” than the statement “all non-mortals are non-Greeks.”²¹² When the disconfirming evidence is missing and the confirming evidence is staring us in the face, our tendency toward confirmation bias makes it highly likely that we will commit the false cause fallacy.²¹³ For example, both the plaintiff’s lawyer and the woman who developed health problems after receiving silicone breast implants are likely to conclude that the implants caused the health problems.²¹⁴ Neither is likely to seek out women who received implants

210. *Id.* Logicians call it the fallacy of *apriorism*. PIRIE, *supra* note 134, at 16.

211. Jonathan Evans links confirmation bias to “the difficulties in understanding linguistic and logical negation outside of hypothesis testing situations.” EVANS, *supra* note 72, at 63.

212. GILOVICH, *supra* note 203, at 32.

213. Gilovich notes that confirmatory information is particularly compelling when we do not have information about disconfirming instances. In such cases, “[b]y placing too much emphasis on positive instances, people will occasionally ‘detect’ relationships that are not there.” *Id.* *False cause* is a common form of fallacious reasoning which occurs when we mistakenly leap to the conclusion that there is a causal relationship between two events (or sets of events) when it does not exist (or when it is more complex than we think it is). Causal issues are terribly important to managers, who are always trying to figure out why a strategy worked (or failed to work), or what set of actions or policies are sufficient to produce a responsive, high-performing organization, or what combination of investments of organizational resources will produce the best impact on the bottom line. Making causal connections is a natural, indeed almost automatic, process for human beings. Gilovich notes that there are solid evolutionary reasons why human beings have a tendency to make causal attributions — observing their environment and making such attributions is the way advanced organisms learn how their world works, and the systematic exploration of causal relationships has been the engine that has driven all scientific advancement. *Id.* at 10. Unfortunately, as Gilovich also notes, “[w]e are predisposed to see order, pattern, and meaning in the world, and we find randomness, chaos, and meaninglessness unsatisfying. . . . As a consequence, we tend to ‘see’ order where there is none, and we spot meaningful patterns where only the vagaries of chance are operating.” *Id.* at 9.

214. This particular type of false cause fallacy is called *post hoc ergo propter hoc* meaning after this, therefore on account of this. PIRIE, *supra* note 134, at 139. Like most fallacies, this one has an ancient provenance. As Pirie notes:

Greek historians regularly discussed natural disasters in terms of human actions. In looking for the cause of an earthquake, for example, we are likely to find Herodotus, or even Thucydides, gravely discussing the events which preceded it before concluding that a massacre perpetrated by the inhabitants of the stricken town was probably the cause.

and had no problems, or women who had the same problems but never received implants. In fact, the lawyer is likely to advertise in the media in an attempt to locate other implant recipients who have subsequently developed health problems. If you line up enough such unfortunate people (trial lawyers sometimes call this tactic “the parade of horribles”), even those who ought to know better will have a hard time resisting the conclusion you want them to reach.²¹⁵

Confirmation bias shapes our attention.²¹⁶ If we heard, for example, that the French are rude to tourists, then we may go to France looking for confirmation of that belief (and ignore all the contrary experiences that we have). Confirmation bias can also shape our behavior to the point where our beliefs become a self-fulfilling prophecy, triggering the responses that confirm them.²¹⁷

Confirmation bias is particularly problematic for managers on a number of levels. What, for example, does it tell us about the difficulty of doing objective personnel evaluations? If we like Fred and think he has a

Id. at 140. One reason why this kind of thinking is so compelling is that it sometimes leads to an obviously correct conclusion, as in: “I drank a quart of Jack Daniels Black Label last night; I have a headache this morning. Drinking too much whiskey causes headaches.” For a discussion of some of the causes of *post hoc ergo propter hoc* reasoning, see DAWES, *supra* note 66, at 115-19.

215. As one doctor was quoted as saying in response to a recent study showing no statistical correlation between breast implants and immune diseases: “Once you see these women, that’s all it takes to be convinced silicone implants can make them sick.” Thomas M. Burton, *Doctors See Hazards in Breast Implants Despite What Recent Studies May Say*, WALL ST. J., Aug. 24, 1994, at B1. Taleb observes that “we are not made to view things as independent from each other when viewing two events, A and B, it is hard not to assume that A causes B, B causes A, or both cause each other. Our bias is immediately to establish a causal link.” TALEB, *supra* note 168, at 213.

216. “[B]eliefs are formed by first impressions: later evidence is interpreted in the light of these beliefs.” SUTHERLAND, *supra* note 30, at 27. On the role of attention in shaping perception, see *supra* text accompanying notes 124-51.

217. Luckhardt and Bechtel give this example:

The person who believes that mountain people are untrustworthy is very likely to perceive a social situation among mountain people differently than someone without such a prejudice. And such a perception can be the start of a vicious circle. Prepared to view mountain people as untrustworthy, a person may see a situation as revealing a mountain person as untrustworthy. This perception will often be taken as confirming evidence of the stereotype, which then becomes strengthened, so that when the observers confront the next situation, they are prepared more than ever to “discover” the untrustworthiness of a person living in the mountains.

LUCKHARDT & BECHTEL, *supra* note 112, at 192. For more on self-fulfilling prophecies, see GILOVICH, *supra* note 203, at 44-48; PLOUS, *supra* note 124, at 231-35.

future with the firm, then we will tend to register only the positive things that he does or put a positive spin on his actions (this is sometimes called the halo effect).²¹⁸ If we dislike Mary and think she has no future with the firm, we will tend to do exactly the opposite (sometimes called the devil effect).²¹⁹ When interviewing job candidates, we may form an impression of them very early in the interview, which we unconsciously seek to confirm in the rest of the interview.²²⁰ When we finally settle on the one we intend to hire, we will tend to seek evidence to support our tentative conclusion.²²¹

Hiring or rewarding the wrong people (while rejecting and failing to reward the right ones) is problematic enough, but our tendency to unconsciously seek confirmation of our beliefs probably plays a part in something far more sinister — the formation and persistence of prejudice:

[People] may create for themselves a world in which hypotheses become self-confirming hypotheses and beliefs become self-perpetuating beliefs. . . . From this perspective, it becomes easier to understand why so many popular beliefs about other people (in particular, clearly erroneous social and cultural stereotypes) are so stubbornly resistant to change. Even if one were to develop sufficient doubt about the accuracy of these beliefs to proceed to test them actively, one nevertheless might be likely to “find” all the evidence one needs to confirm and retain these beliefs. And, in the end, one may be left with the secure (but totally unwarranted) feeling that these beliefs must be correct because they have

218. “Believing in the overall goodness of an individual, a person may then tend to see only the good traits and deeds that that person performs, overlooking the bad ones and even perceiving some bad ones as good.” LUCKHARDT & BECHTEL, *supra* note 112, at 192.

219. *Id.* “[A] person originally seen as bad can, as we say, ‘do no good’ in the eyes of that observer. Only the person’s bad acts are noticed, with no allowance that at least occasionally they are good, and even some good acts are seen as bad.” *Id.*

220. “It has been demonstrated that interviewers form an impression of the candidate within the first minute or so and spend the rest of the interview trying to confirm that impression.” SUTHERLAND, *supra* note 30, at 27-28. Accordingly, Sutherland argues that “the great majority of selection interviews are useless, and may indeed lower the chances of selecting the right candidate.” *Id.* at 30.

221. BAZERMAN, *supra* note 106, at 36. We will call references they listed on their application (people they probably thought could be relied upon to say positive things about them) and ask questions designed to elicit positive answers, such as: “Fred seems to have the people skills necessary to be a good manager. Am I right about that?” See PLOUS, *supra* note 124, at 234.

survived (what may seem to the individual) perfectly appropriate and even rigorous procedures for assessing their accuracy.²²²

e. Belief Bias

Yet, how likely are we to ever develop the doubts that would lead us to a serious (albeit biased) attempt to test any of our cherished beliefs? The evidence indicates that we are strongly predisposed to believe things that are consistent with our pre-existing beliefs and to disbelieve things that contradict them.²²³ Ronald Kellogg says that belief bias “refers to people accepting any and all conclusions that happen to fit with their system of beliefs.”²²⁴ In its extreme form, reasoners completely ignore the premises and focus only on the conclusion, accepting conclusions they find to be believable and rejecting those they find unbelievable.²²⁵

222. Mark Snyder & William B. Swann, Jr., *Hypothesis-Testing Processes in Social Interaction*, 36 J. PERSONALITY & SOC. PSYCHOL. 1202, 1211-12 (1978); see also EVANS, *supra* note 72, at 41 (“In social cognition, confirmation bias may be seen as a major mechanism responsible for the maintenance of prejudice and irrational beliefs.”).

223. Kellogg notes: “Politicians put belief bias to good use. If a politician can stand for a position that most believe in, then the premises and logic lending to supporting the position receive less scrutiny.” KELLOGG, *supra* note 66, at 400. Teachers also are well acquainted with belief bias. One of the reasons why education fails to “take” on some students is that they are simply unwilling to accept any concepts that conflict with their strongly held beliefs (the belief that they are highly objective and rational, for example). *Id.* at 398. Nor do we need the research of cognitive psychologists to tell us that this is the case. Careful observation of human behavior will suffice, as the following comment from Sir Francis Bacon attests:

The human understanding when it has once adopted an opinion draws all things else to support and agree with it. And though there be a greater number and weight of instances to be found on the other side, yet these it either neglects and despises, or else by some distinction sets aside and rejects, in order that by this great and pernicious predetermination the authority of its former conclusion may remain inviolate.

SUTHERLAND, *supra* note 30, at 146. Taleb observes that “[m]any people get married to their ideas all the way to the grave.” TALEB, *supra* note 168, at 221.

224. KELLOGG, *supra* note 66, at 398 (citing M. Henle, *On the Relation Between Logic and Thinking*, 69 PSYCHOL. REV. 366 (1962)); see also EVANS, *supra* note 72, at 23 (“[B]elief bias . . . arises when subjects evaluate the validity of an argument on the basis of whether or not its conclusions conform to their prior beliefs rather than on the basis of whether it is logically entailed by the premises”).

225. KELLOGG, *supra* note 66, at 399. Kellogg says that “[b]elief and meaning, not the predicate calculus and other abstract systems invented by philosophers lie at the core of human thinking.” *Id.*

[w]hen examining evidence relevant to a given belief, people are inclined to see what they expect to see, and conclude what they expect to conclude. Information that is consistent with our pre-existing beliefs is often accepted at face value, whereas evidence that contradicts them is critically scrutinized and discounted.²²⁶

How does belief bias work its insidious magic? One mechanism appears to be the use of differential criteria to evaluate evidence. When we evaluate propositions we like, we in effect “ask only that the evidence not force us to believe otherwise.”²²⁷ But when we judge conclusions we find distasteful, we insist on evidence that compels us to believe.²²⁸ This is an obviously unequal contest, leading to a predictable result: “[b]ecause it is almost always possible to uncover *some* supportive evidence, the asymmetrical way we frame the question makes us overly likely to become convinced of what we hope to be true.”²²⁹ If the evidence we uncover is ambiguous,²³⁰ we are likely to perceive it “in a way that fits our preconceptions.”²³¹ Because we think we are objective,²³² it never occurs

226. GILOVICH, *supra* note 203, at 50. Gilovich quotes another psychologist’s slip of the tongue as a perfect statement of belief bias: “I’ll see it when I believe it.” *Id.* at 49. Another way to put this is to say that we are inclined to commit the fallacy of *apriorism*, which is “[t]o start out with principles from the first (*a priori*) and to use them as the basis for accepting or rejecting facts.” PIRIE, *supra* note 134, at 16. As Pirie observes:

The fallacy is the short brush which sweeps untidy facts under a carpet of preconception. It is a necessary household appliance for those determined to keep their mental rooms clean of the dust of the real world. Engraved on the handle, and on the mind of the user, is the legend: “My mind’s made up. Don’t confuse me with the facts!”

Id. at 17.

227. GILOVICH, *supra* note 203, at 83.

228. *Id.* at 84.

229. *Id.* at 81.

230. Note that this often will be the case where important issues are concerned because “[f]or nearly all complex issues, the evidence is fraught with ambiguity and open to alternative interpretation.” *Id.* at 83. Consider, for example, the arguments about the existence and causes of global warming, where “experts” abound on both sides of the issue. See, e.g., Bruce D. Berkowitz, *Global Warming Studies Are a Model of Confusion*, WALL ST. J., Nov. 4, 1998, at A22; David Laskin, *Land of the Free, Home of Bad Weather*, WALL ST. J., Sept. 17, 1999, at A14.

231. GILOVICH, *supra* note 203, at 52. As Gilovich observes, “the same smile can look warm and friendly when it is worn by someone we like, but smug or sinister when worn by someone we consider untrustworthy.” *Id.*

232. *Id.* at 80. Robert Wright makes an interesting point when he observes that:

to us that the same evidence could be interpreted in a different way.²³³ When the evidence is unambiguously hostile to our point of view, “we often examine it particularly closely”²³⁴ with the end result “that the contradictory information is either considered too flawed to be relevant, or is redefined into a less damaging category.”²³⁵

Of course, confirmation bias will help to assure that we are not forced to confront damaging data as often as might otherwise be the case. We are likely to consult experts who will give us an opinion we find congenial.²³⁶ Thus, we will continue our search for information until we find data that appears to support our desired position.²³⁷

One might think that, being rational creatures, we would eventually grow suspicious of our uncannily long string of rectitude, our unerring knack for being on the right side of any dispute. . . . Nope. Time and again . . . we are shocked at the blindness of people who dare suggest that our outrage isn't warranted.

WRIGHT, *supra* note 1, at 281.

233. GILOVICH, *supra* note 203, at 80. Gilovich quotes social psychologist Ziva Kunda as saying:

[P]eople do not realize that the [inferential] process is biased by their goals, that they are only accessing a subset of their relevant knowledge, that they would probably access different beliefs and [inferential] rules in the presence of different goals, and that they might even be capable of justifying opposite conclusions on different occasions.

Id. at 80-81.

234. *Id.* at 55.

235. *Id.* at 55-56. Gilovich gives the example of a study in which proponents and opponents of capital punishment were given evidence supporting the deterrent efficacy of capital punishment. *See id.* at 53-54 (citing C.G. Lord et al., *Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence*, 37 J. PERSONALITY & SOC. PSYCHOL. 2098 (1979)) The opponents recognized it as hostile to their position, but came “to view [the] evidence . . . as hopelessly deficient and uninformative.” *Id.* at 56.

236. “By judiciously choosing the right people to consult, we can increase our chances of hearing what we want to hear.” *Id.* at 81-82. *See supra* text accompanying note 208 (regarding the periodicals to which we tend to subscribe).

237. Gilovich puts it this way:

When the initial evidence supports our preferences, we are generally satisfied and terminate our search; when the initial evidence is hostile, however, we often dig deeper, hoping to find more comforting information, or to uncover reasons to believe that the original evidence was flawed. By taking advantage of “optional stopping” in this way, we dramatically increase our chances of finding satisfactory support for what we wish to be true.

GILOVICH, *supra* note 203, at 82.

Even trained scientists have been shown to be vulnerable to belief bias.²³⁸ One survey of forty-two scientists who had publicly opposed or advocated nuclear power found that not one had changed his position in the wake of the near meltdown at the Three Mile Island nuclear power plant.²³⁹ However, surely peer reviewers for scholarly journals would be able to rise above their biases when making publication recommendations, would they not? Not according to one study,²⁴⁰ which found that “[t]he methodological critiques and publication recommendations of peer reviewers, . . . , [were] greatly affected by whether the results of a study support or oppose the reviewer’s own theoretical orientation.”²⁴¹ This

238. See Jerry Taylor, *Cancer Risks for Thee, But Not for Me*, WALL ST. J., Jan. 3, 1995, at A8. For an additional example, consider a study of 1461 epidemiologists, toxicologists, physicians, and general scientists regarding various health risks. Half of the subjects were given mainstream data about the effects of secondhand smoke but were told that the data related to “substance x.” The other half were told that the data pertained to second-hand smoke. Of the first group, 33% thought “substance x” was a serious hazard and 41% thought it deserved public health regulation. In contrast, 70% of the second group thought it was a serious environmental hazard and 85% thought public health regulation was warranted. *Id.* Taleb says that scientists “are human; they are marred by the biases that humans have.” TALEB, *supra* note 168, at 225. This, he says, is why “[i]t is said that science evolves from funeral to funeral.” *Id.*

239. PLOUS, *supra* note 124, at 141 (citing Allan Mazur, *Three Mile Island and the Scientific Community*, in *THE THREE MILE ISLAND NUCLEAR ACCIDENT: LESSONS AND IMPLICATIONS* 216 (T.H. Moss & D.L. Sills eds., 1981)). How did they manage it? Plous says that:

Each side assimilated the evidence in keeping with its own biases; nuclear energy opponents tended to be upset by the very occurrence of a serious breakdown and tended to view the breakdown as proof that a future catastrophe would occur, whereas nuclear energy supporters tended to be reassured by the safeguards and tended to believe that future catastrophes would be averted.

Id. After all, as Taleb notes, “[a]n academic who became famous for espousing an opinion is not going to voice anything that can possibly devalue his own past work and kill years of investment.” TALEB, *supra* note 168, at 222.

240. GILOVICH, *supra* note 203, at 56; see also M.J. Mahoney, *Publication Prejudices: An Experimental Study of Confirmatory Bias in the Peer Review System*, 1 COGNITIVE THERAPY & RES. 161 (1977). Similar effects were found in a study looking at the evaluation of marketing research. Subjects rated studies to be “better conducted” and “more convincing” when their prior beliefs were supported. They also rated sample size and the sampling process more favorably, and their overall evaluation was more favorable, when research results supported their initial beliefs. The study also found that subjects tended to discount research results that were contrary to their prior beliefs. See Hanjoon Lee et al., *Evaluation and Use of Marketing Research by Decision Makers: A Behavioral Simulation*, 24 J. MARKETING RES. 187, 193-94 (1987).

241. GILOVICH, *supra* note 203, at 56. The evidence also indicates that journal reviewers are vulnerable to the “halo” and “devil” effects. *Supra* text accompanying notes 218-19. Sutherland recounts a study by two psychologists who selected articles published in top psychology journals and authored by faculty in top psychology departments. The articles were re-typed and fictitious

tendency to interpret evidence selectively is one of the reasons why a hallmark of good scientific thinking is the specification of the meaning of various possible experimental outcomes in advance.²⁴² It is probably also a major reason why human beings have been arguing over the same things for centuries — there is almost always some data that can be interpreted as consistent with almost any position if we really work at it.

f. Conjunctive/Disjunctive Events Bias²⁴³

We tend to think that we know more than we know, that we knew all along how uncertain events would turn out, and that good decisions produce good outcomes, and vice versa. We have already explored some of the possible origins for these human tendencies,²⁴⁴ and we will explore some others when we discuss heuristics.²⁴⁵ One other possible contributor to these thinking problems may be our imperfect intuitive conceptions about how probability operates. A core attribute of rational decisionmaking is making high-probability choices when outcomes are uncertain,²⁴⁶ but the odds that we will be able to do so are obviously contingent upon our ability to think accurately about probability issues.²⁴⁷ Psychologists Daniel Kahneman and Amos Tversky discovered that “people tend to overestimate the probability of conjunctive events and to underestimate the probability of disjunctive events.”²⁴⁸

names with affiliations at imaginary universities were given. The articles were then resubmitted to the same journals that had previously published them. Only three of twelve journals spotted the fact that they had previously published the article (so much for the hopes of immortality by journal article authors); eight out of the remaining nine articles were rejected. SUTHERLAND, *supra* note 30, at 30-31 (citing D.R. Peters & S.J. Ceci, *Peer-Review Practices of Learned Journals: The Fate of Published Articles Submitted Again*, 1982 BEHAV. & BRAIN SCI. 187).

242. GILOVICH, *supra* note 203, at 57.

243. For reasons that will subsequently become apparent, this thinking problem is sometimes also called the compound probability fallacy. See DAWES, *supra* note 66, at 129.

244. See *supra* text accompanying notes 164-202.

245. See *infra* text accompanying notes 430-548.

246. See *supra* text accompanying note 178-80.

247. The price of failure may be obvious: “[I]f we make systematic deviations from rationality in the prediction of future outcomes, we will be less prepared for dealing with future events.” BAZERMAN, *supra* note 106, at 27.

248. Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124, 1129 (1974). Would you like to test yourself to see if you are vulnerable to this bias? What are the odds of winning a two-stage lottery if the odds of winning each stage are 50%? What if the odds of winning each stage were 20%? The average answer given in the first example is 45%, though the correct answer is 25%. The average answer in the second example is 30%, though the odds are 4%. PLOUS, *supra* note 124, at 135-36.

Why is this of particular importance to managers and to those concerned with the legality, ethicality, and effectiveness of managerial decisions? One reason is that it has something basic (but often ignored) to tell us about planning — the more things that must happen together for a plan or strategy to work (or for a project to be finished on time), the less likely it is to work as planned (or to be done by the completion date).²⁴⁹ This is true even if the probability that each of the individual required events will occur is quite high.²⁵⁰

Failure to understand this aspect of probability theory can also distort managerial risk estimations.²⁵¹ With a complex product such as an

249. Kahneman and Tversky observe that:

Biases in the evaluation of compound events are particularly significant in the context of planning. The successful completion of an undertaking, such as the development of a new product, typically has a conjunctive character: for the undertaking to succeed, each of a series of events must occur. Even when each of these events is very likely, the overall probability of success can be quite low if the number of events is large. The general tendency to overestimate the probability of conjunctive events leads to unwarranted optimism in the evaluation of the likelihood that a plan will succeed or that a project will be completed on time.

Tversky & Kahneman, *supra* note 248, at 1129.

250. “[A] combination of events may be improbable even though each event in it is probable. . . .” DAWES, *supra* note 66, at 128.

251. Kahneman and Tversky observe that:

[D]isjunctive structures are typically encountered in the evaluation of risks. A complex system, such as a nuclear reactor or a human body, will malfunction if any of its essential components fails. Even when the likelihood of failure in each component is slight, the probability of an overall failure can be high if many components are involved.

Tversky & Kahneman, *supra* note 248, at 1129. Yet risk estimation is a central aspect of managerial decisionmaking. See Messick & Bazerman, *supra* note 18, at 12:

Uncertainty and risk are facts of executive life. Many risky decisions concern ethical dilemmas involving jobs, safety, environmental risks, and organizational existence. How risky is it to build one more nuclear power plant? How risky is it to expose assembly-line employees to the chemicals for making animal flea collars? At some point, our decisions are reduced to basic questions like: What level of risk is acceptable? How much is safety worth?

It follows that those who purport to judge managerial decisionmaking should also have an adequate understanding of the nature of risk and of proper risk assessment.

automobile or an airplane, the failure of any single component may cause the entire product to fail. As the number of components increases, so too does the risk that the product will fail, even if the risk that any single component will fail is very low.²⁵² What are the odds that a particular firm will be caught violating a regulation? They may be quite small in any individual case, since many regulatory violations go unpunished.²⁵³ This is probably one of the things that leads those people who do ultimately get caught to believe that they will not be²⁵⁴ — they did it before and dodged the bullet, so why not this time? Suppose, for example, that the probability that one can violate regulation *X* without getting prosecuted is .90 (so the probability of apprehension is .10). Then the probability that one could violate it 5 times without getting caught is .59 (and the probability of getting caught is .41). Feeling lucky? Why not try for 10 violations? You have still got a .35 chance of pulling it off (but a .65 chance of making some unwanted new friends). Would you be willing to bet your career and freedom on those odds? It seems safe to say that more people have done so than would have, had they fully understood the nature of the risks they were taking. As Robyn Dawes puts it, “[a] low probability of disaster in any particular small time interval translates into a high one across intervals.”²⁵⁵

3. Positive Illusions/Self-Serving Biases

Life in general, and management in particular, can fairly be described as decisionmaking under conditions of uncertainty. That is, we are often called upon to make important decisions without all of the information that we would like to have, and based on our best estimate of the probable consequences of our decisions (accurate probability data being unavailable

252. Consider this example: “A modern jetliner has 4.5 million parts including 100 miles of wiring. If the system has one million single-string parts, each with a reliability of 99.9999% for performing some specified mission, the overall probability of the mission failing is over 60 percent.” NORMAN O. AUGUSTINE, *AUGUSTINE’S LAWS* 119 (paperback ed. 1987). Augustine quotes the foreman of an automotive plant as saying: “The part you engineers don’t put on the machine ain’t going to cause no trouble.” *Id.* Note that product liability law requires manufacturers to assess the risks associated with their products. *See, e.g.*, JANE P. MALLOR ET AL., *BUSINESS LAW AND THE REGULATORY ENVIRONMENT* 377 (10th ed. 1998) (“Manufacturers have a duty to design their products so as to avoid reasonably foreseeable risks of harm.”).

253. For one thing, many corporate wrongs are easily concealed. *See, e.g.*, John C. Coffee, *Making the Punishment Fit the Corporation: The Problems of Finding an Optimal Corporate Criminal Sanction*, 1910 N. ILL. L. REV. 3, 8 (1980).

254. There is good reason to believe that some of the positive illusions discussed below also play a significant role. *See infra* text accompanying notes 256-315.

255. DAWES, *supra* note 66, at 137.

to us).²⁵⁶ Like it or not, chance often plays a major role in how our decisions (and lives) turn out. So, no matter how careful, rational, and objective we are, some of our decisions will not turn out well.²⁵⁷ Also, being human (and therefore imperfect by definition) means that we are all a mix of positive and negative traits, of abilities and disabilities.²⁵⁸ Our brains may tell us that all this is so, but our egos simply do not want to hear it. Emotionally, we have a strong need to feel that we are in control of our personal destinies²⁵⁹ and are superior beings.²⁶⁰

Sadly, some of the ways that we tend to cope with uncertainty and personal imperfection increase the risk that we will make poor decisions and, by doing so, may reduce our ability to effectively exercise the potential control that life does make available to us.²⁶¹ One class of such problematic thought patterns is what psychologist Shelley Taylor calls

256. "The uncertainty of predicting actual outcomes in the world is intrinsic to the problem of decision and the consequences of decision." DAWES, *supra* note 66, at 141; *see also supra* text accompanying notes 174-76 (regarding the uncertainty surrounding most decisions).

257. This is an unavoidable consequence of making decisions with incomplete information and without a crystal ball. Even if we religiously make high probability choices, some bets will not pay off. Or, to put it another way, low probability events do occur. *See* discussion, *supra* text accompanying notes 174-80. The positive aspect of this situation is that some of our bad decisions will probably turn out well, or at least better than we deserve.

258. "The fact is that almost all of us are superior in some ways and inferior in others, that we are not invulnerable, and that the world is not just." DAWES, *supra* note 66, at 261 n.8.

259. "We often dread uncertainty. A common way of dealing with our knowledge of uncertainty in life is to ignore it completely, or to invent some 'higher rationale' to explain it, often a rationale that makes it more apparent than real." *Id.* at 256; *see also* Messick & Bazerman, *supra* note 18, at 11 ("[P]eople find it easier to act as if the world were certain and deterministic rather than uncertain and often unpredictable."). From the perspective of evolutionary psychology, there may be an even deeper illusion at work here. Robert Wright observes that "not only is the feeling that we are 'consciously' in control of our behavior an illusion (as is suggested by other neurological experiments as well); it is a purposeful illusion, designed by natural selection to lend conviction to our claims." WRIGHT, *supra* note 1, at 275.

260. "There is ample evidence that we tend to make optimistic assessments of our own abilities, traits, and prospects for future success." GILOVICH, *supra* note 203, at 76. David Nyberg gives one reason why that may be so when he says that "given the distance between what we are and what we wish we were, some amount of other-deception and self-deception is an essential requisite for carrying on." NYBERG, *supra* note 78, at 88. But, as Robert Wright observes, "When you're feeling either very good or very bad about yourself, it probably means that a large body of evidence is being hidden from view. The most truthful times come between the extremes." WRIGHT, *supra* note 1, at 272.

261. "Rationally, it often doesn't matter how much control we have over outcomes — so long as we have some." DAWES, *supra* note 66, at 265. The presence of uncertainty should not obscure the nature of our essential task, which is "choosing the best possible alternative and pursuing it with all our energy." *Id.*

positive illusions.²⁶² One such illusion is the illusion of control.²⁶³ If we have to bet, we prefer to do it on a coin we flip or a lottery ticket we buy rather than on a coin that has already been flipped or a ticket that has already been bought (regardless of the obvious fact that our personal action has absolutely no impact on our chances of winning).²⁶⁴ Why? Because “[p]eople falsely believe that they can control uncontrollable events, and they overestimate the extent to which their actions can guarantee a certain outcome.”²⁶⁵

We also have a strong tendency to think that we are somehow exempt from the vagaries of chance. Psychologically, “it” (if it is a bad thing) always happens to someone else. Thus, “[m]any studies have shown that persons who have not been victims of serious negative life events (crime, illness, divorce, and job loss) have overly optimistic beliefs about their invulnerability to these events.”²⁶⁶ People also “consistently underestimate

262. See generally SHELLEY E. TAYLOR, *POSITIVE ILLUSIONS: CREATIVE SELF-DECEPTION AND THE HEALTHY MIND* (1989) [hereinafter TAYLOR, *POSITIVE ILLUSIONS*]; Shelley E. Taylor et al., *Maintaining Positive Illusions in the Face of Negative Information: Getting the Facts Without Letting the Facts Get You*, 8 J. SOC. & CLINICAL PSYCHOL. 114 (1989); Shelley E. Taylor & J.D. Brown, *Illusion and Well-Being: A Social-Psychological Perspective on Mental Health*, 103 PSYCHOL. BULL. 193 (1988).

263. See generally, Ellen J. Langer, *The Illusion of Control*, 32 J. PERSONALITY & SOC. PSYCHOL. 311, 311 (1975).

264. BAZERMAN, *supra* note 106, at 95-96.

265. *Id.*; see also DAWES, *supra* note 66, at 256 (“we treat chance events as if they involve skill and are hence controllable”); PLOUS, *supra* note 124, at 171 (“[P]eople often believe they have more control over chance outcomes than they actually do.”) In one experiment, the experimenters were able to convince Yale undergraduates that they were better or worse than the average person at predicting the outcome of coin tosses. See Ellen J. Langer & J. Roth, *Heads I Win, Tails It’s Chance: The Illusion of Control as a Function of the Sequence of Outcomes in a Purely Chance Task*, 32 J. PERSONALITY & SOC. PSYCHOL. 951, 951 (1975). Note that, in real life, success is usually a blend of skill and luck, so that it may be harder to separate out the effects of each and therefore, more rational to attribute the outcome to skill. The fact that we are willing to do it in circumstances where the outcomes are clearly due to chance, however, shows the bias we have in favor of such attributions.

266. RUE, *supra* note 80, at 173; see also BAZERMAN, *supra* note 106, at 95, for this observation:

[S]tudents expect that they are far more likely to graduate at the top of the class, to get a good job, to obtain a high salary, to enjoy their first job, to get written up in the newspaper, and to give birth to a gifted child than reality suggests. They also assume that they are less likely than their classmates to have a drinking problem, to get fired, to get divorced, to become depressed, or to suffer physical problems.

the frequency of negative events for their own population group²⁶⁷ and “their own personal vulnerability in relation to that of others.”²⁶⁸ They persist in doing so “even when they know that their estimates are well below statistical probabilities.”²⁶⁹ Non-victims also “believe that even if they were to be struck by disaster, they would cope with difficulties more effectively and recover more quickly than others.”²⁷⁰ This phenomenon is sometimes called the illusion of optimism.²⁷¹

All of the executives caught committing criminal and/or unethical acts somehow managed to convince themselves that, unlike the others whose downfalls they had previously read about, they would not be caught. To be sure, many probably made their decisions under significant pressure and to avoid a certain negative impact (missing their goals, being denied a promotion or bonus, or possibly being fired). In the face of such a certain immediate threat, the temptation to unduly discount the probability of an uncertain long-term threat (a lot of people and companies do not get caught) may prove irresistible, especially if we fail to understand how compound probability works,²⁷² think we have more control of events than we do,²⁷³ and if we tend to think that “it” always happens to someone else.²⁷⁴

We are also vulnerable to the false uniqueness effect — a tendency to see ourselves as quite unique in terms of our personal qualities. As Martha Augoustinos and Iain Walker put it: “On almost any dimension which

Id.; see also TALEB, *supra* note 168, at 56 (“Every man believes himself to be quite different, a matter that amplifies the ‘why me?’ shock upon a diagnosis.”).

267. RUE, *supra* note 80, at 173.

268. *Id.*

269. *Id.*

270. *Id.*

271. “People overestimate the likelihood that they will experience ‘good’ future events and underestimate the likelihood of ‘bad’ future events.” Messick & Bazerman, *supra* note 18, at 18. When bad things do happen to people who suffer from positive illusions, there is a strong tendency for them to react with shock and dismay, asking: “Why me?” Given the fact that bad things are happening all the time to lots of people, one is tempted to respond: “Why *not* you?”

272. See *supra* text accompanying notes 247-55.

273. “One reason we think we are relatively immune to common risks is that we exaggerate the extent to which we can control random events.” Messick & Bazerman, *supra* note 18, at 18; see also *supra* text accompanying notes 263-65.

274. “To the extent that executives believe themselves relatively immune from such risks, they may be willing to expose themselves and their organizations to hazards.” Messick & Bazerman, *supra* note 18, at 18. It is not just in the area of unethical or illegal behavior that positive illusions distort managerial decisionmaking. Routine planning exercises are also distorted by excessive optimism and false uniqueness perceptions. See generally Dan Lavallo & Daniel Kahneman, *Delusions of Success: How Optimism Undermines Executives’ Decisions*, HARV. BUS. REV., July 2003, at 56.

ranges in bipolar fashion from 'good' to 'bad,' we tend to see ourselves closer to the 'good' pole than are most other people."²⁷⁵ Research shows that a "large majority of the general public thinks that they are more intelligent, more fair-minded, less prejudiced, and more skilled behind the wheel of an automobile than the average person."²⁷⁶ For example, one survey of 1 million high school seniors found that 70% thought they were above average in leadership ability (2% thought they were below average) and 100% thought they were above average in their ability to get along with others (60% thought they were in the top 10% and 25% thought they were in the top 1%).²⁷⁷ Similarly, a study of Australian workers found that 86% believed they were better than average workers while only 1% thought they were worse than average.²⁷⁸ In another study, 68% of the MBA students in a negotiation class thought their bargaining outcomes would be in the top 25% range (they also thought they would learn more than their classmates and would contribute more to the class experience).²⁷⁹

275. MARTHA AUGOSTINOS & IAIN WALKER, *SOCIAL COGNITION: AN INTEGRATED INTRODUCTION* 87 (1995); see also Messick & Bazerman, *supra* note 18, at 18 ("[P]eople highlight their positive characteristics and discount their negatives. In relative terms, they believe that they are more honest, ethical, capable, intelligent, courteous, insightful, and fair than others.").

276. GILOVICH, *supra* note 203, at 77 (citing R.C. WYLIE, *THE SELF-CONCEPT: THEORY AND RESEARCH ON SELECTED TOPICS*, vol. 2 (1979); J.M. Fields & H. Schuman, *Public Beliefs About Beliefs of the Public*, 40 *PUB. OPINION Q.* 427 (1976); W.B.G. Lebrand et al., *Why We Are Fairer Than Others: A Cross-Cultural Replication and Extension*, 22 *J. EXPERIMENTAL SOC. PSYCHOL.* 590 (1986); David M. Messick et al., *Why We Are Fairer Than Others*, 21 *J. EXPERIMENTAL SOC. PSYCHOL.* 480 (1985); H.J. O'Gorman & S.L. Garry, *Pluralistic Ignorance — A Replication and Extension*, 40 *PUB. OPINION Q.* 449 (1976); O. Swenson, *Are We All Less Risky and More Skillful Than Our Fellow Drivers?*, 47 *ACTA PSYCHOLOGICA* 143 (1981)). Gilovich notes that this has also come to be called the "Lake Wobegon Effect," after Garrison Keillor's imaginary town where "the women are strong, the men are good-looking, and all the children are above average." GILOVICH, *supra* note 203, at 77.

277. *Id.*

278. AUGOSTINOS & WALKER, *supra* note 275, at 87 (citing B. Heady & P. Waring, *The Sense of Relative Superiority — Central to Well-Being*, 20 *SOC. INDICATORS RES.* 497 (1987)).

279. See generally BAZERMAN, *supra* note 106, at 95 (citing Roderick M. Kramer et al., *Self-Enhancement Biases and Negotiator Judgment: Effects of Self-Esteem on Mood*, 56 *ORG. BEHAV. & HUM. DECISION PROCESSES* 113 (1993)). University professors are apparently even more deluded about their abilities. In one survey, 94% of the professors queried thought they were better at their jobs than their average colleague. GILOVICH, *supra* note 203, at 77 (citing P. Cross, *Not Can But Will College Teaching Be Improved?* 17 *NEW DIRECTIONS FOR HIGHER EDUC.* 1 (1977)). The author's personal favorite, however, is the study that found that even drivers hospitalized with injuries from accidents which they caused still believe that they are better than average drivers. AUGOSTINOS & WALKER, *supra* note 275, at 87 (citing C.E. Preston & S. Harris, *Psychology of Drivers in Traffic Accidents*, 49 *J. APPLIED PSYCHOL.* 284 (1965)).

People in the grip of illusions about their abilities and performance are likely to find themselves disappointed and embittered because they feel that the world has failed to provide them with rewards and recognition commensurate with their abilities and performance.²⁸⁰ Worse yet, since their illusions will prevent them from recognizing their need to do what they can to improve, they will be unlikely to take the corrective action necessary to improve themselves and their performance.²⁸¹

But how do we manage to maintain such illusions in the face of all the information that reality regularly sends us about our actual performance and capabilities? Some of the culprits previously discussed furnish a partial explanation. Our illusions will be reinforced if we selectively remember events and occasions when we performed well,²⁸² if we automatically focus on data that confirm our beliefs²⁸³ and reject data that is inconsistent with them.²⁸⁴ Yet these are not the only tools at our disposal. We can selectively apply standards to suit our self-esteem needs.²⁸⁵ For example, what does it mean to be “intelligent”?²⁸⁶ We are particularly likely to employ flexible definitions where ambiguous traits are concerned.²⁸⁷ Furthermore, our judgment of an attribute’s relative importance is likely to be influenced by how well we think we score on it.²⁸⁸

280. The odds are that we are in their grip. Messick and Bazerman say that “belief that one is exempt from these illusions, while others are not, is an excellent illustration of the illusion of optimism.” Messick & Bazerman, *supra* note 18, at 18.

281. See Justin Kruger & David Dunning, *Unskilled and Unaware of It: How Difficulties in Recognizing One’s Own Incompetence Lead to Inflated Self-Assessments*, 77 J. PERSONALITY & SOC. PSYCHOL. 1121 (1999) (one reason people have unrealistic views of their own abilities is that they are doubly disadvantaged — they lack the ability to recognize their lack of skill and ability).

282. See discussion, *supra* text accompanying notes 157-58.

283. See *supra* text accompanying notes 203-22 (discussing confirmation bias).

284. See *supra* text accompanying notes 223-42 (discussing belief bias).

285. “[D]ifferent people use different criteria to evaluate their standing on a given trait — criteria that work to their own advantage.” GILOVICH, *supra* note 203, at 84.

286. “By basing our definitions of what constitutes being, say, athletic, intelligent, or generous on our own idiosyncratic strengths on these dimensions, almost all of us can think of ourselves as better than average and have some ‘objective’ justification for doing so.” *Id.*

287. “[P]eople are particularly inclined to think of themselves as above average on ambiguous traits — those for which the definition of what constitutes excellence can most readily be construed in self-serving ways.” *Id.*

288. “[A] strong correlation exists between how subjects rate themselves on an item and their judgments of the importance of an item.” BAZERMAN, *supra* note 106, at 97; see generally D. Dunning et al., *Ambiguity and Self-Evaluation: The Role of Idiosyncratic Trait Definitions in Self-Serving Assessments of Ability*, 57 J. PERSONALITY & SOC. PSYCHOL. 1082 (1989). Thomas Schelling observes that:

We can also engage in self-serving attributions to change the meaning of specific outcomes. For example, “[i]t is an all too common phenomenon that people accept credit for success and deny responsibility for failure.”²⁸⁹ We are able to manage this because “most people ascribe their successes to their own characteristics and their failure to factors beyond their control, such as plain bad luck.”²⁹⁰ So, it should come as no surprise that a study of CEOs’ letters to shareholders in 18 years’ worth of the corporate annual reports of 18 large corporations found that management claimed credit for 83% of positive events and accepted blame for only 19% of negative events.²⁹¹

[E]verybody ranks himself high in qualities he values: careful drivers give weight to care, skillful drivers give weight to skill, and those who think that, whatever else they are not, at least they are polite, give weight to courtesy, and come out high on their own scale. (This is the way that every child has the best dog on the block.)

THOMAS C. SCHELLING, *MICROMOTIVES AND MACROBEHAVIOR* 64-65 (1978).

289. AUGOUSTINOS & WALKER, *supra* note 275, at 90.

290. DAWES, *supra* note 66, at 263; *see also* GILOVICH, *supra* note 203, at 78 (“people have been found to attribute their successes to themselves, and their failures to external circumstances”); RUSSO & SCHOEMAKER, *supra* note 104, at 180 (we believe that “[o]ur successes are due to skill, our failures to bad luck”). Russo and Schoemaker say that: “[t]his may be the most pervasive of all self-serving interpretations of experience.” *Id.* Bazerman notes that studies of negotiators indicate that they give internal attributions when asked about their successes and external attributions when asked about their failures. BAZERMAN, *supra* note 106, at 96. In other words, it is “heads I’m smart; tails it’s luck.” *See generally* Langer & Roth, *supra* note 265. Robert Wright notes that:

The tendency to attribute our successes to skill, and our failures to circumstance — luck, enemies, Satan — has been demonstrated in the laboratory and, anyway, is obvious. In games where chance plays a role, we tend to chalk up our losses to the luck of the draw and our victories to cleverness. And we don’t just *say* this; we believe it.

WRIGHT, *supra* note 1, at 267 (original emphasis). The professor’s version of this error is to take credit for great teaching when students do well and to say that poor student performance is due to student laziness or stupidity. GILOVICH, *supra* note 203, at 78. Stockbrokers say: “When the price goes up, the client thinks he picked a great stock. When the price drops, the client *knows* his broker sold him a lousy one.” BELSKY & GILOVICH, *supra* note 75, at 149.

291. RUSSO & SCHOEMAKER, *supra* note 104, at 180-81. Studies of internal divisional reports of large companies have produced similar findings. *Id.* at 181. Russo and Schoemaker also give a truly hilarious example of the grand prize winner in the Spanish lottery who, when asked to explain his success, replied that he had searched for a ticket ending in the number forty-eight because “[f]or seven nights in a row, I dreamed of the number seven, and since seven times seven is forty-eight. . . .” *Id.* at 173.

Not only are we powerfully inclined to deny any personal fault or failings, we are also inclined to take credit when it is not due. Anthony Greenwald has identified what he calls beneffectance bias — “the tendency to take credit for success while denying responsibility for failure.”²⁹² Or, as John F. Kennedy supposedly said: “Victory has a thousand fathers; defeat is nobody’s child.”²⁹³ Because people are biased to link themselves to valued results and to unlink themselves from devalued results, their perception of such linkages is often distorted.²⁹⁴ Thus, “[i]t is likely that if you asked each division in your organization to estimate the percentage of the company’s worth that is created by the division, the sum of the estimates would greatly exceed 100 percent.”²⁹⁵

Sadly, another way in which we cling to our positive self-images is by denigrating the performance, character, and abilities of others.²⁹⁶ In one study, for example, the less successful students in an MBA negotiation class attributed the performance of their more successful counterparts to unethical or uncooperative bargaining tactics, rating them as too competitive and selfish.²⁹⁷ Nor are we inclined to afford others the

292. Greenwald, *supra* note 157, at 605. The word beneffectance is a combination of beneficence (doing good) and effectance (competence). *Id.* Readers with a touch of cruelty who want to liven up a boring party and see beneffectance bias in operation should ask a husband what portion of the household chores he does. Then the answer should be reported to his wife for confirmation. A lively dispute frequently ensues. For the study that inspired this bit of fun, see Michael Ross & Fiore Sicol, *Egocentric Biases in Availability and Attribution*, 37 J. PERSONALITY & SOC. PSYCHOL. 322 (1979).

293. BAZERMAN, *supra* note 106, at 96; *see also* PLOUS, *supra* note 124, at 185 (people accept more responsibility for joint outcomes than other people attribute to them).

294. *See generally* C.R. Snyder, *Reality Negotiation: From Excuses to Hope and Beyond*, 8 J. SOC. & CLINICAL PSYCHOL. 130 (1989). Snyder attributes this tendency to the normal person’s theory of the self, which, he says, represents the person as being a “good/in control” person. *Id.* at 135. This theory of the self originates from early childhood when “we are shown, told, and generally reinforced to clearly understand the distinctions between bad and good actions (or outcomes). Of course, our lessons include instructions to increase our linkage to good acts and to decrease our linkage to bad acts.” *Id.* The unbiased processing of information probably ends at about the same time. *Id.*

295. Messick & Bazerman, *supra* note 18, at 18.

296. “Frequently, decision makers negatively distort information about opponents.” BAZERMAN, *supra* note 106, at 96.

297. *Id.* at 96-97 (citing RODERICK M. KRAMER, SELF-ENHANCING COGNITIONS AND ORGANIZATIONAL CONFLICT (Working Paper 1994)). Bazerman notes that this pattern of cognition can have a negative impact on one’s ability to negotiate successfully. Since negotiators’ willingness to disclose information about their own interests may depend on their perception that the other party will reciprocate or at least not exploit the information, characterizing the other party as untrustworthy will lead to the exchange of less information. This lack of information, coupled with a feeling of superiority, may lead to an inability to fully understand the other party’s perspective. When negotiations fall through, both parties may then attribute failure to the intransigence of their

favorable interpretation of outcomes that we reserve for ourselves. As Robert Wright observes, “[P]eople not only tend to attribute success to skill and failure to circumstance; they tend to reverse the pattern when evaluating others. Luck is the thing that makes you fail and other people succeed; ability works the other way around.”²⁹⁸

We tend to apply a similar double standard depending upon whether we are judging others’ behavior or our own. Social psychologists have documented the existence of a fundamental attribution error — a tendency to overestimate the role of dispositional factors and underestimate the role of situational factors in producing behavior.²⁹⁹ In other words, if I see you do *X*, I am inclined to think you did it because you are the kind of person who tends to do *X*. We do not hold ourselves to the same standard, however. Researchers have also documented an actor-observer effect — a tendency for actors to attribute their actions to situational factors while observers tend to attribute the same actions to stable personality traits of the actor.³⁰⁰ Not surprisingly, we also tend to think that our own behavior is more variable across situations than our friends’ and that we are more complex and less predictable.³⁰¹

Some analysts have argued that positive illusions “enhance and protect self-esteem, increase personal contentment, help individuals to persist at

opponent. *Id.* at 97 (citing Roderick M. Kramer et al., *Self-Enhancement Biases and Negotiator Judgment: Effects of Self-Esteem on Mood*, 56 *ORG. BEHAV. & HUM. DECISION PROCESSES* 113 (1993)). In two other experiments, students rated their negotiation opponents below average on a variety of positive attributes while rating themselves above average. *Id.* at 97 (citing Kristina A. Diekmann, “*Implicit Justifications*” and *Self-Serving Group Allocations*, 18 *J. ORGANIZATIONAL BEHAV.* 3 (1997); A.E. Tenbrunsel, *Justifying Unethical Behavior: The Role of Expectations of Others’ Behavior and Uncertainty* (1995) (unpublished Ph.D. dissertation, Northwestern University) (on file with author).

298. WRIGHT, *supra* note 1, at 268.

299. AUGOUSTINOS & WALKER, *supra* note 275, at 68 (citing Lee Ross, *The Intuitive Psychiatrist and His Shortcomings: Distortions in the Attribution Process*, in 10 *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY* 173, 183 (L. Berkowitz ed. 1977)); *see also* DAWES, *supra* note 66, at 29 (“a candidate for parole who explains the situational factors leading to his crime may be judged either to be lying or to be lacking insight into his character defects, even though he is truthfully explaining the reasons for the crime as he views them.”); PLOUS, *supra* note 124, at 180.

300. AUGOUSTINOS & WALKER, *supra* note 275, at 71 (citing E.E. Jones & Richard E. Nisbett, *The Actor and the Observer: Divergent Perceptions of the Causes of Behavior*, in *ATTRIBUTION: PERCEIVING THE CAUSES OF BEHAVIOR* 79 (E.E. Jones et al. eds., 1972). In other words, we tend to operate under an “I had no choice, but you’re ethically challenged” standard.

301. PLOUS, *supra* note 124, at 186-87 (citing Terri L. Baxter & Lewis R. Goldberg, *Perceived Behavioral Consistency Underlying Trait Attributions to Oneself and Another*, 13 *PERSONALITY & SOC. PSYCHOL. BULL.* 437 (1987); Daniele Kammer, *Differences in Trait Ascriptions of Self and Friend*, 51 *PSYCHOL. REP.* 99 (1982); G.N. Sande et al., *Perceiving One’s Own Traits and Others’: The Multifaceted Self*, 57 *J. PERSONALITY & SOC. PSYCHOL.* 13 (1988)).

difficult tasks, and facilitate coping with aversive and uncontrollable events.”³⁰² It has even been suggested that “positive illusions are beneficial to physical and mental health.”³⁰³ David Nyberg states the case eloquently when he explains why self-deception continues to exist:

[W]e know in our bones that self-knowledge isn’t all it’s cracked up to be, and because self-deception is a strategy we cannot hope to live without. We simply must avoid too much anxiety, and learn somehow to cope with life’s surprises. Discovering the pure and simple truth about ourselves (which is rarely pure and never simple, if Oscar Wilde was right) is not necessarily an adequate means to that end.³⁰⁴

This perspective stands in stark contrast to that of Robyn Dawes, who states:

An essential part of wisdom is the ability to determine what is uncertain; that is, to appreciate the limits of our knowledge and to understand its probabilistic nature in many contexts. It follows that an essential part of bravery is eschewing a false sense of security — for example, not believing we are invulnerable or superior, or that the world is just.³⁰⁵

It seems reasonable to question any notion of “mental health” that denies the truth and the nature of reality. People who are interested in making better decisions³⁰⁶ and enjoying some justified self-esteem should be similarly skeptical,³⁰⁷ because the phony comfort of positive illusions and

302. BAZERMAN, *supra* note 106, at 94 (citing Taylor & Brown, *supra* note 262).

303. *Id.* (citing TAYLOR, POSITIVE ILLUSIONS, *supra* note 262).

304. NYBERG, *supra* note 78, at 85.

305. DAWES, *supra* note 66, at 264. Nassim Nicholas Taleb says: “It certainly takes bravery to remain skeptical; it takes inordinate courage to introspect, to confront oneself, to accept one’s limitations — scientists are seeing more and more evidence that we are specifically designed by mother nature to fool ourselves.” TALEB, *supra* note 168, at xxi.

306. “[Y]ou cannot continue these illusions without reducing the quality of decisions you make.” BAZERMAN, *supra* note 106, at 98. Similarly, Robin Hogarth argues that “judgment will be accurate to the extent that the individual’s picture of reality and judgmental rules match those of reality.” HOGARTH, *supra* note 74, at 9-10.

307. If we have an unjustifiably positive image of our personal moral condition, we are likely to have difficulty recognizing the need for personal moral improvement, with the consequent effect that we will fail to attain whatever degree of moral perfection is potentially achievable by us. See WRIGHT, *supra* note 1.

inflated self-opinion is likely to be purchased at too high a price. People who inflate their sense of self-worth are likely to make unjustified demands of others,³⁰⁸ to underestimate their opponents³⁰⁹ and to overestimate the odds their projects will succeed.³¹⁰ They will also tend to inappropriately ascribe blame to others³¹¹ and avoid blame themselves.³¹² They are likely to fail to learn the right lessons from their successes³¹³ and from their mistakes.³¹⁴ None of these behaviors tend to produce good real-world outcomes or lasting personal happiness.³¹⁵

4. Egocentrism, Fairness, and Social Comparison

Sadly, research by cognitive scientists and behavioral economists indicates that our perception of events and situations can be as distorted as our views of our own attributes and accomplishments. This fact is

308. “People lose their jobs when they falsely conclude that they are irreplaceable and make ultimatums to their employers.” BAZERMAN, *supra* note 106, at 98. Bazerman also observes that self-serving attributions lead members of organizations “to be dissatisfied with their actual outcomes and disappoint other organizational members (bosses etc.).” *Id.* at 96.

309. *See supra* text accompanying notes 296-98.

310. “Self-serving attributions also lead people to overestimate their likelihood of success and to underestimate the time projects take to complete — a pervasive mistake in organizations.” BAZERMAN, *supra* note 106, at 96. Bazerman also points out that as a result of such illusions “[p]eople lose their money investing their life savings in new businesses with little chance of success.” *Id.* at 98. Russo and Schoemaker argue that the illusion of control “distorts our perception of reality” and “causes us to overestimate the odds of success and lay the wrong bets.” RUSSO & SCHOEMAKER, *supra* note 104, at 177.

311. Sutherland observes that: “Although the tendency to ascribe others’ behavior to dispositional factors is universal, it is nonetheless irrational. It can result in allotting quite unjustifiable blame.” SUTHERLAND, *supra* note 30, at 193. Russo and Schoemaker point out that: “To avoid the pain of admitting mistakes, we rationalize. We may . . . unrealistically blame the failure on others or on supposedly unforeseeable circumstance.” RUSSO & SCHOEMAKER, *supra* note 104, at 179.

312. BAZERMAN, *supra* note 106, at 96 (self-serving biases “lead people to focus on the aspects of the problems that allow them to avoid blame, thus enabling them to protect a positive self-image.”); *see also supra* text accompanying note 311.

313. “[O]nly by recognizing the role of chance in successes can you realistically learn which of your actions you should carefully repeat and which could be improved.” RUSSO & SCHOEMAKER, *supra* note 104, at 177.

314. “Self-enhancing interpretations of negative outcomes also create a barrier that prevents organizational members from learning from their poor decisions.” BAZERMAN, *supra* note 106, at 99. Russo and Schoemaker concur, observing that “[y]ou can learn from mistakes only if you acknowledge them.” RUSSO & SCHOEMAKER, *supra* note 104, at 179.

315. “In most cases, positive illusions provide a short-term benefit with longer-term costs.” BAZERMAN, *supra* note 106, at 98; *see also* RUSSO & SCHOEMAKER, *supra* note 104, at 179-80 (self-serving rationalizations “benefit us only in the short-run” and come at “a heavy price”).

particularly true where our judgments about fundamental issues such as fairness are concerned. Psychologists have identified a self-serving bias — a tendency for our self-interest unconsciously to distort our perceptions.³¹⁶ This means:

When presented with identical information, individuals perceive a situation dramatically differently, depending on their role in the situation. Individuals first determine their preference for a certain outcome on the basis of self-interest and then justify this preference on the basis of fairness by changing the importance of attributes affecting what is fair.³¹⁷

It is important to understand that the researchers who have documented this phenomenon do not believe it has a motivational explanation — they believe that most of us are consciously motivated to be fair (and to see ourselves as fair).³¹⁸ The problem derives from our inability “to interpret information in an unbiased manner.”³¹⁹ As Max Bazerman puts it: “People tend to confuse what is personally beneficial with what is fair or moral.”³²⁰

This tendency toward egocentric distortion³²¹ is so powerful that it can be induced even when the only stake subjects have in outcomes is one provided by the experimenters.³²² For example, in one study, experimental subjects were given identical packets of information relevant to a lawsuit

316. “When people are called upon to make impartial judgments, those judgments are likely to be unconsciously and powerfully biased in a manner that is commensurate with the judge’s self-interest.” BAZERMAN, *supra* note 106, at 2 (citing E. WALSTER, G.W. WALSTER, & E. BERSCHIED, *EQUITY: THEORY AND RESEARCH* (1978); David M. Messick & Keith P. Sentis, *Fairness, Preference, and Fairness Biases*, in *EQUITY THEORY: PSYCHOLOGICAL AND SOCIOLOGICAL PERSPECTIVES* 61 (David M. Messick & S. Cook eds. 1985)).

317. *Id.*

318. *Id.* at 100.

319. *Id.* In other words, for most of us, the operative definition of fairness is “what I want.”

320. *Id.* at 2. So, “it is common for all parties to a conflict to suggest viable, but self-serving, solutions, and then to justify them based on abstract fairness criteria.” *Id.* at 99-100.

321. Egocentrism is closely related to the positive illusions previously discussed, but it “focuses on interpretations of events rather than on trait assessments of the self” and specifically focuses “on how people, exposed to the same information, interpret the information in a way that favors themselves.” BAZERMAN, *supra* note 106, at 99.

322. See generally Linda Babcock et al., *Biased Judgments of Fairness in Bargaining*, 85 AM. ECON. REV. 1337 (1995). Follow-up studies showed that, when presented with an equal number of arguments favoring each side of the case, subjects were strongly inclined to see those favoring their side as more convincing. Rewarding subjects for accurately predicting the judge’s award and asking them to write an essay arguing the other side’s case had no impact on their tendency toward egocentrism. BAZERMAN, *supra* note 106, at 100-01 (discussing these studies and others).

arising out of a traffic accident.³²³ They were assigned the role of plaintiff or defendant and told to negotiate a settlement (there were substantial penalties for failing to do so) after first making a confidential prediction about what a judge presented with the same materials would award.³²⁴ Persons assigned the role of plaintiff consistently expected a higher judge's award than did those assigned the role of defendant.³²⁵ Needless to say, the parties' ability to reach a settlement varied inversely with the gap between their estimations.³²⁶ Only when the subjects read the materials before being assigned their roles was there a marked reduction in bias and increase in the ease with which they reached a settlement.³²⁷ Given how strong the effects were in this experimental setting, imagine how much more powerful they are likely to be in real settings where the parties have a financial and/or ego stake in the outcome.³²⁸ For example, Max Bazerman suggests that Coopers and Lybrand, the accounting firm found liable for failure to detect management fraud in the Phar-Mor case, "may not have been guilty of intentional manipulation. Rather, they may have been guilty of the motivational bias of egocentrically interpreting and searching for data in order to maintain the client relationship."³²⁹

Consider our criteria for rationality for a moment.³³⁰ Rational decisions are those based on the probable consequences of available choices. Expected utility theory dictates we should pick the choice that is likely to produce the best outcome as defined by the highest utility payoff.³³¹ But egocentrism, self-serving definitions of fairness, and social comparison (concern for others' outcomes) can lead us to make economically nonrational choices.³³²

323. BAZERMAN, *supra* note 106, at 100-01.

324. *Id.*

325. *Id.*

326. *Id.*

327. *Id.* at 101.

328. BAZERMAN, *supra* note 106, at 101.

329. *Id.*

330. *See supra* text accompanying note 179.

331. "[U]nder expected-utility theory, the decision maker is predicted to select the option with the highest expected utility, regardless of whether that choice has the highest expected [economic] value." BAZERMAN, *supra* note 106, at 47. According to the theory, "individuals identify outcomes in terms of their overall wealth and the additional wealth they would have as a result of each alternative outcome." *Id.*

332. Consider, for example, an experiment involving second-year MBA students at the J.L. Kellogg Graduate School of Management. Two groups of students were presented with job choices. They were offered two jobs, and told that they had to accept or reject the job offers that day. Some students were presented with the offers sequentially; others received them simultaneously. Job A was for a starting salary of \$75,000 per year, and subjects were told that the

The tendency to make invidious social comparisons manifests itself at an early age. Robyn Dawes recounts experiments with very young children who would rather have 2 cookies if another child gets 1, than have 3 cookies if the other child gets 4.³³³ Sadly, there is no evidence that we grow out of it. The average adult will pick \$500 for himself and \$500 for another person as more satisfactory than \$600 for himself and \$800 for someone else if asked to rate these alternatives separately.³³⁴ In experiments involving ultimatums, most people offered a choice of \$100 or nothing for themselves will take nothing, if that means that someone else who is offering to split \$5000 given to them by a stranger, who would otherwise get \$4900, will also get nothing.³³⁵

Understanding that others' fairness conceptions will tend to be self-serving and economically irrational can help us make better decisions. Yet what are the implications of the foregoing discussion of positive illusions,³³⁶ the Fundamental Attribution Error,³³⁷ the actor-observer effect,³³⁸ egocentrism,³³⁹ self-serving biases,³⁴⁰ and flexible fairness

company paid all starting MBAs from top schools that salary. Job B was for a starting salary of \$85,000 per year, but students were told that the company was paying some other Kellogg students \$95,000 per year. Of the 32 students who were offered the jobs one at a time, 10 students accepted job B and 22 accepted job A for \$10,000 less per year. It is possible to think of reasons why this choice may not be a nonrational one. For example, the students may have seen the lower relative offer in job B as a signal about how they (or graduates from their school) were perceived by the employer, and thus as an indicator of their future prospects for advancement. However, but when other students were given these offers simultaneously, 25 out of 30 accepted job B. Seeing the offers side by side apparently made clearer to the students the price was for focusing on others' outcomes instead of their own. *See id.* at 85 (discussing the study). The theory here is that "the outcomes of others commonly act as a key reference point in interpersonal decision settings, and that interpersonal comparisons can overwhelm concern for personal outcomes in rating potential resolutions of a dispute." *Id.* at 84 (citing Max H. Bazerman et al., *Psychological Determinants of Utility in Competitive Contexts: The Impact of Elicitation Procedure*, 37 ADMIN. SCI. Q. 220 (1992)). For a discussion of the role reference points can play in decisionmaking, see *infra* text accompanying notes 348-56 (discussing prospect theory).

333. *See* DAWES, *supra* note 66, at 84.

334. BAZERMAN, *supra* note 106, at 84. Taleb says that most people would rather make \$70,000 when others around them are making \$60,000 than make \$80,000 when others around them are making \$90,000. TALEB, *supra* note 168, at 19.

335. BAZERMAN, *supra* note 106, at 81. As Bazerman points out, rejecting a \$4900/\$100 split is economically irrational because \$100 is still better than nothing. *Id.* at 81-83; *see also* RICHARD H. THALER, *THE WINNER'S CURSE* 21-35 (paperback ed. 1994) (discussing ultimatum games).

336. *See supra* text accompanying notes 256-315.

337. *See supra* text accompanying note 299.

338. *See supra* text accompanying note 300.

339. *See supra* text accompanying notes 321-28.

340. *See supra* text accompanying notes 316-20.

standards³⁴¹ for the fundamental question of whether any of us are capable of objective moral evaluation of ourselves or anyone else? After reading this research, it is not hard to understand Robert Wright's conclusion that "[o]ur moral accounting system is wantonly subjective, informed by a deep bias toward the self."³⁴² The presence of a personal stake in the outcome of a situation is not, however, the only thing that can distort our judgment about it. Sometimes, the way that a problem or choice is framed is all that is required to skew our decisionmaking.

5. Loss Aversion, Prospect Theory, and Framing Effects

Which would you choose: a sure gain of \$10,000,000 or a 50% chance of winning \$22,000,000? Most people pick the first option, despite the fact that the expected gain from the second option is higher ($.50 \times \$22,000,000 = \$11,000,000$).³⁴³ If you were being sued for \$5000, estimated the chance of losing at 50%, and the other side offered to settle for \$2400, would you do so? Most people would fight this case, despite the fact that the expected cost of doing so is \$2500.³⁴⁴ Which public health program would you choose: one that has a one-third probability of saving 600 lives but a two-thirds chance of losing them all, or one that will definitely save 200 out of 600 lives? Most people (72%) confronted with this choice select the

341. See *supra* text accompanying note 317.

342. WRIGHT, *supra* note 1, at 340. Why are we this way? The next section explores the answers cognitive psychologists give to this question, answers that emphasize how the human brain works. But there is obviously a deeper "why" at issue here. Assuming, *arguendo*, that the psychologists are on the right track in revealing the dominant tendencies in our thinking and the mechanisms behind them, why are we such creatures? For the moment, reflect on the answer that Wright has arrived at via his study of evolutionary psychology:

[T]he human brain is, in large part, a machine for winning arguments, a machine for convincing others that its owner is in the right — and thus a machine for convincing its owner of the same thing. The brain is like a good lawyer: given any set of interests to defend, it sets about convincing the world of their moral and logical worth, regardless of whether they in fact have any of either. Like a lawyer, the human brain wants victory, not truth; and, like a lawyer, it is sometimes more admirable for skill than for virtue.

Id. at 280. Darwinian anthropologist Jerome Barkow says: "It is possible to argue that the primary evolutionary function of the self is to be the organ of impression management (rather than, as our folk psychology would have it, a decision-maker)." JEROME BARKOW, *DARWIN, SEX, AND STATUS* 104 (1989).

343. See BAZERMAN, *supra* note 106, at 46.

344. *Id.*

second program.³⁴⁵ What if you had to pick a program with both a one-third probability that no one will die and a two-thirds probability that 600 will die, or a program that will definitely cost 400 lives? Here, many (78%) choose the first program, despite the fact that the questions are logically identical.³⁴⁶ So, although our criteria for a rational decision say that choices should be made on the basis of the probable consequences of the decision,³⁴⁷ in these instances people's choices appear to be influenced by the way the decisions are framed. The framing of the questions that tend to produce incorrect answers stresses losses, triggering people's tendency toward loss aversion.

Daniel Kahneman and Amos Tversky explained loss aversion with their prospect theory.³⁴⁸ Essentially, prospect theory says that people evaluate choices by whether they tend to produce a perceived gain or loss relative to a reference point,³⁴⁹ and that their value function for losses is different from their value function for gains.³⁵⁰ The value function for gains is concave and not too steep (much like that predicted by the theory of diminishing marginal utility), so we do not value a \$500 gain twice as much as a \$250 gain.³⁵¹ The value function for losses is convex and much steeper, so a \$250 loss hurts more than half as much as a \$500 loss, and also hurts more than a \$250 gain feels good.³⁵² Accordingly, we tend to fear losses more than we desire gains.³⁵³ As a result, we tend to be risk-averse when pursuing gains and risk-seeking when avoiding losses.³⁵⁴

345. DAWES, *supra* note 66, at 34-35.

346. *Id.* at 35. Unfortunately, physicians have been shown to make the same kinds of mistakes when treatment options are presented to them with variations in framing. See RUSSO & SCHOEMAKER, *supra* note 104, at 26. This is one of many reasons why you should seek a second opinion on all serious health questions.

347. See *supra* text accompanying note 179.

348. See generally Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 *ECONOMETRICA* 263 (1979).

349. DAWES, *supra* note 66, at 40. The most common reference point is the *status quo*. *Id.* But reference points can be shifted by the framing of the problem. So, for example, "suggested retail prices" are used to shift consumers' reference points so that sale prices appear to be a savings. See generally Richard H. Thaler, *Mental Accounting and Consumer Choice*, 4 *MARKETING SCI.* 199 (1985).

350. DAWES, *supra* note 66, at 40.

351. *Id.*

352. *Id.* Taleb says that "the negative [emotional] effect for an average loss to be up to 2.5 times the magnitude of a positive one." TALEB, *supra* note 168, at 68.

353. "[O]ur response to a loss is more extreme than our response to gain." BAZERMAN, *supra* note 106, at 50.

354. "[D]ecision makers tend to avoid risk concerning gains and seek risk concerning losses." *Id.* at 48.

The danger represented by loss aversion is that “people will run greater risks — irrational risks — to avoid losses than they would to make gains.”³⁵⁵ Thus, people in the grip of loss aversion may make choices that are contrary to their best interests (or to those of individuals who are dependent upon them), such as fighting litigation that would be cheaper to settle.³⁵⁶

Loss aversion is far from the only thinking problem that framing can trigger.³⁵⁷ The most fundamental framing problems originate from the obvious relationship between the way in which we define problems and the “solutions” we arrive at for dealing with them. Thus, Russo and Schoemaker caution against what they call “frame blindness,” which is “setting out to solve the wrong problem because you have created a mental framework for your decision, with little thought, that causes you to overlook the best options or lose sight of important objectives.”³⁵⁸ If, for example, I ask, “Is this legal?” I am likely to trigger a far different sort of analysis (and, in some cases, get a very different answer) than if I ask, “Is this ethical?”

An awareness of the frames we are employing and an exploration of alternative frames is obviously a necessary condition for effective thinking.³⁵⁹ Yet “most people are unaware of their own frames,”³⁶⁰ and “managers in most fields tend to draw narrow boundaries around the questions they think about, and their solution is likely to come from within

355. Roger Lowenstein, *Outsider Who Challenged Dismal Science*, WALLST. J. June 6, 1996, at C1.

356. Loss aversion may also play a role in the tendency to persist in losing strategies. See Staw, *supra* note 103 and accompanying text.

357. Some framing effects are somewhat humorous. Consumers do not tend to think of a hamburger that is “75% fat-free” as the equivalent of a “25% fat” hamburger. TALEB, *supra* note 168, at 170. Some are less humorous. Consider, for example, the differing psychological impact of being told that you have cancer and there is a 28% chance you will die within five years versus being told that there is a 72% chance you will survive more than five years. *Id.*; see generally GIGERENZER, *supra* note 114 (discussing various approaches to risk-framing and their impact on our risk perceptions).

358. RUSSO & SCHOEMAKER, *supra* note 104, at 16.

359. “The key to sound decision-making is: Know your own frames.” *Id.* at 37 (original emphasis).

360. *Id.* at 52.

those boundaries.”³⁶¹ The result is often a lack of frame control — that is, “[f]ailing to consciously define the problem in more ways than one or being unduly influenced by the frames of others.”³⁶²

Pollsters, politicians, “spin doctors,” and salespeople have long known that people’s preferences are easily manipulated by clever framing. For example, a *U.S. News & World Report* survey found that 58% of respondents favored aid to Nicaraguan rebels “to prevent Communist influence from spreading” but only 24% favored assistance to “the people trying to overthrow the government of Nicaragua.”³⁶³ More recently, a survey found that while only 29% of respondents favored a constitutional amendment “prohibiting abortions,” 50% favored one that would “protect the life of the unborn.”³⁶⁴ Here again, the choices are objectively the same. Nothing has changed except the language used to describe them, but oh, what a difference that makes!

IV. WHY ARE WE THE WAY WE ARE?

A. Overview

The discussion of positive illusions documented the strong human tendency to make biased assessments of ourselves,³⁶⁵ our performance, and our abilities. The self-esteem motivator is an obvious candidate when we seek to explain our tendency toward such self-serving biases, but it is important to understand that in many cases there are cognitive explanations for the same phenomena. For example, the need to feel good about ourselves (and/or to have others do so) may adequately explain beneffectance bias,³⁶⁶ but it is also possible that our memory selectively presents us with a distorted record of our own contributions to a joint

361. *Id.* at 23. One thing that probably influences managerial frames is the training that managers have received. When the author watches first-year MBA students analyze a business case, the discipline they have been trained in is usually painfully obvious — finance majors focus on financial issues, accountants on accounting issues, and human resources majors look at organizational issues, often to the exclusion of issues outside their disciplines. One is reminded of the old saying: “If the only tool you have is a hammer, you will see every problem as a nail.”

362. *Id.* at 39.

363. PLOUS, *supra* note 124, at 68. Plous says: “To most Americans, ‘preventing Communism’ is a commendable goal and ‘overthrowing governments’ is not.” *Id.* Similar results have been found in subsequent studies. *Id.*

364. *Id.* at 69.

365. *See supra* text accompanying notes 256-315.

366. *See supra* text accompanying notes 292-95.

project, in part because our actions are more available³⁶⁷ to us than are those of others.³⁶⁸ Proponents of cognitive explanations tend to argue that they are more parsimonious,³⁶⁹ but whether or not that is so is dependent upon which model of the human organism one adopts.³⁷⁰ It is also distinctly possible that there may be no single explanation³⁷¹ because cognition and motivation may well be inextricably interwoven.³⁷² For the purposes of this Article, if any definitive answer to the dispute ever does emerge,³⁷³ it will only be important to the extent that it helps us chart a more certain course in our efforts to reduce bias in human reasoning.³⁷⁴ Accordingly, if we are to gain the fullest understanding of the limits of

367. See *infra* text accompanying notes 460-72 (discussing the availability heuristic).

368. See, e.g., Messick & Bazerman, *supra* note 18, at 18 (“people are more aware of their contributions to collective activities than others are likely to be; they have more information about their own efforts than others have or than they have about others”).

369. “Those who favor a cognitive interpretation argue that since any apparent demonstration of a motivational bias can be explained solely in terms of dispassionate cognitive processes, we should not invoke motivational mechanisms to explain these phenomena. Cognitive explanations, we are told, are more parsimonious.” GILOVICH, *supra* note 203, at 79 (citation omitted).

370. Gilovich argues that:

Cognitive mechanisms are more parsimonious only if one adopts a model of the human organism in which a motivational system overlays, and occasionally interferes with, a more fundamental cognitive system. But it is an open question whether the cognitive system should be considered primary. Given a model in which the motivational system is more fundamental, motivational explanations would be more parsimonious.

Id.

371. “[T]his motivation-versus-cognition controversy is . . . in many ways a false issue. There is little reason to believe that our self-serving biases result exclusively from one or the other. . . .” *Id.* at 79-80.

372. Thomas Gilovich argues that “when we closely examine how our motivational biases might operate, the two explanations begin to blend rather closely. To the extent that there is a motivational ‘engine’ responsible for our self-serving biases and beliefs, it is one that delivers its effects through processes that look suspiciously cognitive.” *Id.* at 80. He gives this example:

[O]ur motivations have their effects more subtly through the ways in which we cognitively process information relevant to a given belief. What evidence do we consider? How much of it do we consider? What criteria do we use as sufficient evidence for a belief? Cognition and motivation collude to allow our preferences to exert influence over what we believe.

Id.

373. Gilovich thinks it unlikely that “there will ever be a truly definitive test that will decide between the two accounts.” *Id.*

374. See *infra* text accompanying notes 603-73 (discussing debiasing).

human reasoning that is currently available to us, we must consider both the motivational and the cognitive models of our species.

B. *The Self-Esteem Motivator*

From the motivational perspective, a person is “a set of motivational processes that are integrated into a functional unity.”³⁷⁵ The human self is constituted by a synergy of three distinct, interactive motivational systems: curiosity (cognitive), pleasure/pain (hedonic or affective), and self-esteem.³⁷⁶ Curiosity, in this context, means “the impulse to seek out and respond to information [that] is characteristic of life in all forms.”³⁷⁷ Aristotle referred to this when he said, “[a]ll men by nature desire to know.”³⁷⁸

However, Aristotle is not the only voice in ancient philosophical tradition. A very different emphasis came from the hedonists, who argued that “the primary motivator of human behavior is a desire to experience pleasure and to avoid pain.”³⁷⁹ Learning theorists agree that pleasurable and painful experiences are “the essential operators in establishing patterns of learned behavior.”³⁸⁰ It makes sense that we should be constructed in this way:

If one were to construct a robot that could learn from experience, protect itself from harm, seek what it needs to maintain itself, and avoid what could harm it, it would be useful to include at least two systems: a cognitive system that registered, stored, and assimilated experience into an organized conceptual system and an affective system that provided feelings that motivated the robot to seek certain kinds of experiences and avoid others.³⁸¹

Children’s behavior in their first two years of life is shaped by the interaction of these two motivational processes, the cognitive and the affective.³⁸² However, “[o]nce the child begins the inevitable process of

375. RUE, *supra* note 80, at 129.

376. *Id.* at 130.

377. *Id.* at 131.

378. *Id.*

379. *Id.*

380. RUE, *supra* note 80, at 129.

381. *Id.* at 132 (citing Seymour Epstein, *The Unconscious, the Preconscious, and the Self-Concept*, in 2 PSYCHOLOGICAL PERSPECTIVES ON THE SELF 236, 237 (J. Suls & Anthony G. Greenwald eds., 1983)).

382. *Id.*

self-monitoring, *a new motivational process* slips into place — the process of self-maintenance.”³⁸³ Thus, the child begins to develop a self-concept which is “the general schema about oneself, including thoughts . . . feelings and attitudes, that a person constructs out of social experience.”³⁸⁴ As a sense of self develops, so too does our self-esteem motive, which “becomes a powerful organizer of an individual’s experience and activity.”³⁸⁵ A child who has developed a self-concept “will be perpetually engaged in . . . self-monitoring, . . . scanning for information relevant to the maintenance of a state of self-esteem and avoidance of self-esteem deficits.”³⁸⁶

Many theorists believe that the self-esteem motive is the dominant motivational system³⁸⁷ and that the drive for positive self-esteem “will influence the individual’s processing of information in all respects, including the education of attention, perception, memory, concept formation, and all manner of judgments.”³⁸⁸ Once damage to self-esteem occurs, more information or pleasure (or less pain) cannot repair it.³⁸⁹ There are basically only two ways to repair damaged self-esteem — “either by taking measures to construct conditions for positive self-worth attributions or by taking measures to deconstruct the conditions for negative self-worth attributions.”³⁹⁰ A number of these efforts at construction and deconstruction “involve deception and/or self-deception.”³⁹¹ Loyal Rue summarizes it this way:

We are encouraged by our self-esteem motivator to become a certain kind of ideal person, with various traits, skills, and achievements. But the realities of everyday life always fall short of the ideal. . . . The need for self-worth attributions always seems to

383. *Id.* at 136.

384. *Id.* at 135. The component elements of our self-concept are social identity attributes, dispositional (character) attributes, and physical attributes. *Id.*

385. RUE, *supra* note 80, at 136.

386. *Id.* The primary measuring devices used in this process are social standards “which apply to nearly every aspect of life — social and economic status, race, religion, moral behavior, attitudes, habits, tastes, personal appearance, abilities, dispositions, and so on.” *Id.* at 136-37. Such standards vary considerably in a pluralistic society, but the key concept to understand is that, “[I]t may be assumed that every functional individual has been sufficiently socialized to internalize a set of these standards. Where there are no value commitments there is no self.” *Id.* at 137.

387. *Id.* (citations omitted).

388. *Id.* at 136.

389. *Id.*

390. RUE, *supra* note 80, at 137.

391. *Id.*

exceed the legitimate conditions for making them. Thus, most of the time there is a discrepancy in our lives between the ideal and the real, between the ideal values and the perceived facts. . . . [W]e may close the gap by taking measures to become more like the ideal, or we may take measures merely to appear so to ourselves and/or others.³⁹²

Personal wholeness, from this perspective, is a function of “the extent that an individual is successful in satisfying the needs instigated by robust motivational systems.”³⁹³ However, humans are all condemned to some degree of intrapsychic conflict due to the often-conflicting demands of these systems.³⁹⁴ The need to manage intrapsychic conflict can provide us with a powerful incentive to interpret situations in a way that reduces the threat to our self-esteem. For example, consider the case of an engineer who knows that the new brakes her division has designed for a Marine fighter aircraft have failed some of the required trial tests. Her boss, the leader of the design team, is pressuring her to fudge the test data. Explaining away the negative results by fabricating excuses for why those particular trials were invalid, or attacking the tests themselves, could enable her to avoid facing the moral dilemma. Thus, she would not have to face the unpleasantness, threats, and loss of job and friendships that might result from taking a stand against her boss and blowing the whistle if her protests are ignored. She would not have to feel guilt for doing something wrong by fudging the data despite her moral qualms that it should be disclosed. Alternatively, she could fall back on the rich panoply³⁹⁵ of excuses³⁹⁶ that all of us can generate promptly when the need arises.

Sadly, the themes of self-serving situational interpretations and suspect excuses have been played out in far more terrible contexts than those mentioned above, as documented by Samuel and Pearl Oliner’s landmark

392. *Id.* at 159.

393. *Id.* at 138.

394. *Id.*

395. For a taxonomy of common excuses, see generally C.R. SNYDER ET AL., EXCUSES: MASQUERADES IN SEARCH OF GRACE (1983).

396. Rue points out that the word “excuse” derives from the Latin words *ex + causa*, suggesting that excuses “are designed to remove the perception of the actor as a cause of some negative outcome.” RUE, *supra* note 80, at 166. He notes that many excuses are not pure fabrications — the accuser may have misperceived the causal linkage or the excuser may genuinely believe his excuse but be self-deceived. *Id.* He quotes Albert Camus as saying, “[E]ach of us insists on being innocent at all costs, even if he has to accuse the whole human race and heaven itself.” *Id.* at 162.

study of the differences between those who rescued Jews in Nazi-occupied Europe and those who did not.³⁹⁷ The Oliners' research led them to conclude that "[t]he inclination to act depended largely on rescuers' interpretation of events, which was largely the product of the characteristic ways in which they interpreted their relationships to others."³⁹⁸ Rescuers "actively created, sought, or recognized" opportunities for rescue "where others did not."³⁹⁹ Many non-rescuers justified their refusal to help by saying that the personal risk was too great or that there was nothing they could do.⁴⁰⁰ Some argued that the Jews had brought their fate upon themselves.⁴⁰¹ Rescuers, on the other hand, "refused to see Jews as guilty or beyond hope and themselves as helpless, despite all the evidence that could be marshaled to the contrary. They made a choice that affirmed the value and meaningfulness of each life in the midst of a diabolical social order that repeatedly denied it."⁴⁰²

Yet what drove the difference in interpretation and behavior? The Oliners concluded this about the rescuers:

What most distinguished them were their connections with others in relationships of commitment and care. It is out of such relationships that they became aware of what was occurring around them and mustered their human and material resources to relieve the pain. Their involvements with Jews grew out of *the ways in which they ordinarily related to other people* — their characteristic ways of feeling; their perceptions of who should be obeyed; the rules and examples of conduct they learned from parents, friends, and religious and political associates; and *their routine ways of deciding what was wrong and right*.⁴⁰³

In a word, character. Here too, the motivational model has something to say to us, something with ancient echoes. From this perspective, our

397. SAMUEL P. OLINER & PEARL M. OLINER, *THE ALTRUISTIC PERSONALITY: RESCUERS OF JEWS IN NAZI EUROPE* 256 (1988).

398. *Id.* at 253 (emphasis added). They also recognize the pivotal importance of those interpretations, observing that "interpretations of events are human inventions, and . . . *what and how we choose to see shape our responses* — and thus the future." *Id.* at 260 (emphasis added).

399. *Id.* at 142.

400. *Id.* at 140 & 241; see also Adelson, *supra* note 45, at 42 (stating that non-rescuers "tell you they were too weak to protect the Jews; after all they could barely protect themselves; and in any event, the Jews had it coming to them, did they not?").

401. OLINER & OLINER, *supra* note 397, at 243-44.

402. *Id.* at 260.

403. *Id.* at 259-60 (emphasis added).

personal identity is literally a function of how we go about the business of resolving our inevitable intrapsychic conflicts. As Loyal Rue says, “[o]ur entire lives are constructed, moment by moment, through our efforts to harmonize the demands put upon us by our relentless needs for intelligibility, pleasure, and self-esteem. Personality is the final outcome of compromises negotiated among these conflicting psychodynamic processes.”⁴⁰⁴ In other words, we are what we do, or tend to do, and what we tend to do is the product of what we have done over time.

There are powerful parallels between this view of human motivation and the classic tenets of virtue ethics. Aristotle argued that “none of the moral virtues arises in us by nature.”⁴⁰⁵ Instead, “moral virtue comes about as a result of habit.”⁴⁰⁶ It is “by doing the acts that we do in our transactions with other men [that] we become just or unjust.”⁴⁰⁷ Accordingly, “[i]t makes no small difference, then, whether we form habits of one kind or of another from our youth; it makes a very great difference, or rather *all* the difference.”⁴⁰⁸

Note that this is a process that is occurring whether or not we are conscious of it (or elect to play a conscious role in it).⁴⁰⁹ The contents of

404. RUE, *supra* note 80, at 143.

405. ARISTOTLE, *supra* note 46, at 28. The Roman philosopher Seneca made a similar point when he said, “[n]o man is born wise; but wisdom and virtue require a tutor, though we can easily learn to be vicious without a master.” FRANCES HAZLITT & HENRY HAZLITT, *THE WISDOM OF THE STOICS* 26 (1984).

406. ARISTOTLE, *supra* note 46, at 28.

407. *Id.* at 29. Sutherland summarizes it this way:

[Aristotle] . . . believed that people form their own characters. Every time we resist a bad action, it becomes easier to resist, and every time we do something good it becomes easier to do again. By assiduous practice people can turn themselves into beings who spontaneously do the right thing and spontaneously avoid the wrong.

SUTHERLAND, *supra* note 30, at 328.

408. ARISTOTLE, *supra* note 46, at 29 (emphasis in original). Thus, Epictetus counseled: “[W]hatever you would make habitual, practice it; and, if you would not make a thing habitual, do not practice it, but habituate yourself to something else.” HAZLITT & HAZLITT, *supra* note 405, at 84.

409. Tom Morris makes the essential point with what he calls his *Principle of Becoming*: “Whenever you make a decision, whenever you act, you are never just doing, you are always becoming.” TOM MORRIS, *IF ARISTOTLE RAN GENERAL MOTORS* 164 (1997). He warns us not to kid ourselves that it is otherwise:

One of the greatest dangers in life is the ever-present threat of self-deception. We often believe we can do something, “just this one time,” without its having any implications for who we are. But there are no exceptions to this process. We can

the characters of those who fail to play a conscious role in their self-construction are accidental; character “just happens” to some people.⁴¹⁰ Ethicist Tom Morris puts it this way:

Every decision, and every action, has implications not only out there in the world but in our innermost beings. It’s like throwing a stone into a pond. It never just sinks, but creates ripples. In the same way, anything you do, however small, creates ripples in your character. It makes it a little more likely that you’ll act in the same way again. Patterns are formed, however subtly. Habits of mind and of conduct begin to take root. And you change, however slightly, from what you previously were.⁴¹¹

Morris, like Aristotle and the Stoics, urges us to play a conscious role in the process by saying, “[i]n everything we do, however large or small, we should always be asking ourselves: ‘In doing this, am I becoming the kind of person I want to be?’”⁴¹²

What is at stake here may not just be the personal project of self-construction, but any hope of something resembling free will. Are we managing our desires or are they managing us? Consider Harry G. Frankfurt’s distinction between first-order and second-order desires.⁴¹³ First-order desires “are simply desires to do or not to do one thing or

never take a holiday away from moral significance. Everything we do forms us, molds us, shapes us into the people we are becoming.

Id. at 165.

410. This is what Seneca referred to when he observed:

There are some that live without any design at all, and only pass in the world like straws upon a river. They do not go, but they are carried. Others only deliberate upon the parts of life, and not upon the whole, which is a great error; for there is no disposing of the circumstances of it, unless we first propound the main scope. How shall any man take his aim without a mark? Or what wind will serve him that is not yet resolved upon his port?

HAZLITT & HAZLITT, *supra* note 405, at 41.

411. MORRIS, *supra* note 409, at 164-65.

412. *Id.* at 165. For Aristotle’s view of the odds that most humans would develop virtue, see ARISTOTLE, *supra* note 46 and accompanying text.

413. See Harry G. Frankfurt, *Freedom of the Will and the Concept of a Person*, 68 J. PHIL. 5 (1971), reprinted in FREE WILL 81 (Gary Watson ed., 1982).

another.”⁴¹⁴ Animals have them and so do we.⁴¹⁵ Second-order desires are desires about our desires,⁴¹⁶ and the potential⁴¹⁷ to have them is, so far as we know, uniquely human.⁴¹⁸ Edwin Hartman describes it this way:

I may desire to smoke but regard this sort of desire with disapproval, and wish I did not have it. The desire to smoke is then a first-order desire, in Frankfurt’s celebrated formulation, and the desire not to want to smoke is a desire about a desire, hence a second-order desire. If I am neurotic or just weak-willed I may have first-order desires that are inconsistent with my second-order desires but on which I act all the same.

To the extent that your second-order desires determine your first-order ones or at least override them when you act, you are autonomous, according to Frankfurt. Insofar as you have the will to fulfill your second-order desires, they are part of your character.⁴¹⁹

414. *Id.* at 83.

415. *Id.*

416. “Besides wanting and choosing and being moved *to do* this or that, men may also want to have (or not have) certain desires and motives. They are capable of wanting to be different, in their preferences and purposes, from what they are.” *Id.* at 82-83.

417. It goes without saying that many people do not develop them. Edwin Hartman says, “[o]ne of the characteristics of intellectually developed people is that they not only have desires but reflect on them and have attitudes towards them.” Edwin M. Hartman, *The Commons and the Moral Organization*, 4 BUS. ETHICS Q. 253, 255 (1994). Hartman observes that, “[f]ew are capable of being wholly rational, of being conscious of the relations among their second-order desires and between them and their more immediate ones, of taking a critical attitude towards either kind.” *Id.* at 256. Rue speaks in terms of a whole person who is “in control, coherent . . . [s]he has perspective on her experience, is aware of limitations, knows her priorities, is able to act with unity of purpose.” RUE, *supra* note 80, at 142.

418. “No animal other than man . . . appears to have the capacity for reflective self-evaluation that is manifested in the formation of second-order desires.” Frankfurt, *supra* note 413, at 83.

419. Hartman, *supra* note 417, at 255. Hartman notes that even consistent self-management of one’s first-order desires by one’s second-order desires may not be sufficient to guarantee personal autonomy:

Frankfurt offers an account of a way in which you can do what you want to do and still not have free will [*i.e.*, when your first-order desires overcome your second-order desires]. The problem he does not adequately address is this: you can follow your second-order desires and still not have free will, because you are brainwashed, perhaps by the ambient corporate culture, and therefore have stupid or incoherent second-order desires.

Id. at 257. Consider, for example, the highly disciplined person who effectively manages all her first-order desires in the successful pursuit of worldly success. An Aristotelian would still find such a life to be problematic. Henry Veatch put it this way:

Thus, being free to do what you want does not mean that you have free will.⁴²⁰ Instead, a person enjoys freedom of will if “he is free to will what he wants to will, or to have the will he wants.”⁴²¹ Also, some form of freedom of will, or at least the potential to exercise it, is probably inextricably interwoven with the idea of moral agency.⁴²² As Thomas Nagel says, “[i]t is the attack on inner barriers that leads to the development of ethics, for it means that we hope to be able to will that our character and motives should be as they are, and not feel simply stuck with them when viewing ourselves objectively.”⁴²³

Note, however, that self-objectivity and reflection are necessary conditions of the projects of conscious self-construction and self-liberation. If we are to bridge the gap between what we are and the “moral animals” that we can become,⁴²⁴ then we must first acknowledge the need for personal moral improvement and choose that end over the other competing ends.⁴²⁵ Here again, rationality is of central importance:

[I]ntelligence as a mere instrument of wealth or power or prestige is not ethically significant. Nor is it intelligence pursued for its own sake that ethics prescribes as the end and goal of our lives. Instead, it is intelligence applied to the problem of living — directed not toward unintelligent ends like wealth or power, but toward making the proper choices in our conduct as men. This is man’s true end, or function, or *ergon*, as Aristotle called it.

VEATCH, *supra* note 54, at 68.

420. Frankfurt says, “We do not suppose that animals enjoy freedom of the will, although we recognize that an animal may be free to run in whatever direction it wants. Thus, having the freedom to do what one wants to do is not a sufficient condition of having free will.” Frankfurt, *supra* note 413, at 90.

421. *Id.*

422. Rachels explains it this way:

As rational agents, humans have the power of choice: they may choose to do what they see to be right, or they may choose to do wrong. Thus they are *responsible* for their freely chosen actions, and they are judged morally good if they choose well or wicked if they choose badly. This, . . . helps to explain why freedom is among the most cherished human values. A person who is denied the right to choose his or her own actions is thereby denied the possibility of achieving any kind of personal moral worth.

RACHELS, *supra* note 30, at 183.

423. THOMAS NAGEL, *THE VIEW FROM NOWHERE* 136 (1986).

424. *See supra* note 1.

425. Those who do this will, of course, have bridged another gap previously identified — the motivational gap. *See supra* text accompanying note 32.

[A]ristotle's advice could only be taken by the rational man, by someone whose end was to form his character in a certain way and who accepted that careful selection of what he did was the best means to that end. To put oneself in a position where one does the right thing without thought, that is without consideration of what is rational, one has to undergo a period of deliberately acting in the ways that mould one's character to one's desire: that is rationality indeed.⁴²⁶

Assume, however, that one has foregone the false comfort of positive illusions⁴²⁷ and has been able to develop the level of practical reason necessary to the project of self-construction.⁴²⁸ Assume also that one has chosen to employ it in the name of self-development, and has done so long enough to develop a virtuous character. Would such a person be justified in breathing a mental sigh of relief, confident that her hard-won struggle would enable her to discharge her fundamental moral duty of thinking clearly about matters of moral import?⁴²⁹ Probably not, for other cognitive obstacles remain that could lead the most virtuous astray despite our determination to do the right thing. We now turn to these obstacles.

C. Heuristics and Mental Models

1. Heuristics

If we believe that the need to maintain self-esteem is the only source of our cognitive and perceptual problems, we fail to understand the full dimensions of the challenge confronting us. Scientists who advance cognitive, rather than motivational, explanations for many of the observed biases in human reasoning tend to lay the blame at the feet of various automatic⁴³⁰ decision aids called heuristics.⁴³¹ Heuristics are somewhat

426. SUTHERLAND, *supra* note 30, at 328. Sutherland observes, however, that “[f]ew people think hard about their goals and even fewer think hard about the many possible consequences of their actions.” *Id.* at 129.

427. See *supra* text accompanying notes 256-315.

428. “Practical reason involves setting a goal — pleasure, the good life, whatever — and choosing the means best suited to reaching it.” RICHARD POSNER, PROBLEMS OF JURISPRUDENCE 71 (1990). Sutherland states it this way, “[r]ational behavior is acting, given one's knowledge, in the way most likely to achieve one's ends. In order to act rationally, therefore, one must establish priorities among them.” SUTHERLAND, *supra* note 30, at 129.

429. See *supra* note 1 and accompanying text.

430. On the unconscious operation of heuristics, see *supra* text accompanying note 115.

431. See *supra* text accompanying notes 104-11 & 115-16 (discussing heuristics).

analogous to computer programs — they generally tend to serve us quite well (an evolutionary psychologist would say that this explains their continued presence in the species), but they also tend to have some “bugs” that can lead us to make erroneous decisions.⁴³²

To illustrate the concept, one should consider an analogy. The MBA program at Enormous State University (ESU) uses the following decision rule to screen applications: unless applicants have a minimum 600 GMAT score, at least a 3.4 undergraduate GPA and at least 4 years work experience, they are automatically rejected.⁴³³ This rule will work quite well in reducing the number of applications that admission committees must consider, but there is a price to pay for that convenience. Many (probably most) of the applicants ESU wants to screen out will be screened out, but some applicants that ESU would like to have in its program will also be rejected. For example, consider two applicants, Mr. *X* and Ms. *Y*. Mr. *X* has a 602 GMAT score, a 3.41 GPA from Marginal State Teachers' College (he majored in physical education, where the mean GPA was 3.85), and he has worked four years as a letter carrier for the U.S. postal service. Ms. *Y* has a 598 GMAT, earned a 3.35 GPA (in the Cal Tech astrophysics program, to which only 1 in 5 applicants were admitted and in which the mean GPA was 2.75), and was CEO of a software company that she created upon graduation and later sold to Microsoft for \$45 million. There are a host of fairly obvious reasons why ESU would rather have Ms. *Y* than Mr. *X* in its MBA program, but a decision heuristic like that employed by ESU will produce exactly the opposite result.

Note also that ESU will never know how many Ms. *Y*s it has screened out or how well they would have done in its program had they been

432. See *supra* text accompanying notes 109-10. An example drawn from our perceptions concerns the perceived relationship between the clarity with which an object is perceived and our estimation of its distance from us. Tversky and Kahneman observe:

[T]he apparent distance of an object is determined in part by its clarity. The more sharply the object is seen, the closer it appears to be. This rule has some validity, because in any given scene the more distant objects are seen less sharply than nearer objects. However, the reliance on this rule leads to systematic errors in the estimation of distance. Specifically, distances are often overestimated when visibility is poor because the contours of objects are blurred. On the other hand, distances are often underestimated when visibility is good because the objects are seen sharply. Thus, the reliance on clarity as an indication of distance leads to common biases.

Tversky & Kahneman, *supra* note 248, at 3.

433. This common screening device is called a threshold rule. Paul J.H. Schoemaker & J. Edward Russo, *A Pyramid of Decision Approaches*, 36 CAL. MGMT. REV. 9, 14-15 (1993).

admitted because, for ESU's purposes, they simply do not exist.⁴³⁴ However, in the instance of this admissions heuristic, ESU has a great potential advantage. It was consciously adopted, and it would not be too difficult to show what the price might be for any convenience ESU gains from employing it. Admissions officers could go back a few years and take a close look at some of the "near miss" rejections, perhaps even do a follow-up study on some. This might lead them to refine the heuristic, or it might convince them that it is operating acceptably.

But where cognitive heuristic processes are concerned, we are dealing with decision programs that are hardwired into our brains. We did not consciously choose them. In fact, we will not even realize that we have them unless someone points it out to us,⁴³⁵ and even then we may refuse to believe it.⁴³⁶ Also, since heuristic processes operate in a preconscious way, by definition we are unaware of their operation (or that they have screened out or distorted any information). This means that the problematic effects of our heuristic processes can be very difficult to correct. Thus, it should be obvious that there is no hope of correction if we remain ignorant of heuristics' existence and operation.⁴³⁷

434. Note the implications of this heuristic method on ESU's ability to consider the effectiveness of its admissions standards. Much of the data needed to make the attribution (are they admitting the right people?) is missing. On the problem of missing data, see *supra* text accompanying notes 213-15. Note also that something else is missing that would be necessary for ESU to gauge the effectiveness of its standards — a basis for comparison. If 85% of admitted students complete the program and 75% get jobs within 3 months after graduation, is that good, fair, or poor? Without data from comparable institutions, it is impossible to determine with any degree of confidence.

435. Taleb says:

For a long time we had the wrong product specifications when we thought of ourselves. We humans have been under the belief that we were endowed with a beautiful machine for thinking and understanding things. However, among the factory specifications for us is the lack of awareness of the true factory specifications.

TALEB, *supra* note 168, at 171.

436. See *supra* text accompanying note 67.

437. See *supra* note 119; see also *infra* text accompanying notes 603-673 (discussing debiasing).

a. Anchoring

The order in which we encounter information can affect how we perceive it.⁴³⁸ We tend to be unduly influenced by the first information we encounter, a tendency that can sometimes lead us to discount later, more relevant information. In other words, most of us adjust insufficiently from our initial anchors, whatever they happen to be.⁴³⁹ For example, experienced real estate brokers, despite their beliefs to the contrary, were influenced in their estimates of property values by the asking price for the property.⁴⁴⁰ Jurors may also be vulnerable — one study found “evidence that telling jurors to consider verdicts in an order that runs from harshest to most lenient — currently standard practice in murder trials — leads to harsher verdicts than telling them to consider lenient verdicts first.”⁴⁴¹ Anchoring effects are observable even when the anchors are obviously arbitrary⁴⁴² or are plainly ridiculous.⁴⁴³

438. “In many situations, people make estimates by starting from an initial value that is adjusted to yield the final answer. The initial value, or starting point, may be suggested by the formulation of the problem, or it may be the result of a partial computation.” JUDGMENT UNDER UNCERTAINTY, *supra* note 110, at 14.

439. “[A]djustments are typically insufficient. That is, different starting points yield different estimates, which are biased toward the initial values.” *Id.* (internal citation omitted) For example, when high school students were asked to estimate in five seconds the product of $8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$ and $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$, “[t]he median estimate for the ascending sequence was 512 . . . the median estimate for the descending sequence was 2,250. *Id.* at 15. The correct answer is 40,320. *Id.*

440. See BAZERMAN, *supra* note 106, at 29. Experienced auditors asked to estimate the prevalence of management fraud and experienced similar anchoring effects when given different “greater than or less than” values. *Id.* at 29-30.

441. PLOUS, *supra* note 124, at 148 (citing J. Greenberg et al., *Considering the Harshest Verdict First: Biasing Effects on Mock Juror Verdicts*, 12 PERSONALITY & SOC. PSYCHOL. BULL. 41 (1986)).

442. For example, in one study subjects were asked to estimate the percentage of African nations that were members of the United Nations (the correct answer is 35%). Prior to estimating, subjects were asked to judge whether the percentage was higher than a number arrived at by spinning a wheel containing numbers from 1 to 100 (but rigged to produce either a 10 or a 65). Those subjects who got a “10” estimated 25% on average; those who got a “65” estimated 45% on average. DAWES, *supra* note 66, at 121. In another study, students were first asked the last three digits of their phone number, and then asked to estimate the date of Attila the Hun’s death. The anchor of their phone number exerted a “drag” on their estimates of the date of the Hun’s demise. RUSSO & SCHOEMAKER, *supra* note 104, at 90-91.

443. For example, anchoring effects have been observed in estimation studies where subjects were first asked whether the price of the average college textbook was above or below \$7128.25 or the average temperature in San Francisco was more or less than 558 degrees, and then asked for a precise estimate. PLOUS, *supra* note 124, at 146.

Anchoring, together with belief bias⁴⁴⁴ and confirmation bias,⁴⁴⁵ provides a possible explanation for our tendency to be unduly influenced by our first impression of someone.⁴⁴⁶ An erroneous first impression, together with selective processing of subsequent information can cause us to adjust our opinion in the face of contrary information. It also offers an explanation for why humans seem prone to commit the false alternative fallacy,⁴⁴⁷ which “involves identifying fewer alternatives than in fact exist.”⁴⁴⁸ The fact that the order in which people search can influence their ultimate decision “has extremely important implications in the study of the rationality of choice.”⁴⁴⁹ If individuals and organizations “search through a set of possible alternatives until they find one that satisfies an aspiration level, and then terminate their search,”⁴⁵⁰ then “[a] search in one manner may lead to one decision, while a search in another may lead to a different decision.”⁴⁵¹ Since the criteria for a rational choice demand that alternatives be evaluated on the basis of the desirability of their probable consequences,⁴⁵² and to the extent that anchoring induces choices based on other criteria, it encourages irrational choices.⁴⁵³

The fact that the status quo is one of the most common cognitive anchors exacerbates the false alternative tendency because it means that

444. See discussion, *supra* text accompanying notes 223-42.

445. See discussion, *supra* text accompanying notes 203-22.

446. BAZERMAN, *supra* note 106, at 29 (first impression syndrome is an example of anchoring in daily life); see also PLOUS, *supra* note 124, at 42 (discussing primacy effects). When one group of subjects was asked about a person who was envious, stubborn, critical, impulsive, industrious, and intelligent, it tended to give quite different answers than another group that was asked about someone who was intelligent, industrious, impulsive, critical, stubborn, and envious. Subsequent answers tended to be more strongly influenced by the earliest mentioned characteristics. *Id.*

447. Other authorities use other terminology to describe the same, or related, thinking maladies. Madsen Pirie, for example, talks of the bogus dilemma, in which “we are told the consequences of alternative actions, and told that since we must take one of the actions, we must accept one of the consequences.” PIRIE, *supra* note 134, at 25. He notes that often “the choice is not as limited as is made out.” *Id.* W.L. Reese speaks of the black-or-white fallacy, which occurs when “we are told to choose between two alternatives, and the presence of other alternatives is ignored.” WILLIAM L. REESE, *DICTIONARY OF PHILOSOPHY AND RELIGION* 168 (1980).

448. LUCKHARDT & BECHTEL, *supra* note 112, at 148.

449. DAWES, *supra* note 66, at 51. As Dawes correctly observes, “order can be determined by many factors having very little to do with the consequence of choice . . . or can even be manipulated by a clever person with control of the agenda of a discussion.” *Id.*

450. *Id.* Dawes refers to the work of Nobel Laureate Herbert Simon and his concept of “satisficing.” See generally Herbert A. Simon, *Rational Decision Making in Business Organizations*, 69 *AM. ECON. REV.* 493, 502-03 (1979).

451. DAWES, *supra* note 66, at 51.

452. See *supra* text accompanying note 179 (showing criteria to determine a rational choice).

453. DAWES, *supra* note 66, at 125.

“[c]hanges in existing plans or policies more readily come to mind than do new ones, and even as new alternatives close to the status quo are considered, they, too, can become anchors.”⁴⁵⁴ Thus, when changed objective circumstances demand a significant change in response, many organizations’ responses may be sub-optimal.⁴⁵⁵

Daniel Kahneman and Amos Tversky, pioneers in the study of heuristics and biases, thought anchoring played a role in our tendency to commit the conjunctive/disjunctive events bias.⁴⁵⁶ They suggested that the probability that a single part of a compound event will occur was likely to serve as a cognitive anchor. People would tend to insufficiently adjust from that anchor to account for the impact of the compounding effect of the multiple events that must occur to achieve the desired outcome.⁴⁵⁷ Anchoring may also play a role in our tendency toward hindsight bias.⁴⁵⁸ Once we are anchored to what actually happened, it can distort our ability to make accurate estimates about what might have happened.⁴⁵⁹

b. Availability

When human beings make decisions, they tend to use the information that is psychologically available to them. Kahneman and Tversky found that people tend to estimate frequency and probability according to the

454. *Id.* at 124-25.

455. Organization theorists Richard Cyert and James March note that, when looking for a problem solution, firms search in the neighborhood of the current alternative. See RICHARD M. CYERT & JAMES G. MARCH, *A BEHAVIORAL THEORY OF THE FIRM* 121 (1963). So, for example, a company with high employee turnover may “try minor rules changes to deal with employee dissatisfaction rather than attempt to determine and fix the real cause,” and a company surprised by a competitor’s new product may anchor to it and produce a “me-too” effort instead of something that does a better job of meeting consumers’ needs. RUSSO & SCHOEMAKER, *supra* note 104, at 91-92.

456. See discussion, *supra* text accompanying notes 243-55.

457. JUDGMENT UNDER UNCERTAINTY, *supra* note 110, at 15-16.

458. See discussion, *supra* text accompanying notes 163-72.

459. See Fischhoff, *For Those Condemned to Study the Past: Heuristics and Biases in Hindsight*, in JUDGEMENT UNDER UNCERTAINTY, *supra* note 110, at 343 (“In trying to reconstruct our foresightful state of mind, we will remain anchored in our hindsightful perspective, leaving the reported outcome too likely looking.”); see also BAZERMAN, *supra* note 106, at 37:

Anchoring may contribute to this [hindsight] bias when individuals interpret their prior subjective judgments of probabilities of an event’s occurring in reference to the anchor of knowing whether or not that outcome actually occurred. Since adjustments to anchors are known to be inadequate, hindsight knowledge can be expected to bias perceptions of what one thinks one knew in foresight.

ease with which instances or associations are brought to mind.⁴⁶⁰ That would not necessarily be problematic if our memories were accurate, and if we recalled an unbiased and sufficiently large set of prior examples. But vividness⁴⁶¹ can play a major role in availability, as does recency.⁴⁶² Most of us, for example, reduce our speed for a while after getting a speeding ticket or seeing a horrible accident.⁴⁶³ Availability also plays a role in some of our more humorous daily misperceptions,⁴⁶⁴ and it tells us why the judge's admonition to the jury to "disregard that answer" is probably pointless (and why the advocate asked the question despite knowing that the admonition would occur).⁴⁶⁵

460. Tversky and Kahneman's landmark article puts it this way:

There are situations in which people assess the frequency of a class or the probability of an event by the ease with which instances or occurrences can be brought to mind. For example, one may assess the risk of heart attack among middle-aged people by recalling such occurrences among one's acquaintances. Similarly, one may evaluate the probability that a given business venture will fail by imagining various difficulties it could encounter. This judgmental heuristic is called availability.

Tversky & Kahneman, *supra* note 248, at 11.

461. "A single, vivid experience easily alters people's perceptions because it remains highly memorable and, therefore, highly available to the mind." RUSSO & SCHOEMAKER, *supra* note 104, at 86; *see also* Tversky & Kahneman, *supra* note 248, at 11 ("the impact of seeing a house burning on the subjective probability of such accidents is probably greater than the impact of reading about a fire in the local paper"); *see infra* text accompanying notes 479-500 (discussing vividness).

462. "[R]ecent occurrences are likely to be relatively more available than earlier occurrences." Tversky & Kahneman, *supra* note 248, at 11; *see also supra* text accompanying note 152 (discussing recency effects on memory).

463. "[T]he subjective probability of traffic accidents rises temporarily when one sees a car overturned by the side of the road." Tversky & Kahneman, *supra* note 248, at 11. If we have close friends with a problem-free Yugo and a breakdown-prone Toyota, that may influence our judgment of these brands' reliability more than *Consumer Reports* data showing the exact opposite. KELLOGG, *supra* note 66, at 386.

464. Dawes asks why we always seem to choose the slowest moving line at the supermarket, or get rained on when we do not have an umbrella with us, or why an athlete appearing on the cover of a sports magazine appears to be "jinxed" (performs poorly) thereafter. Plainly, there is no logical connection between these events, but they seem to be connected because they are vivid and we are likely to remember them (and not the times when the line moved quickly, when we had an umbrella, and when our sports hero had a good game after appearing on the cover). DAWES, *supra* note 66, at 94.

465. Keith Murnighan talks about a related phenomenon he calls "the purple chicken problem" — once someone tells you not to think about a purple chicken, that may be all you *can* think of. J. KEITH MURNIGHAN, *BARGAINING GAMES* 39-40 (1992) (emphasis added).

Availability may also play a role in our tendency to make false causal attributions⁴⁶⁶ and in our vulnerability to conjunctive/disjunctive events bias.⁴⁶⁷ The information we do have is simply more psychologically immediate and compelling than information that we do not have. As Russo and Schoemaker observe:

[T]oo many organizations fail to complete their projects within the time they originally forecast. Too many can't deliver products at the costs they originally hoped. And many get blindsided by nasty surprises and expensive errors. Availability biases cause people to underestimate the difficulties they will face: Few of the unexpected events that *might* delay a project come easily to mind when people are planning it. And no matter how knowledgeable people may be, they retain the human tendency to underestimate the importance of information that is not readily available to them.⁴⁶⁸

Availability, along with simulation,⁴⁶⁹ may also be involved in hindsight bias,⁴⁷⁰ and it can distort our ability to estimate risk. Any discussion of potential hazards will increase their memorability, and thus the perception of risk, regardless of the actual probability that the harm will occur.⁴⁷¹ This raises one of the most troubling aspects of availability

466. Plous says illusory correlation occurs when we mistakenly believe that two unrelated variables are correlated. He notes that most researchers believe that availability plays a role because distinctive pairings of variables are highly available, while other possible correlates may be unknown. PLOUS, *supra* note 124, at 164-65. See *supra* text accompanying notes 213-15 (discussing the false causes fallacy).

467. See discussion, *supra* text accompanying notes 243-55. Taleb asserts that "our brain tends to go for superficial clues when it comes to risk and probability, these clues being largely determined by what emotions they elicit or the ease [with which] they come to mind." TALEB, *supra* note 168, at 42.

468. RUSSO & SCHOEMAKER, *supra* note 104, at 105-06.

469. See discussion, *infra* text accompanying notes 546-47.

470. Kellogg observes that:

Hindsight effects are to be expected if people rely on ease of recall (the availability heuristic) and ease of imagining (the simulation heuristic). Once the critical information about the outcome is known, people cannot put it aside. Indeed, it dominates our recollections and imaginations about the situation at hand, distorting our confidence in our judgments.

KELLOGG, *supra* note 66, at 416.

471. "[D]iscussion of a low-probability hazard may increase its memorability and imaginability and hence its perceived riskiness, regardless of what the evidence indicates." Paul

— the biased nature of our experience and its impact on our judgments about reality. It seems obvious that “[i]f one’s experiences are biased, one’s perceptions are likely to be inaccurate.”⁴⁷² The problem is that “much of the information to which people are exposed provides a distorted picture of the world of hazards.”⁴⁷³ This is true because “television, newspapers, and other readily available information sources can create skewed perspectives on reality.”⁴⁷⁴ Robyn Dawes calls this vicarious availability and notes that peoples’ estimates of causes of death have a strong correlation with the frequency with which deaths are reported in the media than with actual frequency of occurrence.⁴⁷⁵ So, our processing of information is not only biased by our own perceptual problems, but by the fact that much of the information we receive is filtered by others in the name of “newsworthiness,” or in the furtherance of a particular cause.⁴⁷⁶ As Russo and Schoemaker put it:

People do instinctively realize that they can fall victim to the availability bias. They know that they base some judgments on evidence that comes most easily to mind. And they also know that television, newspapers, and other readily available information sources can create skewed perspectives on reality. However, few

Slovic et al., *Facts Versus Fears: Understanding Perceived Risk*, in JUDGMENT UNDER UNCERTAINTY, *supra* note 110, at 465.

472. *Id.* at 467.

473. *Id.*

474. RUSSO & SCHOEMAKER, *supra* note 104, at 83. Taleb is particularly scathing on this point, arguing that “prominent media journalism is a thoughtless process of providing the noise that can capture people’s attention.” TALEB, *supra* note 168, at 63. He says that the information they provide is not just “diverting and generally useless, but that it is toxic.” *Id.* at 61.

475. DAWES, *supra* note 66, at 95. The recent public hysteria over SARS is a classic example of this — Americans cancelled travel abroad for fear of contracting SARS, and instead they stayed home and drove their cars, an activity with a dramatically higher risk of death or injury. As one authority notes, “[y]our chances of being killed by SARS are remote compared to the chance that you’ll be killed in your car on the way to a Chinese restaurant.” David Baltimore, *The Sars Epidemic: SAMS — Severe Acute Media Syndrome?*, WALL ST. J., Apr. 28, 2003, at A12. Baltimore, a Nobel laureate in medicine, observes that our recent anthrax scare was similarly unjustified: “[T]his anthrax episode claimed five lives — when each year 40,000 Americans die in highway crashes, 400,000 from tobacco-related illnesses and 20,000 from flu. . . .” *Id.*; see also TALEB, *supra* note 168, at 42 (noting that the threat of mad cow disease which received intense media attention and provoked widespread fear only killed people in the hundreds over a decade, while automobile accidents killed hundreds of thousands over the same period).

476. For example: “If company Y commissions eight studies comparing the relative merits of its product and that of its competitor, and seven of the eight conclude that its competitor’s product is superior, it’s not hard to predict which study company Y will cite in its television commercials.” JOHN ALLEN PAULOS, INNUMERACY 113 (1990).

put these two realizations together when making important judgments.⁴⁷⁷

c. Vividness and Salience

Our attention tends to be focused (sometimes unduly) by particular features of an event or object. Psychologists use the terms salience⁴⁷⁸ and vividness⁴⁷⁹ to describe this tendency. If an event, image, example, or fact is striking, has a significant emotional impact, or has been recently impressed on our consciousness, we may be inclined to give it greater weight than it objectively deserves.⁴⁸⁰ Vividness and salience can also distort our perceptions of causation,⁴⁸¹ and they furnish a cognitive explanation for the fundamental attribution error.⁴⁸²

We are regularly treated to examples of this human vulnerability by the oscillations of public opinion in the face of vivid events, which amply demonstrate how the vividness of a threat can affect our ability to effectively estimate risk.⁴⁸³ Consider, for example, the publicity and the predictable calls for greater safety regulation generated by any spate of aircraft crashes. More safety regulation may or may not be sensible, but one certainly could not logically reach that conclusion on the basis of two or three statistically inevitable crashes. Driving a car on American

477. RUSSO & SCHOEMAKER, *supra* note 104, at 83.

478. Salient factors are those "which command attention." PLOUS, *supra* note 124, at 178.

479. "Vividness usually refers to how concrete or imaginable something is, although occasionally it can have other meanings. Sometimes vividness refers to how emotionally interesting or exciting something is, or how close something is in space or time." *Id.* at 125-26.

480. "Because vivid information is more 'available' and easier to recall than pallid information, it often has a disproportionate influence on judgments." *Id.* at 126.

481. Plous explains the interaction of availability, vividness, and salience in causal attributions:

In very general terms: (1) The more *available* an event is, the more frequent or probable it will seem; (2) the more *vivid* a piece of information is, the more easily recalled and convincing it will be; and (3) the more *salient* something is, the more likely it will be to appear causal. Perceptions of causality are partly determined by where one's attention is directed within the environment, and attention is in turn a function of salience.

Id. at 178.

482. "When explaining the causes of behavior, people rely heavily on factors that are salient at the time. For observers, the actor is most salient; for the actor, situational demands are salient." *Id.* at 183. *Supra* text accompanying note 299 (discussing fundamental attribution error).

483. PLOUS, *supra* note 124, at 139.

highways is far more dangerous.⁴⁸⁴ Yet the greater risk of driving is simply not as graphically impressed upon our consciousness as are the dangers associated with air travel. The thousands of safe flights are not news,⁴⁸⁵ and the general public's ignorance of the gambler's fallacy⁴⁸⁶ can lead them to infer a pattern from a few statistically inevitable crashes that happen to occur close together.⁴⁸⁷

Ideally, “[i]solated but vivid tragedies involving a few people should not blind us to the fact that myriad prosaic activities may involve a much higher risk.”⁴⁸⁸ However, that is not the way the world (or our mind) works. The rarity of an event can itself be a generator of publicity, and

484. “More than twice as many people lose their lives in automobile accidents each year than have died in airline crashes in the entire history of air travel.” Barry Glassner, *Fear of Flying*, WALL ST. J., Nov. 2, 1999, at A2. Glassner notes that in 1998, “more than 600 million people traveled on commercial airliners in the U.S. without a single fatality.” *Id.* After the terrorist attacks on September 11, 2001, many people were afraid to fly. The author has not seen the data, but it would not be surprising if even during that month it was still safer to fly (in terms of fatalities per miles traveled) than to drive in the United States. The aftermath of the attack also furnished another example of the impact of vividness of probability estimates — those who argue that “this just goes to show that terrorism [and not ballistic missile attack] is the *real* threat.” How many of these people believed that prior to September 11, 2001?

485. Thus, vicarious availability plays a role in this particular distorted perception. See discussion, *supra* text accompanying note 475. It is reasonable to assume that some of the positive illusions provide additional reasons why many people experience “fear of flying”; the illusion of control is easier to maintain while driving one’s own car than while one is a passenger on a commercial flight. Since we believe we are better than average drivers, due to the false uniqueness effect, we are especially likely to discount known dangers associated with driving as only applying to “the other guy” under the illusion of optimism. See *supra* Part III (discussing positive illusions).

486. See discussion, *infra* text accompanying notes 513-18.

487. See *infra* text accompanying note 511 (discussing clustering illusion). Ironically, if the calls for safety regulation are heeded, the increasing cost and inconvenience of flying might lead more people to drive instead of fly, possibly resulting in a rise in the death rate. One study of cut-rate airlines, the object of a great deal of fear and loathing after the ValuJet crash a few years ago, concluded that “[f]ar from raising safety concerns, by stimulating people to fly instead of drive, cut-rate airlines save lives — 190 to 275 a year. . . .” Glassner, *supra* note 484, at A26.

488. PAULOS, *supra* note 476, at 130.

many highly dangerous activities are quite prosaic.⁴⁸⁹ This leads the general public to make irrational estimations of risk, says Stuart Sutherland,⁴⁹⁰ using as an example the risks associated with nuclear power and those associated with fossil fuels.⁴⁹¹ All of this, of course, has important real world effects:

These matters are not merely academic, and there is a direct way in which the mass media's predilection for dramatic reporting leads to extreme politics and even pseudoscience. Since fringe politicians and scientists are generally more intriguing than mainstream ones, they garner a disproportionate share of publicity and thus seem more representative and significant than they otherwise would. Furthermore, since perceptions tend to become realities, the natural tendency of the mass media to accentuate the anomalous, combined

489. Paulos observes that:

Terrorist kidnappings and cyanide poisonings are given monumental coverage, with profiles of the distraught families, etc., yet the number of deaths due to smoking is roughly the equivalent of three fully loaded jumbo jets crashing each and every day of the year, more than 300,000 Americans annually. AIDS, tragic as it is, pales in worldwide comparison to the more prosaic malaria, among other diseases.

Id. at 111.

490. Sutherland says:

The public's estimation of risks is . . . also irrational. In particular, because of the availability error, they vastly overestimate the dangers of dramatic accidents that kill several people simultaneously in one place as compared to the more insidious killing of many people at different times and over wide areas. They are also afraid of new devices to which they are not accustomed.

SUTHERLAND, *supra* note 30, at 253.

491. See discussion, *id.* at 253-55. Among the less obvious risks associated with fossil fuels are the deaths and injuries to workers involved in mining and transporting them. Burning fossil fuels causes various forms of pollution, which may be linked to cancer, respiratory problems, and the greenhouse effect. As a result, Sutherland says, "it has been estimated that the likely fatalities per unit of electricity produced are between ten and [one] hundred times greater from coal-fired stations than from nuclear reactors." *Id.* at 254.

with an innumerate⁴⁹² society's taste for such extremes, could conceivably have quite dire consequences.⁴⁹³

Even if we have access to accurate statistical data, vividness can lead us to disregard it in favor of less valid information. For example, people tend to under utilize statistical summary data in favor of case study data when making judgments, a tendency attributable to the vividness of case study data.⁴⁹⁴

Some researchers think vividness offers a partial explanation for the human tendency⁴⁹⁵ to focus on the short-run at the expense of the long-run.⁴⁹⁶ The idea is that the immediate pleasure or pain is more vivid, and therefore more real to us than the potential for downstream pain.⁴⁹⁷ For example, the immediate, relatively certain, promise of reward for attaining

492. PAULOS, *supra* note 476, at 131-32. For Paulos, innumeracy means "an inability to deal comfortably with the fundamental notions of number and chance." *Id.* at 3. This inability, "plagues far too many otherwise knowledgeable citizens." *Id.* at 3-4. It follows that such citizens' thinking will be impaired when the questions at issue require numeracy. Sadly, innumeracy afflicts some surprising groups. For example, one recent study, which should give most of us pause, found that "most doctors' assessments of the risks of various operations, procedures, and medications (even in their own specialties) were way off the mark, often by several orders of magnitude." *Id.* at 10.

493. There is an unappealing personal consequence of failing to understand these things. Paulos says that "[i]f one filters out banal and impersonal events, most of what's left are astounding aberrations and coincidences, and one's mind begins to resemble the headlines of supermarket tabloids." *Id.* at 112-13.

494. "A number of studies have shown that decision makers are affected more strongly by vivid information than by pallid, abstract, or statistical information." PLOUS, *supra* note 124, at 126 (citing RICHARD E. NISBETT & LEE ROSS, *HUMAN INFERENCE: STRATEGIES AND SHORTCOMINGS OF SOCIAL JUDGMENT* (1980); see also PAULOS, *supra* note 476, at 152 ("a few vivid predictions or coincidences often carry more weight than much more conclusive but less striking statistical evidence"). For example, MBA students participated in a study wherein they were given the results of two studies: a survey study in four variations (random sample of 100, random sample of 600, non-random sample of 100, non-random sample of 600) and a qualitative study based on unstructured interviews with a non-random (convenience) sample of 45. Lee et al., *supra* note 240, at 190. The researchers found that while the MBAs recognized the value of the larger sample size and statistical analysis in the survey study, "nevertheless their purchase intentions were more influenced by the qualitative interviews." *Id.* at 193.

495. Warnock says that "people are naturally somewhat prone to be moved by short-run rather than long-run considerations, and often by the pursuit of more blatant, intense, and obtrusive satisfactions rather than of those cooler ones that on balance would really be better." WARNOCK, *supra* note 63, at 21.

496. See discussion, BAZERMAN, *supra* note 106, at 89-93.

497. See generally George Loewenstein, *Out of Control: Visceral Influences on Behavior*, 65 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 272 (1996).

organizational goals or of punishment for failing to attain them, may easily outweigh the more remote possibility of a future legal sanction.⁴⁹⁸

Also note that people who understand that our tendency to overreact to vivid examples can use this to manipulate us. Casinos encourage gamblers' wishful thinking by having lights blink and money tinkle every time someone wins a couple of quarters on the slot machine, giving the impression that everyone is winning.⁴⁹⁹ Trial lawyers understand all too well that juries can be unduly influenced by vivid (but notoriously unreliable) eyewitness testimony, ignoring or unduly discounting the far more reliable, but perhaps dull, testimony of actuaries and forensic scientists.⁵⁰⁰

d. Representativeness

Which outcome is more probable from six consecutive coin tosses — *HHHTTT* or *HTTHTH*? Which six-number lottery ticket would you rather have — *2 13 17 20 29 36* or *1 2 3 4 5 6*? In answer to the first question, most people pick the second sequence of coin tosses, though the mathematical probabilities of both sequences are identical.⁵⁰¹ When answering the second question, most people prefer the first lottery ticket, though once again the odds of any particular sequence of six numbers coming up are identical.⁵⁰² Kahneman and Tversky attribute this to the representativeness heuristic, and say that people often judge probabilities

498. See *infra* text accompanying note 591.

499. PAULOS, *supra* note 476, at 45.

500. Plous says:

The power of vivid information is widely appreciated by advertising executives, politicians, and many other 'professional persuaders.' One area in which vividness can be absolutely pivotal is a court of law. Robert Reyes, Bill Thompson, and Gordon Bower . . . illustrated this point in a study on the way that vivid information influences mock jury decisions.

PLOUS, *supra* note 124, at 127; see also Robert Reyes et al., *Judgmental Biases Resulting From Differing Availabilities of Arguments*, 29 J. PERSONALITY & SOC. PSYCHOL. 2 (1980). Russo & Schoemaker note that: "Lawyers now bring vividness into courtrooms by producing elaborate videotape documentaries in addition to traditional testimony. These videos reconstruct the accident or depict the daily struggle of the victim." RUSSO & SCHOEMAKER, *supra* note 104, at 87.

501. Tversky & Kahneman, *supra* note 248, at 7. In fact, the probability of *HHHHHH* is equal to the probability of each of the other 63 possible outcomes of 6 tosses — 1 in 64.

502. If the lottery numbers run to number 40, the odds of any particular 6-number combination being drawn are 1 in 3,838,380. PAULOS, *supra* note 476, at 54.

“by the degree to which A is representative of B, that is, by the degree to which A resembles B.”⁵⁰³

Representativeness is just one illustration of how much of our thinking tends to be associative in nature.⁵⁰⁴ While associative reasoning is not always incorrect, managers who make decisions based on superficial similarities may predict employees’ performance based on their similarity to other employees. They may also estimate a new product’s chance of success based on prior, similar products’ success, or assess the likelihood that a future event will occur by referring to the managers’ stereotypes of similar occurrences.⁵⁰⁵

Events seen as representative or typical of a class tend to be assigned a higher probability of occurrence (most of the 64 possible outcomes of six coin tosses *will* have alterations of heads and tails), so we believe that the *HTTHTH* outcome is more representative.⁵⁰⁶ If an outcome seems similar to the process that produced it, we have a similar tendency to see it as representative. The *HTTHTH* outcome looks more random, so we think it is a more likely result of a random process like coin tossing.⁵⁰⁷

We tend not to intuitively understand that “random events generally can seem quite ordered.”⁵⁰⁸ The failure to understand this aspect of probability, combined with our natural tendency to want to see patterns in the world around us,⁵⁰⁹ may lead us to “see” them in purely random

503. Tversky & Kahneman, *supra* note 248, at 4. Thomas Gilovich describes representativeness as “the reflexive tendency to assess the similarity of outcomes, instances, and categories on relatively salient and even superficial features, and then to use these assessments of similarity as the basis of judgment.” GILOVICH, *supra* note 203, at 18.

504. “In the language of modern cognitive psychology, *characteristics access schemas*, which may in turn access other characteristics (all through association).” DAWES, *supra* note 66, at 69 (original emphasis). Dawes gives the example of a college admissions committee scanning applications. One applicant looks to have all the sought after qualifications, but makes a critical spelling error. A linguistics professor says “Dyslexia,” and the committee puts the applicant on the waiting list. *Id.* The problem here, as Dawes notes, is that: “Misspelling *is* symptomatic of dyslexia; the schema is accessed. But, of course, there are many more of us who cannot spell well who are *not* dyslexic than who *are*.” *Id.* (original emphasis).

505. BAZERMAN, *supra* note 106, at 7.

506. Tversky & Kahneman, *supra* note 248, at 7.

507. *Id.*

508. PAULOS, *supra* note 476, at 59. A randomly generated sequence of *Xs* and *Os* will contain long runs of each character. *Id.* at 59-60; *see also* DAWES, *supra* note 66, at 82-83 (“[R]andom sequences contain ‘bunches’ of events . . .”); TALEB, *supra* note 168, at 156 (“[P]erfectly patternless [data] would be extremely suspicious and appear to be man-made”).

509. “We are predisposed to see order, pattern, and meaning in the world, and we find randomness, chaos, and meaninglessness unsatisfying. . . . As a consequence, we tend to ‘see’ order where there is none, and we spot meaningful patterns where only the vagaries of chance are

events.⁵¹⁰ Cognitive psychologists have replicated this phenomenon by giving randomly generated data to experts, who often devise cogent explanations for the patterns.⁵¹¹

Seeing nonexistent patterns is just one of the common misconceptions of chance that has been linked to the representativeness heuristic.⁵¹² Kahneman and Tversky believe that representativeness explains the widespread tendency for people to commit the Gambler's Fallacy⁵¹³ — the

operating." GILOVICH, *supra* note 203, at 9. Gilovich notes that this tendency may be explained by evolutionary psychology:

The tendency to impute order to ambiguous stimuli is simply built into the cognitive machinery we use to apprehend the world. It may have been bred into us through evolution because of its general adaptiveness: We can capitalize on ordered phenomena in ways that we cannot on those that are random. The predisposition to detect patterns and make connections is what leads to discovery and advance. The problem, however, is that the tendency is so strong and so automatic that we sometimes detect coherence when it does not exist.

Id. at 10.

510. Dawes says: "Yet another pernicious result of representative thinking is that it implies structure ('non-randomness') where none exists. This implication occurs because a representative view of randomness involves *too much* alternation — often to the point that we could make a clear statistical inference that the generating process is *not* random." Dawes, *supra* note 66, at 81. Dawes cites the belief that airplane crashes come in threes. *Id.* at 81-82. Of course, if you wait long enough you will eventually get three of any event.

511. PAULOS, *supra* note 476, at 60. Statisticians call the tendency to expect random events to look more random the clustering illusion. GILOVICH, *supra* note 203, at 16. Gilovich observes that:

[W]ith *hindsight* it is always possible to spot the most anomalous features of the data and build a favorable statistical analysis around them. However, a properly-trained scientist (or simply a wise person) avoids doing so because he or she recognizes that constructing a statistical analysis retrospectively capitalizes too much on chance and renders the analysis meaningless. To the scientist, such apparent anomalies merely suggest hypotheses that are subsequently tested on other, *independent* sets of data. Only if the anomaly persists is the hypothesis to be taken seriously.

Id. at 21. This, of course, is why good scientific practice requires advance specification of hypotheses before the data is consulted — "once we suspect that a phenomenon exists, we generally have little trouble explaining *why* it exists or what it means. People are extraordinarily good at ad hoc explanation." *Id.*

512. Tversky & Kahneman, *supra* note 248, at 7.

513. They observe that:

After observing a long run of red on the roulette wheel, for example, most people erroneously believe that black is now due, presumably because the occurrence of

“widespread belief in everyday life that luck will somehow even out.”⁵¹⁴ So, if a fair coin has been flipped ten times and has come up heads each time and you had to bet on the eleventh flip, should you bet tails, heads, or should you have no preference? Most people will prefer to bet tails, though the odds of coming up heads on the next flip remain unchanged.⁵¹⁵ We are not just talking about coin flips or *Xs* and *Os* here either. Personal⁵¹⁶ and corporate success tend to contain significant elements of luck,⁵¹⁷ though we admit that only where our failures are concerned. We tend to attribute all success to our intelligence, wisdom, and the like.⁵¹⁸

Kahneman and Tversky suggest that we expect too much alteration in random samples because we tend to think very small samples are representative of larger populations.⁵¹⁹ Even experienced research

black will result in a more representative sequence than the occurrence of an additional red. Chance is commonly viewed as a self-correcting process in which deviation in one direction induces a deviation in the opposite direction to restore the equilibrium. In fact, deviations are not corrected as a chance process unfolds, they are merely diluted.

Id.

514. PIRIE, *supra* note 134, at 83.

515. The coin has no memory. John Allen Paulos states it this way:

[M]ost people tend to think of deviations from the mean as being somehow bound by a rubber band: the greater the deviation, the greater the restoring force toward the mean. The so-called gambler's fallacy is the mistaken belief that because a coin has come up heads several times in a row, it's more likely to come up tails on its next flip (similar notions hold for roulette wheels and dice).

PAULOS, *supra* note 476, at 58. But real coins do not work that way — “the difference between the number of heads and the number of tails tends to get bigger as we continue to flip the coin, and the changes in lead from head to tail or vice versa tend to become increasingly rare.” *Id.*

516. “If even fair coins behave so badly in an absolute sense, it's not surprising that some people come to be known as ‘losers’ and others as ‘winners’ though there is no real difference between them other than luck.” *Id.*

517. Dawes observes that:

[T]he maxim that “nothing succeeds like success or fails like failure” *may* be true, phony “evidence” for it can be found in the bunching of successes in patterns of people or organizations with high probabilities of success, and of failures in those with high probabilities of failures — even when the pattern is of independent events.

DAWES, *supra* note 66, at 83.

518. See *supra* text accompanying notes 316-22 (discussing self-serving attributions).

519. Tversky & Kahneman, *supra* note 248, at 7.

psychologists seem to follow a law of small numbers “according to which even small samples are highly representative of the populations from which they are drawn,”⁵²⁰ rather than the statistically valid law of large numbers.⁵²¹ This insensitivity to sample size helps explain our tendency to commit the fallacy of hasty generalization,⁵²² which is “committed when one draws an inductive conclusion from too little evidence, or too small a sample.”⁵²³ For example: “We tried a woman as a district manager. She was terrible.”⁵²⁴

The problem with the previous example should be obvious, but the tendency toward hasty generalization is so fundamental, and so

520. *Id.* The researchers’ responses “reflected the expectation that a valid hypothesis about a population will be represented by a statistically significant result in a sample — with little regard for its size.” *Id.* at 7-8. As a result, the researchers “put too much faith in the results of small samples,” selected “samples of inadequate size,” and over-interpreted their findings. *Id.* at 8.

521. The law of large numbers “states simply that in the long run the difference between the probability of some event and the relative frequency with which it occurs approaches zero.” PAULOS, *supra* note 476, at 156. This means that “the average of a bunch of measurements of some quantity should approach the true value of the quantity as the number of measurements increases.” *Id.* This, of course, is the mathematical basis of statistical sampling, and it means that “[i]f the sample is large, we can have more confidence that its characteristics are close to those of the population as a whole.” *Id.* at 148.

522. “[W]hile logic requires a generalization from the universal to the particular . . . , but not from the particular to the universal, we are prone to do the exact opposite.” DAWES, *supra* note 66, at 98. To the extent that the tendency to see patterns in random data is explained by evolutionary factors, it is tempting to see a similar explanation here. The ancestor who went from “the last time a bush rustled it was because there was a predator lurking in it” to “the bush rustled — there must be a predator in it” probably still has some genes somewhere in the collective pool. The ancestor who said, “Well, there was a predator last time, but it doesn’t necessarily follow from that that every rustling bush contains a predator,” is probably lacking descendants (unless he or she was sufficiently fleet of foot to offset the logically correct, but dangerously slow, thought processes). See *infra* text accompanying note 567.

523. REESE, *supra* note 447, at 168. Hasty generalization is sometimes called converse accident. Irving Copi says:

In seeking to understand and characterize all cases of a certain kind, one can usually pay attention to only some of them. But those examined should be typical rather than atypical. If one considers only unusual or atypical cases and hastily generalizes to a rule that fits them alone, the fallacy committed is that of converse accident.

Id.

524. All of our male managers have been great successes, right? Or, consider this example: “The last guy we had running the Mexico City office was a Mexican national and he did one hell of a job. Ramon’s a native of Juarez, and I expect him to be equally good.” If being a Mexican national is all it takes to run the office, why not just pick someone at random off the street in Mexico City? We can probably find someone who will work for less than Ramon.

fundamentally wrong, that it warrants a bit more attention. Whenever we reason from specific events, experiences, or examples to general conclusions about the entire class of such events, experiences, or examples, we are engaging in inductive reasoning.⁵²⁵ We informally engage in this kind of reasoning every day when we try to make sense of our experience, and we engage in it formally when we do experimental research.⁵²⁶ The key concept to understand is that the most that inductive reasoning can ever tell us is that if our premises are true, our conclusion is probably true.⁵²⁷ The law of large numbers tells us that the degree of confidence we may have in our personal inductive conclusions is proportionate to the degree to which they are based on truly representative samples — samples that are sufficiently large and unbiased.⁵²⁸

However, all of our personal samples, in addition to being numerically small, are doubly biased. Our experience is biased⁵²⁹ and our recall of that biased experience is also biased.⁵³⁰ All of which leads Thomas Gilovich to say: “Perhaps the most general and important mental habit to instill is an appreciation of the folly of trying to draw conclusions from incomplete and unrepresentative evidence.”⁵³¹

525. In inductive reasoning “a general or universal conclusion is inferred from premisses [sic] all of which are particular propositions.” IRVING M. COPI, *INTRODUCTION TO LOGIC* 33 (4th ed. 1972). Copi gives this classic illustration of an inductive argument: “Socrates is human and is mortal. Xanthippe is human and is mortal. Sappho is human and is mortal. Therefore probably all humans are mortal.” *Id.*

526. DIANE F. HALPERN, *THOUGHT & KNOWLEDGE* 122 (3d ed. 1996).

527. “[W]ith inductive reasoning you can never *prove* that your conclusion or hypothesis is correct, but you can disprove it.” *Id.* This is sometimes called “the problem of induction,” and it is why Karl Popper argued that there are only two kinds of theories — those known to be false because they have been adequately tested and falsified, and those not yet known to be false, but still vulnerable to being disproved. TALEB, *supra* note 168, at 117.

528. “If the distribution of the [sampled] population is not too dispersed or varied, we can . . . have more confidence that the sample’s characteristics are representative.” PAULOS, *supra* note 476, at 148. The reason for concern is that “[s]amples that are not random can lead to very erroneous conclusions.” DAWES, *supra* note 66, at 315. Thus, if you want to accurately gauge public support for arts funding, you would not exclusively interview either patrons of World Wrestling Federation matches or subscribers to the local symphony.

529. Our everyday experience presents us with biased samples of information. GILOVICH, *supra* note 203, at 106.

530. “[T]he degree to which experience — either direct or vicarious — is available to us is influenced by many factors other than its actual occurrence. As we ‘dig in to our memories’ for instances of this or that, we come up with a biased sample.” DAWES, *supra* note 66, at 101; *see also supra* text accompanying notes 153-61 (discussing selective recall).

531. GILOVICH, *supra* note 203, at 187.

Representativeness may also explain another serious thinking problem most of us possess⁵³² — our tendency to make non-regressive predictions.⁵³³ We expect the children of tall fathers to resemble their fathers and we expect the next quarter's results to mirror the last quarter's results.⁵³⁴ When our favorite sports team or player makes the cover of *Sports Illustrated* and then has a poor performance, we attribute it to a jinx.⁵³⁵ What really explains these phenomena that we find so puzzling? One good candidate is a law of probability called regression to the mean, which is “the tendency for an extreme value of a random quantity whose values cluster around an average to be followed by a value closer to the

532. Gilovich says:

This tendency to make non-regressive predictions, like the clustering illusion, can be attributed to the compelling nature of judgment by representativeness. In this case, people's judgments reflect the intuition that the prediction ought to resemble the predictor as much as possible, and thus that it should deviate from the average to the same extent. The most representative son of a 6'5" father is one who is 6'5" himself — a height that is reached by only a minority of such fathers' sons.

Id. at 25.

533. Kahneman and Tversky say about regression to the mean that “[P]eople do not develop correct intuitions about this phenomenon. First, they do not expect regression in many contexts where it is bound to occur. Second, when they recognize the occurrence of regression, they often invent spurious causal explanations for it.” Tversky & Kahneman, *supra* note 248, at 10.

534. In reality, as Gilovich observes:

[V]ery tall parents tend to have tall children, but not as tall (on average) as they are themselves; high school valedictorians tend to do well in college, but not as well (on average) as they did in high school; a company's disastrous years tend to be followed by more profitable ones, and its banner years by those that are less profitable.

GILOVICH, *supra* note 203, at 23.

535. *See id.* at 26.

average or mean.”⁵³⁶ Regression simply reflects “the natural behavior of any random quantity.”⁵³⁷

Our failure to truly appreciate the role random variation plays in our experience partially explains the difficulty we have understanding regression effects, but that chance fluctuation is only one of the many reasons why regression may occur. This means that “[w]henver there is an imperfect prediction from one variable to another — *for whatever reason* — the best prediction is regressive; that is, the value predicted will on the average be closer to its mean than is the value from which it is predicted.”⁵³⁸ Business decisionmakers, and those engaged in evaluating their decisions, should be concerned about regression effects because those who fail to understand them will make certain predictable kinds of reasoning mistakes.⁵³⁹ People who misunderstand regression are likely to make counterproductive decisions and to find themselves unconsciously locked in to erroneous beliefs about reality that they nonetheless find indelibly confirmed by their experience.⁵⁴⁰ Note, however, that failure to

536. PAULOS, *supra* note 476, at 113. In other words, super-smart parents’ kids tend not to be as bright as their parents, super-short parents’ kids tend to be taller than their parents, most Great Men’s kids tend not to be great men (or women), and most great composers’ kids tend not to be great composers. As Paulos puts it:

Very intelligent people can be expected to have intelligent offspring, but in general the offspring will not be as intelligent as the parents. A similar tendency toward the average or mean holds for the children of very short parents, who are likely to be short, but not as short as their parents.

Id.

537. *Id.*

538. DAWES, *supra* note 66, at 116.

539. For example, subjects asked to predict sales in a group of department stores based on most recent per store sales data and an overall estimate of sales growth for the next year almost invariably tend to make non-regressive predictions. That is the easiest way to solve the problem, and we naturally tend to think that the future will look like the past. This is true despite repeated cautionary examples of boom and bust cycles and corporate overexpansion that should lead us to think otherwise. Subjects were told that there was a random factor in each store’s sales, and they would probably have made a more accurate prediction if they had picked a number somewhere between their straight-line projection and the projected average sales per store. For a discussion of these experiments, see BAZERMAN, *supra* note 106, at 24. A study of the actual sales forecasts of department store buyers produced similar results, finding that none of the buyers’ forecasts reflected the tendency (borne out by later sales figures) for sales to regress toward the mean, and that a sales forecasting model that incorporated regression to the mean made better projections than any of the professional buyers. See generally Anthony Cox & John Summers, *Heuristics and Biases in the Intuitive Projection of Retail Sales*, 24 J. MARKETING RES. 290 (1987).

540. Consider Kahneman and Tversky’s experience with flight instructors who disagreed with the psychologists’ assertion that positive reinforcement had been experimentally shown to be far

understand the effects of regression has far broader, and even more disturbing, implications. If we fail to understand the circumstances in which regression is to be expected, we will often make incorrect judgments about the effectiveness of any programs or actions that are taken in response to any crisis.⁵⁴¹

Representativeness also offers a partial explanation for decisionmakers' observed tendency toward the conjunctive/disjunctive event bias when engaging in scenario thinking.⁵⁴² Which of the following scenarios is more likely?

more effective than negative reinforcement. The instructors "noted that praise for an exceptionally smooth landing is typically followed by a poorer landing on the next try, while harsh criticism after a rough landing is usually followed by an improvement on the next try." Tversky & Kahneman, *supra* note 248, at 10. This led the instructors to conclude that "verbal rewards are detrimental to learning, while verbal punishments are beneficial, contrary to accepted psychological doctrine." *Id.* However, regression to the mean suggests that "an improvement will usually follow a poor performance and a deterioration will usually follow an outstanding performance, even if the instructor does not respond to the trainee's achievement on the first attempt." *Id.* Kahneman and Tversky concluded that:

Thus, the failure to understand the effect of regression leads one to overestimate the effectiveness of punishment and to underestimate the effectiveness of reward. In social interaction, as well as in training, rewards are typically administered when performance is good, and punishments are typically administered when performance is poor. By regression alone, therefore, behavior is most likely to improve after punishment and most likely to deteriorate after reward. Consequently, the human condition is such that, by chance alone, one is most often rewarded for punishing others and most often punished for rewarding them.

Id. at 10-11. Flight instructors are not the only group to fall prey to this problem. Thomas Gilovich notes that "[P]unishment has been the preferred reinforcer for the majority of parents in both modern society and in earlier periods." GILOVICH, *supra* note 203, at 27 (internal citations omitted).

541. "One disconcerting implication of such mislabeling is that measures designed to stem a 'crisis' (a sudden increase in crime, disease, or bankruptcies, or a sudden decrease in sales, rainfall, or Olympic gold medal winners) will, on the average, seem to have greater impact than there actually has been." NISBETT & ROSS, *supra* note 494, at 163. Similar errors in judgment are made by people who fail to understand that "[r]oughly 50% of all illnesses for which people seek medical help are 'self-limited' — i.e., they are cured by the body's own healing processes without assistance from medical science." GILOVICH, *supra* note 203, at 127-28. This means that "even a worthless treatment can appear effective when the base-rate of success is so high. When an intervention is followed by improvement, the intervention's effectiveness stands out as an irresistible product of the person's experience." *Id.* at 128.

542. See *supra* text accompanying notes 243-55 (discussing conjunctive/disjunctive events bias).

Scenario 1: An all-out nuclear war between the United States and the Soviet Union.

Scenario 2: A situation in which neither country intends to attack the other side with nuclear weapons, but an all-out nuclear war between the United States and Russia is triggered by the actions of a third country such as Iraq, Iran, Israel, or Pakistan.

Most people will pick the second, more detailed, but less probable⁵⁴³ scenario because it is more representative of how we imagine such an event occurring.⁵⁴⁴ This is important to note because cognitive psychologists believe that one of the ways we try to judge probabilities is by constructing a mental model of a situation. We then run the model to judge the probabilities. The easier it is for us to visualize a scenario, the greater our estimate of the probability of its occurrence.⁵⁴⁵ This tendency toward scenario construction is sometimes called the heuristic of simulation.⁵⁴⁶ The problem, of course, is that those who misread the future find themselves prepared for the future that they expected rather than the one that they ultimately receive, sometimes with disastrous results.⁵⁴⁷

Our mental models and cognitive schemas can also play a major role in another kind of fundamental thinking error, reasoning on the basis of erroneous assumptions.⁵⁴⁸

543. The more detail-producing events that must occur conjunctively to produce a particular scenario, the less likely the scenario is to occur. *See supra* text accompanying note 249.

544. *See* PLOUS, *supra* note 124, at 112. Dawes says that “[b]elief in the likelihood of scenarios tends to be associated with belief in the likelihood of their components; believable components yield believable scenarios (and often vice versa as well). DAWES, *supra* note 66, at 128. But why do we think in terms of particular event sequences? Dawes says “[c]oncrete conjunctions are *available to our imaginations* either because they correspond to stereotypic (representative) beliefs or because they are available through past experience.” *Id.* at 132.

545. KELLOGG, *supra* note 66, at 389. As Dawes puts it:

Compound probability violations of rationality are widespread, particularly in thinking about the future. We imagine the future, and the content of our imaginations tends to conform to our intellectual schemas. Thus, many of our scenarios are conjunctions of specific events that we believe are highly probable. Again such belief is fairly automatic.

DAWES, *supra* note 66, at 131-32.

546. KELLOGG, *supra* note 66, at 389.

547. “When we concentrate on scenarios, we develop a false sense of security by taking precautions against *them*.” DAWES, *supra* note 66, at 137.

548. For the pivotal role of accurate assumptions (premises) in good reasoning, see *supra* text accompanying notes 111-12.

2. *Mental Models*

Just about every decision, business or otherwise, that produces bad results can be described in terms of erroneous assumptions.⁵⁴⁹ One reason we make so many bad assumptions is that we are often unaware that we are making an assumption.⁵⁵⁰ This is especially true in the case of assumptions embedded in the knowledge structures we use to define our world and everything in it. Psychologists and others concerned with cognitive function use a variety of terms⁵⁵¹ to refer to these, including schemas,⁵⁵² scripts,⁵⁵³ thinking frames,⁵⁵⁴ and mental models.⁵⁵⁵ Phillip Johnson-Laird puts the problem this way:

You may say that you perceive the world directly, but in fact what you experience depends on a model of the world. Entities in the world give rise to the patterns of energy that reach the sense organs. The information latent in these patterns is used by the nervous system to construct a (partial) model of the entities that gave rise to the energy in the first place.⁵⁵⁶

549. Note that this is not the same as saying the decisions were caused by bad assumptions.

550. How many times, when something has gone wrong, have you found yourself saying to another person: "But *I* assumed that. . . .?"

551. "Knowledge representations are variously described in the literature as schemas, mental models, categories, classes, concepts, scripts, and frames." KELLOGG, *supra* note 66, at 166.

552. Kellogg says, "[i]n current theory, knowledge is represented mentally in a dynamic structure called a schema. These structures allow one to build mental models of the physical world. They also allow one to think about, reflect on, or imagine actual situations, possible situations, or even frankly impossible situations of pure fantasy." *Id.* at 19 (original emphasis). A schema, he says, "refers to a mental representation of knowledge about the world." *Id.* at 48. Most schemas "develop purely as a consequence of learning about our environments (*e.g.*, the schema for restaurants)." *Id.* at 19-20.

553. Scripts "are schemas that represent routine activities. They are usually sequential in nature and often involve social interactions." *Id.* at 170; *see also supra* text accompanying note 39.

554. Russo and Schoemaker use the term "thinking frame" to refer to the situation in which "someone uses the same mental framework to deal with many different problems." RUSSO & SCHOEMAKER, *supra* note 104, at 33. They note that "many metaphors become thinking frames," and that our frames are the result of our education, experience, and culture. *Id.* In cognitive psychology, the term "frame" is used much more narrowly to denote a schema that represents the physical structure of the environment. KELLOGG, *supra* note 66, at 170.

555. "Mental models are the images, assumptions, and stories which we carry in our minds of ourselves, other people, institutions, and every aspect of the world." SENGE ET AL., *THE FIFTH DISCIPLINE* FIELDBOOK 235 (paperback ed. 1994).

556. PHILLIP N. JOHNSON-LAIRD, *MENTAL MODELS* 402 (paperback ed. 1983); *see also* KELLOGG, *supra* note 66, at 20:

So, “the nature of the mind and its perceptual system exert a decisive effect on the world we perceive”⁵⁵⁷ and “our view of the world is causally dependent both on the way the world is and on the way we are.”⁵⁵⁸ It follows that “all our knowledge of the world depends on our ability to construct models of it.”⁵⁵⁹

Therefore, the problem is that in a very real way, our mental models are our world.⁵⁶⁰ They help us understand it and give it meaning,⁵⁶¹ and by

Schemas direct construction of all conscious experience in perceiving, remembering, imagining, and thinking. As you read the words on this page, you bring expectations about everything from the shapes of the letters to the meaning of the text and you actively construct your understanding of each word, sentence, and paragraph.

557. JOHNSON-LAIRD, *supra* note 556, at 402.

558. *Id.* On the latter point, Jonathan Evans says:

[E]rrors in thinking occur because of, rather than in spite of, the nature of our intelligence. In other words, they are an inevitable consequence of the way we think and a price to be paid for the extraordinary effectiveness with which we routinely deal with the massive information processing requirements of everyday life.

EVANS, *supra* note 72, at 111.

559. JOHNSON-LAIRD, *supra* note 556, at 402. Rue says: “One could say that learning takes place by the construction of schemas, or alternatively, that schemas are constructed by the process of learning.” RUE, *supra* note 80, at 93-94.

560.

[I]t is useful to think of a schema as a kind of informal, private, unarticulated theory about the nature of the events, objects, or situations that we face. The total set of schemata we have available for interpreting our world in a sense constitutes our private theory of the nature of reality.

David Rumelhart, *Schemata: The Building Blocks of Cognition*, in THEORETICAL ISSUES IN READING COMPREHENSION 37 (R.J. Spiro et. al. eds., 1980). It follows, then, that “[t]wo people with different mental models can observe the same event and describe it differently, because they’ve looked at different details.” PETER M. SENGE, THE FIFTH DISCIPLINE: THE ART & PRACTICE OF THE LEARNING ORGANIZATION 175 (paperback ed. 1994). Jonathan Evans states it this way: “[W]e think not about the world but about a *mental representation of the world*. The same external world situation which constitutes the ‘problem’ can be represented in many different ways, and the adequacy of the representation actually constructed may crucially affect the success of the problem solving which follows.” EVANS, *supra* note 72, at 111.

561. “Like a pane of glass framing and subtly distorting our vision, mental models determine what we see.” SENGE ET AL., *supra* note 555, at 235.

doing so they shape our actions.⁵⁶² By educating our attention⁵⁶³ and informing our interpretation of what we selectively perceive,⁵⁶⁴ they tend to become self-reinforcing,⁵⁶⁵ and thus resistant to change.⁵⁶⁶ But while we

562. "Our 'mental models' determine not only how we make sense of the world, but how we take action." SENGE, *supra* note 560, at 175. They affect what we do "because they affect what we see." *Id.*

563. Rue says that schemas function as both causes and consequences of perception, noting that "some investigators have suggested that the function of all learning is to educate a perceiver's attention." RUE, *supra* note 80, at 96. Here is an illustration in a context that will be familiar to most, if not all, readers:

As you walk into the building on campus containing your classroom, your mind unconsciously begins to anticipate the objects and events that will soon be seen and heard. These anticipations play a vital role in directing exploration of the environment. The steps you take, the way you turn your head, the objects you reach for and grasp, and the eye movements you make are directed by your expectations. The eyes can explore the environment in vision just as the hands do in haptic perception — the sense of touch.

KELLOGG, *supra* note 66, at 68 (citation omitted).

564. "The schemas provide expectations that help us learn, but also to miss on occasion events that do not fit with these expectations." KELLOGG, *supra* note 66, at 147. Rue puts it this way:

[T]he power of schemas to influence perception often goes well beyond the education of attention. Schemas provide a basis for inferences about what is actually perceived, sometimes in the absence of sensory data or even in spite of contradictory data. That is, schemas can function to provide missing data or to alter the data that are given. Perceptual events are not only directed by schemas, they are often constructed by them.

RUE, *supra* note 80, at 97. On the role of attention in selective perception, see also *supra* text accompanying notes 127-32.

565. Senge suggests that many of our mental models are the result of hasty, untested generalizations. SENGE, *supra* note 560, at 192 ("[W]e immediately 'leap' to generalizations so quickly that we never think to test them. The proverbial 'castles in the sky' describes our own thinking far more often than we realize."). These "untested generalizations," he says, can become "the basis for further generalizations." *Id.* at 193. On our tendency to make hasty generalizations, see also *supra* text accompanying notes 520-24.

566. Rue says:

An important general point to be made about our assumptive worlds is that they are generally resistant to change. Our assumptions about self and world become established and confirmed through years of experience, and they tend to serve us pretty well in our daily lives, so it takes some doing to get us to change them. This is especially the case as the schemas become more abstract and generalized, or as they become more definitive for one's sense of self-worth. Minor postulates in our assumptive worlds are readily modified under the force of countervailing

may be creatures that need mental models,⁵⁶⁷ just as we need heuristics,⁵⁶⁸ none of our models are likely to be completely accurate.⁵⁶⁹ Similarly, just as we are not naturally aware of the operation of heuristics,⁵⁷⁰ so too are we unaware of the existence and effects of our mental models.⁵⁷¹

evidence, but the global assumptions — that is, the most general or the most cherished — tend to hang on for dear life; and with good reason, for giving them up requires extensive repair to one's assumptive world. In other words, new information that challenges global schemas will ask for nothing less than new ways to organize information. Thus we see that such information will be unwelcome and will create intrapsychic conflict and anxiety.

RUE, *supra* note 80, at 169-70. Senge says: “[N]ew insights fail to get put into practice because they conflict with deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting.” SENGE, *supra* note 560, at 174; *see also* Greenwald, *supra* note 157, at 606 (noting a tendency toward “cognitive conservatism” or resistance to cognitive change). At this point, readers might consider stopping to examine their own reactions to some of the information presented in this Article for signs of personal resistance.

567. “Human beings cannot navigate through the complex environments of our world without cognitive ‘mental maps’; and all of these maps, by definition, are flawed in some way.” SENGE ET AL., *supra* note 555, at 235. Such maps were therefore an evolutionary necessity. Kellogg observes that: “Our perceptual systems have evolved, through natural selection, so as to pick up the information structure of the environment that is pertinent to survival.” KELLOGG, *supra* note 66, at 34. How did this work? He argues that “those of our ancestors who could draw on concrete experience and construct a usable mental model would have remained in the gene pool. Conclusions must be reached quickly and tell us what we need to know for survival.” *Id.* at 375.

568. *See supra* text accompanying notes 104-08.

569. Russo and Schoemaker argue that “[a]ll frames simplify and thus contain gaps, and they can keep you from seeing what is missing.” RUSSO & SCHOEMAKER, *supra* note 104, at 35. It follows that “[n]o single frame can capture a complex problem fully.” *Id.* at 36. Indeed, “[i]n many cases, no single frame can even capture a complex problem adequately.” *Id.* Senge says that “by definition, all [mental] models are simplifications.” SENGE, *supra* note 560, at 176. Even when our mental models are accurate representations of reality when formed, changed circumstances may render them inaccurate, as Senge demonstrates with this example:

For decades, the Big Three of Detroit believed that people bought automobiles on the basis of styling, not for quality or reliability. Judging by the evidence they gathered, the automakers were right. Surveys and buying habits consistently suggested that American consumers cared about styling much more than about quality. These preferences gradually changed, however, as German and Japanese automakers slowly educated American consumers in the benefits of quality and style — and increased their share of the U.S. market from near zero to 38 percent by 1986.

Id. at 175-76.

570. *See supra* text accompanying notes 115-16.

571. *See* RUSSO & SCHOEMAKER, *supra* note 104, at 35 (“Without realizing it, we tend to see reality through one frame at a time.”). “Everyone unwittingly develops a personal theory of reality

When the gap between the world as it is and the world as it is represented to us in our mental models becomes too large, sub-optimal decisions are the likely result.⁵⁷² When those decisions are made by the leaders of a major company, industry, or nation, the negative consequences are unlikely to be confined to the decisionmakers. It is therefore critically important that we make sure that our mental models are conscious and open to revision in the face of changing circumstances and contradictory evidence.⁵⁷³

V. WHAT SHOULD BE DONE TO BRIDGE THE GAPS?

A. Introduction

The foregoing sections have identified and sought to provide explanations for several crucial problems afflicting human reasoning. Most fundamental, perhaps, is the gap between reality and our perceptions of it.⁵⁷⁴ But following close behind must be the gap between our current moral status and our potential as moral beings.⁵⁷⁵ Other important gaps exist between the rational, objective behavioral model currently assumed

that includes a self-theory and a world-theory. A personal theory of reality does not exist in conscious awareness, but is a preconscious conceptual system that automatically structures a person's experience and directs his or her behavior." Seymour Epstein, *Controversial Issues in Emotion Theory*, in REVIEW OF PERSONALITY AND SOCIAL PSYCHOLOGY: EMOTIONS, RELATIONSHIPS, AND HEALTH 65 (P. Shaver ed., 1984), cited in RUE, *supra* note 80, at 169.

572. Senge says that "entire industries can develop chronic misfits between mental models and reality." SENGE, *supra* note 560, at 176. He gives this example of how unexamined mental models contributed to the U.S. auto industry's failure to successfully meet the Japanese challenge:

The problems with mental models arise when the models are tacit — when they exist below the level of awareness. The Detroit automakers didn't say, "We have a *mental model* that all people care about is styling." They said, "All people *care* about is styling." Because they remained unaware of their mental models, the models remained unexamined. Because they were unexamined, the models remained unchanged. As the world changed, a gap widened between Detroit's mental models and reality, leading to increasingly counterproductive actions.

Id.

573. "The key to sound decision-making is: Know your own frames." RUSSO & SCHOEMAKER, *supra* note 104, at 37.

574. See *supra* text accompanying notes 82 & 560-72.

575. See *supra* note 1 and accompanying text.

in business ethics⁵⁷⁶ and the realities of human reasoning behavior.⁵⁷⁷ Important gaps also exist between the abstract principles of modern ethics theory and the ways in which people reason about moral issues.⁵⁷⁸ Similarly prominent are the chasms between moral principles and individual motivation,⁵⁷⁹ and between the strictures of critical thought and the individual's desire to think critically.⁵⁸⁰

The picture of human cognition that emerges from an understanding of these gaps has significant implications for, among other things,⁵⁸¹ our understanding of the sources of unethical and illegal behavior, and the way

576. See *supra* text accompanying notes 22-24 & 49-63. The same assumption, and therefore the same gap, exists between the rational actor model assumed by business regulation and the realities of human decisionmaking behavior. See *supra* text accompanying note 19.

577. See *supra* text accompanying notes 63-89.

578. See *supra* text accompanying note 66; see also *supra* text accompanying note 33 (discussing the gap between the general and the particular and the concern about the possibility of personal legislation when applying such principles); *supra* text accompanying note 53 (regarding the gap between "internal" moralities and the treatment of outsiders).

579. See *supra* text accompanying note 32.

580. See *supra* text accompanying notes 62 & 67.

581. It seems reasonable to assume, for example, that an effective moral theory should be informed by an accurate model of human nature. See, e.g., RACHELS, *supra* note 30, at 180 (observing that a "morality without hubris" would "first of all, be sensitive to the facts about human nature"):

If moral philosophy is to have a sound factual basis, it is to be found in the facts about human nature and nowhere else. If that basis is denied us by a denial of human nature, the only other alternative lies in the extreme rationalism of Immanuel Kant, which proceeds without any consideration of the facts of human life and with no concern for the variety of cases to which moral prescriptions must be applied in a manner that is flexible rather than rigorous.

MORTIMER ADLER, *TEN PHILOSOPHICAL MISTAKES* 157 (paperback ed. 1987). Nagel observes:

[E]ven though morality has to emerge from an impersonal standpoint, that standpoint must take into account the kind of complex beings for whom it is being devised. The impersonal is only one aspect of their nature, not the whole of it. What it is reasonable to ask of them, and what is impersonally expected of them, should reflect this. We must so to speak strike a bargain between our higher and lower selves in arriving at an acceptable morality.

NAGEL, *supra* note 423, at 202. From an evolutionary perspective, the nature of the conflict and the bargain that needs to be struck is "between selfish and altruistic motivation, between pleasure-seeking and normative behavior, and between individual and group interests." WRIGHT, *supra* note 1, at 322 (quoting Randolph Nesse & Alan Lloyd, *The Evolution of Psychodynamic Mechanisms*, in JEROME H. BARKOW ET AL., *THE ADAPTED MIND: EVOLUTIONARY PSYCHOLOGY AND THE GENERATION OF CULTURE* 614 (1992)).

in which applied ethics instruction should be done.⁵⁸² It is to these matters that we now turn.

B. Behavioral Implications

Business decisionmakers suffering from the cognitive maladies discussed in the previous sections are unlikely to be able to effectively discharge their duties to shareholders⁵⁸³ and to the numerous other constituencies that are dependent upon the economic health of the enterprises that they lead.⁵⁸⁴

582. See discussion, *infra* text accompanying notes 603-73 (necessity of debiasing); see also discussion, *infra* text accompanying notes 674-725 (regarding importance of emphasis on character development).

583. Alan Goldman sets out the source of the duty to shareholders succinctly:

We may think of stockholders here as occupying a position relative to managers analogous to the positions of lawyers' clients, doctors' patients, and politicians' constituencies. It is primarily the stockholders' interests that the manager is advancing directly when he attempts to maximize profits, although the interests of employees, including his own interests, are also connected to the financial health of the corporation.

ALAN H. GOLDMAN, *THE MORAL FOUNDATIONS OF PROFESSIONAL ETHICS* 231 (paperback ed. 1980). Few, if any, have argued that managers have no duties to shareholders. The existence and extent of managerial duties to persons other than shareholders has engendered voluminous debate. For a relatively concise, yet exceedingly thorough, exposition of the arguments on this issue, see *id.* at 230-82.

584. Things that have a significant negative impact on the firm, whether they are regulatory fines, litigation losses, or simply lower profits from bad business decisions, can have negative effects that extend beyond a company's shareholders and employees. When market conditions allow firms to "pass on" such losses to consumers, they will do so. See, e.g., Metzger, *supra* note 17, at 412. When they do not, a company's creditors, suppliers, and home communities (those economically dependent upon the corporation's continued existence) are likely to feel the pinch. *Id.* at 413. The potential for such "spillover" effects is sometimes advanced as an explanation for courts' and legislatures' reluctance to impose sufficiently large fines on corporations to assure deterrence. *Id.* at 414.

Decisionmakers who unconsciously process information selectively,⁵⁸⁵ who are overconfident,⁵⁸⁶ or who engage in wishful or aversive thinking will only achieve desirable outcomes accidentally.⁵⁸⁷ Those who seek evidence consistent with their beliefs⁵⁸⁸ and are unjustifiably critical of evidence that is inconsistent with their beliefs are likely to repeat their mistakes⁵⁸⁹ and fail to recognize changing circumstances that dictate changes in their decisions and strategies. Hindsight bias may give corporate leaders an overconfident view of their predictive abilities, with unfortunate results for their organizations and all who depend upon them.⁵⁹⁰

Managers with a defective intuitive understanding of probability are likely to be poor risk estimators,⁵⁹¹ and those who are in the grip of loss

585. See discussion, *supra* text accompanying notes 96, 111, & 115; see also TREVINO & NELSON, *supra* note 24, at 124 for the following example of confirmation bias in operation:

If you're a pharmaceutical executive who wants to believe that a new product is safe, you're more likely to ask your managers something like, "Does it meet all FDA regulations?" In this case, the executive expects and will probably get a confirming response and a quick decision to go ahead with the drug can be made. However, the meeting might take a very different turn if the executive asks, "What health and safety problems are still possible with this drug?"

586. See discussion, *supra* text accompanying notes 182-202; see also TREVINO & NELSON, *supra* note 24, at 123-24 (you may stop looking for the facts too soon "because you think you already have all the facts you need" and "most people . . . are overconfident about their knowledge of the facts"). Messick and Bazerman observe that overconfidence results in a "reluctance to learn more about a situation or problem before acting" and when "coupled with flawed theories about the world or about other people, poses serious threats to rational and ethical decision making." Messick & Bazerman, *supra* note 18, at 19.

587. See discussion, *supra* text accompanying notes 133-37.

588. See discussion, *supra* Part III.B.2.d (discussing confirmation bias); see also *supra* text accompanying notes 217-220 (showing the impact on confirmation bias on managers' ability to do objective personnel evaluations); see *supra* text accompanying note 222 (showing the role of confirmation bias in the formation and persistence of prejudice).

589. See *supra* Part III.B.2.e (discussing belief bias).

590. "By encouraging us to exaggerate the extent of our knowledge, this bias can make us overconfident in our predictive ability. Perception of a surprise-free past may portend a surpriseful future." Baruch Fischhoff, *Debiasing, in* JUDGMENT UNDER UNCERTAINTY, *supra* note 110, at 422, 428.

591. See *supra* Part III.B.2.f (discussing conjunctive/disjunctive events bias); see also Messick & Bazerman, *supra* note 18, at 10 (observing that managers may tend to ignore the possibility of low probability events occurring and underestimate the risk that the public may find out about their decisions and the reasons for them); see also TREVINO & NELSON, *supra* note 24, at 124 (one way people simplify their decisions is by reducing the number of consequences they consider; they are especially likely to ignore consequences thought to affect only a few people); see *supra* text accompanying notes 468 (discussing availability), 469-74 (discussing availability & simulation),

aversion will expose their organizations to irrational risks (and greater losses) to avoid suffering a “loss.”⁵⁹² Leaders in the grip of positive illusions may have a distorted view of their personal competence as business decisionmakers,⁵⁹³ as well as of their personal integrity.⁵⁹⁴ They may therefore underestimate their vulnerability to the risks that they do perceive.⁵⁹⁵

Organizational leaders who are unaware of their mental models or key assumptions are doomed to reach questionable conclusions, even if their reasoning based on those models or assumptions is otherwise impeccably logical.⁵⁹⁶ Similarly, decisionmakers who fail to understand the impact of problem frames on their solutions⁵⁹⁷ cannot be expected to make optimal decisions for the organizations in their charge.

This is, of course, not to say that all instances of unethical business behavior are explainable solely in terms of problematic cognitive processes.⁵⁹⁸ Many (if not most) ethically problematic business decisions probably involve elements of moral fragility as well as cognitive impairment. The central point here is simply that the realities of human cognition are such that they are likely to hamper the decisionmaking capacity of those persons who are intentionally ethical. If rationality, objectivity, impartiality, and accurate factual perception are necessary

& 542-47 (discussing simulation). One particularly important impact has to do with the vividness and availability of immediate consequences versus those that are uncertain and downstream. As Messick and Bazerman note, “The consequences that we face tomorrow are more compelling than those we must address next week or next year.” Messick & Bazerman, *supra* note 18, at 11.

592. See *supra* text accompanying notes 348-56 (discussing loss aversion). Nor can managers suffering from self-serving notions of fairness be expected to understand when settling a dispute is the most rational course for their organization. See *supra* text accompanying note 317.

593. See *supra* text accompanying notes 275-98.

594. See *supra* text accompanying notes 299-315. Trevino and Nelson observe:

[I]f your thoughts about yourself are controlled by illusion rather than reality, how can you make a good decision about your integrity? The basic idea here is that individuals prefer to think positively about themselves. They're likely to unconsciously filter and distort information in order to maintain the positive self image they prefer.

TREVINO & NELSON, *supra* note 24, at 126.

595. See *supra* text accompanying notes 263-74; see also Messick & Bazerman, *supra* note 18, at 18.

596. See *supra* text accompanying notes 548-73. Messick and Bazerman argue that executives' theories about the way the world works, about what other people are like, and about themselves may be flawed, leading to problematic decisions. Messick & Bazerman, *supra* note 18, at 9-10.

597. See *supra* text accompanying notes 357-61.

598. See *supra* text accompanying note 18.

conditions of effective moral decisionmaking,⁵⁹⁹ then the reality of human cognitive limitations suggests that such decisionmaking will often be impossible.⁶⁰⁰ If there is such a gap between actual cognitive processes and those prescribed by philosophical approaches to moral reasoning,⁶⁰¹ then one approach to narrowing it would be to move human decision processes closer to the rational, objective model.⁶⁰² It is to that possibility that we now turn.

C. Debiasing

Max Bazerman says that three basic things are necessary to improve the quality of our decisionmaking:

1. A vision of how a rational decisionmaking process looks.⁶⁰³
2. Knowledge of the pitfalls to which all human reasoning is subject, so that we can “unfreeze” our uncritical and biased thought patterns.⁶⁰⁴
3. Practice in thinking critically so that we “refreeze” our thinking in unbiased ways.⁶⁰⁵

Robyn Dawes argues that “[c]hoosing wisely is a *skill*, which like any other skill can be improved,”⁶⁰⁶ and that the key to thinking improvement

599. See discussion, *supra* text accompanying notes 50-66.

600. See TREVINO & NELSON, *supra* note 24, at 94 (observing that their step approach to making ethical decisions assumes “a rational ethical decision making process.”). They acknowledge, however, that studies of decisionmaking have found “that actual human decision making falls short of this rational ideal.” *Id.* People are intendedly rational in their decisionmaking, “but for a variety of reasons they’re not.” *Id.* They observe that “psychologists have discovered a number of weaknesses and biases in how people make decisions,” some of which “have direct implications for ethical decision making in organizations.” *Id.*

601. See *supra* text accompanying notes 49-66.

602. See discussion, *supra* text accompanying notes 22-24.

603. BAZERMAN, *supra* note 106, at 3 (noting that we must “identify the components of the decision-making process that require judgment if we are to understand judgment”).

604. *Id.* at 168-69.

605. *Id.* at 169-70; see also EVANS, *supra* note 72, at 118 (stating that “[t]he aim should be to replace faulty intuitions with more accurate ones whilst still operating at the level of implicit thought processes.”).

606. DAWES, *supra* note 66, at 2. Diane Halpern has argued that enhancement of students’ critical thinking skills should be “the primary objective of higher education.” Diane F. Halpern, *Teaching Critical Thinking for Transfer Across Domains*, 53 AM. PSYCHOLOGIST 449, 450 (1998). She argues that “[t]here are numerous, qualitatively different types of evidence showing that students can become better thinkers as a result of appropriate instruction.” *Id.* at 451. For other

lies with shifting from intuitive, automatic thinking processes to more controlled thinking processes.⁶⁰⁷ Many authorities agree with Bazerman that knowledge of the kind of thinking errors that humans tend to make is a necessary first step in the quest to reduce our error rates.⁶⁰⁸ Many also agree with him about the importance of practice in elevating the general quality of human thought processes.⁶⁰⁹

However, there are many reasons to suppose that any quality gains in human reasoning skills will be hard-won. Perhaps the most fundamental of these is the inherent difficulty in convincing humans to accept that their reasoning skills are less than adequate.⁶¹⁰ We are wedded to our current

successful studies, see P. Kosonen & P.H. Winne, *Effects of Teaching Statistical Laws on Reasoning About Everyday Problems*, 87 J. EDUC. PSYCHOL. 33 (1995); Darrin R. Lehman & Richard E. Nisbett, *A Longitudinal Study of the Effects of Undergraduate Training on Reasoning*, 26 DEVELOPMENTAL PSYCHOL. 495 (1990); Darrin R. Lehman et al., *The Effects of Graduate Training on Reasoning: Formal Discipline and Thinking About Everyday Life Events*, 43 AM. PSYCHOLOGIST 431 (1988); Richard E. Nisbett et al., *Teaching Reasoning*, 238 SCIENCE 625 (1987)).

607. DAWES, *supra* note 66, at 3-7.

608. See, John S. Hammond et al., *The Hidden Traps in Decision Making*, HARV. BUS. REV., Sept.-Oct. 1998, at 47, 58 (observing that “the best protection against all psychological traps . . . is awareness. Forewarned is forearmed. Even if you can’t eradicate the distortions ingrained into the way your mind works, you can build tests and disciplines into your decisionmaking process that can uncover errors in thinking before they become errors in judgment.”); see also GILOVICH, *supra* note 203, at 186 (stating that “[t]o specify the mechanisms that give rise to erroneous beliefs is to tacitly identify what is necessary to prevent them.”); GLOVER, *supra* note 28, at 403 (“To see how actions can be severed from the sense of moral identity can be a warning to guard against such disconnection.”); PLOUS, *supra* note 124, at 255 (“In some cases, simply learning about a potential problem is enough to avoid it.”); SUTHERLAND *supra* note 30, at 322 (finding that one should call people’s attention to errors); see *supra* text accompanying note 115 (quoting Piattelli-Palmarini).

609. “The necessary principles appear to be easy to understand and to learn; the critical task is to get them so firmly entrenched that they are readily applied to everyday life.” GILOVICH, *supra* note 203, at 186; see also EVANS, *supra* note 72, at 117 (stating that “[i]t is important to consider experience-based training as an alternative to instructional training, especially since this may be more effective in developing implicit thought processes.”); Halpern, *supra* text accompanying note 606, at 454-55 (“Beliefs that have been constructed over many years and the habits of mind that developed along with them will take multiple learning experiences, distributed over time and settings, before they will be successfully replaced with new ways of thinking and knowing about the world.”).

610. For example, Dawes, when addressing some of the external decision aids that have been shown to improve decision quality, observes that “[t]he greatest obstacle to using them may be the difficulty of convincing ourselves that we should take precautions against ourselves.” DAWES, *supra* note 66, at 143. Later, she notes that “[t]he conclusion that random or unit weights outperform global judgments of trained experts is not a popular one with experts, or with people relying on them.” *Id.* at 215; see generally Schoemaker & Russo, *supra* note 433 (discussing decision aids).

decision processes,⁶¹¹ which we tend to think are quite valid⁶¹² and therefore in no need of improvement.⁶¹³ As one prominent authority on bias said:

[T]he evidence is clear that we often hold false beliefs about our own cognitive processes. In most cases, these false beliefs are self-flattering. We are convinced of the rationality of our reasoning, highly adept at constructing plausible explanations for our decision behaviour, too confident that our judgements are correct, convinced that we could have predicted uncertain matters after the event, and so on.⁶¹⁴

Self-knowledge may indeed be the most elusive variety of knowledge where human beings are concerned. Physician and novelist Walker Percy once said that, “unlike any other organism, man is subject to the wildest and most erratic fluctuations in his own perception of himself”⁶¹⁵ because:

[T]he self can perceive, formulate, symbolize everything under the sun except itself. A self stands in the dead center of its universe, looking out. The paradox of consciousness is that the stranger we meet on the street and glance at for a second or two we see more clearly than we shall ever see ourselves.⁶¹⁶

611. See BAZERMAN, *supra* note 106, at 30 (finding that heuristics are central to our current judgment processes and serving as cognitive anchors).

612. “Naive and flawed reasoning practices, such as illusory correlations . . . are resistant to change because they make sense to the individual, and for the most part, the individual believes that they work.” Halpern, *supra* note 606, at 449. For example, she notes that “everyone believes that their personal experiences and those of people whom they trust are as valid and reliable as inferences made from large-scale studies.” *Id.* at 450. Additionally, she finds that this is true even for people who should know better because “[f]aceless statistical averages gleaned from large samples are no match for vivid examples that are experienced personally. Even statistically astute psychologists, who quickly criticize experimental designs with small sample sizes (especially when they do not like the conclusions), willingly accept their own personal experiences as valid and sufficient data.” *Id.*

613. For example, in noting our tendency to apply decision criteria inconsistently, Schoemaker and Russo observe that we fail to realize how “memory failings, mental limits, distraction, and fatigue” can influence our judgments. Schoemaker & Russo, *supra* note 433, at 10. We therefore think we are consistent and do not need to check ourselves for consistency. *See id.*

614. EVANS, *supra* note 72, at 109.

615. WALKER PERCY, *SIGNPOSTS IN A STRANGE LAND* 126 (1991).

616. *Id.* at 126-27; *see also* NAGEL, *supra* note 423, at 39 (stating that “[o]ur idea of ourselves is one whose exact extension is determined in part by things we don’t necessarily know simply in virtue of, or as a condition of, having the concept: our true nature and the principle of our identity may be partly hidden from us.”); *see generally* DENNETT, *supra* note 129.

However, even when the desire to improve our thinking skills is present,⁶¹⁷ there remains a reason to doubt the effectiveness of our attempts at instruction. Since the roots of many of our thinking problems are found in the nature of our intelligence,⁶¹⁸ and since many of the processes we are concerned with are preconscious,⁶¹⁹ there are grounds for concern about how effective normal verbal instruction could ever be in countering them.⁶²⁰ Biases that result solely from a lack of understanding of underlying principles of a reasoning task⁶²¹ should be responsive to training.⁶²² But even an “[e]xplicit understanding of the logical essentials of a task does not guarantee successful reasoning and freedom from bias.”⁶²³

Some types of substantive training do appear to improve students’ abilities to perform certain kinds of reasoning tasks.⁶²⁴ Prominent among

617. Lack of self-knowledge may not be the only reason for its absence. *See supra* text accompanying note 62.

618. *See supra* text accompanying note 558; *see also* DAWES, *supra* note 66, at 142 (observing that “it is impossible for us to think in a way we do not think.”). As a result, Dawes notes that “[a]ttempts to train people not to think representatively and not to be influenced by availability and other biases have not been very successful.” *Id.*

619. “Much of our thinking is intuitive, implicit, heuristic even when applied to explicitly defined problems. Biases are able to flourish because we are so little aware of the nature of our thinking or at least of crucial steps in it.” EVANS, *supra* note 72, at 109; *see also* Hammond et al., *supra* note 608, at 47 (stating that “[w]hat makes all these traps so dangerous is their invisibility.”); *see supra* text accompanying notes 115-16 & 124-32.

620. “One practical implication of the proposal that biases result from unconscious processes is for approaches to *debiasing*. . . . [A] bias resulting from an explicitly held and consciously applied strategy might be expected to be correctable by verbal instruction, whereas one resulting from a preconscious heuristic might require a different approach.” EVANS, *supra* note 72, at 91. Evans notes: “[T]he processes underlying complex reasoning tasks are largely non-verbal, intuitive and implicit. Since verbal instruction presumably has its major impact on verbal and explicit thought processes, one might well expect that formal instruction in logical principles and so on will not prove very effective.” *Id.* at 115; *see also* TALEB, *supra* note 168, at 6 (“Delivering advice assumes that our cognitive apparatus rather than our emotional machinery exerts some meaningful control over our actions. . . . [M]odern behavioral science shows this to be completely untrue.”).

621. One area where this may be true is a mistaken understanding about what constitutes a proper statistical inference. EVANS, *supra* note 72, at 112.

622. *Id.* at 114.

623. *Id.* at 109. Evans notes that “in some cases biases arise because subjects fail to apply understanding of a principle which they possess. In this case, reinforcing the teaching of the theory involved is not likely to be helpful.” *Id.* at 114. Instead, “error patterns are determined far more strongly by the characteristics of the task than by any general factor of reasoning ability that the individual subject brings to it.” *Id.* at 115. All of this leads Evans to conclude that although the “general view amongst psychologists and educationalists interested in the problem appears to be that it is possible to teach critical thinking as a general skill,” the evidence “must cast doubt upon this assumption.” *Id.* at 114.

624. Richard Nisbett notes:

these are training in statistics⁶²⁵ and economics.⁶²⁶ Training in psychology and medicine appears to have some positive effects on reasoning,⁶²⁷ as

Formal education beyond secondary school produces dramatic differences in people's use of different rule systems. It is no exaggeration to say that people who have substantial knowledge of statistics, or of economics, view the world very differently from those who do not. All sorts of mundane problems are understood differently by people with differing levels of education in the relevant rule system.

Richard E. Nisbett, *Reasoning, Abstraction, and the Prejudices of 20th-Century Psychology*, in RULES FOR REASONING 1, 6 (Richard E. Nisbett ed., 1993). See *supra* text accompanying notes 621 & 624.

625. "It has been demonstrated that learning statistics helps people deal rationally with some problems drawn from everyday life." SUTHERLAND, *supra* note 30, at 322; see *supra* text accompanying notes 113-14. One review of various studies of the effects of training on reasoning concludes that people can be taught "by traditional statistics courses and quicker methods" to effectively use probabilistic reasoning in formal problem-solving settings. Richard E. Nisbett et al., *Improving Inductive Inference*, in JUDGMENT UNDER UNCERTAINTY, *supra* note 110, at 459. The authors do acknowledge, however, that "[t]o what degree there is carryover to the actual judgments of everyday life, which teaching techniques are most effective, and, what the best inductive principles and methods to teach are — these are important questions we have only begun to ask." *Id.* Even in an experimental context, there appear to be some limits to the benefits conferred by statistical training. Tversky and Kahneman observe that "[a]lthough the statistically sophisticated avoid elementary errors, such as the gambler's fallacy, their intuitive judgments are liable to similar fallacies in more intricate and less transparent problems." Tversky & Kahneman, *supra* note 248, at 18.

626. Sutherland, discussing an experiment involving professors at the University of Michigan, notes that twice as many economists avoided sunk-cost traps as biology or arts professors, and that the better the professors were at answering such questions, the higher their salaries were (adjusted for age). SUTHERLAND, *supra* note 30, at 324. Sutherland draws some comfort from this:

In other words economists, who are presumably no cleverer than other professors but whose subject gives them a better knowledge of how to take rational decisions, act more rationally in at least some aspects of their everyday life. This would appear to be direct evidence that a knowledge of the theory of decision-making can improve the rationality of ordinary decisions.

Id.

627. *Id.*; see also GILOVICH, *supra* note 203, at 190 observing that:

Exposure to the "probabilistic" sciences may be more effective than experience with the "deterministic" sciences in teaching people how to evaluate adequately the kind of messy, probabilistic phenomena that are often encountered in everyday life. Probabilistic sciences are those such as psychology and economics that deal mainly with phenomena that are not perfectly predictable, and with causes that are generally neither necessary nor sufficient.

Gilovich also discusses a study of statistical and methodological reasoning in which the subjects were graduate students in psychology, chemistry, medicine, and law. Gilovich observed no initial

does training in law.⁶²⁸ Surprisingly, training in logic does not appear to have the benefits one might expect.⁶²⁹ Students exposed to logic training

differences in test scores across disciplines, but students who had two years of training in psychology had seventy percent difference in test scores. The same period in medical school produced a twenty-five percent improvement, while no improvement occurred in the case of law and chemistry students. *Id.* at 190-91 (discussing Darrin R. Lehman et al., *The Effects of Graduate Training on Reasoning: Formal Discipline and Thinking About Everyday-Life Events*, 43 AM. PSYCHOLOGIST 431-42 (1988)). The authors of the study in question explained the positive effects of training in psychology and medicine by noting that training in both disciplines involves thinking about sample sizes, control groups, complex situations where several causal factors may be at work, uncertainties in diagnosis, and other things that can have positive effects on one's ability to work everyday reasoning problems. Lehman et al., *The Effects of Graduate Training on Reasoning: Formal Discipline and Thinking About Everyday-Life Events*, in *RULES FOR REASONING*, *supra* note 624, at 315, 333-34.

628. Legal training's benefits also appear to be limited to certain kinds of arguments. Sutherland observes that:

The only other subject that has been shown to assist is law. Although it does not help improve arguments based on statistics, it increases the number of causal-type arguments that students produce, but as befits future lawyers, the increase is limited entirely to arguments in favour of the hypothesis being entertained.

SUTHERLAND, *supra* note 30, at 325. In answering the question, why is the effect of legal training limited, Lehman, Lempert, and Nisbett conclude:

Training in the law does not stress rules for dealing with variability or uncertainty in causal relations, and so it is not surprising that it produces no improvement in the ability to apply the statistical and methodological rules of the probabilistic sciences to either scientific studies or everyday-life events. Legal training does provide substantial instruction and drill in the logic of permissions and obligations, which can be used to solve problems in the conditional, and it provides additional instruction and drill for other contractual relations, particularly those in which an action must be taken if and only if some other event occurs, which can be used to solve biconditional problems.

Lehman et al., *The Effects of Graduate Training on Reasoning: Formal Discipline and Thinking About Everyday-Life Events*, in *RULES FOR REASONING*, *supra* note 624, at 334.

629. See, e.g., Richard E. Nisbett et al., *Teaching Reasoning*, in *RULES FOR REASONING*, *supra* note 624, at 306 (finding "no evidence" that teaching deductive logic improves reasoning in everyday tasks and "some evidence" that it does not). Evans notes one positive effect that can flow from training in informal logic:

When subjects focus on the conclusion [of an argument] they tend to exhibit belief bias and bring in extraneous information to support their decisions. Subjects who indicate they are considering the premises are more likely to give logical decisions and less likely to show belief bias, especially if they appear to be reasoning in a premise to conclusion direction.

still proved vulnerable to confirmation bias⁶³⁰ and other thinking mistakes.⁶³¹ Particularly depressing are the cases of Nazi philosophers, such as Alfred Baumlér and Martin Heidegger, whose extensive training in philosophy failed to prevent them from embracing Nazism's irrationalities.⁶³² Even Gottlob Frege, whose work made foundational contributions to the philosophy of mathematics and to logic, was not immune.⁶³³ His case leads Jonathan Glover to observe:

There is the hope that the philosophical habit of exposing assumptions to clear and rational thought may make it harder for prejudices and unfounded beliefs to survive. For those of us who have that hope, the story of Frege is disheartening. It shows how even superb work in philosophy can leave the rest of a person's thinking unaffected.⁶³⁴

Upon further reflection, perhaps it should not surprise us that there are real limits to our ability to attain the ideal of perfect rationality and objectivity.⁶³⁵ If the source of the problem is indeed central to the very nature of human cognition, then Kant was indeed right — the human

EVANS, *supra* note 72, at 74. Also, there are some kinds of reasoning rules that appear to offer some hope for improving reasoning:

We think that a major class of such rules are those that people have induced, though only partially, in the course of their daily existence. Rules about assessing causality, rules for generalizing, rules for determining argument validity, and rules for assessing the probativeness of evidence are the kinds of rules that people must have in some measure in order to live effectively in the world.

Nisbett et al., *Teaching Reasoning*, in RULES FOR REASONING, *supra* note 624, at 335.

630. See *supra* text accompanying note 204.

631. SUTHERLAND, *supra* note 30, at 323 (learning logic did not help students spot flaws such as cause and effect reversals in arguments presented to them).

632. See GLOVER, *supra* note 28, at 366-76.

633. Jonathan Glover says: "Frege compartmentalized his mind. When thinking about philosophy and logic, he had no regard for conventional views. He undermined them by argument and worked out alternatives with a more rational basis. When thinking about politics and society, he accepted uncritically the worst conventional prejudices of his place and time." *Id.* at 377.

634. *Id.*

635. Some time ago, Nobel Laureate Herbert Simon observed that "[t]he capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behavior in the real world — or even for a reasonable approximation to such objective rationality." HERBERT A. SIMON, MODELS OF MAN: SOCIAL AND RATIONAL 198 (1957).

“timber” is too poor a material for the construction of perfection.⁶³⁶ But marginal improvement is probably attainable in many cases and, given the stakes,⁶³⁷ well worth pursuing.

Attaining improvements with any degree of effectiveness will require several changes in our thinking about the business of education.⁶³⁸ In addition to making the enhancement of critical thinking skills an explicit goal of higher education,⁶³⁹ instead of assuming that these skills will somehow be developed as a byproduct of education⁶⁴⁰ as has traditionally been conceived,⁶⁴¹ we will have to change the nature of instruction. We

636. “Out of timber so crooked as that from which man is made nothing entirely straight can be built.” Immanuel Kant, *Idee zu einer allgemeinen Geschichte in weltbürgerlicher Absicht*, proposition 6 (1784), *quoted in* ISAIAH BERLIN, *THE CROOKED TIMBER OF HUMANITY*, at xi (1991). Taleb believes that “[w]e are faulty and there is no need to bother trying to correct our flaws.” TALEB, *supra* note 168, at 6. The best we can do is “work around these flaws.” *Id.*

637. See discussion, *infra* text accompanying notes 752-56.

638. “The goal of helping students improve their critical-thinking abilities represents a major change in the way the teaching and learning process is viewed.” Halpern, *supra* note 606, at 450.

639. See *id.*

640. At issue here is the traditional notion of “formal discipline.” For most of recorded history, people believed that formal disciplinary training had positive generalized effects on reasoning ability. For example, the Greeks believed that the study of mathematics improved reasoning, and the Romans thought that studying grammar, as well as arithmetic, was a useful discipline to improve reasoning. See Lehman et al., *The Effects of Graduate Training on Reasoning: Formal Discipline and Thinking About Everyday-Life Events*, RULES FOR REASONING, *supra* note 624, at 315-16. While the notion of formal discipline was rejected by most twentieth century psychologists, studies of the effects of training on reasoning “make it clear that training of some kinds has substantial effects on the way people reason about some sorts of problems.” *Id.* at 335. This leads these researchers to conclude that “[t]he one thing we thought we knew — namely, that formal discipline is an illusion — seems clearly wrong. Just how wrong, and therefore just how much we can improve reasoning by instruction, is now a completely open question.” *Id.* at 336.

641. As Evans notes, the assumption appears to be unwarranted:

[M]ost of the experiments reported have been conducted on college students who have been exposed to a good deal of education which should have developed their general ability to think to at least a reasonable extent — and yet we see the very high rates of errors and biases on the experimental tasks presented.

EVANS, *supra* note 72, at 114-15.

will have to focus explicitly on skill development rather than content⁶⁴² and make use of the knowledge available to us about how people learn.⁶⁴³

We must also recognize that some of our fundamental assumptions need to be revised.⁶⁴⁴ When we seek to improve our students' reasoning ability, and our own, we are in some sense asking humans to perform an unnatural act.⁶⁴⁵ If we succeed, the outcome will be the inculcation of

642. Halpern notes that:

the usual methods that are used for teaching content matter are not optimal for teaching the thinking skills that psychologists and other educators want students to use in multiple domains because instruction in most courses focuses on content knowledge (as might be expected) instead of the transferability of critical-thinking skills.

Halpern, *supra* note 606, at 451. Yet, most of us who are in the business of higher education are content experts, not skill development experts. Our preference for the former and our predictable reluctance to embrace the latter are also obstacles that must be overcome if our students' thinking skills are to be improved.

643. Halpern makes the following observation:

[S]uccessful pedagogy that can serve as a basis for the enhancement of thinking will have to incorporate ideas about the way in which learners organize knowledge and internally represent it and the way these representations change and resist change when new information is encountered. Despite all of the gains that cognitive psychologists have made in understanding what happens when people learn, most teachers do not apply their knowledge of cognitive psychology.

Id. Indeed, universities can in this sense be seen as "reverse black holes" because they give off much light and keep little for themselves. Modern universities are staffed with people who spend their lives finding out how human beings learn. Yet, our instructional methods still rely primarily (albeit with technological augmentation) on the "sage on the stage" model first put into place when the University of Bologna was founded in 1088. Modern universities also have schools that purport to train people to manage organizations, but universities themselves are managed by people who rarely have such training. The cognitive phenomena discussed in this Article suggest several possible hypotheses to explain this curious state of affairs. There is no doubt readers will be able to generate additional hypotheses consistent with their personal premises.

644. "Psychological and educational positions, as well as philosophical positions, that assume a universal adult competence with respect to reasoning must give way to the recognition that adult inferential competence is highly variable and highly dependent on educational history." Nisbett, *Reasoning, Abstraction, and the Prejudices of 20th-Century Psychology*, in *RULES OF REASONING*, *supra* note 624, at 7.

645. Halpern quotes Bertrand Russell as saying: "Most people would rather die than think, in fact they do." Halpern, *supra* note 606, at 450.

strategies to more effectively cope with our limitations, not a final victory over them.⁶⁴⁶ As Thomas Gilovich states:

The underlying causes of faulty reasoning and erroneous beliefs will never be eliminated. People will always prefer black-and-white over shades of grey, and so there will always be the temptation to hold overly-simplified beliefs and to hold them with excessive confidence. People will always be tempted by the idea that everything that happens to them is controllable. Likewise, the tendency to impute structure and coherence to purely random patterns is wired deep into our cognitive machinery, and it is unlikely to ever be completely eliminated. The tendency to be more impressed by what *has* happened than by what has *failed* to happen, and the temptation to draw conclusions from what has occurred under present circumstances without comparing it to what would have occurred under alternative circumstances, seem to be similarly ingrained.⁶⁴⁷

What particular coping strategies and good thinking habits should we be trying to inculcate? First, learning to ask ourselves what data our generalizations are based on⁶⁴⁸ and to refrain from drawing conclusions on the basis of the incomplete, biased information that tends to come our way are fundamentally good thinking habits to develop.⁶⁴⁹ Being aware of and trying to guard against the tendency for our desires and expectations to influence our perceptions can help limit the effects of confirmation bias.⁶⁵⁰

646. See GILOVICH, *supra* note 203, at 185 (“There are . . . times . . . when the source of the problem cannot be eliminated, and so it must be counteracted.”); Hammond et al., *supra* note 608, at 47 (“While no one can rid his or her mind of these ingrained flaws, anyone can . . . learn to understand the traps and compensate for them.”).

647. GILOVICH, *supra* note 203, at 186. Gilovich sees a parallel here with ethics instruction, noting that “[w]hen we teach ethics to our children, we are unlikely to eradicate fully their basic self-centeredness; instead, we counteract it by instilling compensatory moral principles.” *Id.* at 185. It is interesting to note that this view is consistent with Warnock’s notion of how ethics can contribute to the improvement of the human predicament. See *infra* text accompanying note 674-84.

648. SENGE, *supra* note 560, at 178.

649. Gilovich argues that “Perhaps the most general and most important mental habit to instill is an appreciation of the folly of trying to draw conclusions from incomplete and unrepresentative evidence.” GILOVICH, *supra* note 203, at 187. A necessary prerequisite of this is understanding “how often our everyday experience provides us with biased samples of information.” *Id.*

650. Plous states that before making an important judgment or decision, we should learn to pause and ask ourselves these important questions: “Am I motivated to see things a certain way? What expectations did I bring into the situation? Would I see things differently without these expectations and motives? Have I consulted with others who don’t share my expectations and

Learning to seek out and pay attention to disconfirming evidence,⁶⁵¹ and considering alternative hypotheses⁶⁵² and perspectives can limit the effects as well.⁶⁵³ Developing the habit of asking about missing data,⁶⁵⁴ and considering the possibility that chance explains the phenomenon in question, can reduce our tendency to make false causal attributions.⁶⁵⁵

Thinking of reasons why our beliefs may be wrong,⁶⁵⁶ listing the pros and cons of a particular choice or decision,⁶⁵⁷ considering the ways in which our plans or strategies could fail,⁶⁵⁸ scenario analysis,⁶⁵⁹ record-keeping,⁶⁶⁰ and self-testing⁶⁶¹ can all be useful tools for managing overconfidence. Identifying and considering alternative frames and reference points can help counter framing effects, our vulnerability to loss

motives?" PLOUS, *supra* note 124, at 21. Jonathan Glover says maintenance of the kind of moral identity that enables us to resist terrible orders "means keeping skepticism alive. It means not distorting everything else to maintain a political or religious faith." GLOVER, *supra* note 28, at 404.

651. BAZERMAN, *supra* note 106, at 36; GLOVER, *supra* note 28, at 404; SUTHERLAND, *supra* note 30, at 322; Hammond et al., *supra* note 608, at 52 (noting that you should avoid asking questions that invite confirming answers and ask yourself if you are examining all evidence with equal rigor). A focus on disconfirming evidence can also prevent false causal attributions. See PLOUS, *supra* note 124, at 173 (stating that "decision makers should focus on more than the positive and confirming cases of a relationship").

652. SUTHERLAND, *supra* note 30, at 139-40 (stressing the importance of "keeping more than one hypothesis in mind while attempting to disprove each of them").

653. PLOUS, *supra* note 124, at 266 ("Many of the most effective debiasing techniques involve the consideration of alternative perspectives.").

654. GILOVICH, *supra* note 203, at 186 & 188.

655. *Id.* at 189.

656. BAZERMAN, *supra* note 106, at 33; PLOUS, *supra* note 124, at 228; Messick & Bazerman, *supra* note 18, at 20; Russo & Schoemaker, *supra* note 182, at 12-13.

657. PLOUS, *supra* note 124, at 228; SUTHERLAND, *supra* note 30, at 322; Russo & Schoemaker, *supra* note 182, at 13.

658. Russo & Schoemaker, *supra* note 182, at 13.

659. *Id.* at 13 (noting that scenarios — "script-like narratives that paint in vivid detail how the future might unfold in one or another direction" — can help managers exposed to them better appreciate the uncertainties surrounding their estimates). For a full discussion of scenario analysis, see SENGE, *supra* note 560, at 178-80. Senge also argues that scenario analysis can be helpful in combating imperfect mental models and unearthing embedded assumptions. *Id.*

660. Hammond et al., *supra* note 608, at 56; Russo & Schoemaker, *supra* note 182, at 13. Plous argues that keeping track of past events can also help minimize recency and primacy effects and the impact of the availability and heuristic effects. PLOUS, *supra* note 124, at 143; see also DAWES, *supra* note 66, at 143 (observing that keeping track is an aid to overcoming errors produced by representative thinking and availability).

661. BAZERMAN, *supra* note 106, at 33 (noting that feedback is as antidote for overconfidence); PLOUS, *supra* note 124, at 227 (explaining that regular feedback on performance is an antidote to overconfidence); Russo & Schoemaker, *supra* note 182, at 8-10, 12.

aversion, and the sunk cost fallacy.⁶⁶² Stopping to consider how things might have turned out differently can serve as our antidote to hindsight bias.⁶⁶³ Various decision aids are available to offset our tendency to make intuitive judgments⁶⁶⁴ and thereby promote consistency in our decisions.⁶⁶⁵

Perhaps most fundamentally, students should be encouraged to develop the habit of self-control,⁶⁶⁶ to think systematically about their personal priorities,⁶⁶⁷ and to try to keep an open mind.⁶⁶⁸ As Stuart Sutherland has observed:

Given the multiple causes of irrationality, the question arises of whether anything can be done to reduce it. The most general approach would be to try to persuade people to keep an open mind, to come to a conclusion only after they have surveyed all the evidence and to realise that, when occasion merits, it is a sign of strength not weakness to change one's mind.⁶⁶⁹

The debiasing task is difficult considering that even an effective program to inculcate the appropriate habits of mind would not be adequate if our goal is to improve human reasoning about moral matters and, thereby, to improve human behavior. This is because bridging the gap between the rational, objective model of cognition and the ways in which people actually think would leave another crucial gap unbridged — the motivational gap between principles and persons.⁶⁷⁰ Neither utilitarianism⁶⁷¹ nor Kantianism⁶⁷² effectively bridges this gap, so any

662. BAZERMAN, *supra* note 106, at 52-53.

663. PLOUS, *supra* note 124, at 35. Fischhoff notes, however, that few debiasing techniques "have successfully reduced hindsight bias; none has eliminated it." Fischhoff, *Debiasing, in JUDGMENT UNDER UNCERTAINTY*, *supra* note 110, at 428.

664. See DAWES, *supra* note 66, at 203 (weighting schemes found consistently superior to intuitive judgments).

665. *Id.* at 222 (finding that linear models guarantee "that choices are consistent"); see generally Schoemaker & Russo, *supra* note 433.

666. "[P]ractising self-control can almost certainly reduce impetuosity in all aspects of life." SUTHERLAND, *supra* note 30, at 125. Sutherland also observes that "It is almost certainly true that self-control (and also the lack of it) can become a habit. . . ." *Id.*

667. Sutherland argues that "[r]ational behavior is acting, given one's knowledge, in the way most likely to achieve one's ends." *Id.* at 129. It follows that "In order to act rationally . . . one must establish priorities among" those ends. *Id.* However, "[f]ew people think hard about their goals and even fewer think hard about the many possible consequences of their actions." *Id.*

668. Hammond et al., *supra* note 608, at 48.

669. SUTHERLAND, *supra* note 30, at 321-22.

670. See *supra* text accompanying note 32.

671. Assuming that I can see that maximizing overall utility, however defined, would be a good thing indeed, that for our species it may be an imperative thing and if I can maximize my

program of ethics instruction animated by a desire to shape behavior, rather than merely to improve the quality of reasoning, must also seek to bridge the motivational gap by addressing issues of personal moral identity.⁶⁷³ We now turn to this issue.

personal utility by transgressing utilitarian rules in a particular instance, why should I not do so? Once prudential concerns are removed from the picture, the answer to this question is not to be found in this, or any other theory, but rather in the degree of our personal commitment to that theory. As Bernard Williams observes, “[t]here is a deeply uneasy gap or dislocation in this type of theory, between the spirit of the theory itself and the spirit it supposedly justifies.” BERNARD WILLIAMS, *ETHICS AND THE LIMITS OF PHILOSOPHY* 108 (1985). Williams notes that:

[t]he dispositions [to follow moral rules conducive to utilitarian outcomes] help to form the character of an agent who has them, and they will do the job the theory has given them only if the agent does not see his character purely instrumentally, but sees the world from the point of view of that character.

Id. Additionally, he notes that many people may not be capable of consciously adopting utilitarian rules for their own sake. Here he observes that many commentators have identified “two classes of people, one of them a class of theorists who could responsibly handle the utilitarian justification of non-utilitarian dispositions, the other a class who unreflectively deployed those dispositions.”

Id.

672. Why, for example, should I care about acting with principled consistency if acting inconsistently advances my interests? Robert Nozick asked: “Do the philosophers who produce the arguments about commitment think the immoral man’s desire to avoid inconsistency is so great that he would (be motivated to) stop behaving immorally?” ROBERT NOZICK, *PHILOSOPHICAL EXPLANATIONS* 408 (1982). Nozick did not think so, stating:

[I]f the philosopher’s argument [that a person is acting inconsistently] correctly shows the inconsistency, the person was paying the penalty of inconsistency already. The argument does not create the inconsistency. If the person was holding X while behaving immorally, he already was being inconsistent; plainly, he did not find that too terrible. Surely, it is a price he is willing to pay (and continue paying) for his ill-gotten gains.

Id. The fact that some have appeared to think so may say more about the biases of philosophers than about most people’s cognitive processes or values:

It is only (but not all) those people who already have especially strong motivation to avoid inconsistency that are attracted to philosophy as a subject. So it is not surprising that philosophers have thought motivation (and not merely truth) would be clinched by a showing that the alternative is inconsistency. But how powerful, really, is the general desire to avoid inconsistency?

Id. at 407.

673. For information on the role of moral identity in bridging the motivational gap, see *supra* text accompanying note 60 and *infra* text accompanying note 675.

D. On the Importance of Virtue

Virtue ethics, with its emphasis on the centrality of the development of virtuous character,⁶⁷⁴ is admirably suited to bridge the motivational gap between principle and person.⁶⁷⁵ The sense of personal moral identity that should be the product of an emphasis on developing virtue has proven to be a bulwark against atrocity,⁶⁷⁶ and must be cultivated if our future is to be an improvement on our past. Virtue ethics' emphasis on the development of moral judgment,⁶⁷⁷ rather than the reduction of morality to a series of rules,⁶⁷⁸ also allows it to escape some of the vulnerabilities to which principle-based ethical reasoning is exposed.⁶⁷⁹ Virtue ethics also

674. "Traditionally the virtues have been conceptually tied to some *telos*, or some good life. The virtues were those character traits that promoted the attainment of the good life. The good man, in turn, was that person who possessed these virtues." DesJardins, *supra* note 25, at 140. On the process of character development, see *supra* text accompanying notes 404-423. Glover observes that "[a] person's character, as Aristotle saw, comes partly from individual decisions and actions. Repeated, they become the habits which set into character." GLOVER, *supra* note 28, at 26; see also RACHELS, *supra* note 30, at 163 (observing that "we may define a virtue as a *trait of character, manifested in habitual action, that it is good for a person to have.*").

675. "[V]irtue ethics is appealing because it provides a natural and attractive account of moral motivation. The other theories seem deficient on this score." RACHELS, *supra* note 30, at 172.

676. "Under extreme duress, a sense of moral identity can give courage and strength." GLOVER, *supra* note 28, at 26. How does it work? Glover says that "[t]hose who have a strong sense of who they are and of the kind of person they want to be have an extra defence against conditioning in cruelty, obedience, or ideology." *Id.* at 402; see also *supra* text accompanying notes 59-62.

677. "Above all else, the good person possesses *phronesis*, or practical wisdom. Following Aristotle, since ethics is not a demonstrative science, since there are no unambiguous answers in ethics, a type of reasoning different from scientific reasoning will be required of the good person." DesJardins, *supra* note 25, at 139. To possess practical wisdom one must "be able to make appropriate adjustments so that general lessons fit the specific situation." *Id.* Thus, we must be able to "fit our reasoning to the situation and . . . avoid forcing present situations into preconceived categories [and] adapt to changing situations without losing sight of one's ultimate goal." *Id.*

678. See *supra* text accompanying notes 25-30.

679. Rachels observes that the virtue ethics perspective is also consistent with some feminist critics' concerns about modern moral philosophy:

[T]hink again about the theories of "right action" that have dominated modern moral philosophy — theories produced by male philosophers whose sensibilities were shaped by their own distinctive sorts of experience. The influence of that experience is plain. Their theories emphasize impersonal duty, contracts, the harmonization of competing interests, and the calculation of costs and benefits. The concerns that accompany private life — the realm in which women traditionally dominate — are almost wholly absent. The theory of virtue may be seen as a corrective to this imbalance. It can make a place for the virtues of private

emphasizes the development of our rational faculties⁶⁸⁰ and the importance of self-objectivity⁶⁸¹ in the virtuous life.⁶⁸² Our recent history confirms that the cultivation of both will likely be an essential part of any improvement in our future. Indeed, it is difficult to imagine that the human predicament

life as well as the rather different virtues that are required by public life. It is no accident that feminist philosophers are among those who are now most actively promoting the idea of a return to the ethics of virtue.

RACHELS, *supra* note 30, at 175. The feminists' concerns find some support in the work of Oliner and Oliner, who found that few of those who rescued Jews from the Nazis had cognitive styles that emphasized the primacy of abstract ethics theories. They observe:

That few individuals behave virtuously because of autonomous contemplation of abstract principles — a finding that has been reiterated in numerous studies including Adorno's and our own — has not deterred advocates of independent moral reasoning from advancing it as the most morally admirable style. In some sense, rarity may even confirm its virtue, since it conforms to our cultural notion of the hero as a rather lonely person. But this is also a dispiriting view, for if humankind is dependent on only a few autonomously principled people, then the future is bleak indeed.

OLINER & OLINER, *supra* note 397, at 257. Indeed, the autonomous reasoners envisioned by modern ethics theories may not necessarily reach virtuous conclusions in the absence of empathy. As Oliner and Oliner note:

[T]he venerated of autonomously principled individuals often fail to acknowledge that such individuals may not in fact extend themselves on behalf of people in distress or danger. Ideology, grand vision, or abstract principles may inure them to the suffering of real people. Facists, conservatives, democrats, Oliver North and his supporters and detractors, and the killers of kulaks, Mesquito Indians, and fellow Campuchean — all invoke principles in support of their actions. "You ask Hitler," says Ikonnikov to his Bolshevik companion in a German concentration camp, both characters in a novel by Vassily Grossman, "and he'll tell you that even this camp was set up in the name of Good."

Id. (referring to VASSILY GROSSMAN, *LIFE AND FATE* (1985)). "Plato knew years ago, says H.D. Forbes, 'independence of mind can have more than one outcome; it may promise the philosopher but deliver the tyrant.'" *Id.*

680. On the centrality of reason in virtue ethics, see *supra* text accompanying notes 50-54.

681. See *supra* text accompanying notes 410-23.

682. On the role of reason and self-objectivity in the prevention of atrocity, see *supra* text accompanying notes 61 & 62.

would not be improved⁶⁸³ by the presence on this earth of a greater number of persons committed to the practice of the traditional virtues.⁶⁸⁴

683. Warnock argues that the general object of morality is “to contribute to betterment — or non-deterioration — of the human predicament. . . .” WARNOCK, *supra* note 63, at 26. Morality achieves this, Warnock says, “primarily and essentially by seeking to countervail ‘limited sympathies’ and their potentially most damaging effects.” *Id.* He does not believe that it is possible to eliminate our tendency toward limited sympathy:

I do not mean . . . that it is possible completely to remove what I have been calling the “limitation of human sympathies.” By the near prospect or the reality of, say, suffering for oneself, or a parent, or a child, or a friend, one will surely always be naturally *moved* as one is not by the predicament of a total stranger, still less by the mere knowledge (which after all we all have all the time) that someone or other is suffering somehow and somewhere. Morality does not in that way expand, or at any rate does not expand without limit, our human sympathies.

Id. at 165 (original emphasis). One can instead build on it to construct a moral identity that desires the achievement of morality’s ends. He argues that “while one may be largely or completely *unmoved* by another’s suffering, it is still possible to be not *indifferent* to it, to want it *not* to happen. . . .” *Id.* It follows, he argues, that:

[I]f one can be thus not indifferent to the predicament of others — can want it to be, say, better, notwithstanding that one is not actually agitated by its being bad — then it is possible to come to want to comply with, and want that others should comply with, principles whose recognition would tend to ameliorate that predicament. One can want to acquire and exercise the settled disposition to comply with such principles in one’s judgment and conduct, to give due weight to the range of reasons that those principles generate.

Id.

684. Warnock states it this way:

If any of those things towards the amelioration of the human predicament which can be done are to be done in fact, then not only must people sometimes be *made* to do things which they are not just naturally disposed to do anyway; they must also sometimes voluntarily, without coercion, act otherwise than people are just naturally disposed to do. It is necessary that people should acquire, and should seek to ensure that others acquire, what may be called *good dispositions* — that is, some readiness on occasion voluntarily to do desirable things which not all human beings are just naturally disposed to do anyway, and similarly not to do damaging things.

Id. at 75-76 (original emphasis); see also WILLIAMS, *supra* note 671, at 45 (“We need to live in society — and that is certainly an inner need, not just a technological necessity — and if we are to live in society, some ethical considerations or other must be embodied in the lives of quite a lot of people.”).

However, virtue ethics is also unlikely to meet all of our needs. First, although the kind of reasoning required under virtue ethics may not be the same as scientific reasoning,⁶⁸⁵ there is no reason to suppose that the practitioners of virtue ethics would be invulnerable to the cognitive pitfalls that can impede effective principle-based ethical reasoning.⁶⁸⁶ Virtue ethics' lack of explicit content⁶⁸⁷ can be seen as a potential source of problems for reasoners who may be too quick to conclude that they are virtuous.⁶⁸⁸ If rule-utilitarianism⁶⁸⁹ and Kantianism⁶⁹⁰ are vulnerable to

685. See *supra* text accompanying note 677.

686. See *supra* text accompanying notes 425-32.

687. Rachels observes that "[t]here is, . . . no settled body of doctrine on which all these philosophers [of virtue] agree." RACHELS, *supra* note 30, at 161. This, he argues, makes virtue theory an inadequate guide to action because "[m]oral problems are frequently problems about what we should *do*. It is not obvious how, according to virtue theory, we should go about deciding what to *do*." *Id.* at 176 (original emphasis). Thus, he concludes that "[t]he principal problem" for virtue theory "is the problem of incompleteness." *Id.* at 177.

688. For reasons why we are inclined to do just that, see *supra* text accompanying notes 275-304, & 337. Virtue ethicists are not unaware of the problem. See, e.g., VEATCH, *supra* note 54, at 121 ("But," you will say, "on such a basis almost anyone can justify almost anything he does. Few men consider themselves to be unintelligent and unthinking.").

689. Consider, for example, the problems associated with rule construction. Exactly how precisely should utilitarian rules be formulated? While some practices (promise-keeping) may generally be consistent with utility-maximization, there may be some situations in which we can agree that is not the case. As Henry Sidgwick observed:

[T]he admission of an exception on general grounds is merely the establishment of a more complex and delicate rule, instead of one that is broader and simpler; for if it is conducive to the general good that such an exception be admitted in one case, it will be equally so in all similar cases.

SIDGWICK, *supra* note 32, at 485. The natural temptation, of course, will be to re-formulate a rule so that it justifies our desired course of action.

690. G.E.M. Anscombe argued: "[Kant's] rule about universalizable maxims is useless without stipulations as to what shall count as a relevant description of an action with a view to constructing a maxim about it." RACHELS, *supra* note 30, at 121. For example, Rachels asks:

Exactly what rule would you be following if you lied? The crucial point is that there are many ways to formulate the rule; some of them might not be 'universalizable' in Kant's sense, but some would be. Suppose we said you were following *this* rule (R): 'It is permissible to lie when doing so would save someone's life.' We *could* will that (R) be made a "universal law."

RACHELS, *supra* note 30, at 121. Alasdair MacIntyre elaborates on another way in which slippage can occur:

personal legislation in their rule-framing and formulation phases, this criticism would seem to be doubly true of virtue ethics, which lacks any explicit⁶⁹¹ theoretical yardstick to measure its practitioners' conclusions.

[T]he Kantian test of a true moral precept is that it is one that I can consistently universalize. In fact, however, with sufficient ingenuity almost every precept can be consistently universalized. For all that I need to do is to characterize the proposed action in such a way that the maxim will permit me to do what I want while prohibiting others from doing what would nullify the maxim if universalized. Kant asks if I can consistently universalize the maxim that I may break my promises whenever it suits me. Suppose, however, that he had inquired whether I can consistently universalize the maxim "I may break my promises only when. . . ." The gap is filled by a description devised so that it will apply to my present circumstances but to very few others, and to none such that if someone else obeyed the maxim, it would inconvenience me, let alone show the maxim incapable of consistent universality.

ALASDAIR MACINTYRE, *A SHORT HISTORY OF ETHICS* 197-98 (1966). The result of this, he argues, is that "in practice the test of the categorical imperative imposes restrictions only on those insufficiently equipped with ingenuity. And this surely is scarcely what Kant intended." *Id.* at 198.

691. It can be said that the virtuous thing to do is the thing the virtuous person would do. *See, e.g.,* DesJardins, *supra* note 25, at 138 ("Aristotle characterizes good acts as those acts performed by the good man. Although this often is thought to be circular, it seems to me to contain a wealth of truth."). It is true that the virtues themselves can provide some guidance for action:

[I]t could be said that actions are to be assessed as right or wrong in the familiar way, by reference to the reasons that can be given for or against them: we ought to do those actions that have the best reasons in their favor. However, *the reasons cited will all be reasons that are connected with the virtues* — the reasons in favor of doing an act will be that it is honest, or generous, or fair, and the like. This analysis could be summed up by saying that our duty is to act virtuously — the "right thing to do," in other words, is whatever a virtuous person would do.

RACHELS, *supra* note 30, at 177 (original emphasis). But what is one to do in situations where the virtues appear to be in conflict?

Suppose you must choose between A and B, when it would be dishonest but kind to do A, and honest but unkind to do B. (An example might be telling the truth in circumstances that would be hurtful to someone.) Honesty and kindness are both virtues, and so there are reasons both for and against each alternative. But you must do one or the other — you must either tell the truth, and be unkind, or not tell the truth, and be dishonest. So which should you do? The admonition to act virtuously does not, by itself, offer much help. It only leaves you wondering which virtue takes precedence. It seems that we need some more general guidance, beyond that which radical virtue theory can offer, to resolve such conflicts.

Id. at 178.

Second, the cultivation of reason itself is inadequate to assure the improvement of the human predicament. Reason, after all, is merely a tool, and one that in the service of limited sympathy⁶⁹² can serve to worsen the human predicament rather than improve it.⁶⁹³ Similarly, some virtues can serve questionable ends as easily as good ones.⁶⁹⁴ We should carefully

692. Warnock says: “[M]ost human beings have some natural tendency to be more concerned about the satisfaction of their own wants . . . than those of others.” WARNOCK, *supra* note 63, at 21. When the interests of others *are* of some concern to us, it is likely that our concerns are limited to “some others — family, friends, class, tribe, country or ‘race.’” *Id.* (original emphasis).

693. “Rationality . . . seems, like intelligence and skill and resources, to be something that can be used to do harm . . . as well as good; what is ultimately crucial is *how* it is to be used.” *Id.* at 25-26. There is an argument, however, that adequately developing our reasoning abilities should lead to a reduction in limited sympathy. Charles Darwin had this to say on the subject:

As man advances in civilisation [sic], and small tribes are united into larger communities, the simplest reason would tell each individual that he ought to extend his social instincts and sympathies to all the members of the same nation, though personally unknown to him. This point being once reached, there is only an artificial barrier to prevent his sympathies extending to the men of all nations and races.

WRIGHT, *supra* note 1, at 277. Warnock sees the connection between limited rationality and limited sympathy. He ascribes paramount importance to limited sympathy because of its power to direct our reason, but he recognizes that in some ways “it is not very sensible to attempt a definite answer” to the question which is the most important “if only because in practice these two factors are extraordinarily difficult to disentangle from one another.” WARNOCK, *supra* note 63, at 24. This is because “much that is most damagingly done seems really attributable, not to the malevolence of men, but to sheer folly and confusion of mind.” *Id.* at 25. Further, he asks, “is it not the case that much failure of human sympathy is itself the direct offspring of un-reason?” *Id.* It is true, he says:

If people were saner, their sympathies also would be less stunted and deformed; hearts would be in better shape if heads were less tangled, and haunted, and befogged. Surely it has been a very common failing of moralists, professionally pre-occupied with the weakness of good-will in human affairs, enormously to under-rate the strength in that connection, not simply of ill-will, but of sheer un-reason.

Id.

694. Warnock argues that some of the traditional virtues such as “industriousness, courage, and self-control” are virtues, but perhaps not moral virtues: “They may be, indeed in some degree they certainly are, necessary conditions of the effective exercise of moral virtues, as indeed of effective action of any kind; but one may still wish to say that they *are* not moral virtues.” *Id.* at 78 (original emphasis). These virtues, he says, “may be exclusively and entirely, . . . , self-profiting,” that is, “wholly directed to the attainment of an agent’s personal interests or ends — possibly, indeed, of ends of his to the gross damage or neglect of the interests of others.” *Id.* He reminds us that: “Courage, asceticism, iron self-control, resolution in the face of hardship or danger or difficulty — these are almost standard equipment for the really major destroyers, whether

emphasize the development of those virtues that are conducive to the expansion⁶⁹⁵ of our limited sympathy.⁶⁹⁶ Even a strong sense of moral identity is inadequate unless it is rooted in empathy.⁶⁹⁷ Empathy alone, however, is insufficient to do the job.⁶⁹⁸ In addition, the widespread cultivation of dispositions to abstain from unjustifiably harming others,⁶⁹⁹

military, political, or criminal, or all three at once.” *Id.* at 79. Bernard Williams agrees, observing that:

One kind of virtue that can evidently be misused is the so-called executive virtues, which do not so much involve objectives of their own as assist in realizing other objectives — courage, for instance, or self-control. These are nevertheless virtues, being traits of character, and they are not related to pursuing other objectives as the mere possession of a skill is.

WILLIAMS, *supra* note 671, at 9. The paradigmatic example is the valiant Nazi soldier — “He is courageous all right, and courage is an admirable thing; but because his courage is deployed in an evil cause, his behavior is *on the whole* wicked.” RACHELS, *supra* note 30, at 164 (original emphasis).

695. Oliner and Oliner note:

Individuals capable of highly altruistic behaviors within the confines of their families, or even on behalf of their national communities, may not extend such behaviors toward strangers, particularly members of outsider groups. For example, parents and patriots ready to sacrifice all on behalf of their children or country often closed their doors in the face of supplicant Jews.

OLINER & OLINER, *supra* note 397, at 253.

696. Warnock says that “the paradigmatic *moral* virtues may be . . . those good dispositions whose tendency is directly to countervail the limitation of human sympathies, and whose exercise accordingly is essentially . . . good *for* persons other than the agent himself.” WARNOCK, *supra* note 63, at 79-80.

697. Glover says that “the central lesson Nazism holds for ethics is that a sense of moral identity is not enough. Moral identity needs to be rooted in the human responses, rather than, as with the Nazis, adversarial to them.” GLOVER, *supra* note 28, at 396.

698. As Oliner and Oliner point out: “[E]motional empathy for pain, however intense, does not necessarily result in a helping response. Rather than attempting to alleviate the pain, one may choose to escape it — by physically removing oneself from the problem, denying it, devaluing the victim, or perhaps contenting oneself with some slight gesture.” OLINER & OLINER, *supra* note 397, at 174. Empathy, they conclude, is not “a guarantor of virtue” because “[e]mpathic people may not choose to act or may not know how to do so effectively. . . .” *Id.* at 258. It is interesting to note, however, that empathy “eliminates certain biases in social judgment.” PLOUS, *supra* note 124, at 256 (referring to actor-observer attributions).

699. Warnock speaks of the need to cultivate “the disposition to abstain from (deliberate, unjustified) maleficence.” WARNOCK, *supra* note 63, at 80. He elaborates by observing:

[T]he propensity *not* to act injuriously towards others whenever one has, or might have, some “natural” inclination to do so . . . is . . . of fundamental importance; for

to positively aid others,⁷⁰⁰ and to eschew the unjustified discrimination against,⁷⁰¹ or the deception of,⁷⁰² others would certainly improve the

it is obvious what a gangster's world we should find ourselves in without it — and indeed do find ourselves in, when and so far as this disposition is absent.

Id. at 81. Warnock believes that we definitely have an unfortunate tendency toward malevolence towards some others, a tendency that goes far beyond limited sympathy:

There is also, besides complete or comparative indifference, such a thing as active malevolence, perhaps even purely disinterested malevolence; a man will sometimes be not only unconcerned about, but actively malevolent towards, others whom he may see as somehow in competition with himself, and sometimes perhaps even towards some whose frustrations or sufferings are not even supposed to be for the advancement of any interest of his own.

Id. at 21-22.

700. Warnock here speaks of the need for a “disposition towards positive beneficence.” *Id.* at 81. He further observes that “[t]he limitedness of sympathies tends often to make it not just natural to interest oneself directly in another’s good; there is a need, then, for cultivation of the disposition to do so, which will very often take the particular form of readiness to give *help* to others. . . .” *Id.* (original emphasis). Oliner and Oliner observed that those who rescued Jews in Nazi-occupied Europe “were more characterized by close relationships with others, empathy for and identification with the underdog, and perceptions of others as individuals rather than as representatives of a type than were nonrescuers.” OLINER & OLINER, *supra* note 397, at 256.

701. Warnock argues that “we should now add,” to our list of the moral virtues, “the disposition not to *discriminate*, as surely most humans have some natural propensity to do, to the disadvantage of those outside the limited circle of one’s natural concern.” WARNOCK, *supra* note 63, at 82 (original emphasis). What he refers to is fairness:

[T]he importance of this virtue of fairness tends . . . to increase with the increase of scope and occasions for its exercise. For very many people . . . their power to help or harm others is actually so limited as probably to be confined, on most occasions, to persons who may well be within the circle of their natural concern; but as such power increases, it is increasingly likely to expand its scope over persons to whom one may personally be wholly indifferent, or even of whom one may know nothing at all.

Id. at 83.

702. Warnock believes humans have a natural tendency to engage in deception:

If we consider the situation of a person, somewhat prone by nature to an exclusive concern with his own, or with some limited range of, interests and needs and wants, living among other persons more or less similarly constituted, we see that there is one device in particular, very often remarkably easy to employ, by which he may be naturally more or less inclined to, so to speak, carve out his egoistical way to his own, and if necessary at the expense of other, ends; and that is *deception*.

human predicament.⁷⁰³

It may be possible to begin the construction of some substantive moral standards by working backwards from these moral virtues. G. J. Warnock puts it this way:

If it were agreed that we have here, in these “good dispositions,” four moral virtues, it could scarcely be contentious to derive from this the proposition that we have here, by the same token, four fundamental moral *standards*, or moral *principles*. To have and to display, say, the moral virtue of non-deception could be said to be to regulate one’s conduct in conformity to a *principle* of non-deception, or to refer to that as to a *standard* in one’s practical decisions.⁷⁰⁴

Id. Rue argues that “every human practices deception in a multitude of ways. We conceal information, we distort and exaggerate, we rationalize, we bluff.” RUE, *supra* note 80, at 4. Rue goes so far as to argue that the role of deception in life is “sufficiently large and central to warrant the conclusion that one cannot adequately understand history, nature, personality, and society without also understanding the nature and functions of deception.” *Id.* Warnock explains the damage deception wreaks on the human predicament:

[I]t is easy to see how crucially important it is that the natural inclination to have recourse to it [deception] should be counteracted. It is, one might say, not the implanting of false beliefs that is damaging, but rather the generation of the suspicion that they may be being implanted. For this undermines trust; and, to the extent that trust is undermined, all co-operative undertakings, in which what one person can do or has reason to do is dependent on what others have done, are doing, or are going to do, must tend to break down.

WARNOCK, *supra* note 63, at 84.

703. See WARNOCK, *supra* note 63, at 85-86:

[I]n the general context of the human predicament, there are these four (at least) distinguishable damaging, or non-ameliorative, types of propensity which tend naturally to emanate directly from “limited sympathies” — those of maleficence, non-beneficence, unfairness, and deception. If now we apply the supposition that the “object” of morality is to make the predicament less grim than, in a quasi-Hobbesian state of nature, it seems inherently liable to be, and to do so specifically by seeking to countervail the deleterious liabilities inherent in “limited sympathies,” we seem to be led to four (at least) general types of good disposition as those needed to countervail the above-mentioned four types of propensity; and these dispositions will be, . . . , those of non-maleficence, fairness, beneficence, and non-deception. [T]hese (at least) are fundamental *moral virtues*.

Id.

704. *Id.* at 86 (original emphasis).

The logic behind this is obvious. Different virtues maybe more important at different times and in different contexts,⁷⁰⁵ but the high degree of fit between the moral virtues and the more problematic aspects of our human nature⁷⁰⁶ suggests that the standards evolved from these virtues offer great hope of improving our situation.⁷⁰⁷ It also should not hurt that the substance of these principles, if not the means of their derivation, is unlikely to offend most committed rule-utilitarians or Kantians.⁷⁰⁸

705. See RACHELS, *supra* note 30, at 172:

[I]t may be true that in different societies the virtues are given somewhat different interpretations and different sorts of actions are counted as satisfying them; and it may be true that some people, because they lead particular sorts of lives in particular sorts of circumstances, will have occasion to need some virtues more than others. But it cannot be right to say simply that whether any particular character trait is a virtue is never anything more than a matter of social convention. The major virtues are mandated not by social convention but by basic facts about our common human condition.

Id.

706. On the importance of such a “fit,” see *supra* text accompanying note 581. According to Warnock, the salient features of the human predicament are biological needs, human wants (having little to do with needs), limited resources, limited information, limited intelligence, limited rationality, and limited sympathy. WARNOCK, *supra* note 63, at 17-21. Limited rationality and limited sympathy are of paramount importance here, because “they determine what, of the things that *can* be done, *are* done.” *Id.* at 24 (original emphasis).

707. Rachels says that “*there are some virtues that will be needed by all people in all times.*” This was Aristotle’s view, and he was probably right. Aristotle believed that we all have a great deal in common despite our differences.” RACHELS, *supra* note 30, at 171 (original emphasis). This is because “[e]ven in the most disparate societies, people face the same basic problems and have the same basic needs.” *Id.* Henry Veatch makes an even stronger statement:

It is true that as the conditions of life vary from age to age, from region to region, or from one culture to another, the criteria of bravery, say, or of honesty, or of stupidity, will vary considerably. But the distinction between bravery and cowardice, honesty and dishonesty, wisdom and folly, will nonetheless be recognized and maintained almost universally.

VEATCH, *supra* note 54, at 132.

708. However, we must accept that another “gap” that should be bridged (if we are to make any improvement in the human predicament) is the strong commitment that individuals have for their preferred moral theories. Here, as in many other areas of life, our ultimate goals would be better served by focusing on our wide areas of agreement rather than upon our differences. Unfortunately, moral philosophers may not be able to help us much in bridging this gap due to the strength of their theoretical commitments and the behaviors that such strong commitments tend to produce. Russell Hardin says:

One must ask why a creature that does not necessarily care about maximizing social utility⁷⁰⁹ or aspire to principled consistency in its behavior should necessarily aspire to enhanced rationality and the possession of good character.⁷¹⁰ If one embraces virtue ethics the motivational gap will be bridged, but have we just pushed the motivational gap back one step further? The traditional answer states that virtue is its own reward, because the virtuous, rational life is superior to other variations.⁷¹¹ It may be, as Mill said, that it “is better to be a human being dissatisfied than a pig satisfied; better to be Socrates dissatisfied than a fool satisfied.”⁷¹² Yet, if most people prefer to be pigs⁷¹³ and are no more

Apart from religious believers, few people disagree more vehemently about the rightness of various moral views, especially foundationalist views, than do professional moral theorists. There are philosophers who assert essentially that utilitarianism is so far from being a moral theory that it is evil. Others assert that supposedly rationalist groundings of such theories as those of Kant and Alan Gewirth are vacuous, that the Aristotelian concern with virtue is roughly the philosophical equivalent of callously fiddling while Rome burns, that commonsense morality is little more than a collection of prejudices. *There is often venom in these assertions and, it seems, surprise or contempt that anyone could hold any but roughly one's own views.*

RUSSELL HARDIN, *MORALITY WITHIN THE LIMITS OF REASON* 179 (1988) (emphasis added).

709. See WILLIAMS, *supra* note 671 and accompanying text.

710. See NOZICK, *supra* note 672 and accompanying text.

711. See, e.g., RACHELS, *supra* note 30, at 169 (Aristotle's answer to the question of why it is important to have the virtues was “the virtues are needed to conduct our lives well”). Robert Nozick agreed: “I believe there is a cost to immoral behavior. It is a *value* cost. The immoral life is a less valuable life than the moral one, the immoral person is a less valuable being than the moral one.” NOZICK, *supra* note 672, at 409 (original emphasis). See also the following statement by Veatch:

[E]very human being faces the task of learning how to live, how to be a human being, just as he has to learn how to walk or to talk. No one can be truly human, can live and act as a rational man, without first going through the difficult and often painful business of acquiring the intellectual and moral virtues, and then, having acquired them, actually exercising them in the concrete, but tricky, business of living.

VEATCH, *supra* note 54, at 184-85.

712. John Stuart Mill, *Utilitarianism* ch. 2 (1861) in J.S. MILL, *UTILITARIANISM, ON LIBERTY, AND CONSIDERATIONS ON REPRESENTATIVE GOVERNMENT* 10 (H.B. Acton ed., 1987). Mill goes on to say that “if the fool, or the pig, are of a different opinion, it is because they only know their own side of the question. The other party to the comparison knows both sides.” *Id.*

713. For Aristotle's view of men's preferences, see ARISTOTLE, *supra* note 46. Veatch acknowledges that “most of us do fail; we don't lead examined lives; we don't achieve our natural human perfection; we can't honestly say that we are happy, at least not in any distinctively human

interested in perfecting their rationality than they are in being rationally consistent in their actions, then why would they start down the road to virtue in the absence of a noble lie⁷¹⁴ or some other very compelling form

way.” VEATCH, *supra* note 54, at 125. Part of the problem, Veatch suggests, is that there may be a price for being a Socrates, a price many people are simply not prepared to pay:

I can hardly fail to recognize that in order to be a Socrates, say, I shall have to give up a lot of things that may be very dear to me — comforts and luxuries, or place and position, or wealth, or even my career as a scholar or general or diplomat or scientist; I might even have to drink the hemlock! When the realization of such sacrifices is borne in upon me, it would hardly surprise anyone if I were to begin to feel that the examined life really didn't have so much to recommend it after all — despite the fact that in truth it might still be the best life for me and indeed for any man.

Id. at 151. If readers' experiences mirror the author's (which includes several years of attempting to teach ethics to MBA students and executives), then the phenomenon of people who are more concerned about the costs of doing right than costs of doing wrong, will not be unfamiliar. Badarraco and Webb's study of the work experiences of recent Harvard MBAs suggests that such people were quite common in the students' organizations. See Joseph L. Badaracco, Jr. & Allen P. Webb, *A View From the Trenches*, 37 CAL. MGMT. REV. 8, 13-14, 23-24 (1995).

714. The idea is that a post-religious society may need a new myth to energize the substantial portion of the population who are not capable of being moved by abstract principles. Rue observes: “Plato first raised the prospect of a noble lie in the *Republic*, suggesting that a seductive fable would be expedient for getting citizens to accept a desired social order.” RUE, *supra* note 80, at 279-80 (citation omitted). He notes that “[t]he challenge of a noble lie is to re-enchant the universe by getting us to perceive, in spite of ourselves, that its significance is objective.” *Id.* at 279. A noble lie must also “provide individuals with the resources for achieving self-esteem by serving collective ideals, and it must provide groups with the resolve to remain focused on the needs of individuals.” *Id.* at 281. There are obvious moral questions here of a means versus ends variety, something Rue recognized when he observed that “we have come to the point of defending deception and self-deception as adaptive strategies for opposing the maladaptive truth of nihilism.” *Id.* at 279. By “nihilism” he means ethical nihilism, the idea that there are no valid moral principles. See CAMBRIDGE DICTIONARY OF PHILOSOPHY 691 (Robert Audi ed., 1995). Rue believes that nihilism is true because “it is our most adequate theoretical account of the nature and status of ‘ultimate’ meanings.” RUE, *supra* note 80, at 274. He accepts the post-modernist critique:

There is no correct reading of a text or a picture or a dance. Whatever meanings a speaker intends necessarily defer to the meanings a listener infers. As for reality itself, it does not speak to us, does not tell us what is true or good or beautiful. The universe is not itself any of these things, it does not interpret. Only we do, variously.

Id. at 273. The problem is that “*nihilism is a maladaptive truth*, a truth that is inconsistent with the conditions of personal wholeness and social coherence, and therefore uncondusive to human survival.” *Id.* at 275. “[A] society of nihilists will very soon degenerate into something

of motivation?⁷¹⁵ The awareness of the gap between what we are, the moral creatures that we can be,⁷¹⁶ and the consequent decision to start the process of constructing a virtuous character⁷¹⁷ are, after all, the product of a self-objective,⁷¹⁸ rational⁷¹⁹ person.

A renewed emphasis on the development of virtue is a necessary, but not a sufficient, condition of improving the human predicament. In the absence of God,⁷²⁰ it may not be possible to define a *telos* for man,⁷²¹ but

approximating moral anarchy." *Id.* at 276. Hence, the necessity for a noble lie. Why a "lie?" Because "[i]f nihilism is true, then all myths are lies." *Id.* at 279.

715. There are certainly grounds for thinking that the virtue project is an uphill struggle. As Henry Sidgwick noted long ago:

Observation would lead me to suppose that most men are so constituted as to feel far more keenly pleasures (and pains) arising from some other source than the conscience; either from the gratifications of sense, or from the possession of power and fame, or from strong human affections, or from the pursuit of science, art, etc.; so that in many cases perhaps not even early training could have succeeded in giving to the moral feelings the requisite predominance: and certainly where this training has been wanting, it seems highly improbable that a mere change of ethical conviction could develop . . . their earthly interest to resolve on facing all sacrifices for the fulfilment of duty.

SIDGWICK, *supra* note 32, at 175.

716. *See supra* note 1 and accompanying text.

717. *See supra* text accompanying notes 404-423.

718. "[L]iving intelligently involves seeing things as they are and seeing oneself as one is, amid all the confusions and misrepresentations due to one's own passions and predilections and prejudices." VEATCH, *supra* note 54, at 86; *see also supra* text accompanying notes 410-23.

719. *See supra* text accompanying notes 423-24.

720. "[W]e are living in times that might aptly be called 'post-ethical'. People still use moral language, but they have increasingly stopped believing that it has any objective foundation. They have become 'emotivists': that is, they increasingly treat moral judgments as no more than personal expressions of approval or disapproval." Michael Prowse, *Why Plastering Over Capitalism's Cracks Won't Work*, FIN. TIMES, July 13, 2002, at 2. What caused this change? Prowse answers: "The growing authority of empirical science and the loss of faith in religion are partly responsible. If people believe the world consists of nothing but tiny particles or quantum wave functions, why should they treat ethics as anything but a matter of taste?" *Id.* Prowse believes this helps explain some of our most recent financial scandals:

[M]any people's behaviour is now guided almost exclusively by prudential considerations: in other words they obey the law, help others and respect customs and mores only if they calculate that this will benefit them personally in some way. They do not accept the validity of "oughts" or "shoulds." On this view, "doing one's duty, regardless of the personal cost" is a philosophy to which only fools subscribe.

it seems possible to define the kinds of people who will contribute to that improvement and the kinds of lives such people would lead. It also seems unlikely that much improvement will occur without conscious cultivation. A renewed emphasis on the virtues alone, however, may not be sufficient to provide us with all that we need to bridge the gap between what we are and what we can be,⁷²² both as individuals and as a species. We may need more specific rules of conduct to guide our behavior,⁷²³ and we may need some modicum of rationality in order to embark upon the process of rational self-construction.⁷²⁴ Moral virtues and our explicit goal of improving the human predicament⁷²⁵ can provide some of the guidance we

Id. Even those of us who are not religiously inclined should not be mistaken about what has been lost and its importance. Glover says:

Those of us who do not believe in a religious moral law should still be troubled by its fading. The evils of religious intolerance, religious persecution and religious wars are well known, but it is striking how many protests against and acts of resistance to atrocity have also come from principled religious commitment.

GLOVER, *supra* note 28, at 405.

721. “[M]odern philosophy has, by and large, rejected the notion that there is any one, nonarbitrary *telos*.” DesJardins, *supra* note 25, at 140 (original emphasis).

722. See *supra* text accompanying notes 1 & 424.

723. Rachels concludes that “it seems best to regard the theory of virtue as part of an overall theory of ethics rather than as a complete theory in itself.” RACHELS, *supra* note 30, at 179.

724. See *supra* text accompanying notes 424-26.

725. Rachels suggests that:

Our overall theory might begin by taking human welfare — or the welfare of all sentient creatures, for that matter — as the surpassingly important value. We might say that, from a moral point of view, we should want a society in which all people can lead happy and satisfying lives. We could then go on to consider both the question of what sorts of actions and social policies would contribute to this goal *and* the question of what qualities of character are needed to create and sustain individual lives.

RACHELS, *supra* note 30, at 179. Nyberg argues that:

The moral universe is the same for everyone in that it is based on concern for human dignity, decency, voluntary relations that are not oppressive, and some kind of spiritual fulfillment. These norms, which make up moral lives, are construed differently at different ages, in different places, and the particulars vary depending on the kind of brain we have (we are all similar, but we’re not identical), the evolution of local histories and customs, and the models generated for their expression. But the basis of concern is the same.

NYBERG, *supra* note 78, at 196.

need where the substance of moral standards are concerned.⁷²⁶ An increased awareness of the cognitive pitfalls discussed in earlier portions of this article can, perhaps, contribute to the enhanced rationality part of the recipe, as well as reduce the number of instances in which we misapply whatever moral rules we have come to accept. Therefore, we must develop both our hearts and our heads.

VI. CONCLUSION

Numerous “gaps”⁷²⁷ must be bridged if we are to fulfill our first moral duty of thinking clearly,⁷²⁸ and clear thinking is required if we are to bridge the most fundamental of those gaps — the gap between what we are and what we can be morally.⁷²⁹ Bridging that gap, or at least narrowing it somewhat, will be essential if we are to improve the human predicament. If we are to have any modicum of success in that effort, we will have to heed Pope’s admonition to study mankind,⁷³⁰ since the key facts about our natures are also the key facts about our predicament.⁷³¹ Those of us who seek to improve the human predicament by gaining a better understanding of the sources of unethical behavior, and by training students to become more ethical decisionmakers, must also take what can be learned from the realities of human cognitive processes. We must use it to reshape students’ thinking about fundamental questions of moral action⁷³² and moral instruction.⁷³³

Given our known failings as reasoners, the assumption that those we endeavor to instruct are more or less rational and objective creatures who can be relied upon to appropriately apply the ethics theories and methods of analysis that we try to teach them is simply unjustified. A conscious effort to help students become more rational and objective decisionmakers is a necessary condition of their effective application of the tools of ethical

726. See *supra* text accompanying notes 704-707.

727. See *supra* text accompanying notes 27, 31-33, 63-66, 140, 574, & 708.

728. See *supra* note 1 and accompanying text.

729. See *supra* text accompanying notes 1 & 424.

730. “Know then thyself, presume not God to scan; The Proper study of mankind is man.” ALEXANDER POPE, AN ESSAY ON MAN, epistle 2, line 1-2 (1733), available at <http://eir.library.utoronto.ca/rpo/display/poem1638.html> (last visited June 9, 2005).

731. See *supra* text accompanying note 706.

732. See *supra* text accompanying notes 583-601. Raising questions about moral action inevitably leads to questions about moral responsibility and moral evaluation. These questions, though obviously important, are beyond the scope of this Article.

733. See *supra* text accompanying notes 638-44.

(and any other kind of) analysis.⁷³⁴ There are ample grounds for concern about the degree of success that can be expected from such an effort,⁷³⁵ not the least of which is that “we know very little about reasoning and how to teach it.”⁷³⁶ We do now know enough to have some idea about the kinds of habits of mind our students need to build⁷³⁷ and the kinds of knowledge they have to acquire⁷³⁸ if they are to have any hope of improving their reasoning skills.

We know that whatever the success of any effort at improving future managers’ reasoning skills may be, it will be insufficient to work positive changes in their moral behavior without an explicit effort to build (or bolster) their moral identities through the inculcation or reinforcement of the moral virtues.⁷³⁹ Here again, though the nature of the virtues to be taught may be less than crystal clear,⁷⁴⁰ we probably know enough about the kinds of persons we need to help develop to begin the effort. In the process, we may be able to find our way to some fundamental moral standards on which most of us can agree.⁷⁴¹

734. An enhancement of students’ rationality and objectivity will not necessarily narrow all of the “gaps” identified in this Article. If it is true that some, or most, humans do not reason about moral issues by consulting and attempting to apply abstract ethical rules, then improving their ability to effectively apply such rules will not necessarily foster any improvement in the quality of their real world decisionmaking unless increasing their thinking skills leads to a change in the nature of their thinking — that is, it leads to a shift away from intuitive approaches toward a more conscious, deliberate reasoning style. *See supra* text accompanying notes 66 & 679. While this is not improbable, it is not the only reason why this Article focuses on enhancing students’ rationality and objectivity. Those ethics instructors whose efforts are primarily focused on teaching students some ethics theory and modes of ethical analysis are likely to continue in that vein. Reasons for this include a personal attachment to a particular theory or to the theoretical approach in general, and the fact that this approach has the obvious benefit (to the instructor, at least) of being teachable. (There is an explicit content that instructors can assimilate and attempt to transmit, much as they do with the other things they teach.) The approach suggested in this Article — enhancing rationality and objectivity while consciously seeking to cultivate virtue — does offer some hope for improving the decisionmaking of intuitive reasoners. Intuitive reasoning animated by the moral virtues could be expected to produce more desirable results than intuitive reasoning motivated by limited sympathy, and the shortcomings of purely empathic reasoning seem to call out for some attempt to leaven it with a dose of reason.

735. *See* discussion, *supra* text accompanying notes 610-23, 629-35, & 645-47.

736. Lehman et al., *The Effects of Graduate Training on Reasoning: Formal Discipline and Thinking About Everyday-Life Events*, in *RULES FOR REASONING*, *supra* note 623, at 335.

737. *See supra* text accompanying notes 648-69.

738. *See supra* text accompanying notes 603-08 & 624-29.

739. *See supra* text accompanying notes 671-84 & 692-93.

740. *See supra* text accompanying notes 694-703.

741. *See supra* text accompanying notes 704-08.

The challenge of trying to improve the human predicament by trying to narrow the gap between the kinds of creatures we currently are and the more moral ones we can hope to become *is* an immense one for creatures such as ourselves,⁷⁴² creatures with minds like trial lawyers,⁷⁴³ who are believers rather than thinkers,⁷⁴⁴ creatures who are in the grip of selective perceptions,⁷⁴⁵ biased memories,⁷⁴⁶ and self-delusion.⁷⁴⁷ We suffer from a possibly indelible⁷⁴⁸ tendency toward limited sympathy for our fellow human beings,⁷⁴⁹ and we tend to lack a basic desire to improve either our reasoning ability⁷⁵⁰ or our moral state.⁷⁵¹ Our failure to meet the challenge at this point in our species' history is ample testament to its magnitude. One possible reaction to the foregoing litany of human cognitive limitations is a crippling despair, for what is at stake here is obviously something of far more importance than either the ethical reasoning abilities (and desire to employ them) or law-abiding tendencies of managers, present and future.

Some amount of despair is certainly warranted. Outright pessimism would be justified if we conceive of our goal as a state in which all, or even most, human beings are in total agreement on a set of moral standards that counter our worst tendencies. Our "crooked timber" simply does not lend itself to such a project of perfection. Yet, while utopia may not be in our grasp, at least some of our dystopias may be eliminable or improvable, and any improvement would be worth having given the nature of our history.

742. What we face when we go against our nature is an awesomely powerful force, as the Roman poet Horace observed: "You may drive out nature with a pitchfork, yet she'll be constantly running back." OXFORD DICTIONARY OF QUOTATIONS 348 (4th ed. 1992).

743. See *supra* text accompanying note 342.

744. See *supra* text accompanying note 206.

745. See *supra* text accompanying notes 120-51.

746. See *supra* text accompanying notes 152-63.

747. See *supra* text accompanying notes 78, 205, 299-314, & 593-94.

748. See GLOVER, *supra* note 28, at 142 (discussing the possible evolutionary origins of intergroup hostility). Glover concludes that "[b]ecause tribalism runs so deeply in us, it may be impossible to eliminate." *Id.* at 149. That being so, "the only realistic option is to accept our tribal psychology as a fact of life." *Id.* He does, however, hold out the hope that "[g]reater self-consciousness about our psychology may mean that these simple-minded commitments grow into something more complex." *Id.* A better understanding of the evolutionary origins of our psychology also offers some hope of escaping the prison of our inherited motivations. See WRIGHT, *supra* note 1.

749. See *supra* text accompanying notes 692-93 & 696-707.

750. See *supra* text accompanying notes 206, 610-16, & 645.

751. See *supra* text accompanying notes 32, 157-58, 296-301, 342, 681-82, & 710-19.

What has our history been? Robert Wright highlights a typical incident from its darker side when he quotes from a story about one incident in the ongoing Israeli/Palestinian conflict: “In a week’s time, both sides have constructed deeply emotional stories explaining their roles, one-sided accounts that are offered with impassioned conviction, although in many respects they do not stand up, in either case, under careful scrutiny.”⁷⁵² Wright notes that “[w]ars routinely feature a deep and sure sense of grievance on both sides, a weighty belief in the enemy’s guilt,”⁷⁵³ and observes that “the sentence could be applied with equal accuracy to all kinds of clashes, big and little, through the centuries. By itself this sentence tells a large part of human history.”⁷⁵⁴ Can we change the story of our future in a positive way? If we are going to do so, our history of failure suggests that we must try some new approaches.⁷⁵⁵ The Oliners remind us of the price of pessimism:

If we persist in defining ourselves as doomed, human nature as beyond redemption, and social institutions as beyond reform, then we shall create a future that will inexorably proceed in confirming this view. Rescuers refused to see Jews as guilty or beyond hope and themselves as helpless, despite all the evidence that could be marshaled to the contrary. They made a choice that affirmed the value and meaningfulness of each life in the midst of a diabolical social order that repeatedly denied it. Can we do otherwise?⁷⁵⁶

752. WRIGHT, *supra* note 1, at 284.

753. *Id.* at 277. Not just wars, one hastens to add. The opposing parties’ stories about the disputed ballots in Florida during the Bush-Gore presidential election were certainly consistent with this pattern.

754. *Id.* at 285.

755. This brings to mind Georg Christoph Lichtenberg’s comment: “Whether things will be better if they are different I do not know, but that they will have to be different if they are to become better, that I do know.” DIETRICH DÖRNER, *THE LOGIC OF FAILURE* 50 (1989). It also brings to mind the anonymous comment that it is a sign of insanity to keep repeating the same behaviors and expecting different results.

756. OLINER & OLINER, *supra* note 397, at 260; *see also supra* text accompanying note 87.

