MEADOR LECTURE SERIES 2010–2011: RATIONALITY

RATIONALITY

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INTRODUCTION TO THE MEADOR LECTURES ON RATIONALITY

"[I]rrationality is a failure within the house of reason."[1]

– Donald Davidson

I.

The epigraph suggests an idea for beginning to think about rationality: rationality depends on *reasons*. The labels "rational" and "irrational" make sense only when applied to that which has the power to engage in some type of reasoning. This is why Donald Davidson writes that irrationality arises *within* the house of reason. Only that which can act rationally can also act irrationally—trees, rocks, and most sentient animals are not rational, but this does not mean that they are irrational.[2] They are

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1.   DONALD DAVIDSON, *Paradoxes of Irrationality*, *in* PROBLEMS OF RATIONALITY 169, 169 (2004).

2.   *See id*. at 169 ("[T]he irrational is not merely the non-rational, which lies outside the ambit of the rational . . . . [O]nly a rational creature can be irrational."); P.M.S. HACKER, HUMAN NATURE: THE CATEGORICAL FRAMEWORK 199 (2007) ("To be a rational creature is to possess the faculty of reason. . . . To lack that faculty is not to be irrational but a non-rational creature."). Whether, and where, to draw the line between "rational" and "non-rational" among non-human animals is the subject of debate. Many philosophers limit the category to language users. *See, e.g*., DONALD DAVIDSON, *Rational Animals*, *in* SUBJECTIVE, INTERSUBJECTIVE, OBJECTIVE 95 (2001); HACKER, *supra* at 203 ("Our rationality, our limited responsiveness to reasons, and our fallible ability to reason are corollaries of our being language-users. For only language-users can *engage in reasoning* . . . ."); *See* ROBERT B. BRANDOM, MAKING IT EXPLICIT: REASONING, REPRESENTING, AND DISCURSIVE COMMITMENT xxi (1998) ("In a weak sense, any being that engages in linguistic practices, and hence applies concepts, is a *rational* being; in the strong sense, rational beings are not only linguistic beings but, at least potentially, also *logical* beings."). Others disagree. *See, e.g*., PATRICIA S. CHURCHLAND, BRAINTRUST: WHAT NEUROSCIENCE TELLS US ABOUT MORALITY 26 (2011) ("Because many species of birds and mammals

simply non-rational; the concept of rationality does not make sense and does not apply. Rationality is like morality in this respect: only something with the power to act morally is capable of acting immorally.[3] The power, ability, or capacity to reason, broadly construed, delineates the scope of the concept of rationality, broadly construed.

Here is a related idea about rationality: rationality depends on *inferences*. As Robert Brandom notes, "to be rational is to distinguish good inferences from bad inferences."[4] The ability to act rationally in the first place is one that can be exercised correctly or incorrectly, well or poorly. Part of what it means to possess this ability is, as Brandom explains, to know the difference.[5] The "good inferences" are associated with being rational; the "bad inferences" with being irrational. The inferential practices range from the theoretical (as when one derives propositions as conclusions from a number of premises) to the practical (as when one sees dark clouds and therefore grabs an umbrella before leaving). Whether theoretical or practical, the distinction between good and bad inferences indicates that rationality is a *normative* concept—it implies the existence of a standard or criteria for distinguishing good from bad inferences, correct from incorrect reasoning.[6]

Under "rationality," the *Oxford English Dictionary* concurs with these two basic points. The first definition refers to "the quality of possessing reason; the power of being able to exercise one's reason."[7] A second definition refers to the "fact of being based on, or agreeable to, reason" and whether a "view, practice, etc." is "reasonable."[8]

These two basic points help to explain the enduring significance of rationality as a topic of discussion and debate. Our power to be rational—and our discursive powers generally—helps to define what makes human

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display good examples of problem-solving and planning, this claim about rationality looks narrow and under-informed.").

3.   As with rationality, whether and under what circumstances non-humans should be included in this category is the subject of debate. For discussions of this issue see FRANS DE WAAL, PRIMATES AND PHILOSOPHERS: HOW MORALITY EVOLVED (Stephen Macedo & Josiah Ober eds., 2009) (with responses by Robert Wright, Christine M. Korsgaard, Philip Kitcher, and Peter Singer); CHRISTINE M. KORSGAARD ET AL., THE SOURCES OF NORMATIVITY (1996); CHURCHLAND, *supra* note 2, at 26 ("That nonhuman animals have social values is obvious . . . .").

4.   *See* BRANDOM, *supra* note 2, at 231 ("All parties can agree that to be rational is to distinguish good inferences from bad inferences. The disagreement concerns . . . 'good inference' in this formula.").

5.   *Id*. at 230 ("[Rationality requires] mastery of the normative dimension of inference: a practical grasp of the notion of right reasoning, of the distinction between correct and incorrect inference.").

6.   *See generally* JUDITH JARVIS THOMSON, NORMATIVITY (2008). Although the normativity of rationality concerns cognitive aspects, emotions also play a role. *See* MARTHA C. NUSSBAUM, UPHEAVALS OF THOUGHT: THE INTELLIGENCE OF EMOTIONS (2001).

7.   7 OXFORD ENGLISH DICTIONARY 220 (2d ed. 1991).

8.   *Id*.

animals special and, well, *human*.[9] It accounts for our *sapience* and distinguishes us from the merely sentient.[10] Attempts to understand this property and thus ourselves have animated thousands of years of philosophical thought.[11] In addition to understanding ourselves, we also need to figure out how we should act, what we should do next. And thus the *normativity* of rationality has animated and continues to drive discussion in philosophy, economics, the sciences, and law and public policy.[12]

To recap: rationality involves a power of reason, and this power can be exercised in correct and incorrect, good and bad, better and worse ways. It can be done well or poorly. So far, so good. Trying to bring the concept of rationality into sharper focus, however, is where things get complicated. We have not said anything yet about what exactly one has to do to exercise this power and, more importantly, what the standards or criteria are for separating the rational from the irrational.

To begin to get at these complex questions, we must attend to some details of the different projects that invoke the concept of rationality. Here we can distinguish three broad families of theoretical endeavors for which rationality plays a central role: a "narrow normative" project, a "broad normative" project, and a "descriptive/ explanatory" project.

First, the *narrow* normative project employs a limited, *instrumental* conception of rationality. Decisions, outcomes, beliefs, etc. are considered rational if they are appropriate means for achieving certain given ends; they are considered irrational if they are inconsistent with or are otherwise inappropriate means for achieving these ends.[13] The project is *normative* in that it provides a standard or criteria for guiding actions or decisions, on one hand, and for evaluating actions or decisions, on the other. The

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9. *See* DAVIDSON, *Rational Animals*, *supra* note 2, at 96 ("it is not surprising that our human language is rich in resources for distinguishing men and women from other creatures"); HACKER, *supra* note 2, at 203 ("[M]ankind possesses a multitude of powers distinguishing us from other animals . . . . But it is true that we are the only rational animals.").

10. BRANDOM, *supra* note 2, at 650 ("[T]his expressive account of language, mind, and logic is an account of who *we* are. . . . We are sapients: rational, expressive—that is, discursive—beings. But we are more than rational expressive beings. We are also *logical*, *self*-expressive beings."); *id*. at 275–77 (discussing the sapience-sentience distinction).

11. Rationality as a general topic in philosophy is distinct from the specific philosophical doctrines associated with "Rationalism." Philosophical rationalism refers to a variety of epistemological claims about types of knowledge that do not depend ultimately on sense experience and is typically distinguished from the philosophical doctrines associated with "Empiricism." For a general overview, see Peter Markie, *Rationalism and Empiricism*, STAN. ENCYCLOPEDIA OF PHIL., http://plato.stanford.edu/entries/rationalism-empiricism/ (last revised Aug. 6, 2008).

12. For an illuminating discussion of the roles played by the concept of rationality in these different disciplines, see JOSÉ LUIS BERMÚDEZ, DECISION THEORY AND RATIONALITY (2009).

13. Bermúdez refers to this conception as the "action-guiding" dimension of rationality in which "the rational resolutions of a decision problem are those that give the agent the best prospect of realizing her goals relative to the information that she has available to her." *Id*. at 13.

conception of rationality employed by this project may apply to both individual and collective decision-making. The project is *narrow* because the ends or goals are simply taken for granted and are typically specified as preferences.[14] If someone, or a group, prefers one outcome over another, then the rational decision would be one that achieves the preferred outcome; a decision in favor of the non-preferred outcome would be irrational. In addition to preferences, the narrow normative project employs a principle of "maximum expected utility" to guide and evaluate actions. This allows for assessments of rationality even when possible outcomes are not certain. Preferences regarding outcomes may simply be multiplied by the (believed) probability of each outcome's occurrence to arrive at the "expected utility" value for each possibility; the rational decision is the option with the highest value. This basic conception of rationality underlies decision theory, which attempts to formalize the decision-making process when values can be assigned to preferences and probabilities.[15]

Many readers will of course recognize this description of rationality as the one underlying much economic analysis of law[16] as well as the general framework underlying cost/benefit public-policy analysis.[17] The narrow normative conception, however, does not exhaust the field of rationality, and, indeed, it faces some serious problems that emerge when our scope of rationality broadens.

Second, the *broad* normative project expands the scope of rationality in terms of both ends and means. While the narrow conception takes ends as a given (in terms of preferences), the broad normative project assesses the ends or goals, as well as the means, in evaluating reasoning and decision-making. One possibility is to invoke a more robust notion of "utility" than actual preferences. A substantive notion of utility may appeal to a variety of different criteria—for example, happiness, well-being,

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14.   *Id.*

15.   *Id.* In order to formalize the decision process a subject's preferences must be quantified as cardinal utilities. *See* JOHN VON NEUMANN & OSKAR MORGENSTERN, A THEORY OF GAMES AND ECONOMIC BEHAVIOR (1944). A subject's utility function (the cardinal utilities assigned for each outcome) can then be multiplied by probabilities for each possible outcome to arrive at the "expected utility" for each outcome. The "rational" decision is the one that maximizes expected utility. The probability component typically relies on analysis consistent with the axioms of classical probability theory. *See* ANDREI KOLMOGOROV, FOUNDATIONS OF THE THEORY OF PROBABILITY (1956). For a useful overview, see Alan Hajek, *Interpretations of Probability*, STAN. ENCYCLOPEDIA OF PHIL., http://plato.stanford.edu/entries/probability-interpret/ (last revised Dec. 19, 2011). For a critique of this approach in economic analysis of law, see Alex Stein, *The Flawed Probabilistic Foundation of Law and Economics*, 105 NW. U. L. REV. 199 (2011).

16.   *See id.* at 259 ("Of the two determinants of economic value—utility and probability—the first occupies the forefront of law and economics scholarship . . . .").

17.   *See* Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 YALE L.J. 165,177 (1999) ("[M]ost defenders of [cost-benefit analysis] assume that agencies should maximize the satisfaction of unrestricted preferences. By 'unrestricted preferences' we mean people's actual preferences, even if they are uninformed or distorted by circumstances.").

wealth, or preferences under ideal conditions—to ground utility in something more "objective" than individual preferences.[18] Once the notion of utility is taken to include more than preferences, then decision-makers may be mistaken—and fail to act rationally—even when their decisions satisfy their preferences perfectly. For example, under a "happiness" model of utility, a subject may decide on a course of action that satisfies her actual preferences but that course of action may produce less happiness and more pain than other options available to her. A second possibility for the broad project is for the "ends" or goals to depend on non-utilitarian, normative considerations.[19] For example, non-utilitarian moral considerations may provide an independent standard by which to measure a subject's decisions and reasons for action.[20] The broad normative project also expands the considerations along the "means" dimension, assessing the ways in which reasoning is conducted and decisions are made. While the narrow conception relies on whatever is believed about the probability of possible outcomes, a broader conception of rationality may assess the evidential base for decisions, as well the intermediate inferential practices that produce the evidence and the universe of options.

Under the broader conception, rationality more closely resembles reasonableness generally. Under the narrow conception, by contrast, rationality and what is reasonable may diverge. The narrow conception is what allows the distinction, made famous by John Rawls, between the rational and the reasonable to make sense.[21] The instrumentally rational thing to do, for example, may be unreasonable because it is immoral or unjust. As the conception of rationally broadens, however, the rational and the reasonable converge.

Finally, although rationality is primarily a normative notion, it also shows up in *descriptive* and *explanatory* projects of human behavior. Although "rational actor" models posited in economics explain some types of economic behavior well, they are widely thought to be descriptively inferior to "bounded" rationality models[22] and the psychological descriptions of the "heuristics and biases" commonly used to make

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18.   *See* BERMÚDEZ, *supra* note 12, at 43–76 (discussing substantive notions of utility); *see also* Adler & Posner, *supra* note 17, at 177 (arguing that an "unrestricted preferences" model of cost-benefit analysis is "implausible and unnecessary").

19.   *See, e.g.*, KORSGAARD ET AL., *supra* note 3.

20.   *See id*.

21.   *See* JOHN RAWLS, POLITICAL LIBERALISM 51 (1996) (arguing that reasonableness, unlike rationality, "connects with the idea of fair social cooperation"); *see also* HACKER, supra note 2, at 202 ("Like reasonableness, rationality is also tied to freedom from the distorting effects of bias and emotion on thinking. But reasonableness, unlike rationality, is more closely linked to the appreciation of values and their multiplicity, and to awareness of the legitimate concerns of others . . . ."); W.M. Sibley, *The Rational and the Reasonable*, 62 PHIL. REV. 554 (1953).

22.   *See* Jeffrey J. Rachlinski, *The Psychological Foundations of Behavioral Law and Economics*, 2011 U. ILL. L. REV. 1675 (2011).

decisions, which deviate from "rational actor" predictions.[23] Accompanying these psychological descriptions, the narrow normative conception of rationality may serve as a benchmark by which to measure outcomes. Theorists disagree, however, about the extent to which deviations from the narrow conception ought to be deemed irrational.[24]

A distinct, but related, explanatory project occurs in philosophy. The psychological projects take individuals' beliefs and reasoning processes as given through observation and experiment and then assess the extent to which individuals conform to models of rationality. The philosophical project reverses the order of explanation: rationality is used to explain and interpret mental states (beliefs, desires, intentions, etc.) in the first place. According to this project—carried out in different ways by philosophers such as Daniel Dennett, Donald Davidson, and Robert Brandom—as an interpretive strategy, we impose some minimal degree of rationality on beings in order to make sense of their behavior and the mental states that accompany their behavior.[25] As a conceptual matter, in other words, some degree of coherence (a condition of rationality) is necessary to make sense of human behavior as *actions produced by particular beliefs, desires, and intentions*.[26]

Stepping back from this brief outline, we can glimpse the dizzying array of different uses to which "rationality" is put in the humanities, the sciences, economics, and law. Reasons and reasoning are at the heart of law and legal theory, and thus the law inherits the immense complexity that attends to the topic of rationality. Legal theory has, unfortunately, been dominated by a narrow, instrumental conception of rationality (tempered with a rich psychological literature aimed at describing, explaining, and predicting behavioral deviations) to the neglect of broader normative notions.[27]

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23. *See* JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES (Daniel Kahneman et al. eds., 1982).

24. *See, e.g.*, L. Jonathan Cohen, *Can Human Irrationality Be Experimentally Demonstrated?*, 4 BEHAV. & BRAIN SCI. 317 (1981); GERD GIGERENZER ET AL., SIMPLE HEURISTICS THAT MAKE US SMART (1999).

25. *See* BRANDOM, *supra* note 2, at 15–18; DONALD DAVIDSON, *Incoherence and Irrationality*, *in* PROBLEMS OF RATIONALITY, *supra* note 1, at 189; DANIEL C. DENNETT, THE INTENTIONAL STANCE (1989).

26. *See* DAVIDSON, *supra* note 25, at 196 ("Rationality . . . is a condition of having thoughts at all.")

27. Within legal scholarship, the law of evidence is one notable exception, where broad notions of rationality have been a continuing topic of discussion and debate. *See, e.g.*, LARRY LAUDAN, TRUTH, ERROR, AND CRIMINAL LAW: AN ESSAY IN LEGAL EPISTEMOLOGY (2006); ALEX STEIN, FOUNDATIONS OF EVIDENCE LAW (2005); L. JONATHAN COHEN, THE PROBABLE AND THE PROVABLE (1977); Michael S. Pardo & Ronald J. Allen, *Juridical Proof and the Best Explanation*, 27 LAW & PHIL. 223 (2008); Alvin I. Goldman, *Quasi-Objective Bayesianism and Legal Evidence*, 42 JURIMETRICS J. 237 (2002); Richard Lempert, *The New Evidence Scholarship: Analyzing the Process of Proof*, 66 B.U.L. REV. 439 (1986).

Legal doctrine, however, at times embraces broader conceptions of rationality. Consider two examples: (1) "sufficiency of the evidence" standards in civil and criminal cases, and (2) criminal law doctrine regarding culpability. In *Jackson v. Virginia*, the U.S. Supreme Court articulated the constitutional standard for reviewing criminal defendants' challenges to the sufficiency of evidence underlying their convictions.[28] The standard is whether "any *rational* trier of fact could have found the essential elements of the crime beyond a reasonable doubt."[29] Then, in *Anderson v. Liberty Lobby, Inc.*, in articulating the summary judgment standard for civil cases, the Court analogized to *Jackson v. Virginia*.[30] The civil standard, which applies to both summary judgment and judgment as a matter of law, is whether a "*reasonable* jury could return a verdict for the nonmoving party."[31] "Reasonable" and "rational" are synonymous in this context. For both issues, the question is whether a particular conclusion, given the evidence and the standard of proof, has adequate epistemic support in the record.[32]

Second, within criminal law, several doctrinal issues depend on judgments of a defendant's rationality.[33] In this context, rationality refers to a general capacity to respond to, and act (or not) based on, reasons. As Stephen Morse explains "mental disorder" for purposes of criminal law doctrine is best explained as "irrational behavior that is refractory to evidence and argument."[34] The lack of this capacity for rationality "is the primary reason the law treats some . . . people specially."[35] For these doctrinal purposes, rationality is conceived broadly and means a minimal capacity to reason, to respond to reasons, and to act (or not) based on those reasons.[36]

To recap again: We began with two quite general points about rationality—its connection to reasoning in general and to good reasoning in

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28.   443 U.S. 307 (1979).

29.   *Id*. at 319 (emphasis added).

30.   477 U.S. 242, 252 (1986) (explaining that *Jackson v. Virginia* imposes a "reasonable jury" standard in criminal cases).

31.   *Anderson*, 477 U.S. at 248 (emphasis added); *id*. at 252 (explaining that this determination depends on the "evidentiary standard of proof" at trial); Reeves v. Sanderson Plumbing Prods., Inc., 530 U.S. 133, 149–50 (2000) (explaining that the standard for judgment as a matter of law "mirrors" the standard for summary judgment).

32.   I discuss the epistemic support required to satisfy standards of proof in more detail in Michael S. Pardo, *The Nature and Purpose of Evidence Theory*, 66 VAND. L. REV. (forthcoming), *available at* http://ssrn.com/abstract=2060340 .

33.   For a comprehensive overview of the relationships between rationality and various pre-trial, trial, and post-trial issues, see Stephen J. Morse, *Mental Disorder and Criminal Law*, 101 J. CRIM L. & CRIMINOLOGY 885 (2011).

34.   *Id*. at 891.

35.   *Id*. at 892.

36.   This minimal conception of rationality resembles the explanatory philosophical project. *See supra* notes 25–26 and accompanying text.

particular. We then briefly outlined three types of theoretical projects that make use of the concept: a narrow normative one; a broad normative one; and a descriptive and explanatory one. Finally, we noted examples in which the concept arises in legal doctrine. This sketch was meant merely to provide a brief overview of rationality's landscape. The Meador Lectures on Rationality explore its terrain.

II.

The Meador Lectures sharpen our focus on the topic of rationality by illuminating particular areas of its terrain.[37] The four lecturers—Rosabeth Kanter,[38] Hanoch Dagan,[39] Phoebe Ellsworth,[40] and Ronald Allen[41]— discuss the significance of rationality for diverse issues in law, business, and science and examine several distinct aspects of the concept. A sense of these distinct aspects can be seen in the ways each lecturer conceives of and defines the topic. Two authors (Kanter and Dagan) focus on a narrow conception associated with *homo economicus* and explore issues left out by that picture. Two authors (Ellsworth and Allen) focus on a broad conception of rationality associated with successful reasoning generally, comparing and contrasting law with scientific practices and other areas of inquiry. For Kanter, the "rationality" of economics posits that people "always act on self-interest, defined by preference rankings."[42] Likewise, for Dagan, "rationality" is "narrowly defined as the maximization of an agent's self-interest."[43] For Ellsworth, "rationality" focuses on "intellectual methods" and whether "those methods are designed to analyze questions and reach the correct conclusions by means of reason, free from cognitive

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37. The Meador Lectures at the University of Alabama School of Law are named in honor of Daniel J. Meador, a graduate and former Dean of the law school and the James Monroe Professor of Law Emeritus at the University of Virginia School of Law. The lectures are sponsored by the University of Alabama School of Law's Program on Cross-Disciplinary Legal Studies. *See About the Cross-Disciplinary Legal Studies Program*, U. OF ALA. SCH. OF LAW, http://www.law.ua.edu/academics/cross-disciplinary-legal-studies-program/ .

38. Rosabeth Kanter, *Values, Purpose, Meaning, and Expectations: Why Culture and Context Matter*, 62 ALA. L. REV. 1033 (2011). Rosabeth Kanter is the Ernest L. Arbuckle Professor of Business Administration at Harvard Business School.

39. Hanoch Dagan, *Between Rationality and Benevolence: The Happy Ambivalence of Law and Legal Theory*, 62 ALA. L. REV. 191 (2010). Hanoch Dagan is Dean and Professor of Law at Tel-Aviv University, Buchmann Faculty of Law.

40. Phoebe Ellsworth, *Legal Reasoning and Scientific Reasoning*, 63 ALA. L. REV. 895 (2012). Phoebe Ellsworth is the Frank Murphy University Professor of Law and Psychology at the University of Michigan Law School.

41. Ronald J. Allen, *Rationality and the Taming of Complexity*, 62 ALA. L. REV. 1047 (2011). Ronald Allen is the John Henry Wigmore Professor of Law at Northwestern University School of Law.

42. Kanter, *supra* note 38, at 1033.

43. Dagan, *supra* note 39, at 191.

or emotional biases."[44] For Allen, "rationality" refers to "success in controlling our environment, which is attributable to the myriad regulatory measures our minds have been able to construct and employ to tame various aspects of the chaos swarming around us."[45]

Rosabeth Kanter discusses "winning streaks" and "losing streaks" among corporations in order to illustrate that rationality depends on more than the assumptions of the narrow economic conception, including "the context surrounding a given phenomenon in the mind" and "history, expectations about the future, group membership, and cultural values."[46] Winning streaks have their upsides and downsides. When things are going well, confidence improves, people are more likely to take risks and be entrepreneurial, and people are more willing to be collaborative.[47] However, when things are going well, "people start taking for granted the upward cycles and think it is all because of their own actions and behaviors because they are superior," and "people begin to believe that it will never end."[48] She discusses the example of Enron.[49] With losing streaks, behaviors and emotions reinforce a downward spiral: "there is little appetite for risk," "there is anger, hurt, and resentment," and teams and corporations are consequently less likely to communicate and learn.[50] These conditions make turnarounds difficult, but Kanter traces some of the factors that make turnarounds more likely. Most important are instilling a "strong sense of purpose" and providing clear values and principles with which the group can identify.[51] These factors create "positive expectations of success" and "a culture of collaboration in which people felt enriched."[52] She discusses the examples of Proctor and Gamble, Banco Santander, and Continental Airlines.[53] Kanter concludes that understanding values, history, and a sense of purpose are necessary to "explain and predict human behavior" and that by understanding this context we can see how "rationality . . . includes things that were once considered irrational."[54]

Hanoch Dagan explores a puzzle in law and legal theory. The puzzle arises from the fact that the law typically treats citizens as self-interested maximizers of their own interests, but it typically treats judges (and other

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44.   Ellsworth, *supra* note 40, at 895.
45.   Allen, *supra* note 41, at 1052.
46.   Kanter, *supra* note 38, at 1034.
47.   *Id*. at 1037.
48.   *Id*. This cognitive bias—known as the "fundamental attribution error"—is also discussed in Ellsworth, *supra* note 40, at 916–18.
49.   Kanter, *supra* note 38, at 1037.
50.   *Id*. at 1038.
51.   *Id*. at 1042.
52.   *Id*. at 1045.
53.   *Id*. at 1042–46.
54.   *Id*. at 1046.

officials) as "benevolent servants of the public good."[55] Although these are the "official stories" regarding citizens and judges, he notes counter-narratives that recognize, for example, legal doctrine premised on citizens' concern for other individuals and the community as a whole[56] and legal theory's descriptions of the utility functions of rational self-interested judges.[57] Dagan acknowledges that the official stories and the counter-narratives each contain some truth, but he argues that the baselines assumptions of the official stories (citizens are rational and judges are benevolent) are nevertheless justified. With regard to citizens, the baseline is justified because "a liberal society must assume and, as far as possible, must also ensure that . . . [benevolent] pursuits are aspects of individual self-fulfillment."[58] In other words, a broad assumption of rationality sets the baseline to allow citizens to pursue their own "conceptions of the good," including their "other-regarding commitments and collective associations."[59] With regard to judges, the baseline is justified because "it is part of a cultural and institutional structure which strengthens our expectations that judges will transcend their self- and group-interest and will serve the public good."[60] One thing that even self-interested rational judges prefer is to be perceived as "good judges," and this requires actions that manifest the virtues associated with the benevolence story.[61] In other words, the baseline is justified because we want judges to act *as if* they are benevolent, or as a truly benevolent judge would, even when they are not. Finally, Dagan traces the normative implications of this argument, cautioning against the reductionism of "naïve utopianism and hopeless cynicism."[62] He argues that law should sustain and foster the "fragile ambivalences" between these two poles by (1) assuming the rationality of citizens but also providing "complex platforms" for fostering communities of trust made possible by benevolent actions, and (2) assuming the benevolence of judges but also fostering a "role-morality" that "tinkers with judges' preferences and protective sets of incentives."[63]

Phoebe Ellsworth examines the rationality of the "intellectual methods" employed by science and law.[64] She begins at a general level by cataloging similarities and differences between legal reasoning and reasoning

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55.   Dagan, *supra* note 39, at 192.
56.   *Id.* at 195.
57.   *Id.* at 197.
58.   *Id.* at 200.
59.   *Id.* at 201.
60.   *Id.* at 200.
61.   *Id.* at 199–200.
62.   *Id.* at 202.
63.   *Id.* at 203.
64.   Ellsworth, *supra* note 40, at 895.

practices in the sciences, focusing on deductive and inductive reasoning and the case method.[65] She next focuses on the general cognitive biases that affect both fields (for example, hindsight, anchoring, and confirmation).[66] Finally, Ellsworth turns to the key institutional differences that contribute to divergences in legal and scientific reasoning: the lack of empirical testing of legal assumptions and the law's need for (1) immediate, final decisions; (2) categorical thinking rather than compromises; and (3) judgments about particular events or people, rather than probabilistic judgments about classes or groups.[67] She discusses several examples to illustrate divergences. One example concerns jury requirements. In two cases, the U.S. Supreme Court held that six-person juries and non-unanimous verdicts were each constitutionally permissible.[68] In response, "[m]embers of the social science community were surprised and dismayed that the Court could allow such significant changes . . . on the basis of such flimsy evidence about human behavior."[69] Later, the Court declared five-person juries to be unconstitutional,[70] discussing "the explosion of [social scientific] research on juries" that emerged in the subsequent years, even though "no research actually addressed the question of differences between five-person and six-person juries."[71] Ellsworth also discusses examples of juror bias in capital cases; race and the implementation of capital punishment; the admissibility of expert testimony; and predictions of future dangerousness.[72] She concludes with a further divergence between law and science about human behavior generally, arguing that the law assumes a baseline of "personal responsibility" and "free will," while social scientists operate with more "deterministic assumptions" in which "situational influences" play a much greater causal role.[73] She concludes by suggesting that a greater awareness of these influences "might temper the punitive nature of American sanctions."[74]

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65. *Id*. at 896–901.

66. *Id*. at 902–07.

67. *Id*. at 907–17.

68. Williams v. Florida, 399 U.S. 78 (1970) (six-person juries); Johnson v. Louisiana, 406 U.S. 356 (1972) (unanimity requirement).

69. Ellsworth, *supra* note 40, at 909.

70. Ballew v. Georgia, 435 U.S. 223 (1978).

71. Ellsworth, *supra* note 40, at 909–10.

72. *Id*. at 910–16.

73. *Id*. at 916–18. Ellsworth discusses the "fundamental attribution error" as a source for some of this divergence. *See* John M. Darley & C. Daniel Batson, *"From Jerusalem to Jericho": A Study of Situational and Dispositional Variables in Helping Behavior*, 27 J. PERSONALITY & SOC. PSYCHOL. 100 (1973). Note that the distinction between "situation" and "character" as a causal factor is itself a distinct issue from the distinction between "free will" and "deterministic" factors. Internal, non-situational variables, for example, could also be causal and deterministic. For an argument that legal doctrine depends on personal responsibility but not on free will, see Morse, *supra* note 33.

74. *Id*. at 918.

Ronald Allen focuses on the complexity underlying both rationality and law. The commonality underlying both domains is the attempt to control an overwhelmingly complex environment with rules.[75] Beginning with rationality, Allen notes two significant facts: (1) the topic has been an enduring one discussed by virtually every major philosopher for thousands of years, and (2) they "did not agree on very much."[76] He catalogs several different benchmarks that have been advanced as the mark of rationality, including economic efficiency, logical consistency, evidential cogency, and certain substantive commitments.[77] He concludes that rather than any one set of rules bearing the true mark of rationality, they are each different cognitive "tools" that work well on some problems and poorly on others in the complex environments in which human reasoners find themselves.[78] The same goes for the law.[79] The law imposes a system of static[80] rules designed to control the social environment. As with rules of rationality, legal rules face limitations caused by the complexity to which they must apply. Allen devotes the remainder of his essay to discussing these limitations with examples including assumptions in legal theory about primary (i.e., non-litigation) and secondary (i.e., litigation) behavior; factual decision-making; legal doctrine; the rules-standards distinction; and the Hart/ Dworkin debate.[81] With each example he illustrates how certain operating assumptions and intended results may be thwarted by the complex environment to which it applies.[82] Allen concludes by discussing a particular cognitive tool—"inference to the best explanation"—that responds dynamically in each of these situations and that itself explains much of law's success in controlling the social environment and taming complexity. He explains that "one important and ubiquitous tool is to examine and compare possibilities" and to search "for the better or best of the explanations that we have available to us."[83] Allen concludes that this

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75.   Allen, *supra* note 41, at 1048–50.

76.   *Id*. at 1049.

77.   *Id*. at 1051 (discussing NICHOLAS RESCHER, RATIONALITY: A PHILOSOPHICAL INQUIRY INTO THE NATURE AND THE RATIONALE OF REASON (1988) and RUSS SHAFER-LANDAU, MORAL REALISM: A DEFENCE (2003)).

78.   *Id*.

79.   *Id*. at 1054 ("[T]he twin domains of the legal system—law and fact—are immensely, almost infinitely complex, each being bubbling cauldrons of interacting variables often too numerous to articulate let alone compute, often continuous rather than discrete, and often unknown to the observer . . . .").

80.   Allen draws a distinction between "static" and "dynamic" rules. *Id*. at 1062–68. Static rules provide necessary and sufficient conditions for decisions about pre-determined situations; dynamic rules adjust based on the underlying circumstances to achieve particular goals. *Id*.

81.   *Id*. at 1057–68.

82.   For example, he concludes that the complexity underlying the legal system "demonstrates the literal impossibility of the strong Dworkin program of law as integrity." *Id*. at 1066.

83.   *Id*. at 1066–67.

perspective itself best explains law's operations and its dynamic responses to complexity: "any result in a given case is simply another datum whose effects ripple through the system in many instances prompting others to contest it in various ways, and so on."[84]

And so on to the Meador Lectures on Rationality.

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84.   *Id*. at 1067.