

The Venn Diagram of Business Lawyering Judgments: Toward a Theory of Practical Metadisciplinarity

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I. INTRODUCTION: THE VENN DIAGRAM

This article addresses that attribute variously called good, sound, seasoned, or mature judgment. How do we in the academy describe this almost ineffable quality, much less teach it? To be clear, this is not the usual legal or philosophical task of sitting in retrospective judgment, as in the attribution of fault or blame, but instead the process of prospective decision-making. It is one of the most intractable issues facing the legal academy; yet, at the same time, such judgment is perhaps the most marketable, practical skill we might impart upon our law students. Long after I had embarked on the thinking and writing that has come to be this article, I sat in on the fairly typical “dean talk” that prospective dean candidates give to faculties as part of the hiring process. This particular candidate bordered on what law faculties think of as a “non-traditional” candidate; despite having long-standing scholarly bona fides (a Ph.D. in a social science discipline from an Ivy League school), he had spent most of his career as a practicing lawyer, was well connected in the elite circles of the Boston-New York-Washington axis, and at the time of the interview, was the chief legal officer of a major institution. He related what the general counsel of a major New York investment bank had told him—what storied old Wall Street law firms still offered was not just exquisitely delivered legal work but consummate “judgment.” I have also been a general counsel, and I concur with the sentiment that obtaining that kind of judgment is the aspiration.¹

This is precisely the kind of professional judgment we are willing to buy, not just from Wall Street lawyers, but also from our doctors, investment advisers, auto mechanics, veterinarians, and the executives of companies in which we own shares. Philosophers, at least since Aristotle, have been pondering this issue. Aristotle called it

¹ I have previously criticized Ronald Gilson’s iconic article, *Value Creation by Business Lawyers: Legal Skills and Asset Pricing*, 94 YALE L.J. 239 (1984). See Jeffrey M. Lipshaw, *Beetles, Frogs, and Lawyers: The Scientific Demarcation Problem in the Gilson Theory of Value Creation*, 46 WILLAMETTE L. REV. 139 (2009). That was primarily a reaction, not so much to the idea that lawyers or clients might actually be transaction cost engineers, but to the rational actor justification based on the idea that lawyers and clients were actually chasing a notional joint surplus. I suspect the delivery of exquisite judgment reduces transaction costs, and so my more positive views here of business lawyer value might well be complementary in many respect to those of Professor Gilson.

phronesis, or “practical wisdom,” and described it as a natural attribute that includes, among other things, the ability to deliberate well, to deal with universal principles as well as particular actions, to assess which actions are conducive to ends, to employ sympathetic understanding in the effort to determine what is fair, and to distinguish and abjure mere cleverness in the pursuit of a bad end.² In the *Critique of Pure Reason*, Immanuel Kant simply punted on the essence of judgment, concluding that it could be learned but not defined.³

I intend to theorize about the practical reality of lawyers making particularly difficult kinds of judgments, namely those that require blending legal judgment with knowledge from disciplines outside the law. No legal issue is ever purely one of law; the facts come from somewhere. But for many issues (for example, whether the set of circumstances by which a consumer was injured in the course of using a lawnmower is actionable) we would consider the judgment to be squarely within the discipline of law. Even this relatively mundane judgment is a theoretical and reductive exercise.⁴ When a lawyer applies the law to the facts, she eliminates the extraneous detail in the entire narrative of the incident, and selects those particular facts that establish the elements of the claim. She does this by selecting a hypothesis of liability from among recognized legal characterizations that might fit the circumstances (for example, strict liability or implied warranties). She then develops a theory of the case by culling the evidence to fit the hypothesis. That is a lawyer’s particular skill as a

² ARISTOTLE, NICOMACHEAN ETHICS 152–73 (Martin Ostwald trans., Bobbs-Merrill 1962).

³ IMMANUEL KANT, CRITIQUE OF PURE REASON 268–69 (Paul Guyer & Allen W. Wood trans., Cambridge Univ. Press 1999) (1787).

⁴ My working concept is that the goal of the reductivist physical or social scientist is to make each level of explanation by way of physical or social scientific laws or regularities supervene on a set of more general laws or regularities. The great pioneering organizers of the law as an academic discipline were engaged in the same kind of reductive effort: to distill the essential rules that constituted the law from the available data, namely the pronouncements of common law judges in litigated cases. See, e.g., Hanoch Dagan & Roy Kreitner, *The Character of Legal Theory* (Tel Aviv Univ. L. Fac. Papers, Working Paper No. 114, 2010), available at <http://law.bepress.com/taulwps/fp/art114> (“Langdellian legal science envisioned law as an autonomous discipline governed by three characteristic intellectual moves: classification, induction, and deduction.”). Indeed, “reductionism” is its own extensive topic in the philosophy of science. I mean here primary “epistemic reduction,” and within that, “explanatory reduction,” defined loosely as “the idea that the knowledge about one scientific domain (typically about higher level processes) can be reduced to another body of scientific knowledge (typically concerning a lower and more fundamental level).” Ingo Brigandt & Alan Love, *Reductionism in Biology*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY, May 27, 2008, <http://plato.stanford.edu/entries/reduction-biology>.

professional: the ability to predict, structure, manipulate, or advocate by application of the models supplied by the law to the reality of the world.

Moreover, the legal profession is simply one example of the specialization of knowledge and judgment. Our physical and social environments have become too complex and interconnected, and our knowledge has so far expanded in breadth and depth that scientific explanation (and hence, reduction to more general laws) is impossible without specialization. The eminent historian Thomas Haskell suggests that professional organizations arose in the late nineteenth century in order to achieve communities that governed the certification of such expertise.⁵ For lay people, lawyers, like physicians or accountants or stockbrokers, are a prime example of such a self-certifying professional guild. That same phenomenon of the professionalization of knowledge and judgment took place within academia; self-certifying guilds arose at about the same time for philosophers, historians, economists, and sociologists, among others.⁶

Law, it seems to me, has a special place within the social sciences or humanities disciplines. The vast majority of the discipline—the practicing bar—interacts on a daily basis with the lay community or practitioners of other specialized disciplines such as medicine, management, or engineering. Practicing lawyers (particularly those counseling and not litigating) engage every day in the exercise of interdisciplinary judgment. They are not just applying the legal doctrine they learned in their law school classes. Very few sister-social-science or humanities disciplines have adherents who practice in the way that lawyers practice law—an exception being economics, widely viewed as the most scientifically rigorous of the social sciences. The closest examples in other disciplines are “public intellectuals.”⁷ Practicing lawyers and public intellectuals of all stripes nevertheless bear a critical similarity: in order to be effective they must translate their discipline to non-practitioners in a way that transcends technical analysis or jargon.

Peter Goodrich correctly observes that law as practice long preceded law as discipline, and has always been, by nature of what law-

⁵ THOMAS L. HASKELL, THE EMERGENCE OF PROFESSIONAL SOCIAL SCIENCE: THE AMERICAN SOCIAL SCIENCE ASSOCIATION AND THE NINETEENTH-CENTURY CRISIS OF AUTHORITY 18–23 (2000).

⁶ *Id.*

⁷ Examples are David McCullough and Doris Kearns Goodwin in history. There are legal academics as well who are public intellectuals: Richard Posner and Martha Nussbaum being prime examples.

yers are required to do, “interdisciplinary.”⁸ Moreover, this very practical interdisciplinarity creates its own issues with the modern legal academy. Accordingly to Professor Goodrich, the scholarly crisis of *academic* law is that it does not fit neatly into any of the other disciplines of human behavior: it is homeless.⁹ The effect of such homelessness, says Goodrich, has been to encourage legal scholars, in essence, to create their own disciplinary boundaries and norms where perhaps fewer ought to exist, and that it may be time for the discipline to undertake “a frank acknowledgment of the value of indisciplineline both to novelty and intellection.”¹⁰

Thus, this inquiry into the making of professional judgments as between disciplines spans both the practicing and the academic arms of the legal profession. Whether one is a law professor doing work in “law and [insert a discipline like economics, philosophy, society, or evolutionary biology],” or a practicing lawyer counseling a client on the advisability of a business deal, the moment we cross disciplinary lines and seek to make judgments about others’ work in a specialized, professional world, we run into a kind of “Rule-of-Recognition” problem: how do you recognize expertise if you are not yourself an expert in the discipline? What are the standards of judgment when two disciplines intersect? Who makes the judgment, and how expert or certified does the judgment-maker need to be in each discipline?

As exemplars of the kind of practical issue about which I intend to theorize, I propose three different classes of business-lawyering questions, which will serve to clarify what constitutes a lawyer’s wisdom or judgment. There are some matters in the course of a business’s operation that are so trivially legal that we can appropriately call them “pure” business judgments. If electrical connector A simply does not work in our application, the choice of the more expensive connector B is a pure business decision (assuming we want to sell products that work). There are some legal judgments, at the other extreme that, while complex, call for the input of facts but not business judgment. In other words, the business input is so trivial that we can appropriately call them “pure” legal judgments. The rules for determining the number of shares that a corporate-control person subject to Rule 144¹¹ might sell in a given period take certain inputs and

⁸ Peter Goodrich, *Intellection and Indiscipline*, 36 J.L. & SOC’Y 460, 467–70 (2009).

⁹ *Id.* at 462.

¹⁰ *Id.* at 460.

¹¹ 17 C.F.R. § 230.144 (2010). Rule 144, promulgated by the Securities and Exchange Commission, provides a safe harbor from violation of securities registration

apply a regulatory algorithm. Similarly, the determination of whether a particular business acquisition requires a filing with the Federal Trade Commission (FTC) under the Hart-Scott-Rodino pre-merger rules¹² is, in large part, an algorithm that depends on the size of the parties involved and the size of the transaction, subject to certain exceptions.

Far more challenging, it seems to me, are questions of mixed legal and business judgment. Those might occur in the foregoing “pure” examples if we modified the questions as follows:

- Should we buy electrical connectors from C that are cheaper than those from B if we are fairly satisfied as to their efficacy and also obtain a contractual warranty?
- Should the control person sell her shares if the public nature of a Rule 144 filing will cause investors and analysts to doubt her confidence in the company?
- Should we proceed with the acquisition if it is arguably too concentrative under Section 7 of the Clayton Act and a pre-merger filing will subject it to certain scrutiny?

Along the same lines, consider the following not-atypical situations:

- A small firm makes the electrical connectors. It sells five million of them a year to the automotive industry at a price of fifty cents per unit. The firm’s gross revenues are thus \$2.5 million. The form purchase order from the automobile manufacturer provides that the supplier is responsible for all losses, including consequential damages, arising from any defect. If the connectors turned out to be defective, their replacement would require two hours of time from a service mechanic (roughly \$100). The automobile manufacturer refuses to modify the form warranty provision. Should the firm sell the connectors?
- A retired executive of very comfortable means proposes to buy a travel agency. The purchase price of the agency is

rules for holders of restricted securities or control persons who wish to sell their shares to public. *Id.*

¹² 16 C.F.R. §§ 801–803 (2010). Substantively, Section 7 of the Clayton Act, 15 U.S.C. §18, bars business acquisitions which may substantially lessen competition, or tend to create a monopoly in any line of commerce. *Id.* The Hart-Scott-Rodino Antitrust Amendments Act of 1976 put in place a system whereby the FTC and the Department of Justice could review acquisitions before they occur. The rules, promulgated by the FTC pursuant to that act, limit the pre-merger review only to significant acquisitions undertaken by significant entities. *Id.*

\$500,000, under an asset purchase agreement that excludes the assumption of any liabilities except those expressly set forth in the agreement. The seller has a reputation of being “sharp.” There has been some due diligence, and there is a full set of representations and warranties in the agreement. There is, however, always the possibility that there are skeletons in the closet; for example, notwithstanding the non-assumption of liabilities, an ongoing customer might claim that the previous owner failed to make good on an obligation and refuse to do business unless the new owner makes good. The domestic partner of the executive is sitting in your office and has posed the question: “This poses a lot of financial risk for our household; do you think we should go ahead with it?”

A Venn diagram uses circles and the manner in which they overlap to represent the logical relationship between elements within sets. Some elements are only part of circle A; some elements are only part of circle B; but some elements are part of both circles. In the following Venn diagram (Figure 1), the “A” elements are business judgments, the “B” elements are legal judgments, and the overlap “AB” are mixed judgments of law and business.

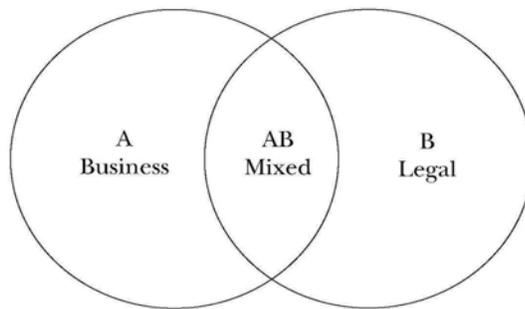


Figure 1

The question is: who is capable of making judgments in the Venn diagram overlap?¹³ Business people are not competent to assess

¹³ To give away part of the punch line, part of what follows is a critique of that kind of thinking under which we might attribute “either-or” characteristics, as in a Venn diagram, to different judgments. See discussion *infra* notes 63–64. In the terminology I discuss later, circle A would constitute an idealized cognitive model, including prototype effects, of a business judgment, and circle B would be the equivalent for a legal judgment. See *id.* The overlap can be thought of as another category or more ideally as the elimination of a distinction between the idealized models in the two circles.

the legal implications of those mixed judgments and are not inclined merely to trust the decision to lawyers. Lawyers, on the other hand, by training if not inclination, are usually successors to a particular method of organizing the world and members of a closed discipline: they are not business people. By nature of the very concept of a judgment, however, both the assessment and the decision must occur privately in a single conscious mind, no matter how the judgment is ultimately influenced, communicated, shared, or adopted by others. If, as I think is the case, lawyers have to undertake the judgments that fall in the overlap, the implication for lawyering and legal education is that some of the old canards about leaving business judgment to the business people must fall away.¹⁴

There are three sub-themes. First, as discussed in Part II, there is no “collective judgment.” Practical judgment does not occur in the ether but in a mind.¹⁵ The closest we have come to a science of

¹⁴ Do lawyers actually get involved in making business decisions? My casual experience as the chief in-house lawyer for two very large corporations leads me to say “yes”—notwithstanding theorizing (generally unsupported by empirical work) to the contrary. I have in mind assessments like those of Professor Kim:

Inside counsel, as employees of the firm, are inclined to take orders and accept the “definition of the situation” (a phrase coined by Milgram) from their superiors. . . . Although inside counsel’s duties include a prominent role in corporate compliance, it is business management that jealously guards the right to decide whether to comply with the law, which is seen as the ultimate risk management decision. For inside counsel to challenge management’s decisions or management’s authority to make decisions would then amount to clear insubordination.

Sung Hui Kim, *Why Do Lawyers Acquiesce in Their Clients’ Misconduct—Part II*, THE SITUATIONIST (Apr. 2, 2007, 10:54 PM), <http://thesituationist.wordpress.com/2007/04/02/why-do-lawyers-acquiesce-in-their-clients-misconduct-part-ii>. See also Sung Hui Kim, *The Banality of Fraud: Re-Situating the Inside Counsel as Gatekeeper*, 74 *FORDHAM L. REV.* 983 (2005) (discussing how inside counsel participate in corporate fraud and proposing alternative rules so that lawyers maintain a role as gatekeepers). Professor Kim’s rather sweeping conclusion is not based on broad empirical evidence of actual in-house lawyer conduct; it is instead a combination of inference from the well-known Milgram conformity lab tests and equally well-known examples of lawyers behaving badly. Kim, *Why Do Lawyers Acquiesce*, *supra*. I knew many in-house lawyers, and while I cannot say how they (or law professors in the same situation) would have performed in the electric shock tests and cannot deny the impact of framing on decision-making, my casual observations were that individual moral choice and leadership in context, while certainly more elusive in its measurement, showed up more than just from time to time. As compared to Professor Kim, I have no more empirical basis for determining whether that was the exception or the rule.

¹⁵ I do not need to take a position on mind-body dualism to make this assertion. Whether one takes a wholly material view (that state of mind is nothing more than a neural brain state), an extreme dualistic view (that mind and the physical brain are two different things entirely), or any position in between, the thoughts that comprise judgment are mental and not physical events.

judgment is the exploration of consciousness and cognition, both of which remain unresolved. There is still no scientific explanation of consciousness; it is subject to what Thomas Nagel referred to as the “explanatory gap.”¹⁶ Moreover, there is a debate whether consciousness will ever be reducible to scientific or naturalistic explanation. It is fair to say that if there is anything to the idea that consciousness is irreducible, judgment is next in line, because we still have to deal with the inner experience of the individual subject, not the observer of the subject. Once we place judgment within an embodied mind, how does it work? Would it be algorithmic, in the sense that eventually we could pour all the relevant facts and authorities into a legal computer (into which we have programmed all the rules), and have it provide us with advice such that in a blind test we could not determine if it came from a computer or a human being? This is an application of the so-called “Turing test” of artificial intelligence.¹⁷ Is judgment inductive, a kind of scientific prediction of the future that is confirmed or falsified by ensuing experience? Or would judgment be closer to imagination?

What we quickly realize is that an inquiry into prospective judgment overlaps traditional questions among philosophers of law as to whether anything actually constrains a judge’s decision. This is a subset of the more general philosophical issue of “rule following;” namely, how do we draw the conclusion that the past data establishes a particular rule or regularity, and how do we decide that the next datum does or does not follow that rule?¹⁸ The extreme at one pole in that arena is formalism—that the law consists of internally consistent rules that naturally seem to dictate their own application to new situations. The other extreme is indeterminacy—that there is no such constraint and all decisions reflect the whim of the judge. It seems intuitively correct, when we think about judgment not within the adjudication context but as a relatively mundane and prospective exercise, that our judgments are neither pre-ordained by some kind of formula nor wholly random. We need to assess the more general issue of rule following in the non-adjudication context, and for that, I turn to work in cognitive science and the law.

Second, the judgment in the AB portion of the diagram is interdisciplinary by definition because a business judgment differs from a

¹⁶ Thomas Nagel, *What Is It Like to Be a Bat?*, in *PHILOSOPHY: BASIC READINGS* 422, 422 (Nigel Warburton ed., 2nd ed. 2005).

¹⁷ See A.M. Turing, *Computing Machinery and Intelligence*, 59 *MIND* 433, 433–34 (1950).

¹⁸ See *infra* notes 51–54 and accompanying text.

legal judgment. Business judgment depends far more on the argument from merit versus legal judgment, which depends far more on the argument from authority and a particular kind of legal authority at that. What then does it mean, in the making of business-legal judgments, to be an expert in the AB portion of the diagram? In Part III, I propose that we need to define a new professional discipline in which a myriad of wise executives, counselors, diplomats, lawyers, financiers, and others currently practice without professional certification—the field of “metadisciplinarity.” Being interdisciplinary means merely that you operate between and among various established disciplines. One can be interdisciplinary between, for example, law and literature without ever considering what it means generally to work in an interdisciplinary way. Being a metadisciplinarian takes us to a higher order skill—it means being an expert in the making of interdisciplinary judgments. My experience has been that successful business people and business lawyers frequently make judgments in which they weigh and select among the views of experts in different disciplines, even those they are not expert in. As set forth in Part III, I contend that this metadisciplinarity skill has something to do with the aspect of our cognitive powers that use metaphor and analogy to extend our knowledge.

Finally, can we make wise lawyers? Are metadisciplinarity skills teachable? That is the subject of Part IV. I believe they are, but they recruit such basic cognitive and empathetic abilities that the task is never going to be easy. Metadisciplinarity, the discipline of deciding which rules to apply when no discipline has a monopoly on the rules, invokes something beyond algorithm and induction. It requires that its practitioners understand, in the words of one pioneer in the application of cognitive science to law, that human beings are “meaning-making machines.”¹⁹ Hence, metadisciplinarians will be aware of

¹⁹ E-mail from Steven Winter to the author (Jan. 1, 2010) (on file with author). See also STEVEN L. WINTER, *A CLEARING IN THE FOREST: LAW, LIFE AND MIND* xiv (2001) (referring to our “pervasive cultural processes of meaning-making”). Professor Winter’s book on the intersection of cognitive science and the law has been a tremendous help in my thinking about the mysterious processes of judgment. One major thesis of his masterful work is that cognitive science opens up an insight into the explanation of judgment, something that has heretofore remained “opaque” and “obscure” as contemplated by mainstream rationalist thinking. *Id.* at 3, 7. My project is to take on both the practical and theoretical—the “doing” not just the “explaining”—of judgment. Professor Winter writes, “The promise of cognitive theory lies precisely in its ability to make explicit the unconscious criteria and operations that structure and constitute our judgment.” *Id.* at xiii. If Professor Winter and I differ, it is because I am less sanguine about whether judgment, something I agree is an element of irreducibly imaginative cognitive ability, is nevertheless explicable in naturalistic terms “all the way down.” One of the things about which I disagree is Professor

the many ways in which cognitive beings make sense of the world, employing what the cognitive scientists call “cognitive integration” or “blending.” The reason excellence in the practice of lawyer metadisciplinarity is so difficult, and so rare, is that practitioners need not merely understand the fact of cognitive blending but must also approach it empathetically. In other words, it means understanding the possible meanings that one’s words and actions create apart from the speaker’s semantic intentions or the actor’s instrumental goals.

II. CONSCIOUSNESS AND JUDGMENT

A. *Where Does Judgment Take Place?*

Judgment is an exercise of mind. It is the act of a brain employing concepts to make sense of both data external to the being in which the brain is embodied and data and concepts internal to the brain. Within legal theory, there has been endless debate about how brains go about making those judgments, at least as to the application of whatever the law is to a new set of facts presented to the decision maker. There is, however, no serious debate that such judgment is an exercise of mind and occurs in thoughts. A more difficult question is the relationship of thoughts to physical events. Neuroscience tells us that neurons in the brain fire and electrical impulses seem to emanate from particular sites in the brain when it is dealing with particular categories of decisions and actions. Science, however, still does not provide any theories under the patterns of neuron firing that either predict the content of the thoughts themselves or explain how the thinker has an inner subjective experience of the thoughts.²⁰ Philosophers have long debated where the mind is located, but nobody seriously doubts that we have minds, that what goes on in our minds is private, not public, and that we have privileged access to what is going on in our own mind.²¹ From there, little is settled in the hard questions of philosophy of mind, such as whether we really have free will or what it means to be conscious.

Winter’s critique of the validity of *any* dichotomy, which arises from what I describe later in this article as his “ardent naturalism.” See *infra* notes 246–50 and accompanying text. For a critique of *A Clearing in the Forest* as it pertains to traditional jurisprudential debates (say, as between Hart and Dworkin) and a defense of the concept that mental concepts are dichotomously different from the physicality of neuron-firing in our brains, see Dennis M. Patterson, *Fashionable Nonsense*, 81 TEX. L. REV. 841, 858–78, 885–94 (2003) (book review).

²⁰ COLIN MCGINN, *THE MYSTERIOUS FLAME: CONSCIOUS MINDS IN A MATERIAL WORLD* 4–5, 28–29 (1999). This is the so-called “hard question of consciousness.”

²¹ *Id.* at 11–12 (discussing the privacy of consciousness).

Moreover, judgment is an exercise of a single mind, regardless of the influences and information that come from others. Whether the businessperson or lawyer incorporates the legal and business conditions to draw a practical conclusion, it is still, in the words of the bromide, “lonely at the top.” Here is an illustration. We were representing a major bank in a sensitive piece of litigation. The problem was not whether the bank’s legal position was solid but the adverse publicity attendant to the very existence of the claim. In short, it had to do with whether certain business arrangements were really the bank’s responsibility (i.e., was an intermediary between the bank and certain customers an agent of the bank or of the customers?). While we might demonstrate that the bank had no legal responsibility, the public impression might well be that the bank let its customers hang out to dry. While in a large conference, we were confronted with the question—fight or settle?²² I recall a large square table and at least a dozen people, inside lawyers, outside lawyers, the chief financial officer, the vice-president of bank operations, and others arrayed around the bank’s CEO. The CEO asked each person to state a view on the question of “fight or settle?” After hearing each person’s response, she paused for a moment and then said, “I think we have to settle.” What struck me at the time was that every person there had a rule, a truth, or an authority to which he or she could appeal—whether it was law, a sense of justice, sound banking, or customer relations. Despite all of the discussion, when the time came to make the decision, the CEO had no authority to fall back on except her own.²²

Judgment occurs in a place—the mind—that for the foreseeable future is privileged solely to the being making the judgment. Nobody outside the mind of the being knows, unless the being truthfully says so, what the basis of the judgment really is. Whether we will ever know enough about the mind to be able to conclude the naturalistic basis for consciousness, for the time being, it remains that the inner-privileged mind has either irreducible free will or something naturalistically explicable, which we not only have not explained scientifically, but also still have no idea how to find an explanation.²³ Something

²² In an essay on the loneliness of the United States Presidency, Nancy Gibbs quoted Dwight D. Eisenhower: “[O]ne man must conscientiously, deliberately, prayerfully scrutinize every argument, every proposal, every prediction, every alternative, every probable outcome of his action, and then—all alone—make his decision.” Nancy Gibbs, *Obama After One Year: The Loneliest Job*, TIME, Jan. 25, 2010, at 64, available at <http://www.time.com/time/magazine/article/0,9171,1953705,00.html>.

²³ When scientists are elected to the National Academy of Sciences, they are entitled to publish an Inaugural Article in the Academy’s Proceedings. My friend, Da-

is going on in there, but we have no way of knowing precisely what it is. Like consciousness, our experience of judgment is wholly our own and is capable outwardly of being replicated by an automaton or zombie with no inner experiences whatsoever. We will simply never know whether anything compelled the bank CEO to say, “I think we have to settle.”

It is hard to resist the idea that judgment is not a collective undertaking; for example, in a faculty vote on a pressing issue or in the vote by which a law firm partnership admits new partners. The judgment occurs in the mind of the decider. Our faculty recently decided to take a vote expressing the sense of the faculty on an issue facing the university. The individual decision of the faculty member proposing the resolution was an act of conscience. Each individual decision to speak at the meeting, and even the decision to attend the meeting, was an act of conscience, as was each instance of casting a vote. The collective expression resulting from the vote, however, was a political act, not an act of conscience. Indeed, as Hannah Arendt suggested, conscience, in the sense of the ethical judgment one makes as in the faculty vote, is a mental activity closely linked to consciousness in the sense of inner awareness described above.²⁴ Thinking, she observed, is the soundless dialogue we have with ourselves; it is like a wind that sweeps away “the implications of unexamined opinions and thereby destroys them” and manifests itself in judgment.²⁵ She further observed that judgment is “the faculty to judge *particulars* without subsuming them under those general rules which can be

vid Haig, gave me one of these, in which a University of Pennsylvania biologist argues not only that free will is an illusion but those aspects of the criminal legal system assigning guilt based on the knowledge of, and choice between, right and wrong should be rethought because no such free choice is really possible. Professor Cashmore writes, “The reality is, not only do we have no more free will than a fly or bacterium, in actuality we have no more free will than a bowl of sugar.” Anthony R. Cashmore, *The Lucretian Swerve: The Biological Basis of Human Behavior and the Criminal Justice System*, 107 PROC. NAT’L ACAD. SCI. 4499, 4503 (2010). I think this is more philosophy than science, and not very good philosophy at that, but I cite it fairly to demonstrate one of the extreme poles in the debate.

²⁴ Hannah Arendt, *Thinking and Moral Considerations: A Lecture*, 51 SOC. RES. 7, 34–35 (1984).

It took language a long time until it separated the word *consciousness* from *conscience*, and in some languages, for instance in French, such a separation never happened. Conscience, as we use it in moral or legal matters, supposedly is always present within us, just like consciousness. And this conscience is also supposed to tell us what to do and what to repent of; it was the voice of God before it became the *lumen naturale* or Kant’s practical reason.

Id.

²⁵ *Id.* at 36.

taught and learned until they grow into habits that can be replaced by other habits and rules.”²⁶ Whether the judgments are ethical, as opposed to merely practical, they occur in our minds, are privileged to us, and are beyond influence, authority, external truth-justifications, and power, regardless of whether we accede, knowingly or unconsciously, in the solitude of our own minds, to influence, authority, justifications, and power.²⁷

B. Judgment Is Neither Reducible to a Matrix of Rules nor Completely Indeterminate

The conceptual continuum of practical decision making extends from one extreme, algorithmic solutions, to another extreme, the randomness and indeterminacy of throwing darts or rolling dice. We can safely say that neither extreme constitutes that good, sound, seasoned, or mature judgment we would want from a trusted adviser. Could a computer, at least in theory, be capable of making that kind of human-like judgment? Alternatively, if we cannot even theoretically reduce the judgment-making process to a series of algorithm, does it mean that all judgments are really random, indeterminate, or even whimsical? I believe judgment is indeed neither irreducibly algorithmic nor wholly random, and therein lies its difficulty and mystery.

1. The Problem with Algorithmic Judgment

Can we conceive of a legal computer on whose judgment we would be willing to rely? As to some matters, the answer is likely yes. An algorithm can resolve some issues; for example, deciding how many shares can be sold into the market under Rule 144. An algorithm is rigidly deductive; given correct conditions, the rules of inference supplied by the formal system provide us with the correct conclusion. Our reasonable intuition, however, is not only that legal issues that can be resolved by an algorithm are not very interesting but also that the kind of judgment we seek in lawyers operating in the

²⁶ *Id.* at 35–37.

²⁷ In a discussion of this point, my colleague Pat Shin directed me to the “plural subject theory” developed by the philosopher Margaret Gilbert. *See, e.g.*, MARGARET GILBERT, *SOCIALITY AND RESPONSIBILITY: NEW ESSAYS IN PLURAL SUBJECT THEORY* (Rowman & Littlefield 1999). Her central thesis is that a joint commitment is fundamentally different than an individual intention and “cannot be analyzed [solely as] . . . the sum or aggregate of the individual commitments” or intentions. *Id.* at 3. I have not thought this through in detail, although I suspect it may be fruitful in considering contract theory. My initial reaction, however, is that a commitment, whether individual or joint, is a *doing*, even though it involves the minds of the committers; whereas, judgment is a thought process that precedes commitment, whether individual or joint.

AB portion of the Venn diagram is not, in concept, reducible to an algorithmic system. Even if law might be fairly described as a “formal and rational system, however much its doctrines and rules may diverge from the common sense understandings of the layperson,”²⁸ it is still not a system of formal logic.

Let us explore why sublime legal judgment involves a kind of thinking that goes beyond logic. When we consider what it means to think, we begin with consciousness itself because thinking seems to be at the heart of whatever a conscious mind is. The issue of consciousness deals with explanations for the empirical fact of the subjective inner life of the mind. Our mental states have an associated feeling of being our own experience; as one philosopher noted, “These qualitative feels are also known as phenomenal qualities, or qualia.”²⁹ I can show you a dish of guacamole or play Rachmaninoff’s Second Concerto or mow your lawn, but only you can experience the taste, the melody, and the smell. The natural sciences have not so far been helpful in explaining that phenomenal experience. Indeed, much of the debate is about whether science will ever be able to explain it.³⁰ The philosophical question at the very edge of the development of artificial intelligence is: can a computer have a mind that observers would regard as conscious (i.e., that it is thinking as a human being would think)? Alan Turing, one of the pioneers of computing, proposed the most famous test of whether a machine can be said to think.³¹ If a questioner poses sustained questions to a hidden responder and cannot tell whether the responder is a human being or a machine, and the responder is indeed a machine, then, for all intents and purposes, the machine thinks.³² The most famous response to the Turing test is John Searle’s Chinese room problem, the point of which is that the mere carrying out of the steps of an algorithm does not logically require that the entity so carrying out actually understand it.³³

The renowned mathematician and physicist, Roger Penrose, explicitly links the issue of consciousness and judgment, claiming that

²⁸ WILLIAM M. SULLIVAN ET AL., EDUCATING LAWYERS: PREPARATION FOR THE PROFESSION OF LAW 186 (2007). This is the well-known “Carnegie Report.”

²⁹ DAVID CHALMERS, THE CONSCIOUS MIND: IN SEARCH OF A FUNDAMENTAL THEORY 4 (1996).

³⁰ MCGINN, *supra* note 20, at 5.

³¹ Turing, *supra* note 17.

³² *Id.*

³³ John R. Searle, *Minds, Brains, and Programs*, in THE MIND’S I 353, 353 (Douglas R. Hofstadter & Daniel C. Dennett eds., 2000).

judgment-forming is itself the *hallmark* of consciousness.³⁴ He starts with the premise that consciousness is likely to have conferred some selective evolutionary advantage on those possessing it, and then asks what that advantage might be.³⁵ What we can do with consciousness, he argues, unlike a computer, is figure out how to deal with new problems we have not previously faced.³⁶ Humans, unlike computers, seem to have non-algorithmic capabilities, particularly as to judgments of understanding, truth, common sense, and artistic appraisal. This is a good candidate for selective advantage over non-conscious or wholly pre-programmed beings. As Penrose observes, if one knows which algorithm is necessary for the solution of a problem, then one must have seen the problem before.³⁷ But what happens when the problem is wholly new, and we must decide which algorithm to use? Penrose says, “Somehow, consciousness is needed in order to handle situations where we have to form new judgments, and where the rules had not been laid down beforehand.”³⁸

This is the issue that so frustrated us in middle-school algebra: “Once an appropriate algorithm is found, the problem is, in a sense, solved.”³⁹ If our teacher gives us the algebraic equivalence, the process of solving for x is far easier than if we are given a story, and it is up to us to determine the algebraic equation that will solve the problem of the number of apples Mary will be able to eat in June. In traditional law school pedagogy, it has a well-known name—issue spotting. Even before we get to the application of a rule to the facts (the “A” in the famous IRAC or TREAC method of answering law school and bar examination questions), we need to decide that there is indeed a legal issue buried in the problem and select a rule to be applied (the IR or TRE portions of the method). Even if we could solve the legal problem with algebra, legal judgment would involve more than deduction; it requires the selection of the formal model in which deduction would occur. This particular kind of reasoning is called abduction, or “inference to the best explanation,” and has a sense of educated guesswork about it.⁴⁰

³⁴ ROGER PENROSE, *THE EMPEROR’S NEW MIND: CONCERNING COMPUTERS, MINDS, AND THE LAWS OF PHYSICS* 532 (1998).

³⁵ *Id.* at 529.

³⁶ *Id.* at 530–31.

³⁷ *Id.* at 534.

³⁸ *Id.* at 531.

³⁹ *Id.* at 534.

⁴⁰ For a detailed discussion of abductive reasoning from its first articulation by Charles Sanders Peirce, see Scott Brewer, *Exemplary Reasoning: Semantics, Pragmatics,*

The exercise of judgment in the AB portion of the Venn diagram is thus more than logic. Even if we were to concede that embodied brains process algorithmically in an unconscious way, Penrose contends that the “judgments themselves . . . are the manifestations of the action of *consciousness*.”⁴¹ Judgment is a process that “one continually makes while one is in a conscious state, bringing together all the facts, sense impressions, and remembered experiences that are of relevance, and weighing things against one another—even forming inspired judgments, on occasion.”⁴² Certainly this description accords not only with our intuitions about judgment but also with the experience of long-time practitioners. Thus, even if law itself were a formal logical system, we would still face an irreducible issue of judgment arising from the non-algorithmic or “extra-algorithmic” nature of our consciousness.

This seems to me to be the dispositive answer to a debate ten years ago about whether artificial intelligence in law can ever be anything more than a glorified LexisNexis or Westlaw. Cass Sunstein observed that computers are unable to perform analogical reasoning.⁴³ That provoked a response from Eric Engle arguing that the criticism is based on notions of static rules of computation, rather than dynamic rules of computation, in which the computer learns from its prior errors.⁴⁴ Moreover, so-called “neural networks” already allow computers to undertake pattern recognition. These are computer programs designed to model the way that brain neurons process patterns. Again, highly oversimplified, these are programs that allow parallel rather than serial processing and contain learning algorithms that allow the program to “learn” (i.e., to reject choices available within the program). The program does not just find a solution; it finds the optimal solution, which is usually the solution that has the lowest cost.

and the Rational Force of Legal Argument by Analogy, 109 HARV. L. REV. 923, 945–49 (1996).

⁴¹ PENROSE, *supra* note 34, at 531.

⁴² *Id.* at 533.

⁴³ Kevin Ashley, Karl Branting, Howard Margolis & Cass R. Sunstein, *Legal Reasoning and Artificial Intelligence: How Computers “Think” Like Lawyers*, 8 U. CHI. L. SCH. ROUNDTABLE 1, 18–21 (2001).

⁴⁴ Eric Allen Engle, *Smoke and Mirrors or Science? Teaching Law with Computers—A Reply to Cass Sunstein on Artificial Intelligence and Legal Science*, 9 RICH. J.L. & TECH. 6 (2002); see also Eric Allen Engle, *An Introduction to Artificial Intelligence and Legal Reasoning: Using xTalk to Model the Alien Tort Claims Act and Torture Victim Protection Act*, 11 RICH. J.L. & TECH. 53 (2004).

I believe Sunstein was right in the result but not because computers have or do not have analogical reasoning capability. Engle is probably right in suggesting that they could be programmed to appear to be making analogies. It is Penrose's observation that dooms an artificial intelligence capability. Human brains supply the rules to the program. Whether it is merely induction or an artificial neural network that can replicate analogous reasoning through pattern recognition, we need to undertake an abductive process to come up with the rule we are going to give the computer, either close to the surface or deep down in the midst of the neural network. Even if the rule is a second- or third-order learning rule, we need to make a judgment that is the best choice among various alternative rules for learning. You decide to adopt Rule A as the optimizer for making a particular choice among possible patterns that could explain the visual data. What is the rule you used to adopt Rule A? Let's assume it was Rule A'. How did you decide to adopt Rule A'1 as opposed to Rule A'2? If it was a rule, Rule A'', how did you choose A''1 over A''2? At some point, you choose without a rule, as Penrose suggests, non-algorithmically.

There is no reason why we cannot, in theory, make a really sophisticated, and perhaps even human-seeming, judgment computer (for example, the gray eminence that is the avatar of old Mr. Cravath) that could issue a judgment on my electrical connector hypothetical in the introduction. It would assess the case law, calculate the probabilities of defect and their cost consequences, determine the business's risk averseness, correct for cognitive biases, and give us a "yes" or "no" answer to the question. But as long as it is digital and pre-programmed, it is going to face, at some point, the circumstance Penrose posits—one that is wholly new, and for which the computer has not been told how to choose between Rule B and Rule B'.⁴⁵

⁴⁵ Researchers at Carnegie-Mellon University in Pittsburgh have been working on a computer program called the Never-Ending Language Learning system, or NELL, which undertakes "continuous learning, as if NELL is exercising curiosity on its own, with little human help." Steve Lohr, *Aiming to Learn as We Do, a Machine Teaches Itself*, N.Y. TIMES, Oct. 5, 2010, at D1. Its "thinking" consists of the human-generated algorithms NELL uses to acquire knowledge from scanning Web pages; NELL then classifies this information into semantic categories and develops "relations" among the categories. *Id.* The idea is to "tap the Web as a rich trove of text to assemble structured ontologie—formal descriptions of concepts and relationships—to help computers mimic human understanding." *Id.* As the developers acknowledge, for all of NELL's apparent sophisticated learning ability, it can still make computer-like mistakes in semantic interpretation. *Id.* For example, NELL understood the categories of baked goods, but decided that Internet cookies were baked goods as well. *Id.* It took the sentences "I deleted my Internet cookies," compared it to "I deleted my files," and concluded that computer files were also baked goods. *Id.* The ultimate

2. Rule Following and the Problem with Inductive Judgment

As we have seen, even a purely deductive system of law would require a non-algorithmic exercise of mind, something we have come to call judgment. Legal and business judgments are, however, rarely just a matter of pure deduction. In making a business judgment about whether to open another ethnic restaurant in a particular neighborhood, we may look at data from which we can draw inductive conclusions about the relative success of similar restaurants in similar neighborhoods. In deciding whether to undertake a particular form of financing without Securities and Exchange Commission (SEC) registration, we may look at no-action letters by which we can draw inductive conclusions about the likelihood of SEC enforcement from the position it took with respect to similar deals. In each case, the business person or lawyer is looking for a rule or regularity in the past data in order to make a prediction about whether or not the next instance will fall within that rule.

This is the problem of rule following, the mystery at the heart of induction. Its very persistence over centuries is evidence of its intractability: whence comes the hypothesis, the abductive inference to the best explanation, the rule that explains the regularity of the data? Socrates tormented Meno until he reached his famous paradox: one seemingly could not reduce virtue to its essential nature merely from examples of virtue without first having some idea of what constituted virtue.⁴⁶ Millennia later, Karl Popper noted the mystery in the proposing of the inductive hypothesis: “[w]hat the great scientist does is boldly to guess, daringly to conjecture, what these inner realities are like. This is akin to myth making. . . . The boldness can be gauged by

breakthrough in replicating human understanding, of course, would be NELL’s selection or development of an algorithm on its own, designed to solve a new problem for which it had never been programmed. *Id.*

⁴⁶ PLATO, PROTAGORAS AND MENO (W.K.C. Guthrie trans., Penguin 1977). The inductive process is Socrates’ attempt to have Meno find “something in common” among all the examples of virtue, so as to distill its essence. *Id.* at 103. Finally, Meno says,

But how will you look for something when you don’t in the least know what it is? How on earth are you going to set up something you don’t know as the object of your search? To put it another way, even if you come right up against it, how will you know that what you have found is the thing you didn’t know?

Id. at 128.

the distance between the world of appearance and the conjectured reality, the explanatory hypothesis.”⁴⁷

The hypothetical stab at an answer is, as Kant observed, a matter of *judging* that is not the same as *knowing*.⁴⁸ It is not mere application of our faculty of cognition to the real world (i.e., the application of rules like causality or substance so that we might order our sensible perceptions). Instead, judgment is “the faculty of **subsuming** under rules, i.e., of determining whether something stands under a given rule . . . or not.”⁴⁹ Nor is judgment an exercise in the kind of logic that constitutes the employment of reason or the derivation of the conditions of propositions through logic. The attempt to set rules for the application of rules leads to an infinite regress. If you try to determine what circumstances fit within a rule, setting another rule merely leads to another rule to another rule to another rule, all the way down. Hence, according to Kant, “the power of judgment is a special talent that cannot be taught but only practiced.”⁵⁰

Ludwig Wittgenstein in turn dealt with the mystery of rule following at the heart of language itself.⁵¹ Our ordinary use of words is not reflective; it simply comes into our minds that the word applies the next time we use it. Wittgenstein compares the way a word comes to mind as something more than a random association with a meaningless symbol but less than conscious analysis of the relationship of the symbol to the thing or concept: it is something like being guided or influenced by the symbol, but even that level of reflection overstates the level of consciousness about the use of the word.⁵²

Consequently, there is no rule for the application of a rule. Indeed, if Kant captured anything in the interplay between rules and

⁴⁷ Karl Popper, *The Problem of Demarcation*, in PHILOSOPHY: BASIC READINGS, *supra* note 16, at 351, 354.

⁴⁸ KANT, CRITIQUE OF PURE REASON, *supra* note 3, at 268.

⁴⁹ *Id.* (emphasis in original).

⁵⁰ *Id.* Kant expanded his treatment of judgment in his Third Critique, where, in the context of aesthetics and teleology, he further distinguished the faculty of judgment from knowledge and reason. Very briefly, the particular antinomy (or irreducibility) of judgment is (a) we sense an objective purposiveness in nature (i.e., the implicit order or *telos* that underlies our ability to do science by subsuming under rules) but, on the other hand, cannot posit, at least as a matter of knowledge, a Designer, and (b) as to objects of beauty, we again sense an objective and universal purposiveness in design, but also understand that our sense is subjective, and we must necessarily presume that others share our sense of the universal. See IMMANUEL KANT, CRITIQUE OF JUDGMENT xii–xiv (Dover 2005) (1790).

⁵¹ LUDWIG WITTGENSTEIN, PHILOSOPHICAL INVESTIGATIONS §§ 198–202, at 80^c–81^c (G.E.M. Anscombe trans., 3d ed. 1958) (1953).

⁵² *Id.* § 175, at 71^c.

examples, it is the battle that law professors undertake with their first-year students. In the hoary law school test-taking methodology of “IRAC” (issue/rule/application/conclusion), the exercise of judgment is the selection of “R” and the “A” of application, not the mere memorization of rules. It is as though, seeking to derive through the power of logic a universal statement of a rule, the law student commits precisely the errors Kant anticipates. A student may have all the hornbook and study aid rules memorized,

[Y]et can easily stumble in their application, either because he is lacking in natural power of judgment (though not in understanding), and to be sure understands the universal in abstracto but cannot distinguish whether a case belongs in concreto under it, or also because he has not received adequate training for this judgment through examples and actual business.⁵³

It seems a reasonable generalization that our experience of difficult or close decisions is that they are not capable of algorithmic resolution and not resolvable by formulaic resort to second-order foundational rules or principles. On the other hand, our intuitions about those decisions seem not to be wholly indeterminate. The question is whether we can ground non-deductive rule following somewhere in the middle.⁵⁴

3. An “Irreducibility of Judgment” Thesis

The problem with any reduction to rules (including the rules by which I have chosen to sort particular business, legal, and mixed judgments by way of the Venn diagram) is the illusion of objectivity, something fostered by the particular construct of concepts that constitutes law generally. The paradigmatic legal judgment is an objective one, in which a legal observer applies a set of rules to a particular set of facts for purposes of determination the legal consequence, if any, arising out of that set of facts. Yet the essence of judgment is a mental activity, undertaken by a subject (whether a lawyer or businessperson) whose own process of judgment must necessarily be affected by subjective factors. When we make a judgment, we have privileged access to our own minds vis-à-vis others, but the privilege has its limits; we can never be reducibly objective about ourselves. Only the CEO knows whether, among the many arguments from authority,

⁵³ KANT, *CRITIQUE OF PURE REASON*, *supra* note 3, at 269.

⁵⁴ I view judgment as a philosophical issue as hard as the one of consciousness, and as discussed *supra* in notes 20–45 and accompanying text, that this is because the two issues are related.

she was bound to follow any of them, whether she experienced them as appeals to reason or cudgels.

There is extensive (and insightful) work on the cognitive process in decision making that deals with the impact of the context in which the issue is framed, commonly used heuristics, and biases, all of which can be regularly observed.⁵⁵ But the recursiveness of self-analysis is problematic in the internal *making*, as opposed to the *analysis*, of judgments; one may attempt to assess the extent of one's own bias, framing issues, heuristics, and so on, but the analysis itself may be subject to those same influences. In the end, the moment of decision, like Kierkegaard's leap of faith,⁵⁶ may well be an experience, like consciousness, that is beyond science.

If there is a teachable theory of judgment, it is largely negative. We should avoid the effect of biases, framing, and priming, for example, when they consistently lead to bad judgments.⁵⁷ In that behavioral psychology context, there is rarely a suggestion for a positive theory of judgment beyond "go with your first instinct." But that, of course, may be the problem. Unfortunately, ensuring good judgment is not as simple as a cathartic identification of one's biases. In *Blink*, Malcolm Gladwell, using the example of a European orchestras' bias against female trombone players, tells the story of a woman who consistently succeeded in screened auditions (where the identity of the player is hidden) but nevertheless struggled to get a position.⁵⁸ There the answer is relatively simple: have the courage to face up to the bias. Simon Blackburn recently made the same point about the interplay of biology and freedom.⁵⁹ Even if a scientist tells you what your hard-wired nature is, you still have the option, for example, of tipping the waitress you will never meet again or defending someone against an injustice even if it is contrary to your self interest to do so. Moreover, if the biologist reduces every action to one that is, by operation of our innate instincts, ultimately consequential and self-

⁵⁵ See SCOTT PLOUS, *THE PSYCHOLOGY OF JUDGMENT AND DECISION-MAKING* (1993) (identifying factors that cause lawyers to make bias-motivated judgments).

⁵⁶ SØREN KIERKEGAARD, *FEAR AND TREMBLING* 34 (Cambridge, 2008) (1843). Kierkegaard compares the "knight of faith" to a dancer who leaps "into a particular posture in such a way that there is no second when he grasps at the position but assumes it in the leap itself.... The knights of infinity are dancers and have elevation." *Id.*

⁵⁷ Cassandra Burke Robertson, *Judgment, Identity, and Independence*, 42 CONN. L. REV. 1 (2009).

⁵⁸ MALCOLM GLADWELL, *BLINK: THE POWER OF THINKING WITHOUT THINKING* 245-48 (2005).

⁵⁹ Simon Blackburn, *Mind over What's the Matter*, N.Y. TIMES, July 27, 2008, at BR15 (book review).

servicing, we may fairly ask whether (a) that is the practice of science or (b) if it matters to the person who is the beneficiary of our altruism.

I am inclined to think that judgment is irreducible, and always will be, precisely because it is a subjective take on an objective world. The person undertaking the judgment can never be objective about herself, and that is a conceptual problem, not an empirical one capable someday of resolution. Indeed, to get at this issue, we do not need to tackle the overlap of prospective law and business judgment. We can see it in debates about one of the most fundamental issues in legal theory—is a judge making a judgment somehow constrained by the formal system of rules and principles constituting the law or is the result of the judging exercise wholly indeterminate (or even if determinate still so unpredictable as to be unknowable)? Formalists think law is a coherent and rational matrix of doctrine (i.e., a “formal” system, though not formal in the deductive sense) that largely guides the decision maker. Legal realists believe that the so-called coherent web of doctrine does not guide anything: results are wholly indeterminate based on the judge’s individual predilections. There is no middle ground.

In his work on paradoxes in the law, Oren Perez provides an example—Learned Hand’s famous negligence formulation—of the infinite regress of judgment at the heart of the putatively objective rational calculation in law.⁶⁰ As lawyers, we understand that courts have laid down rules of conduct (like what constitutes “due care”), and rational actors presume a relationship between the ex post outcome of cases and the ex ante calculation in respect of that outcome that lawyers (those most rational of actors) are supposed to make. Perez observes that the potential tortfeasor, informed by the case holdings, knows that she will be liable for the injury she causes if the cost of precaution is less than the probability of an accident times the magnitude of the accident.⁶¹ For the model to work, it has to assume that potential tortfeasors and judges are perfect welfare maximizers with perfect information. But information and deliberation are not costless. Therefore, maximizing actors need to make a decision about whether to invest costs in obtaining the necessary information and spending the time deliberating about the choice. That decision is itself not costless; one needs to gather information about whether gathering information and deliberating is a fruitful way to spend one’s maximizing time and so on to the infinite regress. The point is that

⁶⁰ OREN PEREZ & GUNTHER TEUBNER, PARADOXES AND INCONSISTENCIES IN THE LAW 22–26 (2006).

⁶¹ *Id.* at 24.

the judgment must necessarily reduce to intuition at some point. Indeed, Perez's conclusion is that this is why there exist rules of thumb for deciding what to do—they sit somewhere between unsatisfying calculation and pure intuition.⁶²

Professor Steven Winter's deconstruction and reconstruction of "thinking like a lawyer" is instructive here. He employs recent developments in cognitive theory to eliminate what he refers to as "antinomial capture."⁶³ To oversimplify his point, is there a way to anchor how we make sense of the world without resorting to the extremes of either "p or ~p" thinking, that is, the application of algorithm rules that spit out clear answers, on the one hand, or complete indeterminacy on the other? No, he says, judgments are not reducible, but that very irreducibility can be explained in a way that is "scientific" or "non-transcendental."⁶⁴ We are not free, according to Professor Winter, because of metaphysical transcendence.⁶⁵ Instead our freedom arises from the physical reality that our embodied brains give us irreducible capacity for imagination.⁶⁶ Nevertheless, our embodied brains import social norms from which we can expect a certain amount of congruence. That is to say, our brains are irreducibly imaginative but, paradoxically, in systematic and regular ways. The law seems to radiate both aspects of this paradox—a desire to ground or bind decisions to the past, yet the apparent freedom of any individual judge to bend the law to his or her apparent indeterminate ends.

To put it otherwise, the antinomy that pulses through Professor Winter's work⁶⁷ is the one between:

(a) Rationalist, reductivist thinking—something is or is not within a category; something fits the proposition or not; semantic meaning requires objective reference to something—and

(b) An enlightened understanding that human beings are hardwired to make and extend meaning in a socially constrained, non-formalistic, yet non-indeterminate, way. We think not in fixed categories, but by way of evolutionary and culturally

⁶² *Id.* at 25.

⁶³ WINTER, *supra* note 19, at 11.

⁶⁴ *Id.* at 7 ("The import of transfigurative processes such as metaphor is that there can be no linear, algorithmic function that links experiential input to imaginative output. But neither is rationality purely arbitrary, subjective, or radically indeterminate; it is framed and constrained by the systematic nature of these conceptual processes.")

⁶⁵ *Id.* at 115–16.

⁶⁶ *Id.* at xi.

⁶⁷ See WINTER, *supra* note 19.

developed basic schema—“idealized cognitive models”—complete with prototype effects.

This makes intuitive sense as a way of dealing with common issues of tension between definitions and examples in statutory interpretation. In a doctrinal subject I teach, I see this most explicitly in the “what is a security?” cases such as *SEC v. W.J. Howey Co.*⁶⁸ Rational, reductivist legal thinking wants a p or not-p definition: “a security is a contract under which a person invests money in a common enterprise with the expectation of a return on the investment through the efforts of others.”⁶⁹ Yet at the margins, we find ourselves throwing out the propositional, linguistic model and returning to analogies or metaphors to the prototype of the idealized cognitive model: how much does this instrument look and feel like a share of common stock?⁷⁰

One bridge from an objective study of judgments to the internal experience of making judgments is Donald Schön’s work on professional “reflection-in-action.”⁷¹ Professional judgment, he observes, is mysterious even to professionals themselves. Consistent with Haskell’s account of the rise of the specialized professionals in the late 1800s,⁷² Schön recounts the rise of the dominant theme of professionalism, at least through most of the twentieth century, Technical Rationality, under which professional activity means “instrumental problem solving made rigorous by the application of scientific theory and technique.”⁷³ Law was no exception; Langdell’s vision of law as the science of deriving principles inductively from decided cases is

⁶⁸ 328 U.S. 293 (1946).

⁶⁹ *Id.* at 298–99.

⁷⁰ Thus, even though the *Howey* definition could literally be read to include an employee’s investment interest in a pension fund, it is not a security. See *Int’l Bhd. of Teamsters v. Daniel*, 439 U.S. 551, 552 (1979). And even though the share of stock that entitles one to purchase a New York City cooperative apartment falls literally within the laundry list of instruments that are securities under Section 2(a)(1) of the Securities Act of 1933, 15 U.S.C. §§ 77a–77bbbb, nevertheless, the context requires that it is not a security. *United Hous. Found., Inc. v. Forman*, 421 U.S. 837, 865–66 (1975). John Searle deals with this issue of definition (i.e., that to criticize a definition, we must already have a concept of the thing being defined). JOHN R. SEARLE, *SPEECH ACTS: AN ESSAY IN THE PHILOSOPHY OF LANGUAGE* 5–8 (1970); see also JOHN R. SEARLE, *INTENTIONALITY: AN ESSAY IN THE PHILOSOPHY OF MIND* 1, 149 (1983).

⁷¹ DONALD A. SCHÖN, *THE REFLECTIVE PRACTITIONER: HOW PROFESSIONALS THINK IN ACTION* (1983) [hereinafter SCHÖN, *PRACTITIONER*]; DONALD A. SCHÖN, *EDUCATING THE REFLECTIVE PRACTITIONER: TOWARD A NEW DESIGN FOR TEACHING AND LEARNING IN THE PROFESSIONS* (1987).

⁷² See *supra* note 5. It is also consistent with Louis Menand’s account of academic specialization. See *infra* notes 137–44 and accompanying text.

⁷³ SCHÖN, *PRACTITIONER*, *supra* note 71, at 21.

well known.⁷⁴ In the early 1980s, Schön detected a crisis of confidence in professionalism, something he attributed to the world's growing complexity (and need for interdisciplinary judgment) that trumped the deep but narrow model of Technical Rationality.⁷⁵ Nevertheless, there are practitioners in all professional fields who successfully negotiate the “irreducible element of art in professional practice” and “do sometimes find ways to make sense of complexity and reduce uncertainty to manageable risk.”⁷⁶ The essential issue in Technical Rationality is not *problem solving*—we have the tools—but *problem setting*—deciding which tools to use. Technical Rationality is to Schön as algorithms are to Penrose. We invoke judgment so closely connected to consciousness itself (in Schön's case, *professional judgment*) when it is time to apply either an algorithm or a technical solution to a new problem we have never faced before. Just as choosing the algorithm is, to Penrose, non-algorithmic, problem setting is, to Schön, non-technical.⁷⁷

Thus, professional judgment mediates between, on one hand, the foundation of stable disciplines “grounded in systematic, fundamental knowledge, of which scientific knowledge is the prototype”⁷⁸ and, on the other, the indeterminacy of the “swampy lowland where situations are confusing ‘messes’ incapable of technical solution.”⁷⁹ To Schön, that is an epistemological issue that calls for the epistemological solution he calls “reflection-in-action:” “the ‘art’ by which

⁷⁴ *Id.* at 29 (citing Arlene K. Daniels, *How Free Should Professions Be?*, in *THE PROFESSIONS AND THEIR PROSPECTS* 56 (Eliot Friedsen ed., 1971)).

⁷⁵ *Id.* at 14 (“[P]rofessional knowledge is mismatched to the changing character of the situations of practice—the complexity, uncertainty, instability, uniqueness, and value conflicts which are increasingly perceived as central to the world of professional practice.”). Note that Schön made this observation long before the crisis of confidence in professionals that marked the financial crisis of 2008–09. Jeffrey M. Lipshaw, *The Epistemology of the Financial Crisis: Complexity, Causation, Law, & Judgment*, 19 S. CAL. INTERDISC. L.J. 299, 337–42 (2010).

⁷⁶ SCHÖN, PRACTITIONER, *supra* note 71, at 18.

⁷⁷ *Id.* at 40. For a critique of mechanistic decision-making in place of judgment in connection with aspect of the 2008–09 financial crisis, see Amar Bhidé, *The Big Idea: The Judgment Deficit*, 88 HARV. BUS. REV. 44 (Sept. 2010). Professor Bhidé's critique centers primarily on the flaws of algorithmic decision-making models when applied to human affairs as a complete substitute for case-by-case judgment (as, for example, in bankers' underwriting processes for residential mortgages). He concludes, however, with an observation consistent with those of Penrose and Schön about the irreducibility of judgment: “Ultimately, however, the “right-sizing” of judgment [i.e. deciding when to use intuitions rather than algorithms] is itself a matter of judgment.” *Id.* at 53.

⁷⁸ *Id.* at 23.

⁷⁹ *Id.* at 42.

practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict.”⁸⁰

III. APPROACHING INTERDISCIPLINARY LAW-BUSINESS EXPERTISE

If the judgment in the Venn diagram overlap is lonely, subjective, and artful, it is nevertheless, by definition, interdisciplinary. It asks the judgment maker to operate in an intellectual space that lies outside of a pure academic or professional discipline of law as well as outside of a pure academic or professional discipline of business management. There is indeed a difference between the ways the disciplines of law and business approach the issue of the following rule: a business judgment is different than a legal judgment. Legal judgments are classically the result of argument from authority and a particular kind of authority at that. Business judgments (at least in modern management theory) depend far more on the argument from merit.

What then would it take to be an expert in the AB portion of the diagram, in the making of business-legal judgments? We need to define a new professional discipline: the field of “metadisciplinarity.” Being interdisciplinary means merely that you operate between and among various established disciplines. Metadisciplinarity is a higher order skill: it means being an expert in the making of interdisciplinary judgments. Being a metadisciplinarian is going to require recruiting very basic cognitive skills. Recall Penrose’s linking of judgment to consciousness: there is something non-algorithmic about both consciousness and judgment because we must engage in the abductive process of deciding which among the many rules available to us we will apply in a completely new situation. In this Part, I describe the metadisciplinary skills lawyers operating with excellence in the Venn diagram overlap must have developed, consciously or not. In the next Part, I will discuss a possible theoretical source for the practical skills.

A. *The Authoritarian Nature of Legal Argumentation*

While lawyers have always drawn their cases from the full range of human activity, the profession itself has been, as Peter Goodrich observes, “quintessentially disciplinary and disciplining, a reality conferring enterprise.”⁸¹ The profession as social institution passes itself on from generation to generation and, in the process, “institutes its

⁸⁰ *Id.* at 50.

⁸¹ Goodrich, *supra* note 8, at 460.

own epistemic field—its jurisdiction—and in the process potentially negates those disciplines that lay claim to evaluate the epistemology of legal judgment.”⁸² According to Professor Goodrich, its development as an academic discipline, at least in England, was “a rather sorry affair” in that lawyering developed as a practice, not as a field of study.⁸³ Moreover, the practice developed largely as one of advocacy toward the instrumental ends of clients by reaching back through what Karl Popper, in other contexts, referred to as “the argument from authority.”⁸⁴ Professor Goodrich’s critique largely endorses another recent assessment by Geoffrey Samuel that likens law, because of the “authority paradigm,” more to theology than social science.⁸⁵ The argument from authority is ubiquitous in law, even in the academy.⁸⁶

⁸² *Id.* at 461.

⁸³ *Id.* at 467.

⁸⁴ KARL POPPER, CONJECTURES AND REFUTATIONS: THE GROWTH OF SCIENTIFIC KNOWLEDGE 21 (2002). Popper rejected arguments from authority, versus arguments from merits, as anathema to the pursuit of objective truth in science. *Id.* at 20–21. His foundational fulcrum was the openness of ideas to criticism, regardless of their source. *See id.*

⁸⁵ Geoffrey Samuel, *Interdisciplinarity and the Authority Paradigm: Should Law Be Taken Seriously by Scientists and Social Scientists?*, 36 J.L. SOC’Y 431 (2009). From the abstract:

[Law’s] principal actors (judges) make assertions free from the normal constraints of scientific method; accordingly, the idea of a ‘legal science’ (imported into the common law tradition after 1846) must be treated with great caution. It is not a science dedicated to enquiring about the nature of the physical world, society or social relations. Its epistemological development remains trapped in the seventeenth and eighteenth centuries: thus, as a discipline, law has little to offer other social sciences.

Id.

⁸⁶ Goodrich, *supra* note 8, at 477. He comments on the difficulty of creating exchange, conversation, ratiocination, or intellection beyond the argument from authority even within academic law:

It sounds deceptively simple but such spaces are generally not available in law, where the community of lawyers tend to advocate rather than interrelate, and where closure dominates the discursive form. The seminar rooms, corridors, alcoves of law school are not so hospitable socially, neither are they open epistemically, disinclined as they tend to be to dialogue, nor in any obvious sense conversant either with the method of law or of other disciplines. Too often we meet the figure whom Doderidge nicely terms the legal temerist, the professor in a blind rush to judgment, intent only on proving his point, his worth and so conforming rather too easily to the almost comical persona of the ‘authority paradigm’, the dogmatist who cannot stay to explain in any sustained way why she thinks that philosophy, theory, hermeneutics, literature or deconstruction or some imagined spectre bearing that name should be banished, branded, destroyed. As if their opinion somehow carried an

Authoritarian argument underlies our idealized cognitive model of lawyers; they are zealous warriors on behalf of the client within the legal system. The archetype of the lawyer and the traditional teaching by way of the case method cast lawyering as advocacy. Core legal competency continues to consist largely of “narrow, analytic reasoning from the case method,” and legal education emphasizes “issue spotting, legal concepts, legal reasoning, legal ambiguity, and the importance and elusiveness of ‘facts.’”⁸⁷ A lawyer endowed with this competency embodies the very antithesis of the solitude of judgment; instead, she argues from authority. Dennis Patterson has already deconstructed the implicit brute arguments from authority in the various jurisprudential approaches to the justification of the truth of legal propositions and concluded, analogously to Popper, that the only fulcrum of truth available in law is that it is a process of argumentation.⁸⁸ The harder question in modern jurisprudence is the position of the judge—what makes the judge’s *ruling* a true proposition of law is the stuff of jurisprudential justification that Patterson critiques.⁸⁹ He sees it as an issue of truth (or, really, the lack of truth in any objective sense);⁹⁰ I see it as one of authority. In either case, it has to do with appealing to something outside of ourselves for the justification of our beliefs, judgments, or actions.

The essence of the idealized model of lawyers as the antithesis of the solitude of judgment lies in the idea of vanquishing and the substitution of intellectual bruteness for physical brutality. Argument for lawyers plays out in the public arena, and unless clients exercise their own judgment to settle cases, there are winners and losers. Law in this instance is a cudgel. Indeed, a common conception among business lawyers is that litigation is the stick behind more amicable

unreal and unreasoned weight. Which, of course, is the problem with the authority paradigm.

Id.

⁸⁷ Ben W. Heineman, Jr., *Law and Leadership*, 56 J. LEGAL EDUC. 596, 598 (2006) (adapting the lecture Heineman gave at the Yale Law School on Nov. 27, 2006, as part of The Robert H. Prieskel and Leon Silverman Program on the Practicing Lawyer and the Public Interest).

⁸⁸ See DENNIS M. PATTERSON, *LAW AND TRUTH* 181 (1996) (“The essence of law is legal argument: the forms of legal argument are the culturally endorsed modes for showing the truth of propositions of law.”) I suspect Professor Patterson is more agnostic than Popper on the question whether there is objective truth, as least as that concept would apply to law.

⁸⁹ *Id.* at 181 (noting the fruitlessness of jurisprudential theorists’ attempts to identify propositions of law as true in virtue of “something.”).

⁹⁰ *Id.* at 21 (“Nothing makes our legal utterances true. Truth in law is neither a property nor a relation. Truth is not an explanatorily useful concept.”)

resolutions; there is only a difference in degree, not kind, between warfare and litigation. Negotiating anything in litigation, from the resolution of a discovery dispute to the case itself, barely clears the stink of power. As long as the parties have the safety net of saying “forget it, see you in court,” we still have not removed lawyers from the search for truth by way of authority. Compare instead the negotiation that occurs when two equally motivated parties (versus the situation in which one has the other over some kind of real-world barrel) are negotiating a deal. After I moved from being a litigator to a transactional lawyer, I described this as “negotiating without a net.” That is, the only thing you could do was appeal to whatever influenced the other parties’ judgment, and no authority in the world could compel a happy result. But that authority is the essence of legal argumentation.

In short, argumentation for the invocation of authority is not judgment. On the other hand, not every judgment we make necessarily invokes “merit” as opposed to arbitrary authority. First, it seems that we can fairly characterize some judgments as having been resolved as the result of an appeal to authority (the conventional application of rules) and some as having been resolved by appeal to merit. The problem with rejecting every argument from authority is like dealing with the Liar’s Paradox or the nihilist dictum that there is no truth. If that is so, then the statement that there is no truth cannot be true. Even the most committed nihilist has some fulcrum from which his or her own consciousness surveys the world. Second, despite Professor Winter’s attack on rationalist thinking as the way our minds really operate (which I think is fair), judgments often need to be binary or “either-or” or “p versus not-p.” Even if it is true (and I believe it is) that the Supreme Court’s definition of a security for purposes of the 1933 and 1934 Acts is almost impossible to apply without evoking the prototype effect within the idealized cognitive model of a security—namely, a share of common stock—at some point we have to say yes or no. This thing either does or does not fall within the definition. Perhaps there is an analog to “inclusive positivism” in jurisprudence.⁹¹ When a legal decision maker faces the possibility of applying different rules to a fact situation, the argumentation may call down merit in the form of policy or logic or equity. But it is

⁹¹ Leslie Green, *Legal Positivism*, STANFORD ENCYCLOPEDIA OF PHILOSOPHY, Jan. 3, 2003, <http://plato.stanford.edu/archives/fall2009/entries/legal-positivism> (“So-called ‘inclusive positivists’ (e.g., Waluchow (to whom the term is due), Coleman, Soper and Lyons) argue that the merit-based considerations may indeed be part of the law, if they are explicitly or implicitly made so by source-based considerations.”).

really “soft authoritarianism.” Within the lawyers’ own discipline, policy or merit arguments are merely a basis for adopting one particular authority over another.

B. Interdisciplinary in Business Leadership

I want to compare my idealized cognitive model of pure legal judgment (and the argument from authority) with an equally idealized model of business judgment. The issues of boundaries and boundarylessness have been at the forefront of organizational theorists and practitioners for the last thirty years or so, as the Japanese industrial revolution, particularly in the automotive industry, challenged the ultimate systems of professionalization—where individual workers were specialized to the point of single and repetitive tasks.⁹² Unlike academics, business leaders do not have tenure, and while their compensation and perks might invite skepticism, they do indeed face consequences if they fail to perform. I suggest there is metadisciplinary insight that might help us, as lawyers, in considering our theory and practice of metadisciplinarity.⁹³

Peter Senge’s canonical book, *The Fifth Discipline*,⁹⁴ was an exposition of human motivation and practical manual for the workplace.⁹⁵ Senge’s conception of a successful institution was a “learning organization,” the leadership challenges in which he saw as precisely the is-

⁹² “Ford not only perfected the interchangeable part, he perfected the interchangeable worker.” JAMES P. WOMACK, DANIEL T. JONES & DANIEL ROOS, *THE MACHINE THAT CHANGED THE WORLD* 30 (1990). Alfred Sloan applied the same principles to the organization and management of the enterprise at General Motors “and it is this complete system to which the term *mass production* applies today.” *Id.* at 40.

⁹³ What follows is an unscientific sampling based on a representative selection from the management tomes presently sitting on my bookshelf, collected between the end of 1992 and mid-2004: Joseph L. Badaracco, Jr., *The Discipline of Building Character*, in *HARVARD BUSINESS REVIEW ON LEADERSHIP* 89–113 (1998) (quoting William James regarding the utility of ideas); PRICE WATERHOUSE CHANGE INTEGRATION TEAM, *THE PARADOX PRINCIPLES* (1996) (referring, for example, to Kierkegaard, Wilde, and Whitehead on the role of paradox in the management of chaos, complexity, and contradiction); Nitin Nohria & James D. Berkley, *What Ever Happened to the Take-Charge Manager*, in *HARVARD BUSINESS REVIEW ON LEADERSHIP* 199–222 (1998) (calling on managers to return to the pragmatism advocated by 19th century American pragmatists).

⁹⁴ PETER M. SENGE, *THE FIFTH DISCIPLINE: THE ART AND PRACTICE OF THE LEARNING ORGANIZATION* (1994).

⁹⁵ Indeed, *The Fifth Discipline* generated a separate manual of case studies and practice guides. PETER SENGE, ART KLEINER, CHARLOTTE ROBERTS, RICHARD ROSS & BRYAN SMITH, *THE FIFTH DISCIPLINE FIELDBOOK: TOOLS AND STRATEGIES FOR BUILDING A LEARNING ORGANIZATION* (1994).

sues of disciplinary structure and sovereignty (and interdisciplinary anxiety) in academia.⁹⁶

From a very early age, we are taught to break apart problems, to fragment the world. This apparently makes complex tasks and subjects more manageable, but we pay a hidden, enormous price. We can no longer see the consequences of our actions; we lose our intrinsic sense of connection to a larger whole. When we then try to “see the big picture,” we try to reassemble the fragments in our minds, to list and organize all the pieces. But, as physicist David Bohm says, the task is futile—similar to trying to reassemble the fragments of a broken mirror to see a true reflection. Thus, after a while we give up trying to see the whole altogether.⁹⁷

Another business change model, developed by Michael Hammer and James Champy, was “reengineering:” a drastic reshaping of business processes that threw out theories of organizing work (the division of labor, elaborate controls, the need for managerial hierarchy) dating back to the dawn of the Industrial Revolution.⁹⁸ Two years later, Champy revisited the subject, asking why reengineering had not worked in many cases.⁹⁹ Champy noted the difficulty with which managers let go of the metaphor of factory and organization as machine.¹⁰⁰ What reengineering required instead was more than letting go of “command and control.”¹⁰¹ It required abandonment of faith in an “eternal, universally right way of doing things”¹⁰² or the “illusion of one conclusive solution to any business . . . problem”¹⁰³ and the retention of our faith in human beings—as Champy explained, “the knowledge and belief that we are all eager to learn, and capable of dedication, high spirits, and individual responsibility.”¹⁰⁴

Having built up huge organizations marked by departments and disciplinary boundaries, much of the effort in modern businesses is to moderate their influence. Within the management laboratory of General Electric, the term for the effort is “boundarylessness,” for which the theorists employ an organism metaphor for boundaryless-

⁹⁶ SENGE, *supra* note 94, at 3–4.

⁹⁷ *Id.* at 3.

⁹⁸ See MICHAEL HAMMER & JAMES CHAMPY, REENGINEERING THE CORPORATION (1993).

⁹⁹ JAMES CHAMPY, REENGINEERING MANAGEMENT (1995).

¹⁰⁰ *Id.* at 13–14.

¹⁰¹ *Id.*

¹⁰² *Id.* at 26.

¹⁰³ *Id.* at 27.

¹⁰⁴ *Id.*

ness: boundaries traditionally seen as fixed barriers become “permeable, flexible, moveable membranes in a living evolving organism.”¹⁰⁵ The *raison d’être* of a business organization is to create business results; if boundaries are still in the way of “flexibility and innovation,” then they are problematic.¹⁰⁶ Yet the human reaction to the creation and destruction of disciplinary walls transcends the form of institution, whether academic or profit seeking. In business, “the mere thought of a boundaryless organization is terrifying. After all, boundaries *are* organizations; they define what’s in and what’s out; who controls and who has status. To change the nature of boundaries is akin to removing your own skin.”¹⁰⁷

The discipline upon which business organizations (and business schools) call to address the boundary problem is not one that shows up with any frequency in law schools; it is leadership. If you are charged with creating a boundaryless organization, or with leading one, you must necessarily have metadisciplinary skills. That is, your job is to deal with problems of interdisciplinarity. What is the idealized cognitive model of such a leader? The leadership theorists include metaphoric characteristics like “ambidexterity,”¹⁰⁸ tolerance of uncertainty (as in processes that “unleash tremendous energy and chain reactions”), willingness to “unclear destinations,”¹⁰⁹ or “alignment.”¹¹⁰ One manual advises, “[t]he shift toward a boundaryless organization requires you not only to fight through your organization’s immune system response but also to overcome your own natural inclinations for control, clarity, and certainty.”¹¹¹ Another manual highlights the problems with alignment, the metaphor for getting people in different disciplines to work toward the same or, at least, not conflicting goals. The problem is “[d]ealing with . . . people who may

¹⁰⁵ RON ASHKENAS, DAVE ULRICH, TODD JICK & STEVE KERR, *THE BOUNDARYLESS ORGANIZATION: BREAKING THE CHAINS OF ORGANIZATIONAL STRUCTURE* 4 (1995). Ulrich was a professor of business administration at the University of Michigan; Kerr was the vice president of corporate leadership development at General Electric. *Id.* at xxx-xxxii. The coiner of the term was likely John F. Welch, Jr., the former chairman and chief executive officer of General Electric. See NOEL M. TICHY & STRATFORD SHERMAN, *CONTROL YOUR DESTINY OR SOMEONE ELSE WILL* 234–37, 248–49 (1993) (describing John F. Welch, Jr.’s views).

¹⁰⁶ ASHKENAS, *supra* note 105, at 13.

¹⁰⁷ *Id.* at 22.

¹⁰⁸ *Id.* at 327.

¹⁰⁹ *Id.* at 328–30.

¹¹⁰ Morgan W. McCall, Jr., *Developing Leadership*, in *ORGANIZING FOR THE FUTURE: THE NEW LOGIC FOR MANAGING COMPLEX ORGANIZATIONS* 256, 267–68 (Jay R. Galbraith et al. eds., 1993).

¹¹¹ ASHKENAS, *supra* note 105, at 332.

have no reason on earth to cooperate but may have considerable impact on outcomes.”¹¹² The metadisciplinary skill, in business theory language, is *interpersonal competence*, a skill that becomes necessary in increasingly boundaryless organizations because “the basis of influence is shifted from narrowly defined hierarchical authority to persuasion across large lateral spans, functions, and traditional boundaries.”¹¹³ In short, interdisciplinary spaces worry non-academics as much as they worry (as we will see) academics; the role of the organization’s leader in the business world is to set priorities across disciplines even though not a member of any particular one. The paradox of management metadisciplinarity is evident in the advice that two leading entrepreneurship scholars give to small business owners in dealing with expert advisers like lawyers, bankers, or accountants. “Being an activist manager means doing two seemingly contradictory things: seeking out the best advisers—specialists if necessary—and involving them more thoroughly and earlier than might have been done before. At the same time, the manager must be more skeptical of their credentials and advice.”¹¹⁴

C. *Toward a Theory of Practical Metadisciplinarity*

1. Metadisciplinarity in Academic Theory and Institutions

Part of the task in thinking about judgment is recognizing that there is no “how-to” cookbook for making judgments. For scholars in the modern legal academy, interdisciplinarity can be a touchy issue.¹¹⁵ There is a continuum between abiding strict disciplinary boundaries and certifications, at one end, and freewheeling interdisciplinary thought on the other. Each pole of the continuum has potentially good and bad attributes. The downside of interdisciplinary work is dilettantism, but the upside is infusion of new thought and creativity as well as the exposure of new audiences to the insights of the respective contributing disciplines. The upside of working within a tradi-

¹¹² McCall, *supra* note 110, at 268. I emphasize that this statement is about business organizations, not faculties.

¹¹³ *Id.*

¹¹⁴ Howard H. Stevenson & William A. Sahlman, *How Small Companies Should Handle Advisers*, in *THE ENTREPRENEURIAL VENTURE* 450, 450 (William A. Sahlman, et al. eds., 2nd ed. 1999).

¹¹⁵ As the Carnegie report, *Educating Lawyers: Preparation for the Profession of Law*, observes, the legal academy is still trying to sort out how to honor both its trade school roots as well as the interests of legal academicians seeking the respect of their first-tier research university counterparts in the social sciences and humanities. SULLIVAN ET AL., *supra* note 28, at 4. See Goodrich, *supra* note 8, for more on academic law’s own issues with interdisciplinarity.

tionally established discipline is rigor and depth, but the downside is insularity, stultification, and the trap of the Kuhnian paradigm. It is another instance, in my view, of Popper's issue of the polarities (never pure in the real world) of the arguments from authority and the arguments from merit.

There is both a conceptual and a practical question in moving effectively between those poles. The conceptual question goes to the substance of interdisciplinarity—namely, the transfer of knowledge across disciplines. A discipline is precisely the kind of “either-or” categorization that the work in cognitive science assesses. The power of interdisciplinarity as a conceptual matter invokes the role of metaphor and analogy in breaking down established categories—of seeing a new field that is neither of the original disciplines or importing insights from the new field or cross-disciplines back to the original disciplinary contributor.

I draw on Mark Turner's work in describing the role that categories and analogies play in cognitive science.¹¹⁶ It is not surprising to expect that categorization is an evolutionarily adaptive behavior; creatures categorize in order to avoid being overwhelmed by variety (and, likely, to be able to separate threats from non-threats).¹¹⁷ Category structures evolve within cultures, and cultures optimize category structures as a matter of fitness. Analogies put pressure on category structures by unmasking, capturing, or inventing connections absent from or upstaged by one's category structures.¹¹⁸ The important point is that the cognitive process of categorizing and analogizing is the same, differing only in the degree to which a particular category has been well entrenched as a cultural matter. In other words, the mere equation of two concepts does not make the statement an anal-

¹¹⁶ Mark Turner, *Categories and Analogies*, in *ANALOGICAL REASONING* 3, 3 (David H. Helman ed., 1988). In doing so, despite not being a cognitive scientist, linguist, or philosopher, I am making a metadisciplinary judgment about analogy and metaphor, and I am rejecting a number of conflicting, deflating, and/or dismissive views. See generally DONALD DAVIDSON, *INQUIRIES INTO TRUTH AND INTERPRETATION* (1984) (explaining that expressions are metaphorical merely as a matter of usage; they do not impart meaning solely on account of being metaphors); RICHARD RORTY, *OBJECTIVITY, RELATIVISM, AND TRUTH: PHILOSOPHICAL PAPERS* (1991) (arguing that distinctions between literal and metaphoric usages are merely distinctions between familiar and unfamiliar usages); Maurice Lagueux, *Do Metaphors Affect Economic Theory?*, 15 *ECON. & PHIL.* 1 (1999) (discussing the increased and inappropriate use of metaphors in economic theory); Alexander Rosenberg, *Does Evolutionary Theory Give Comfort or Inspiration to Economics?*, in *NATURAL IMAGES IN ECONOMIC THOUGHT: "MARKETS READ IN TOOTH AND CLAW"* 384, 384 (Philip Mirowski ed., 1994) (arguing that the Darwinian theory is an inappropriate model or theoretical framework for economic theory).

¹¹⁷ Turner, *supra* note 116, at 3.

¹¹⁸ *Id.*

ogy as we have come to understand it within our categories. Some attempts at analogical connections strike us as odd or random. One of the “deeper” insights from the popular music of my youth was a set of lyrics describing a pilgrim’s journey to ask the Dalai Lama the meaning of life, to which the response is “life is like a beanstalk, isn’t it?”¹¹⁹ I still do not know what that was supposed to mean: life is tall, green, interwoven, has leaves, or leads to angry giants? “For us to recognize a statement as an analogy, we must recognize that it is in some ways putting pressure on our category structures.”¹²⁰

Some analogies are so entrenched that we take for granted the comparative connection that is the source of the analogy. Tired analogies are those no longer considered inventive. For example, Turner observes that we long ago stopped viewing the analogical connections between two different zebras as insightful:¹²¹

That there is a continuous gradient—not a dichotomous opposition—between analogical and categorical connection means that our category structures are dynamic and subject to transformation under the pressure of analogy. Analogies deal with our categories by side-stepping, goosing, improving them. They can inventively induce us to build new connections, and recast or tune others. A powerful analogy can re-structure, disturb, influence, and change our category structures, and successful analogical connections can ultimately become part of our category structures.¹²²

Indeed, the analogy itself becomes a source of similarity that can be the basis for a new categorical connection. For example, it is common now to think of a quarterback as the field general of any kind of team, but the category we would call “quarterbacks” originate as an analogy: the law firm senior partner is to the acquisition team as a football quarterback is the offense. On the other hand, Turner notes that we understand the offensively sexist analogies of men to rocks

¹¹⁹ PROCOL HARUM, *In Held 'Twas in I, on SHINE ON BRIGHTLY* (Repertoire Records 1997).

¹²⁰ Mark Johnson, *Some Constraints on Embodied Analogical Understanding*, in *ANALOGICAL REASONING*, *supra* note 116, at 25, 26. Exactly how it is doing so remains a mystery. Mark Johnson, another pioneer in the field, has observed that, notwithstanding the debate over the status of analogy and metaphor, we still do not know why—other than it is a fact of our culture or our sensibility—we find some analogies more powerful than others. *Id.* at 25. Johnson noted, “[A]nalogical and metaphorical projection is pervasive in human understanding at a level of meaning and reasoning below that of propositional relations. My negative or critical thesis would then be that we don’t have a fully adequate theory of analogical reasoning, because we haven’t given sufficient attention to these preconceptual and nonpropositional levels of cognition.” *Id.* at 26.

¹²¹ Turner, *supra* note 116, at 4.

¹²² *Id.* at 5.

and women to flowers, even though that particular connection is not (we hope) entrenched in our category structures.¹²³

Because disciplines are themselves institutionalized forms of categories, how does anyone gain the disciplinary competence to judge the analogies, the transferences from discipline to discipline, at least in the first instance? Once the power of the analogy gains adherents, itself a social and cultural process, and threatens to replace the existing categories with those suggested by the analogy, it is what Kuhn called the paradigm shift.¹²⁴ That is a social process. I am focusing here on the cognitive process. I want to unpack in some detail the cognitive processes by which we decide whether analogies have power or do not.

Turner compares what he calls the classical and vertical dimensions of categorization. In the classical dimension, constituents fall into a category because they share critical attributes that define the category. Moreover, categories sharing attributes become super-categories. The vertical dimension of categorization, developed by Eleanor Rosch, holds that there is one level of abstraction, the basic level, around which most conceptual information is organized. A given linguistic community or discourse type marks what it takes to be the default basic-level categories shared by its speakers. The following are categories in which we could place my dog Annie: everything—physical object—organisms—animals—dogs—mutts—Chow / Golden Retriever mixes—Annie. The basic level thesis of the vertical dimension says that we see the most distinctive or descriptive (or *basic*) category within that vertical chain as “dog.”¹²⁵

Moreover, the cognitive “oomph” of the basic level is expressed in something called cue validity. Cues are better indicia of a particular category the more that they are associated with that category, and the less that they are associated with other categories. “The cue validity of a category is the sum of cue validities of the attributes.”¹²⁶ Cue

¹²³ *Id.*

¹²⁴ THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (3d ed. 1996). “When examining normal science . . . , we shall want finally to describe that research as a strenuous and devoted attempt to force nature into the conceptual boxes supplied by professional education.” *Id.* at 5. “Simultaneously, we shall wonder whether research could proceed without such boxes, whatever the element of arbitrariness in their historic origins” *Id.* When new research exposes (to the community) the arbitrariness of the conventional models and the community can no longer maintain the old conceptual boxes in the face of the evidence, scientific revolutions occur, “the tradition-shattering complements to the tradition-bound activity of normal science.” *Id.* at 6.

¹²⁵ Turner, *supra* note 116, at 6–7.

¹²⁶ *Id.* at 7–8.

validity is low at the level of individual dogs—Annie compared to my other dog, Max—because they have few attributes in common at that category specification—Max is Max and Annie is Annie. Cue validity is also low at the level of organisms because too many of the Annie’s attributes *cannot* be shared with an amoeba.¹²⁷

We can translate the level of cue validity on a vertical level to the extent we see a difference in horizontal categories. The spot where we see the maximal differentiation from other vertical strands is at the basic level. We get the highest cue validity (i.e., maximal differentiation of attributes between Annie, my mutt of a dog, and Moonie, a Dutch Warmblood horse I ride from time to time) at the basic level. Turner observes how this works. There is generally very little overlap between contrasting categories at or above the basic level. Once we have identified Annie as a dog and Moonie as a horse, their further categorization by breed and name does very little to cue differences in attributes. But in the categories below the basic level—everything, organisms, vertebrates, and mammals, for example—there is such significant overlap that we cannot find enough distinguishing cues relative to the non-distinguishing ones.¹²⁸

What then makes for powerful analogies? The thesis is that we organize knowledge around mental models at basic levels. The next step is distinguishing the kinds of equations or connections that *might* be analogies. The first rule Turner suggests is that “[a]n equation between different mental models at the basic level is a candidate for analogy,” but not every equation is an analogy.¹²⁹ I will use my own examples. “A child is a seedling.” We recognize a candidate for analogy as an equation between (an instance of) a basic level model and (an instance of) a contrasting basic level model.¹³⁰ That does not mean that we necessarily understand the proposed analogy. The “child = seedling” is almost conventional and easy to understand. I could have proposed the following equation: “A child is a piece of rye bread.” That is not so easy.

The second rule in identifying analogies is the relationship between the basic level category and the more general one above it.¹³¹ “Child = seedling” is a powerful analogy because the next category above child is “human,” and the next category above seedling is

¹²⁷ *Id.* at 8.

¹²⁸ *Id.*

¹²⁹ *Id.* at 9.

¹³⁰ *Id.* at 9–10.

¹³¹ Turner, *supra* note 116, at 11.

“plant.”¹³² A child is a human but not a plant, so there may well be something analogous there. The third rule is that a potentially understandable analogy signals a false categorization.¹³³ How can children equate to seedlings when they normally reside in wholly different categories? Finally, we resist analogies when we are equating two mental models that share a supercategory at or below the basic level.¹³⁴ Take “dog” as a basic level category. “Annie was a Golden Retriever” may say something descriptive about Annie that does not feel like an analogy because Annie was a dog (indeed, partly a Golden Retriever). Annie and Golden Retrievers both describe dogs. We can, however, overcome the resistance. Annie had a dog aggression issue, so if I say, “Annie was a real Pit Bull,” the listener will understand I am saying something about her behavior (just as if I were to emphasize that she was a *real* Golden Retriever, and wants to love you to death). In that instance we are signaling the analogy “by using strong pragmatic cues and highly conventionalized metaphors.”¹³⁵

That is the conceptual issue. In short, it is an open question whether those setting the categories in the established disciplines have the right (intellectually speaking) to dictate the use of their disciplines as analogy in explaining or disturbing the categories in other disciplines. The practical question goes to the institutional aspects of academic and professional disciplines, and is a real-world instantiation of the conceptual issue. Within the academy, for example, does every person have to be a full-fledged expert in each discipline of interdisciplinary work to offer a credible view? That is going to be awfully expensive and limiting.¹³⁶ If relevant disciplinary competence does not mean actually getting a Ph.D. or the equivalent in both subjects, then it is an empirical question. How much work do you have to do in the equivalent of on-the-job training to have relevant disciplinary competence?

¹³² See *id.* at 11–12 (providing a helpful rule of thumb). Consider pairs of “category/not-category” like “event/non-event” or “person/not-person.” Child = seedling is an example of the latter. “Meeting you was a revelation” is an example of the former.

¹³³ *Id.* at 13–14.

¹³⁴ *Id.* at 14.

¹³⁵ *Id.* at 16. Note the importance of the shared supercategory being at or below the basic level. “Child = seedling” is understandable as an analogy, even though children and seedling share the supercategory “physical object.” *Id.* at 15. But “physical object” is above the basic level and hence is weak and “unimpressive” as a connection. *Id.*

¹³⁶ It also raises the question whether the work is going to be inter-disciplinary. Do multiple Ph.D.s co-opt one into the conventional wisdom of each discipline and kill the inclination to ruffle feathers?

Not surprisingly, then, academic interdisciplinarity (much less metadisciplinarity) is a significant challenge as an institutional matter. Louis Menand has recently published a brief overview of the subject.¹³⁷ Academic disciplines are a relatively recent phenomenon¹³⁸ and a product of a more general professionalization of occupation that has been going on since the late 1800s.¹³⁹ The reasonable point to take from Menand's survey is the power of the relevant discipline. "It is a self-governing and largely closed community of practitioners who have an almost absolute power to determine the standards for entry, promotion, and dismissal in their fields."¹⁴⁰ As Menand correctly observes, it is the non-transferability of expertise that is the hallmark of professionalism. It substitutes a standard of merit for class and status: "the product is guaranteed by the expertise the system is designed to create. Incompetent practitioners are not admitted to practice, and incompetent scholarship is not disseminated."¹⁴¹ Finally, because the community of experts ratifies the professional product, "the most important function of the system is not the production of knowledge. It is the reproduction of the system."¹⁴² The result of all of this is academic anxiety about the rise of interdisciplinarity, "a relatively boundary-respecting conception of scholarly inquiry [giving] way to a relatively boundary-suspicious conception."¹⁴³ Again, not surprisingly, the very paradox of fixed boundaries and indeterminacy that is at the heart of metadisciplinary judgment affects this question. Interdisciplinary anxiety, concludes Menand, is "about the formalism and methodological fetishism of the disciplines and about the danger of sliding into an aimless subjectivism or eclecticism."¹⁴⁴ In Popperian terms of authority and merit, if we have no authority to which we might turn, how do we know if it is any good?¹⁴⁵

¹³⁷ LOUIS MENAND, *THE MARKETPLACE OF IDEAS: REFORM AND RESISTANCE IN THE AMERICAN UNIVERSITY* (2010).

¹³⁸ *Id.* at 97; see generally HASKELL, *supra* note 5.

¹³⁹ MENAND, *supra* note 137, at 100.

¹⁴⁰ *Id.* at 104–05.

¹⁴¹ *Id.* at 105.

¹⁴² *Id.*

¹⁴³ *Id.* at 117 (noting that this coincided with a broader societal respect for professionalism generally). As I have observed, the financial crisis of 2008–09 highlighted this issue for the judgment of financial experts, economists, and regulators, at least as perceived by intelligent laypeople. See Lipshaw, *supra* note 75.

¹⁴⁴ MENAND, *supra* note 137, at 123.

¹⁴⁵ In personal terms, as one of my best friends on the faculty has said to me (in so many words), "I know you are a smart guy, and you work hard, but why should I believe anything you say?" Goodrich raises the same question in advocating for more intellection and indiscipline in academic law:

Even more directly to the institutional point, the philosopher of science Stephen Kellert has explored the extent to which we might borrow knowledge across disciplines, particularly from the natural sciences to the social sciences and humanities.¹⁴⁶ Kellert focuses on another hot topic in mathematics, chaos theory.¹⁴⁷ The point is not chaos theory itself, but whether there is any traction in using metaphors from the mathematics of chaos theory as the source of knowledge in other fields. He acknowledges the same issues of potential dilettantism, meaningless comparisons, name-dropping, and erroneous terminology.¹⁴⁸ Nevertheless, he asserts “a pluralistic and roughly pragmatist conception of knowledge by showing that it enables and advances the critical examination of borrowed knowledge.”¹⁴⁹

The institutional challenges are precisely the boundaries that Menand identified:

As we make knowledge, we encounter many things that may seem odd, transgressive, or even threatening: transfers across disciplinary boundaries, nonstandard usages of words, traffic between

The interdisciplinary paradigm, by contrast, opens up to the logic of chance, the chaos of thought, and the transformations of events. What is at issue, in other words, is a space of intellection, in publishing terms diverse fora of exchange, in pedagogic contexts mobile sites of interdisciplinary interaction. A coming face to face with other disciplines. Sounds easy, but it gets hard. Who will pay for that? Who will supervise, mediate, attend, and care for these critical but subversive, radical but secretive moments and occasions? Does coming back mean going underground? Or worse, being ridiculed, ignored, derided, in short, envied and dismissed, feared and discounted? Why such a price to pay and who in the end are now the guardians of academic law who dare to impose their views, their prejudices against the free play of thought?

Goodrich, *supra* note 8, at 477. Who is willing, like Friedrich Hayek (or my friend Gordon Smith) to admit that he or she is “muddleheaded,” such state being a condition precedent to independent thought, unconstrained by the disciplines of those with “more orderly minds?” See Friedrich A. Hayek, *Two Types of Mind*, 45 ENCOUNTER 33 (1975), *reprinted in* 3 F.A. HAYEK, THE COLLECTED WORKS OF F.A. HAYEK: THE TREND OF ECONOMIC THINKING 49, 52 (1991); Gordon Smith, *Are You a “Master of the Subject?”* CONGLOMERATE (May 12, 2010), <http://www.theconglomerate.org/2010/05/are-you-a-master-of-the-subject.html>.

¹⁴⁶ See generally STEPHEN H. KELLERT, *BORROWED KNOWLEDGE: CHAOS THEORY AND THE CHALLENGE OF LEARNING ACROSS DISCIPLINES* (2008).

¹⁴⁷ See *id.* A chaotic system is one that is non-linear, bounded and deterministic, and obeys simple rules, but displays complicated and unpredictable behavior. A non-linear system is one in which the variables are not related to each other according to strict proportionality. Part of chaos theory is to discern patterns in seemingly random data sets. The pattern is highly dependent on initial conditions (what is known as the butterfly effect). The term “strange attractor” comes from chaos theory. *Id.* at 4–8.

¹⁴⁸ *Id.* at 14–16.

¹⁴⁹ *Id.* at 23.

facts and values, and so on. Pluralism counsels that we should not limit our options in such encounters to either fearful rejection or uncritical embrace. The first option may lead to a rigid reassertion of boundaries that enforce isolation, whereas the second may result in the inappropriate collapsing of those very boundaries. New possibilities do not have to be pigeonholed as either menacing or liberating but should be critically examined for what they offer and where they fail.¹⁵⁰

The counterweight to the dangers of pluralism is Popperian: humility in assertions of substantive or procedural truths, and openness to criticism.¹⁵¹

One of Kellert's critical targets in his defense of pluralism is "the belief that metaphorical borrowing cannot or should not be subjected to detailed investigation," a view of some scientists and philosophers of science "who claim that any metaphorical use of science is always an inappropriate misuse."¹⁵² To the contrary (and not surprisingly), Kellert adopts the position of the philosopher, Max Black, that a metaphor is more than a mere literal statement of comparison; it is instead "an utterance with two components in tension, where the irreducible cognitive meaning of the metaphor arises from the interplay between these components understood as systems."¹⁵³ Kellert's elucidation of metaphorical borrowing is an example of the general cognitive abilities we saw in Turner's work: metaphor generates "hypotheses from current conceptualizations and transform[s] them. Juxtaposing perspectives yields a reconceptualization, bringing new properties to salience, and reorganizing concepts."¹⁵⁴ Nevertheless, it is possible to criticize metaphors,¹⁵⁵ and there too Kellert provides additional heuristics—fit, utility, need, and awareness—consistent with Turner's theoretical framework of metaphors involving the interplay between instances of basic level categories, considered vertically and horizontally.¹⁵⁶ The point is that the cognitive process of metaphor, either in Turner's model or in Kellert's, is non-algorithmic and irreducible. Nevertheless, equations (in Turner's terminology) that are recognizable as potential metaphors may nevertheless, in Turner's or Kellert's methodology, be obscure (life = beanstalk) or

¹⁵⁰ *Id.*

¹⁵¹ *Id.* at 23–24.

¹⁵² KELLERT, *supra* note 146, at 103; *see also supra* note 116.

¹⁵³ KELLERT, *supra* note 146, at 105 (referring to EVA FEDER KITTAY, METAPHOR: ITS COGNITIVE FORCE AND LINGUISTIC STRUCTURE 22–23 (1987)).

¹⁵⁴ *Id.* at 111.

¹⁵⁵ *Id.* at 121–47.

¹⁵⁶ *Id.* at 126; *see supra* text accompanying notes 129–135.

nonsensical (baseball = tomato).¹⁵⁷ If someone proposes a metaphor as a means of explanation or category busting, we are not obliged to accept it merely because it falls somewhere between algorithmic certainty and complete indeterminacy.

What I take from Turner (conceptually) and Menand and Kellert (practically) is the following principle: analogies as category busters within academic disciplines cannot possibly fall within the authority of one discipline or another. As an example, I have debated with friends in the legal academy whether one of the great feats of formal logic in the 20th century, a proof constructed by the mathematician Kurt Gödel, has anything to teach us, by analogy, about the limits of the law.¹⁵⁸ Here is the essence of the matter. Between 1910 and 1913, Alfred North Whitehead and Bertrand Russell published the monumental *Principia Mathematica*, which purported to derive all mathematical truths from a defined set of axioms and rules of inference.¹⁵⁹ Using an arithmetic equivalent of the Liar's Paradox (when a pathological liar asserts he is a liar, is the statement true?), Gödel proved two things.¹⁶⁰ First, the *Principia* failed to fulfill the stated goal of Whitehead and Russell to provide a system in which all mathematical questions could be resolved.¹⁶¹ He showed that the *Principia* was incomplete in that there are truths derivable by the axioms and rules of inference in the system which are undecidable—that is could not be proved to be either true or false.¹⁶² Second, he generalized even further, concluding that a formal logical system as complex as that of the *Principia* would have to be either incomplete or inconsistent.¹⁶³ In other words, one might prove all truths within that otherwise incomplete system but only by using an axiom or rule of inference not originally posited as constitutive of the system; in Gödel's terms, the proposition “is undecidable in the system [Principia Mathematica] yet turns out to be decided by metamathematical considerations.”¹⁶⁴

Mathematicians and non-mathematicians alike often find Gödel's Proof irresistibly tempting as a source of metaphoric insight

¹⁵⁷ *Id.* at 147; see *supra* text accompanying notes 129–135.

¹⁵⁸ R. B. Braithwaite, *Introduction to KURT GÖDEL, ON FORMALLY UNDECIDABLE PROPOSITIONS OF PRINCIPIA MATHEMATICA AND RELATED SYSTEMS 1, 2* (R.B. Braithwaite ed., 1992). See ERNEST NAGEL & JAMES R. NEWMAN, *GÖDEL'S PROOF* (2001), for a more accessible and non-technical description of the proof.

¹⁵⁹ *Id.*

¹⁶⁰ GÖDEL, *supra* note 158, at 40.

¹⁶¹ *Id.* at 37–38.

¹⁶² *Id.* at 38.

¹⁶³ *Id.*

¹⁶⁴ *Id.* at 41.

into metaphysical truths about self-reference, recursiveness, and the limits of knowledge. The most popular of the works extending the proof beyond its implications for formal logic is Douglas Hofstadter's iconic *Gödel, Escher, Bach: An Eternal Golden Braid* ("GEB"),¹⁶⁵ but Hofstadter is not the only respected thinker to analogize the proof from formal logic to other fields.¹⁶⁶ Some writers have suggested that law is a formal system,¹⁶⁷ like mathematics, and others have tried to use the proof to support the assertions of legal indeterminacy underlying critical legal studies.¹⁶⁸ Mathematically inclined law professors have likely done the world a favor by excoriating most of these analogies.¹⁶⁹ Nevertheless, I confess that I have been tempted by the allure of Gödel's Proof. I started college as a math major (and, as an eighteen-year old, moved on to history and humanities when I could not master the proof of the existence of real numbers using Dedekind Cuts). Even if we grant that the disciplines of formal logic and practical wisdom are distinct, is there nevertheless some learning that we legitimately derive from the analogy of something like Gödel's Proof or

¹⁶⁵ DOUGLAS HOFSTADTER, *GÖDEL, ESCHER, BACH: AN ETERNAL GOLDEN BRAID* (1979). On March 22, 2007, I did a Westlaw search of all law review and journal articles with the following search term: hofstadter & escher /3 bach. The search revealed 101 articles that had cited GEB.

¹⁶⁶ Stephen Hawking did it, albeit casually, in an interview about what might be left for science to discover. Leonard Mlodinow, *Dialogue: Prometheus Bound*, DISCOVER, Oct 2005, at 65. Roger Penrose invokes it in his discussion of consciousness. PENROSE, *supra* note 34, at 416–18. John Barrow, professor of mathematics and Director of the Millennium Mathematics Project at the University of Cambridge, also invokes it. JOHN D. BARROW, IMPOSSIBILITY: THE LIMITS OF SCIENCE AND THE SCIENCE OF LIMITS 218–32 (1998); JOHN D. BARROW, THE INFINITE BOOK: A SHORT GUIDE TO THE BOUNDLESS, TIMELESS AND ENDLESS 260 (2005).

¹⁶⁷ See Anthony D'Amato, *Pragmatic Indeterminacy*, 85 NW. U. L. REV. 148, 148–49 (1990).

¹⁶⁸ See Mark R. Brown & Andrew C. Greenberg, *On Formally Undecidable Propositions of Law: Legal Indeterminacy and the Implications of Mathematics*, 43 HASTINGS L.J. 1439 (1992) (describing the feasibility of legal formalism and its adherents and suggesting that law is better described as indeterminate).

¹⁶⁹ Robert Birmingham, *Calculations*, 30 CONN. L. REV. 1019, 1034–35 (1998) (reviewing JOHN W. DAWSON, JR., LOGICAL DILEMMAS: THE LIFE AND WORK OF KURT GÖDEL (1997)); David R. Dow, *Gödel and Langdell—A Reply to Brown and Greenberg's Use of Mathematics in Legal Theory*, 44 HASTINGS L.J. 707, 715–16 (1993); Mike Townsend, *Implications of Foundational Crises in Mathematics: A Case Study in Interdisciplinary Legal Research*, 71 WASH. L. REV. 51, 146 (1996). Professor Birmingham's review contains the harshest critique of references in the legal academic and judicial literature to Gödel's Proof. Birmingham, *supra*, at 1020–21. Professor Townsend's article is a more methodical assessment of the "self-reference" craze, with the appropriate note of caution about applying work in other disciplines without regard to content or context. Townsend, *supra*, at 128–29.

the uncertainty principle within quantum mechanics¹⁷⁰ to something like law or judgment? There seems to be something unfair in the logicians telling me I have fairly characterized the proof, to the extent it can be, other than in formal symbolic logic but that the tenets of the discipline of formal logic are such that any analogies are per se illegitimate.

Indeed, Roger Penrose, a mathematician who is in quantum jumps far more adept with this than I, explicitly counters the logicians' objections in offering Gödel's Proof as metaphor for his claim

¹⁷⁰ To the extent that people use the phrase "uncertainty principle" as a metaphor, I believe one meaning is that the act of measuring impacts the system being measured. So, for example, peer evaluation of classroom teaching is subject to a kind of "uncertainty principle" because the act of observation affects the teacher being observed.

Quantum mechanics involves the insight that microscopic bits of matter and energy, by virtue of their microscopic size, exhibit the tendencies of both particles and waves. A wave "spreads out" in a field and a particle is somewhere, but an electron or a photon appears to do both. The mathematics of quantum mechanics precisely and deterministically describes quantum states as weightings of possible positions of the particle in relation to the momentum space associated with the wave. At this point, any further explanation gets into far more detail than I want to provide, except to say that a problem arises when we, macroscopic beings, want to measure the quantum world and must therefore translate a quantum concept of "amplitude" into a macroscopic concept of probability, which seem analogous (and, indeed, have a mathematical relationship) but are not the same. See PENROSE, *supra* note 34, at 291–390, for an overview designed for non-scientists.

Is it an effective metaphor or analogy? The answer is probably not. Position and momentum are complementary in quantum mechanics, meaning that the act of measuring imposes an absolute limit to our ability to know both precisely at the same time (the mathematical relation is $\Delta x + \Delta p \geq h$, where Δx is the range of possible positions of the particle, Δp is the range of possible momenta, and h is Planck's constant). While the "knowability floor" of Planck's constant is itself a tiny number (6.6×10^{-34} Joule seconds), it still puts real limits on our ability to know x and p at the same time. If, for example, we measure x so that we know the particle's position exactly (so Δx is zero), then the value for Δp will have to be at least h and that will likely be enough not to know anything about what p actually is at the same time.

The candidate for an analogy here is MEASURING A QUANTUM STATE = OBSERVING A CLASS [or MEASURING A TEACHER]. Does the analogy help us understand *why* observing the class is problematic? Perhaps, but it is only in the broadest sense that measurement affects the thing being measured. The reasons for the effect in each case are very much different. For quantum mechanics, it is something about the mathematical relationships of micro-amplitudes to macro-probabilities; for classrooms, it is about the psychology of the teacher. Moreover, a quantum state must be made random by a measurement; a teacher need not be affected by observation at all! Finally, even macroscopic objects are subject to $\Delta x + \Delta p \geq h$, but because h is so small in relation to the size of any object we can actually observe, we can be very, very certain of both position and momentum.

Notwithstanding whether the *metaphor* works, we nevertheless have come to attribute a *meaning* to "uncertainty principle" outside of quantum mechanics along the lines of the one I have suggested.

that the ability to form non-algorithmic judgments is the hallmark of consciousness itself.¹⁷¹ Recall what has happened; by applying the explicit axioms and rules of inference of *Principia Mathematica*, Gödel developed a proposition that said in symbols “*this proposition is not provable within Principia Mathematica.*”¹⁷² Penrose refers to this as the Gödel proposition or $P_k(k)$.¹⁷³ The logicians’ objection runs something like this. In order to extrapolate broader truths from $P_k(k)$, we need to be able to convince ourselves that $P_k(k)$ is true. We can only do that if we are capable of knowing that its derivation is a proper use of axioms and rules of inference in the formal system. That, according to the logicians, is the province of logicians. As Penrose describes the position, “If the mathematician is using some very complicated algorithm inside his head, then we should have *no chance* of actually knowing what that algorithm is, and we shall therefore not be able actually to construct its Gödel proposition, let alone be convinced of its validity.”¹⁷⁴

Penrose subjects this argument to its own Gödelian *reductio ad absurdum*. The very point of mathematical propositions like $P_k(k)$ is that they are not subject to debate once mathematicians understand that they were validly derived. Moreover, notwithstanding different ways of using axioms and rules of inference to get to a proposition in formal logic, there is only one universal system (or “meta-logic”) of algorithmic derivation, and it is “*equivalent to all the different mathematicians’ algorithms for judging mathematical truth.*”¹⁷⁵ But if the universal system is itself a meta-algorithm, then it will be possible to build up a Gödel proposition for it as well. That is, we should be able to prove the statement that “this algorithm of the universal system is not provable.” That leads us down an infinite regress to the point where, as Penrose observes, “the conclusion that the algorithm that mathematicians actually use to decide mathematical truth is so complicated or obscure that its very validity can never be known to us.”¹⁷⁶ But mathematical truth being obscure directly contradicts the whole idea of mathematical truth, which is that it is not obscure. Statements are true in mathematics purely as a result of the syntax of the sentences, not because the sentences have any other semantic content. Thus, the truth has to be clear on the face of the sentence

¹⁷¹ PENROSE, *supra* note 34, at 538–41.

¹⁷² See *supra* notes 160–64 and accompanying text.

¹⁷³ PENROSE, *supra* note 34, at 538.

¹⁷⁴ *Id.* at 539.

¹⁷⁵ *Id.* at 540.

¹⁷⁶ *Id.*

and not, at least in concept, spring from truths so mysterious that their “validity is beyond our comprehension.”¹⁷⁷

In sum, trying to prove that mathematics is self-evidently true spins into a regress that is not unlike trying to tap the mind of the programmer of each succeeding abstract system. To Penrose the mathematician, it is as close as he can come by mathematical proof to showing that there is something non-algorithmic even about seeing algorithmic truth.¹⁷⁸ “We must ‘see’ the truth of a mathematical argument to be convinced of its validity. This ‘seeing’ is the very essence of consciousness.”¹⁷⁹

Penrose has persuaded me (not a mathematician) that he is onto something about the relationship of judgment to consciousness and the ultimately non-algorithmic nature of that consciousness (and judgment).¹⁸⁰ We thus come back to the question of how academics not certified in other disciplines actually make judgments about the quality of work (much less the truth) either in those other disciplines or in their interdisciplinary spaces. One recent study sheds some empirical light on the matter. Michèle Lamont, a Harvard sociologist, conducted a study of interdisciplinary peer review as undertaken for grant approvals.¹⁸¹ By the nature of the task itself, members of particular academic disciplines must pass judgment on the “excellence” of work outside their disciplines. Lamont’s study, albeit anecdotal (it consisted of eighty-one interviews with scholars involved in

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ PENROSE, *supra* note 34, at 540–41.

¹⁸⁰ Hence, in several Parts I discuss debates Professor Winter and I have had about the validity of *any* conceptual dichotomies. See *infra* notes 246–50 and accompanying text. This is a good example of his reasonable basis for dichotomy-skepticism. Earlier in the article, I argued for distinguishing the *argument from authority* and the *argument from merit*. See *supra* notes 87–113 and accompanying text. I am not a mathematician, but I am persuaded by Penrose’s argument. It seems, intuitively, to be helpful that the argument comes from someone world-renowned as a physicist and mathematician, and not from my good friend Tom, who is a lawyer but is a well-read amateur in physics and mathematics. On the other hand, I would not accept the argument, even from Penrose, if I did not seem to understand it, or if it sounded silly to me (in the exercise of my own judgment). As accomplished as he is, Francis Collins has not persuaded me to believe in a personal, mindful, intentional, designing God. See FRANCIS S. COLLINS, *THE LANGUAGE OF GOD: A SCIENTIST PRESENTS EVIDENCE FOR BELIEF* (2006). (Nor, for that matter, has my friend David Haig, an evolutionary biologist, persuaded me that there is no such God.) Perhaps deciding how to weigh authority and merit (thus blurring the dichotomy) is itself part of the irreducible quality of judgment.

¹⁸¹ MICHÈLE LAMONT, *HOW PROFESSORS THINK: INSIDE THE CURIOUS WORLD OF ACADEMIC JUDGMENT* (2009).

five research grant funding competitions),¹⁸² demonstrates the difficulty of both cross-disciplinary and interdisciplinary judgment. The disciplinary cultures she studied in depth (philosophy, English, history, anthropology, political science, and economics¹⁸³) themselves varied in their scholarly convention—styles she dubs constructivist, comprehensive, positivist, and utilitarian.¹⁸⁴ For example, scholars from history and the humanities value proposals in the comprehensive style of “*verstehen*, attention to details, and contextual specificity” or the constructivist style that “give[s] voice” to various groups.¹⁸⁵ Social scientists (particularly economists), on the other hand, favor the positivist style, more akin to the natural sciences, which employs “generalizability and hypothesis testing.”¹⁸⁶ Moreover, the disciplines also vary in the level of internal consensus on standards of excellence.¹⁸⁷

What happens when a group of scholars from different disciplines must judge which proposals among the various disciplines gets the research money? Lamont’s conclusion was “that making judgments about excellence is a deeply interactional and emotional undertaking, rather than a strictly cognitive one.”¹⁸⁸ The data bear out the paradox of disciplinary structure. Even though panels valued collegiality, respect for other expertise and sentiments, and methodological pluralism, there was nevertheless significant deference to disciplinary sovereignty. The result is not unexpected: the final decision is not a matter of judgment but a ballot in which “[s]trategic voting, horse-trading, self-interest, and idiosyncratic and inconsistent criteria all are unavoidable parts of the equation.”¹⁸⁹ As in the faculty vote described earlier, each panel member’s judgment is an internal and solitary one in which the panelist must face down the polarities of the sacred and the profane.¹⁹⁰

¹⁸² *Id.* at 12–13.

¹⁸³ *Id.* at 55.

¹⁸⁴ *Id.* at 57.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* This distinction appears within legal scholarship, particularly that which purports to extend beyond mere doctrine to “law and [other discipline].” See Robert C. Ellickson, *The Twilight of Critical Theory: A Reply to Litowitz*, 15 *YALE J.L. & HUMAN.* 333, 337 (2003) (noting that “[a] creative tension between the yin of social-scientific universalizers and the yang of humanistic particularizers thus promises to benefit all participants in the legal academy”).

¹⁸⁷ LAMONT, *supra* note 181, at 58–61.

¹⁸⁸ *Id.* at 112.

¹⁸⁹ *Id.* at 156.

¹⁹⁰ See *supra* text accompanying notes 23–24.

The practical problem of interdisciplinary academic judgment is even more acute when the issue of excellence centers not on the comparison of work between two governing disciplines but when the work itself is interdisciplinary. Lamont devotes a chapter of her report to the issue, and her conclusion is not surprising.¹⁹¹ The bottom line is that there is no canon for judging interdisciplinary work, and it struggles with the concurrent polarities of “expert and generalist criteria (what one respondent [in Lamont’s study] defines as ‘virtuosity and significance’).”¹⁹² In my view, each panelist’s judgment must necessarily extend from a known domain, and its categories and rules, to one that is unknown or emergent by way of metaphor and analogy and that goes to the heart of cognitive theory. And “[n]ot surprisingly, given the emergent quality of the standards of evaluation for interdisciplinary genres, panelists readily fall back on existing disciplinary standards to determine what should and should not be funded.”¹⁹³

Even if there is no working definition better than “we know it when we see it,” *good* interdisciplinarity, as Lamont describes it, has something to do with using concepts and perspectives from one discipline to modify perspectives in another; using research techniques from one discipline as a means of coming up with theoretical models in another; developing an entirely new theoretical constructs to reconceptualize research in the host domains and perhaps to integrate them in a new domain; and modifying theoretical frameworks in one domain and then applying them to others.¹⁹⁴ The primary value of interdisciplinarity is in challenging the strength and impermeability of the lines constituting the Venn diagram circles, and its primary challenge is in identifying who is capable of making the judgments precisely because the subject matter and methodology are new and beyond existing disciplinary conventions. It is the extension of meaning across categories by way of metaphor theorized by the cognitive scientists.¹⁹⁵

We do not live life or do business in isolated departments, and it strikes me that the academic answers to really important moral, so-

¹⁹¹ LAMONT, *supra* note 181, at 202–11.

¹⁹² *Id.* at 210.

¹⁹³ *Id.* at 211.

¹⁹⁴ *Id.* at 204–05.

¹⁹⁵ That there is something of a tension between explanatory reductionism and metaphor is reflected in the fact that the authors of the *Stanford Encyclopedia of Philosophy* on “Reductionism in Biology” chose this quote from Margaret Drabble’s *The Sea Lady* as their epigram: “We reduce and reduce and reduce, but the habits of anthropomorphism and metaphor are hard to kill.” Brigandt & Love, *supra* note 4.

cial, and political issues likely transcend departments and disciplines as well. They are the work of metaphor-wielding and meaning-interpreting metadisciplinarians.

2. Lawyers as Business Metadisciplinarians

Because academic disciplinarity is merely a subset of occupational disciplinarity, it is not surprising that similar institution and conceptual issues arise in the practice of law, both as between legal specialties (the Venn diagram overlap, say, of estate and corporate law) and between legal and business issues (the Venn diagram overlap that is our primary subject here). I have suggested that lawyers and business people who manage acquisitions are practicing metadisciplinarians who regularly engage in metaphor and analogy to do their jobs. When you are managing an acquisition, for example, your expertise is in doing the deal. You are not an expert in patent, labor, tax, or environmental law. But you must make judgments all the time that require you to learn enough about what the experts are telling you, and which are at cross-purposes with each other, to make a reasoned decision.

Indeed, there is irony in Professor Goodrich's recourse to the *historical* indiscipline of the practice in his call for *new* indiscipline in the legal academy.¹⁹⁶ He notes that the first attempts to systematize law in the late seventeenth century

did not push to constitute law as an autonomous discipline but, rather, sought to equip the lawyer with a training that would draw on all relevant disciplines and would recognize that this borrowing or translation into law required a degree of tact. It was important that the lawyer appeared well educated, articulate, knowledgeable, and equipped to judge.¹⁹⁷

Professor Goodrich commends the hoary practical tradition of open-mindedness to modern theorists.

[W]here law deals with a subject matter that is studied by another . . . then it is not without logic to seek advice from, become interested in, and learn from those other disciplines. A lawyer needs a little disciplinary bricolage, an open mind, skill in inquiry as opposed to imposition.¹⁹⁸

¹⁹⁶ See Goodrich, *supra* note 8, at 460.

¹⁹⁷ *Id.* at 470.

¹⁹⁸ *Id.* at 479.

We regularly use interdisciplinary metaphors in the classroom or the office to teach, often (as Kellert points out¹⁹⁹) without detailed knowledge of either the source or the target domain. I am neither an accountant nor a hydraulic engineer, but I use the analogy “company = swimming pool” to teach basic financial statement concepts to my partnership law students. Note that this is a “thing/not-thing” equation; the basic levels “swimming pool” and “company” only share a very remote supercategory—everything. If companies are swimming pools, then water equals wealth. The balance sheet is a measurement of the state of the wealth or the level of the water in the pool at any given time. The more water in the pool, the wealthier the company (or its owners). The income statement measures flow. Revenue is water flowing into the pool over a period of time; expense is water flowing out. If, over the course of a period, more water comes in than flows out, the difference is profit, and that profit raises the level of the water, which indicates that shareholder’s equity or wealth has increased. Most students have no clue about financial statements, but they do understand swimming pools, and the analogy works. Similarly, when in the corporate world, I used the analogy “time period = bucket” (again, a thing/not-thing equation). The point was to tell people that time periods were to the performance of the corporation as buckets were to whatever buckets held—artificial, human created containers that did not necessarily reflect all, or the reality of, what we were accomplishing.

It is possible that metaphors are, as the critics suggest, no more than different ways of describing or making comparisons. Even sophisticated managers and directors had a hard time understanding what was and what was not possible in corporate and tax structuring for purposes of a merger, acquisition, or disposition. I used to use the metaphor “corporation = egg carton” to make it clear that we could sell a corporate subsidiary (the egg carton) by selling the egg carton itself or an interest in the egg carton (its stock); however, that was fundamentally different from an asset sale in which we continued to own the egg carton (i.e., its stock) but sold off some or all of the eggs inside the carton. This was to counter the oft-held belief that we

¹⁹⁹ KELLERT, *supra* note 146, at 128 (noting that a number of renowned social and physical scientists have not fully understood the sources from which they drew their otherwise fruitful metaphorical models; “Darwin got Malthus wrong, and Freud misread Helmholtz” (citation omitted)).

could somehow sell some of the eggs by selling part of the carton itself.²⁰⁰

I do think, nevertheless, that some metaphors were more than mere avenues to descriptive understanding and actually broke down boundaries and barriers to understanding. Many clients and executives with whom I dealt were engineers or accountants by education and experience. Those are both fields that rely on mathematical relationships, formal logic, and algorithms. It was not unusual to find that they looked at transactions—the settlement of lawsuits, the closing of an acquisition, the response to an FTC challenge to a merger, dealing with a recently dismissed executive—as analogous to the game of chess. Even though human beings do not usually see chess that way, the fact that computers can be programmed to beat grandmasters is an indication that chess is indeed fundamentally a calculation.²⁰¹ I would suggest a category-busting analogy: no, if we are going to compare this situation to a game, it is poker, winnable by luck, bluff, or skill in reading tells, or it is the Prisoner's Dilemma, winnable only by cooperation with the other side.

Still, the metadisciplinarity skills can be even more fundamental. Imagine this scene, not uncommon in the corporate world: MegaCorp has three operating divisions that each focus on a particular industry. We might say the divisions are Telecommunication Products and Services, Consumer Media, and Plastics. Within each division, there are “strategic business units” (“SBUs”). We will focus on one division, Consumer Media, which consists of the Online Media Group, the Publications Group, and the Recording Group. (The logic or business rationale of the particular groups is not important here.) Once a year, MegaCorp's chief executive officer and his entourage (i.e., the chief financial officer (CFO), the chief information officer (CIO), the head of human resources, various financial analysts, and the head of corporate development), along with the presidents of the other two divisions, descend on each division for “Strategic Plan Review” (“STRAP”). STRAP is the annual exercise in which each business updates its business model and reports its objectives, strategies, and tactics for the upcoming three years. By the time we get to this point, each SBU will have killed thousands of trees,

²⁰⁰ No, I would respond, we cannot do that, but we could establish a new egg carton, place within it the five eggs we want to sell, and then sell *that* carton.)

²⁰¹ PENROSE, *supra* note 34, at 16–17; *see also* MORTON D. DAVIS, *GAME THEORY: A NONTECHNICAL INTRODUCTION* 7–8 (Dover 1997) (1970) (suggesting that, to game theorists, chess is a trivial game because, even though it appears infinitely complex to the human players, it is finite because every position on the board is, in principle, a win for white or black or a draw).

employed a trillion of PowerPoint pixels in doing its own internal STRAP, and presented its STRAP to the division equivalents of the corporate honchos (i.e., the divisional president, CFO, CIO, etc.). Much is at stake here. The corporate and divisional honchos are responsible for the allocation of capital resources; this is an exercise in persuading proxies for the shareholders that the business continues to deserve investment, that management knows what it is doing, and that the businesses within each SBU will continue to grow and be more productive.

Each SBU general manager is a master of his or her business. *Rarely does anybody else in the room know much about it.* It is the ultimate metadisciplinary exercise: the SBU general managers must persuade people who are not experts in any single business that the managers' SBUs deserve to win a share of the zero-sum pie. I spent almost eleven years of my professional life as the general counsel either at the divisional level or the corporate level watching these performances, something I came to refer to as "Death by PowerPoint." Some managers would spend endless hours in minute details on product descriptions or factory floor statistics. The elephant in the room was, "What is the point? What are we learning from this massive data dump, other than we now know every detail of your business's operation?"

At some point, I suggested to one of the bright, new SBU managers that he should think of his presentation as a legal brief—that is, a structured argument with something like the following "Question Presented": "Should a business with patented technologies, established legal barriers to entry, access to significant growth prospects in China, and an experienced management team, all promising to return 20% on invested capital, receive a capital allocation in the upcoming year of \$X million for the projects listed on Schedule A?" The brief would contain a series of major theses, supported by minor theses, each of which would be supported by evidence (preferably available in an appendix). The package would no longer be a data dump but a marshalling disclosure of the resources necessary to make an informed decision about the argument. I realize now I was using the basic level metaphors from cognitive science that support not only legal argumentation but also all story telling.

This is what Professor Winter describes as the compositional structure of narrative that precedes disciplines and allows us to make judgments, even when we are not experts in the disciplines.²⁰² A

²⁰² WINTER, *supra* note 19, at 105–06.

narrative, a story, is an idealized cognitive model (a base-level metaphor) built out of an image-schema like “SOURCE-PATH-GOAL.”²⁰³ In other words, it is not surprising that stories are basic and universal, even if the content varies from culture to culture (including business cultures). Narrative then becomes a twice-removed reconstruction of the real world, once by the narrator, who applies imagination to reconstruct the world out of the data of real life (in my real world example, the business data of the SBU) and again by the reader or listener (in my real world example, the corporate or divisional honchos). As Professor Winter points out, there are no certain outcomes because, to paraphrase, the final capital allocation (a) requires the honcho’s imaginative engagement with the manager’s world-making, and (b) the very act of communicating creates contingency and risk.²⁰⁴ The point is that narrative and legal argument have similar idealized cognitive models, built from a higher level metaphor “argument = journey.”

The final point is to the lawyer’s metadisciplinary competencies in this milieu. As Ben Heineman, the former general counsel of General Electric has observed, core legal competency consists of the kind of thinking that results from inculcation in the case method.²⁰⁵ Nevertheless, those may not be the qualities of mind we seek in wise counselors or leaders. Heineman distinguished the Aristotelian character traits necessary to good judgment in Anthony Kronman’s vision of the lawyer-statesman—“civic mindedness, deliberation, experience, prudence, sympathy, detachment, practical wisdom”—from a way of thinking.²⁰⁶ Again, lawyers who go beyond mere legal deconstruction are metadisciplinarians; in Heineman’s words, “in asking the ‘what ought we to do’ question,” they “*can articulate powerfully a set of systematic and constructive options that expose and explore the value tensions inherent in most decisions.*”²⁰⁷ In academic terms, it means that I, as neither a Ph.D. in economics nor a Ph.D. in philosophy, when considering each disciplines’ suggestions as to how we ought to live, might nevertheless have a competency in deciding between them because I am still able to ask what the point of the narrative is. In business terms, good metadisciplinary lawyers will ask the same kinds of questions.

²⁰³ *Id.* at 117.

²⁰⁴ *Id.* at 122–25.

²⁰⁵ Heineman, *supra* note 87, at 598.

²⁰⁶ *Id.* at 599 (referring to ANTHONY T. KRONMAN, *THE LOST LAWYER: FAILING IDEALS OF THE LEGAL PROFESSION* (1993)).

²⁰⁷ *Id.* at 599.

IV. THE MAKING OF METADISCIPLINARY LAWYERS

A. *The Metaphilosophy of Judgment: Can We Get Beyond the Ancient Paradox of Fixed Rules and Indeterminacy?*

Judgment is beyond interdisciplinary; it is metadisciplinary and metaphilosophical. I say that as an interdisciplinarian who knows his way around the language of philosophy. We understand intuitively that we can make reasonable, or even good, judgments that turn out badly.²⁰⁸ What we want, then, are wise judgments. The essence of judgment and wisdom has been food for much thought, but nobody has yet gotten it down to science. The Bible posed the ultimate in paradoxical standards—to act justly *and* to love mercy—with no explicit guidance on how actually to accomplish it.²⁰⁹

All issues of judgment, if they reduce to anything, reduce to the paradoxes and polarities that seem to frame all approaches to the resolution of any problem. The list goes on: rationalism versus empiricism; naturalism versus transcendentalism; foundationalism versus indeterminacy. We see this battle between the polar values of stability (seeing adaptability as chaos) and adaptability (seeing stability as stultification) in almost every debate. Among religionists, the dilemma is between fundamental authority and the competing position that the fundamental authority (the literal text of the Bible, the Halakha, the Shar'ia) has a vote but not a veto. In constitutional law, theorists struggle to find answers that respect tradition and yet are not slaves to the particular semantics, prejudices, or culture of a bygone era. The common law accords authority to past decisions in the doctrine of *stare decisis* but permits arguments for good faith modifications of the law. To outside observers, litigation itself mocks the argument from authority. Like enemies praying to the same God for victory, lawyers argue instrumentally for their positions in a form suggesting that there is a single, just, and objective answer to the question.²¹⁰

It is one thing to adopt a theoretical or epistemological stance; it is wholly another to have to make practical judgments. Usually the

²⁰⁸ We can also get lucky and make bad judgments that turn out okay. To continue on the theme, I think that is what most parents of teenagers hope, knowing that part of growing up is making bad judgments and learning from the results. In other words, you pray the result is a close call that shakes up the child but not a harmful accident.

²⁰⁹ *Micah* 6:8.

²¹⁰ See Jeremy Waldron, *Is the Rule of Law an Essentially Contested Concept (in Florida)?*, 21 L. & PHIL. 137 (2002) (puzzling over the repeated invocation of the abuse of the Rule of Law directed by both sides toward the other in the dispute over the 2000 Florida Presidential vote count).

best we get is an acknowledgment that this is a really hard problem and a suggestion for reaching reflective equilibrium, whether approached from a naturalistic or non-naturalistic perspective. Even Karl Popper, dealing in judgments about scientific arguments, came to that conclusion. He rejected all arguments from foundation or authority (in science and politics) in favor of arguments from merit, yet he refused to give up on the idea that there is an objective truth. His foundational fulcrum was the process of seeking truth, not truth itself. That process depends, whether in science, politics, or philosophy, on an orientation to truth—namely, being open to criticism.

If we thus admit that there is no authority beyond the reach of criticism to be found within the whole province of our knowledge, however far it may have penetrated into the unknown, then we can retain, without danger, the idea that truth is beyond human authority. *And we must retain it. For without this idea there can be no objective standards of inquiry; no criticism of our conjectures; no groping for the unknown; no quest for knowledge.*²¹¹

This is something important for lawyers and lawyers-in-training (as well as their teachers) to consider. In Steven Winter's account, Karl Llewellyn's critique of formalism arose from the same antimony between fixed rules and indeterminacy.²¹² In his 1934 Columbia Law Review essay, Llewellyn observed that an institution like the Constitution "is in first instance a set of ways of living and doing. It is not, *in first instance*, a matter of words."²¹³ Adjudication was not a matter of making order but of maintaining it when things become awry. And the mediation of the formalism of legal structures with the fluidity of living and doing was something called "situation sense," a subjective yet constrained ability to adapt to the antinomy by way of a particular craft or process.²¹⁴ According to Professor Winter, Llewellyn simply did not have the conceptual tools to explain the mediation between formal rules and "living and doing."²¹⁵ Professor Winter argues instead that most legal rules already incorporate understood social constraints: what lawyers and judges do and produce is law but it is not unconstrained.²¹⁶ Law is already the product of reified custom, tradition, and social practice by the time lawyers and judges start working

²¹¹ POPPER, *supra* note 84, at 39 (emphasis added).

²¹² WINTER, *supra* note 19, at 216–22.

²¹³ *Id.* at 216 (footnotes omitted) (quoting Karl N. Llewellyn, *The Constitution as an Institution*, 34 COLUM. L. REV. 1, 17–18 (1934)).

²¹⁴ *Id.* at 218.

²¹⁵ *Id.* at 220–21.

²¹⁶ *Id.* at 221–22.

with it. As Professor Winter interprets Llewellyn, he could not articulate the structure that militated against legal indeterminacy, so he erred the other way.²¹⁷ “In the absence of a formalized construct like an ICM, Llewellyn could not capture the automatic, tacit sense of validity described by his concept of situation-sense.”²¹⁸

We often need to make a choice, even if it is based on incomplete information, about where we stand on what seem to be eternal antinomies. We will not (it is fair to say) resolve the tension between fixed rules and indeterminacy any time soon. We simply have to keep making real decisions. As we used to say in the business world, if decisions could be resolved by fixed rules, then we would not be paid the big bucks. Because judgment extends even to those ubiquitous antinomies that pervade all philosophy and which are a matter of belief rather than proof, judgment is metaphilosophical.²¹⁹

²¹⁷ *Id.* at 221.

²¹⁸ WINTER, *supra* note 19, at 220.

²¹⁹ The Princeton philosopher Adam Elga has grappled with a particular kind of judgment, that is, how we should be guided by friends and outside advisors, somewhere between gurus and experts, on one hand, and fools and fakes, on the other. Adam Elga, *Reflection and Disagreement*, 41 *NOÛS* 478 (2007). In other words, when you and a friend who seems to be as epistemically grounded as you, disagree about something, how should you incorporate her views into your own? Elga’s Bayesian analysis is clever in its own right, but I am more interested at this point in what he put aside, and why:

How should one take into account the opinions of an advisor who may have imperfect judgment? That question factors into two parts:

1. To what degree should one defer to a given advisor’s judgment? For example, when should one count an advisor’s judgment as completely worthless? Or as approximately as good as one’s own? Or as better than one’s own, but still less than perfect?
2. Given one’s assessment of an advisor’s level of competence, how should one take that advisor’s opinion into account?

On the first question, I have no substantive answer to offer here. My excuse is that the question concerns a huge, difficult, and domain-specific matter. How should one judge the epistemic abilities of weather forecasters, dentists, math professors, gossipy neighbors, and so on? This is a question with the same sort of massive scope as the question: “When does a batch of evidence support a given hypothesis?” Fearsome questions both, and worthy of investigation. But leave them for another day.

Id. at 483. It seems to me that the heuristics Professor Elga proposes in his article ultimately must reduce to judgments about Bayesian conditional probabilities that are the very same fearsome judgments he puts off. Those judgments are metaphilosophical.

B. Cognition, Meaning, and Empathy

1. Blending as a Source of Non-Algorithmic Judgment

Simply because judgment, even in the Venn diagram overlap, is metaphilosophical and therefore mysterious, I still believe there is an avenue for some additional progress on the question. It stems from these empirical questions. Why do venture capital term sheets and contracts work even though there is almost no real world force to them? Why do most real world contracts work even though they are rarely litigated? Why do business people have a far more fluid reaction to contract terms than the lawyers? I propose it is because the documents, as a subset of actions generally, mean something more to the participants in the transaction than merely the semantic content of the contract (i.e., the legal structures or rights created or the legal risks allocated). J.L. Austin observed that utterances can be performative: “to utter the sentence (in, of course, the appropriate circumstance) is not to describe my doing of what I should be said in so uttering to be doing or to state that I am doing it: it is to do it.”²²⁰ The sentence, “I take thee to be my wedded wife,” is not, when recited in a ceremony, a description of one’s action but the performance of the act of marrying.²²¹

Mark Turner and other cognitive scientists have addressed the creation and descent of meaning. It is *not* meaning in the interpretive sense familiar to lawyers, as “the textual scholar who takes it as given that a particular text is meaningful and . . . who regards it as his task to interpret the text for us.”²²² The issue instead is “[h]ow it is possible in the first place for meaning to arise and descend.”²²³ With Gilles Fauconnier, Turner has posited a theory of human meaning: the process of cognitive integration, or “blending,” in which new meanings are derived from influencing spaces.²²⁴ An example is the meaning of the sentence, “the surgeon is a butcher.” We have a fairly clear idea of what a surgeon is: a doctor who cuts into human bodies for the purpose of curing ailments. We also have a fairly clear idea of what a butcher is: someone who cuts up animals for consumption by

²²⁰ J.L. AUSTIN, HOW TO DO THINGS WITH WORDS 6 (1965).

²²¹ *Id.* at 8. As Austin notes, the performative utterance need not be the only way in which a particular act is undertaken. *Id.* at 9. The act of marrying could be the silent hopping over a broom or the smashing of wine glass.

²²² MARK TURNER, COGNITIVE DIMENSIONS OF SOCIAL SCIENCE: THE WAY WE THINK ABOUT POLITICS, ECONOMICS, LAW, AND SOCIETY 11 (2001).

²²³ *Id.*

²²⁴ *Id.* at 16 (setting forth Turner’s own compendium of the articles in which he and Fauconnier expounded the theory).

human beings. One can understandably be a competent surgeon or a competent butcher. Turner says:

[T]he essence of conceptual integration is its creation of a new mental assembly, a blend, that is identical to neither of its influences and not merely a correspondence between them and usually not even an additive combination of some of their features, but is instead a third conceptual space, a child space, a blended space, with new meaning. This new meaning is “emergent” meaning, in the sense that it is not available in either of the influencing spaces but instead emerges in the blended space by means of blending those influencing spaces.²²⁵

There is nothing about being a doctor or being a butcher that suggests incompetence, but a butcher-doctor means something: the doctor is not competent.²²⁶

The creation of meaning is not just a matter of semantics nor even of a single mind’s integration of influencing spaces to generate new meaning. I recently sent an email to Dan Markel, the founder and proprietor of PrawfsBlawg, pointing out several mechanical mistakes a new guest blogger had made. I wrote: “You are the Johnny Carson of new bloggers.” That is an individual and semantic blend that takes one influencing space, law professor blogging, and another, the idea of mentoring new stand-up comedians, and suggests that there is a new kind of mentor: a mentor whose job it is to introduce (and deal with the success and failures) of neophyte law professor bloggers. Turner’s core example of blending arises out of a wholly non-semantic-social ritual: Clifford Geertz’s iconic description of the Balinese cockfight.²²⁷ There is no particular consequence to my projection of Johnny Carson to a Florida State University law professor, but as Turner observes, for the Balinese cockfight, “there is a lot at stake; there will be a winner and a loser,” and a complex governing structure has arisen.²²⁸ The point is that winning and losing takes on a meaning well beyond the mere entanglement of two fighting chickens. Turner quotes Geertz:

²²⁵ *Id.* at 17.

²²⁶ *Id.* We can see it operating the other way as well, and this is appropriate as I write this a week before the Super Bowl. Peyton Manning, a quarterback, is a surgeon when he picks apart defenses. “Surgeon-quarterback” also means something: an expert quarterback. We could go on. A faculty committee could have a quarterback, but the “committee-quarterback” probably does not have anything to do with football. “Committee-quarterback” means the leader of the committee but in a particular fashion—a leader who is not merely titular but is involved in getting things done.

²²⁷ Clifford Geertz, *Deep Play: Notes on the Balinese Cockfight*, in *THE INTERPRETATION OF CULTURES* 412 (2000).

²²⁸ TURNER, *supra* note 222, at 42.

[To the Balinese,] [f]ighting cocks . . . is like playing with fire only not getting burned. You activate village and kingroup rivalries and hostilities, but in “play” form, coming dangerously and entrancingly close to the expression of open and direct interpersonal and intergroup aggression . . . but not quite, because, after all, it is “only a cockfight.”²²⁹

We can use the idea of blending to unpack Professor Winter’s more general insights about meaning in the law in the context of business judgment. In private law, the issue is the relationship between the semantic content of the law and the non-semantic implications of those actions that are putatively “legal.” Professor Winter observes:

Like the ritual of the Brachah [referring to the traditional Jewish practice of reciting a blessing praising God before almost every act of daily life], the law is at bottom a belief, concept, or mental artifact; but, it is a mental artifact that emerges as meaningful only as it is externalized and realized in social practice.²³⁰

The semantic content of contracts is indeed important to the lawyers who write them (and the professors who teach them), but they are merely one way human beings make sense (or attempt to control) a highly contingent and uncertain future. Contracts are attempts to create private law. Law (even when private) is authority in the Popperian sense. Hence, contracts are attempts to impose formal linguistic mappings on the world. Here, the critical point to judgment in the Venn diagram overlap is the divergence between the meaning of the words as logical or coherent constructs within the law (i.e., the documentation and the structures the business lawyer creates on behalf of clients) and the possibly unrelated meanings of those words and other acts as performatives.

If I understand double-scope blending as a source of meaning to others and myself, does it help me make judgments? I am positive it does not help to *explain* in naturalistic terms the abductive leap we have already explored that is the making of the judgment. It simply does not eliminate the irreducibility (i.e., the mystery in trying to explain) of judgment. Do Gödel’s Proof or the quantum uncertainty principle actually explain the limits of law’s coherence or its indeterminacy?²³¹ They probably do not. Indeed, it is not clear to me that cognitive science, in general or blending, specifically offers any solution to paradox itself (such as the paradox of fixed rules and inde-

²²⁹ *Id.* at 44 (quoting Geertz, *supra* note 227, at 440).

²³⁰ WINTER, *supra* note 19, at 339.

²³¹ See *supra* note 158 and accompanying text.

terminacy), and Turner quickly abjures any such metaphysical ambitions. The idea of the blend does not really depend on there being a priori knowledge. That would involve a metaphysical journey back to “ur-blends.” To give blending its explanatory “oomph,” all we have to be able to observe is that, given two existing-influencing spaces, they are capable of producing a blend that does not necessarily correspond with empirical reality. What makes this “cognitive science” rather than philosophy is the hypothesis that double-scope blending is the key differentiator between modern human minds and all others, and that, at least in concept, is a testable proposition.²³²

My metadisciplinary intuition is, nevertheless, that this concept of blending is a powerful image for the non-algorithmic aspect of judgment. Theoretical knowledge, even if incomplete, can inform judgment. The blending of the idea of incomplete but consistent systems or the idea that measuring influences the target of the measurement with influencing spaces outside of mathematics or quantum physics creates real meaning, even if it does not create something approximating “truth.” Blends are metaphors. They shake up the existing categories (the influencing spaces) and create new ways of interpreting the world. Turner explains:

Blends let you do what you cannot do, be what you cannot be, not always so you can escape your situation, but instead, often, so you can learn about, make decisions about, and develop consequences for your situation, especially your mental and social reality, through events in a blend that, sometimes, for one reason or another, cannot or will not in fact be real.²³³

Light beams have nothing to do with surfing or sailing a boat; however, blending the influencing space of chasing a wave and the known property of electro-magnetic radiation led Einstein to believe he could never catch up to the light wave but instead that as he approached its speed, time itself would slow down.

Hence, knowledge about blending as an ongoing engine for the creation of meaning will help us do a better job in the discipline of being metadisciplinary—that is, the art and science of making judgments that are interdisciplinary. Professor Turner says, “We often take our cues for action, feeling, or belief from these blends. We assemble blended futures and choose between them, or blended counterfactual presents and grieve at their counterfactuality.”²³⁴ Counterfactuality is a particularly powerful concept in how we go about

²³² TURNER, *supra* note 222, at 52–54.

²³³ *Id.* at 44.

²³⁴ *Id.* at 54.

making causal inferences for the purpose of judgment. In counterfactual blends, we have to imagine what might happen as the result of a particular choice. Take one aspect of a business acquisition as an example. One of the things lawyers draft and negotiate in an acquisition agreement is the allocation of risk for liabilities created by the selling business. The buyer of the business assumes some of the liabilities and does not assume others. Third parties, however, may not honor that difference, and we cure the problem (assuming both parties are collectable) by providing cross-indemnifications. The seller will indemnify the buyer if a third party asserts a non-assumed liability and vice versa. Generally, the parties limit those indemnification rights—there are deductibles called “baskets” and agreed limits on total indemnification called “caps.” Moreover, the indemnification rights do not extend to the statute of limitations; the parties negotiate a “survival period.”

The Fauconnier-Turner model of counterfactuals in social science generally accords with my intuitions about what is going on in this negotiation. For example, in order to test whether there was an incumbency effect in elections, researchers had necessarily to posit a counterfactual election in which the actual incumbent was not incumbent against the real one in which she was. Causal inferences in social science must always be fundamentally inconclusive “since no matter how perfect the research design, no matter how much data we collect, no matter how perceptive the observers, no matter how diligent the research assistants, and no matter how much experimental control we have, we will never know a causal inference for certain.”²³⁵ In qualitative research, the preliminary descriptive question is, “What if X had never happened?” as a means of getting to the normative policy decision, “Should we ban future instances of X?” The first question “asks us to blend conceptual structure from different mental spaces to create a separate, counterfactual mental space.”²³⁶ Fauconnier and Turner contend that the blending process is largely unconscious but nevertheless includes a number of standard features, such as the exploitation and development of counterpart connections between influencing space, whether all or only some of the counterpart connections are brought into the blend. We make choices by composing, completing, and elaborating from the mental influencing spaces we have thus created. Composition is a matter of selectively

²³⁵ *Id.* at 78–79 (quoting GARY KING, ROBERT O. KEOHANE & SIDNEY VERBA, *DESIGNING SOCIAL INQUIRY: SCIENTIFIC INFERENCE IN QUALITATIVE RESEARCH* 77–79 (1994)).

²³⁶ *Id.* at 70.

bringing meaning back from the influencing image to the blend. Completion involves introducing other specific or general knowledge that might bear on the result. Elaboration “develops the blend through imaginative mental simulation according to principles, logic, and dynamic patterns in the blend.”²³⁷

We are now lawyers sitting in a law firm conference room negotiating the indemnification provisions and creating an emergent meaning out of multiple counterfactual possibilities. We compose the blend by thinking about all the things that could go right or wrong in connection with the operations being sold—who is best positioned, for example, to deal with defective products that were manufactured before the closing but for which claims were not made until long afterward—and imagine all of those liabilities as a pool that is capable of being divided. We complete the blend by calling on cycles of experience in similar deals (for example, the actual likelihood that third parties assert claims more than one or two years after a closing). We elaborate by imagining how we might fairly classify or divide the pool into different tanks or cubbyholes, perhaps each with different rules governing the allocation of liabilities or the survival of the indemnification rights.

Even this description of a small (but important) part of the deal making process understates the complexity of the “meaning making” that is going on as among all of the actors—individuals within the corporate clients, the lawyers for the parties, and others not involved but who may be affected by the transaction. For example, when a large corporation sells a division, it commonly wants to include in the acquisition agreement a post-closing covenant under which the purchasing corporation agrees to maintain the salaries, perks, and job positions of employees for a period of time (e.g., one or two years). There is a meaning to this provision from a purely legal standpoint: the covenant significantly reduces the legal risk that employees will assert employment termination or discrimination claims against the selling company arising out of the sale. Whether that is a significant danger, the provision really has a separate and non-legal purpose. What the provision says, not to the departing employees, but to the employees who remain with the unsold divisions of the selling corporation, is that they too will be protected in a similar way if the time comes when the corporation determines that its portfolio requires that their division be sold. That is, the selling corporation is less concerned here with either the economics of the sale as it relates to the

²³⁷ *Id.* at 74.

currently transferred employees (or the marginal legal risk) than with the meaning that descends to other non-transferred employees.

There are myriad other examples of a divergence between the semantic content of a lawyer's utterances and the meaning of the utterances as performatives. The filing of a lawsuit against the seller for breach of representations and warranties (or worse yet, fraud) after the closing of the business acquisition may make perfect sense from a litigation standpoint but means something wholly different in the investment community—namely, that management was not competent in its pre-closing due diligence or in the post-closing integration of the company. Aspects of employee relationships, like incentive compensation or perks of office (for example, access to the company plane, even if the executive pays for it out of her own pocket) may create meanings and atmospherics in the workplace only marginally related to the economics or legalities of the situation. A married senior executive's affair with a subordinate may affect the executive's credibility within an organization, even if the legal analysis were to conclude that the extra-curricular conduct neither violated sexual harassment laws nor the company's code of ethical conduct (because the relationship was entirely consensual).

Moreover, my long experience of deal negotiations is that there is the equivalent of ritualized cockfighting among the lawyers, wholly apart from the interests of their clients, and it creates meaning beyond the mere reduction of a business transaction or structure to words. I recall a large firm lawyer I had hired to negotiate the representations and warranties in an acquisition whereby we were acquiring another company. The firm on the other side had a reputation of being tough and aggressive. She told me that it was well understood that if you were a lawyer in that firm, you simply "had" to win a majority of the negotiating points, regardless of their importance to the deal. One of the business people observed to me that the battle between the two young lawyers over the document had taken on a life of its own. I have done no empirical work on this point, but I am willing to suggest that any survey of transactional lawyers will indicate that this is a discouragingly common phenomenon.

The point is that even high-powered lawyers, trained in the deductive and inductive propositional skills of the law, begin to provide exquisite judgment when, consciously or unconsciously, they alter the cognitive integration (i.e., the blending by which they create emergent meaning that education in the law works so hard to inculcate). The profession—academic and practicing—reflects blending that has been reified as concretely as the social norms of Balinese cockfight-

ing. The profession's metaphors for law are as object, as other, as living being, and as Professor Winter observes, a person with "coercive authority whose unflinching long arm brings to justice those who would ignore her commands."²³⁸ The profession's idealized cognitive model of law is authority personified, and the prototype effect is positivism, which seems to accord with common sense.²³⁹ The most significant implication of this for exquisite judgment in the practice is the same as Professor Winter's more generalized critique of the positivist, reductivist understanding of law: it puts far more emphasis on reified categories (even like my image of the Venn diagram) of law versus business than is warranted by the way our minds operate.

Consider the "lawyer's lawyer" who insists that the acquisition agreement is not an objectified model of an inter-subjective understanding but is a thing itself. That lawyer is bound to confront the same problems in business deals that Professor Winter identifies with positivism as a general theory of law in society.²⁴⁰ Just as "law cannot organize or cabin the social meaning upon which that exercise of power [by the state] depends,"²⁴¹ neither can it cabin the social meaning by which persons oblige themselves to one another. Within the Venn-diagram overlap, the problem is epistemic; the "law/not law" demarcation issue is impossible because law takes its meaning from social context. Within the Venn diagram overlap, "rules cannot work *as* rules unless they already reflect the normatively loaded understandings of those who are expected to obey them."²⁴² The answer to the question at the outset of this Part—why people negotiate contract terms they know they can never realistically enforce—corresponds to what Professor Winter calls "conceptual collapse:" the reality is that "law" has constraining power without the sword or the purse, even when the putative aim is to affect the purse with the threat of the sword.²⁴³ That is because the business and legal constraints in the Venn diagram lose their categorical distinctiveness. Law ceases to be an external power and is indistinguishable from the parties' internalized sense of particular social norms and their bindingness upon us. When we begin to look at law as merely one set of social or interpersonal (in the private law context) constraints, the distinction between

²³⁸ WINTER, *supra* note 19, at 340.

²³⁹ *Id.*

²⁴⁰ *Id.* at 342.

²⁴¹ *Id.*

²⁴² *Id.*

²⁴³ *Id.* at 345–47.

law and business (like the distinction between positive law and morality in Professor Winter's thesis) simply melts away.

2. Transcendental Insight, Empathy, and Meaning

I appreciate Professor Winter's work because he has so adeptly demonstrated the artificialities of "thinking like a lawyer" as against the non-algorithmic and non-reductive way we regularly go about making judgments about what we do not know from what we do know. In our ability to categorize, to identify idealized models and prototypes within categories, and to extend or influence the creation of new categories or the destruction of old ones by metaphor, our brains are irreducibly imaginative. Indeed, we observe those processes, by experiment and study, to be universal, systematic, and regular as an aspect of the human condition.

The epistemologist in me still wants to ask: whence comes this embodied and constrained capacity for irreducible imagination? When we speak of judgment, it seems that one binary dichotomy remains, even when we understand idealized cognitive models, and cannot be eliminated as a matter of concept. An idealized cognitive model is a concept about the mind developed and applied within the very mind that it seeks to describe. If I use it, I can certainly say something about the operation of your mind, my mind, or minds generally. But where did this all start? Why or how did I even come to have the idealized cognitive model of something like an idealized cognitive model? Professor Winter categorically believes that there is no transcendental truth; we were simply built this way through the evolutionary process.²⁴⁴ I am not yet satisfied to buy into the inductive argument that since science has so far explained lots of mysteries, it will (eventually) explain this one too. Unlike Plato, I do not think we can resolve the paradox of analysis (Meno's paradox): to be able to talk about an idealized cognitive model, I have to have some hard-wired or a priori tendency to conceptualize in prototypes.

This is where we return to the difficult questions of subjective consciousness, determinism, freedom, and, for my purposes, our judgment. You can find freedom in Kantian transcendentalism, or you can find it, as Professor Winter does, in an irreducible yet embodied mental ability to reconstruct the world in which we happen to find ourselves situated. In Professor Winter's view, how we understand our "being in the world" is an internal activity,²⁴⁵ and while all

²⁴⁴ WINTER, *supra* note 19, at 114–17.

²⁴⁵ *Id.* at 356–57.

understandings are socially created, not all are the same (e.g., the artist and the house painter do not necessarily experience the same possibilities of creativity and expression). Freedom is not the absence of constraint but something we have that arises out of our being in a social situation and gives us the opportunity to choose:²⁴⁶

[O]nce we recognize that meaning is constituted in our imaginative interactions with the environment, we can begin to understand ourselves as human—that is, as beings who think in terms of our situation, form our categories in contact with our experience, and modify that situation and experience by the meaning we discover in them.²⁴⁷

Professor Winter is wholly committed to an embodied mind and the rejection of any kind of mind-body dualism (even the weak mysterious kind, rather than the Cartesian strong kind). That, he says, is just another reflection of rationalist “p versus not-p” thinking. Despite my obvious admiration for his work, I part company with Professor Winter in his ardent and particular form of naturalism; I am simply more agnostic. It is why I believe judgment is essentially metadisciplinary and metaphilosophical. I do not understand how a mind in the world, but nevertheless considering itself, can ever relieve itself of the subject-object dichotomy, however distorting it may be. Indeed, if we think it is hard to avoid all dichotomies, Professor Winter seems to draw one between transcendental nonsense and the product of an embodied mind. That strikes me as precisely the antinomial capture he otherwise so correctly criticizes. I am not prepared simply to end reflection on the problem with the foundational claim that all, including the values that enter into exquisite judgment, must be explained naturalistically or with a particular naturalistic theory, or that imagination and possibility is simply the human condition arising out of a particular evolution in space and time of a particular kind of subjective consciousness.²⁴⁸ The rejection of the

²⁴⁶ *Id.* at 354.

²⁴⁷ *Id.* at 356–57.

²⁴⁸ The work of George Lakoff and Mark Johnson, as well as others who take the position that metaphors arising out of the physical experience of embodied minds explains all of thinking, such that even propositional thinking (logic and mathematics, for example) is metaphoric, significantly influenced Professor Winter’s work. WINTER, *supra* note 19. Lakoff and Johnson (as well as Professor Winter) reject not only Cartesian mind-body dualism, but also, among other concepts, (a) the Kantian concept of autonomous freedom, to the extent such “freedom” means there is any noumenal or transcendent of physical experience, and (b) the idea that we have any a priori or reasoned access to the workings of our own minds. GEORGE LAKOFF & MARK JOHNSON, *PHILOSOPHY IN THE FLESH: THE EMBODIED MIND AND ITS CHALLENGE TO WESTERN THOUGHT* 3–5 (1999). Steven Pinker, on the other hand, critiques this as

subject-object dichotomy works for Professor Winter because he has found a comfortable epistemological resting place, but that resting place is nevertheless foundational in its own, but very sophisticated, way.²⁴⁹

The retention of some aspect of the subject-object dichotomy is important to me because without it we cannot talk about another and ourselves. Indeed, as Professor Winter has pointed out to me and as I have written in the past, we do not even have complete access to our own minds. We—ourselves—cannot tell whether what we choose to do is the “right” thing to do or the thing we are doing because we have been influenced unconsciously to do it or because we are rationalizing consciously instinctive desires²⁵⁰ When I consider my own mind, it is the odd and recursive exercise that is both subject-object dichotomous (me as subject considering me as object) and not subject-object dichotomous (I only have one brain).

the “Messianic Theory” of metaphor. STEVEN PINKER, *THE STUFF OF THOUGHT: LANGUAGE AS A WINDOW INTO HUMAN NATURE* 238, 245 (2007). Pinker, I think, takes a more moderate position. He accepts (as I do) that metaphor helps fill in “the smooth multidimensional texture of experience” that propositional and digital language and thinking leave out. *Id.* at 276–78. He rejects, however, as implausible a concept of mind that characterizes thinking as so exclusively metaphoric all the way down to the neural sources of human thought and so “grounded in bodily experience,” that there is no room for abstract propositions and concepts to be able to capture objective truths about the world. *Id.* at 259. Pinker observes that “language is a ‘lossy’ medium,” and so is the law (or, more precisely, the language lawyers use to work in the law). *Id.* at 276. What I am suggesting is that the meaning-making capacity of metaphor allows access to smooth textures of judgment as well as to the descriptions of experience.

²⁴⁹ In an earlier draft, I had referred to this as Archimedean, to which Professor Winter objected. To be clear, he does not view a search for conceptual foundations as fruitful. Instead he contends the paradox of the human condition is that contingency is built into it. WINTER, *supra* note 19, at xvi. I view that as its own particular “foundationalism,” albeit not of the conventional sort (i.e., one that provides a firm ground for “objective” knowledge. Indeed, Professor Winter endorses Richard Rorty’s anti-foundationalism precisely because it is *not* Archimedean. *Id.* at xii (endorsing Richard Rorty’s anti-foundationalism). This is all a philosophical debate for another time; I find Kant’s dichotomy between the noumenal and the experiential to be satisfying as my resting place on this issue, but I am clearly more willing than Professor Winter to accept any dichotomy!

²⁵⁰ E-mail from Steven Winter to the author (Feb. 11, 2010) (on file with author); see also Jeffrey M. Lipshaw, *Law as Rationalization: Getting Beyond Reason to Business Ethics*, 37 U. TOL. L. REV. 959, 989 (2006). Kant himself believed the reconciliation of freedom and compulsion was not possible: “But Reason would overstep all its bounds if it undertook to explain how pure reason can be practical, which would be exactly the same problem as to explain how freedom is possible.” IMMANUEL KANT, *FUNDAMENTAL PRINCIPLES OF THE METAPHYSICS OF MORALS* (1785), reprinted in *BASIC WRITINGS OF KANT* 216 (Allen W. Wood ed., 2001).

The key is the ability to distinguish between “I” and “You.” What is fundamental to exquisite judgment is the exercise of empathy in our consideration of meaning that *others* might create arising out of our interactions with them. We are capable of considering how we might create meaning out of blending, and we cannot control the blends by which others create meaning, but we can think about them as we might make them ourselves. I decline dichotomous “p versus not-p” thinking about the non-naturalistic sources of meaning because I am able to derive meaning from them. Hence, I am willing to remain agnostic (and, indeed, open minded) about Kant’s concept of freedom,²⁵¹ Abraham Joshua Heschel’s concept of the radical amazement available to a mind in the physical world,²⁵² or Martin Buber’s mysticism about the “I-You” relationship.²⁵³

The power of the cognitive science explanation of blending is its ability to clarify how each of us continuously creates meaning. What strikes me about its application to judgment is the combination of empathy with that understanding.²⁵⁴ That is, my judgments will be

²⁵¹ KANT, *supra* note 249, at 203–05. According to Kant, our ability to be moral beings depends on our freedom of will, by which we are able to reason to our moral duties, independently of physical causality. *Id.*

²⁵² ABRAHAM JOSHUA HESCHEL, *GOD IN SEARCH OF MAN: A PHILOSOPHY OF JUDAISM* 46 (1976)

While any act of perception or cognition has as its object a selected segment of reality, radical amazement refers to all of reality; not only to what we see, but also to the very act of seeing as well as to our own selves, to the selves that see and are amazed at their ability to see.

Id.

²⁵³ See MARTIN BUBER, *I AND THOU* (Walter Kauffman trans., 1970).

²⁵⁴ See Patrick McKee, *Toward an Epistemology of Wise Judgment* (2007) (unpublished article) available at <http://ccsn.uchicago.edu/McKee.pdf>, for another more philosophically based approach to this. Professor McKee posits that judgments take on the honorific status “wise” as the result of the judgment taking epistemic sanction from a subjective experience he terms “seeing through illusion.” *Id.* at 11. The problem is, again, interdisciplinary. As Plato describes in his *Apology*, Socrates makes the mistake of inferring that wise experts in one field will be experts in other fields. *Id.* at 1 (describing Plato’s apology). The internal experience Plato describes is one, first, of reflection upon reflection (in the mode of Schön): Socrates recognizes that he has made an error, and then considers why he had been seduced into accepting a fallacy. *Id.* at 2. Second, some aspect of volition marks the experience: Socrates chooses to avoid the temptation of being seduced again. *Id.* at 3. Third, the experience evokes empathy: Socrates will understand it in others, having not forgotten what it feels like within himself. *Id.*

Moreover, Professor McKee places “seeing through illusion” within a broader philosophical debate about a person’s access to his or her own basis for justification of a belief. *Id.* at 12. Generally, “internalists” hold that people can have access to the basis by which they incorporate evidence, reasons, or experiences to justify a belief; “externalists” deny this access. See George Pappas, *Internalist vs. Externalist Conceptions of Epistemic Justification*, *STANFORD ENCYCLOPEDIA OF PHILOSOPHY*, Jan. 24, 2005,

better if I understand how others with whom I deal create meaning by way of conceptual integration. To do that, I must undertake a further blend in which I project myself into the counterfactual circumstance of being that person, with that person's needs, and the meanings that person will create out of the mutual circumstance in which we find ourselves. In Professor Winter's terms, our rules and our norms do not spring from the ether; they are motivated by our interactions with our environment. But another subject is not merely something in the environment; she is another consciousness like me who is simultaneously creating meaning. To exercise judgment, I must empathize with her, and I cannot reason my way to empathy.

Empathy is an emotional response to another. One of the most significant statements about empathy comes from Buber's *I and Thou*.²⁵⁵ Buber sees our relationships, not as the world acting upon us or others acting upon us, but in the very pairing of us and the world or others.²⁵⁶ Hence, the third-person relationship is not merely "I" and "It." Instead, a word pair "I-It" symbolizes it in language. Similarly, the second-person relationship is not "I" and "You." The relationship itself is a basic word composed of "I-You."²⁵⁷ When we experience the world, the experience occurs in our processing of the experience—generally it is not a matter of relation with experience. It is possible to live a life defined entirely by the "I-It," and that is a life in which our own reason is paramount. The "I-You" relationship is the unmediated second-person relationship.²⁵⁸ In contrast, it is the pure *encounter* between two beings.²⁵⁹

<http://plato.stanford.edu/entries/justep-intext/>. In this account, "seeing through illusion" is a first-person accessible experience, and is moderately internalist in the sense that, for the judgment to be wise, "its subject must be able to access such an experience and include it in the grounds or basis for making that judgment." McKee, *supra*, at 12. This accords with my story about the bank CEO. See *supra* note 22 and accompanying text. The judgment seemed wise because he took into account the experiences and judgments of everyone around the table, but then if asked would no doubt have said a recitation of an access to a basis for the decision something like this: "I appreciate the counsel of those who have suggested we need to fight this out to avoid creating a precedent for the future, and it appeals to me not to admit we did anything wrong, but my long experience with this is that we tend to believe our own stories and rationales, and in the long run we are better off settling."

²⁵⁵ See BUBER, *supra* note 253.

²⁵⁶ *Id.* at 53.

²⁵⁷ *Id.* at 53–54.

²⁵⁸ *Id.* at 62.

²⁵⁹ *Id.*

In Buber's philosophy, the theory of the "I-You" relationship becomes practical through what he calls dialogue.²⁶⁰ The essence of dialogue is rooted in a relationship between one person and another, and that relationship transforms the nature of the communication. "Moreover it is completed not in some 'mystical' event, but in one that is in the precise sense factual, thoroughly dovetailed into the common human world and the concrete time-sequence."²⁶¹ Moreover, dialogue does not occur when one perceives another in his capacity as observer or onlooker: the person observed "is for them an object separated from themselves."²⁶² In dialogue, he perceives in the other person "something, which I cannot grasp in any objective way at all, that 'says something' to me."²⁶³ Buber posits an intuitional sense, derived from a second person relationship, that the world is something other than what the subject has rationalized and justified it to be.²⁶⁴ Our ability to make excellent judgments arises not from legal argumentation or business negotiation or even by understanding and responding to an authoritative second-person claim or demand but by the intuitive insight we obtain only by hearing and accepting what someone says to us. We are not required to satisfy the questioner but only to hear the question: "[t]he basic movement of the life of dialogue is the turning towards the other."²⁶⁵ It is interesting to consider how pragmatic Buber the mystic is on the subject of dialogue, particularly as contrasted with monologue. The problem with monologue is not a failure in the ability to create rich meanings; rather, "[h]e who is living the life of monologue is never aware of the other as something that is absolutely not himself and at the same time something with which he nevertheless communicates."²⁶⁶ Dialogue is a relationship in which we hear the questions of another; it is not altruism, and it is not love.²⁶⁷ Indeed, this almost mystical sense of the

²⁶⁰ MARTIN BUBER, *BETWEEN MAN AND MAN* (Ronald Gregor-Smith trans., Routledge Classics 2002) (1947).

²⁶¹ *Id.*

²⁶² *Id.* at 11.

²⁶³ *Id.*

²⁶⁴ *Id.* at 14.

²⁶⁵ *Id.* at 25.

²⁶⁶ BUBER, *supra* note 260, at 23.

²⁶⁷ *Id.* at 24.

This man of modern philosophy, however, who in this way no longer thinks in the untouchable province of pure ideation [who takes up nature and addresses it in his own thought], but thinks in reality—does he think in reality? Not solely in a reality framed by thought? Is the other, whom he accepts and receives in this way, not solely the other

other was one of the conclusions Michèle Lamont drew from her study of cross-disciplinary research funding panels, in which the very legitimacy of the process turned on the participants adopting impersonal, abstract, and consistent rules so as to separate “profane” self-interest from the “sacred” task of determining excellence.²⁶⁸

C. *The Pedagogical Challenge*

How then do we go about imparting the relevant disciplinary competence in judgment or practical wisdom? I do not know, but I am pretty sure there is no Ph.D. program in it. I am by education, training, and long practice a lawyer. I spent the better part of twenty-six years as an associate and partner in a law firm and as a general counsel to two very large industrial businesses. I have sat as the director of a large synagogue, a prestigious prep school, and a homeowners’ association. I have been a husband to the same spouse for thirty years. Together we have raised three children who are now wonderful adults. In that time, I have made hundreds or thousands of professional and personal decisions. To continue with the metaphors, making decisions is throwing darts. One might certainly get better at it through training and practice, but there is still that movement when the dart leaves the fingers and either the thrower errs slightly or there is a gust of wind and the randomness of the world takes over. I am now a law professor, and I teach business-law doctrine (not dart throwing but it feels similar) to aspiring young lawyers. There is a real question about how you go about teaching practical wisdom to law students (or any other student) or if wisdom is teachable at all.²⁶⁹

The Carnegie Foundation recently completed a study of legal education and acknowledges the disciplinary limitations of the study of law. In the first year of law school, “[a]t a deep, largely uncritical level, the students come to understand the law as a formal and rational system, however much its doctrines and rules may diverge from the common sense understandings of the lay person.”²⁷⁰ Moreover, “[i]n their all-consuming first year, students are told to set aside their desire for justice. They are warned not to let their moral concerns or

framed by thought, and therefore unreal? Does the thinker of whom we are speaking hold his own with the bodily fact of otherness?

Id. at 32.

²⁶⁸ LAMONT, *supra* note 181, at 110–11 (citing MAX WEBER, *ECONOMY AND SOCIETY* 213 (1978); *see also* EMILE DURKHEIM, *THE ELEMENTARY FORMS OF RELIGIOUS LIFE* 235–72 (Free Press 1965).

²⁶⁹ The University of Chicago has started a project called Defining Wisdom. DEFINING WISDOM, <http://wisdomresearch.org> (last visited Sept. 14, 2010).

²⁷⁰ SULLIVAN ET AL., *supra* note 28, at 5.

compassion for the people in the cases they discuss cloud their legal analyses.”²⁷¹ The Report notes the problem is that the curriculum never re-balances against the rational and analytical inculcation of the first year.²⁷²

My casual empiricism (i.e., my experience as a law student, lawyer, business person, and teacher) tells me that this is a fair generalization. I believe, however, that the issues are as much the re-introduction of wisdom as justice. I admire those crusaders for justice in the form of rights, but I have spent most of my professional life in the quotidian pursuits I mentioned above: getting deals done; helping CEOs make difficult decisions; resolving disputes, preferably by compromise and not litigation; counseling business people on making profits but staying within the rules; and, more than anything, doing exactly what the Carnegie Report mentioned: mediating between the doctrine and rules of the legal system and not only common sense understandings of lay people but their business goals and aspirations.

As in the case of the bank’s CEO’s decision to settle described earlier in Part IIA, every expert and every discipline had a view on either the ultimate issue or how various permutations of the ultimate result could affect his or her particular disciplinary responsibility. For the decision-maker, the thought process when integrating all of those points of view could go something like this:

If we do X, the tax people are thrilled, but the environmental people are worried. If we do Y, we will be giving up a valuable real estate asset, but if we don’t give it up, we won’t get Z, which we need to make the business work going forward. Yes, we can stand on our contract rights and litigate until the cows come home; but the opposing party is a customer, and we are likely to win the battle and lose the war. Yes, I understand the logic of the tax scheme you have proposed, but let’s step back and do a sanity check.

This kind of decision-making may be less heroic or inspirational than crusading for justice, but I am firmly convinced that great lawyers in the mundane milieu of making money bring something more than keen analytical skills to the table. They bring some kind of wisdom—a metaphorical creativity—that transcends disciplinary boundaries, both within the law and without.

To me, the work-a-day need in the curriculum is not just a retaking of the sense of justice from the beating it took during the first

²⁷¹ *Id.* at 6.

²⁷² *Id.* at 5–6.

year inculcation in rational analysis. It is also restoring the notion of judgment as an aspiration that sits above smarts or cleverness (the stuff of mere rational analysis). More bluntly, I have said many times that every time I thought I was being amazingly smart or clever (and, trust me, I can be) in a business or legal situation, it invariably came around to bite me in the behind. The question then is how we integrate not just doctrine and skills into the law school curriculum but wisdom as well. In part, it will take the courage not to be coolly rational and technical but to employ the techniques of Donald Schön's reflection in action, of knowing intuitively without knowing analytically, and of overcoming the lawyer's dependence on words over images and idealized cognitive models. The bane of our profession, it seems to me, is what Schön describes as practitioners divorced from the theoretical mindset it takes to be reflective, who are "locked into a view of themselves as technical experts," who "have become too skillful at techniques . . . which they use to preserve the constancy of their knowledge-in-practice," and for whom "uncertainty is a threat; its admission is a sign of weakness."²⁷³

There is, moreover, a link between judgment, learning, and leadership. For academics (and legal ones particularly), the challenge is discovering that "scholarship" is just a term of art for a particular product of people who ply their trade in academia. F. Scott Fitzgerald's often-misquoted dictum is deeply insightful. He says first: "[T]he test of a first-rate intelligence is the ability to hold two opposed ideas in mind at the same time, and still retain the ability to function."²⁷⁴ Being truly able to learn means that you have to will yourself to understand why someone would hold an idea that is opposed to yours; thus, in that moment of learning, you hold both ideas. Somebody can be a "scholar" for fifty years and never have one of those epiphanies.²⁷⁵

Real learning is related to a certain kind of leadership and certainly the kind of leader as coach-mentor-inspirer that modern leadership theory extols over old-fashioned command-and-control. While the first Fitzgerald quote is widely known, the sentence that follows suggests an even more profound insight: "*One should, for example, be able to see that things are hopeless yet be determined to make them otherwise.*"²⁷⁶ We can always analyze our way to hopelessness (that is a la-

²⁷³ SCHÖN, PRACTITIONER, *supra* note 71, at 69.

²⁷⁴ F. SCOTT FITZGERALD, THE CRACK-UP 69 (Edmund Wilson ed. 1945).

²⁷⁵ See generally Goodrich, *supra* note 8 (arguing that legal scholarship is an interdisciplinary affair.)

²⁷⁶ FITZGERALD, *supra* note 274, at 69 (emphasis added).

wyerly specialty), but the determination to make things otherwise calls on—I hate to say it—a kind of faith, even if it is no more religious than a vague sense of purpose or ends, or a recognition that our determination to make things otherwise is what makes us want to get out of bed in the morning and face another day in lives that in the scheme of things do not mean anything.²⁷⁷

I challenge any reader to dispute the idealized cognitive model of legal thinking I have described here. Idealized models, however, are social constructs.²⁷⁸ Like Balinese cockfighters, law students come to internalize from their teachers, mentors, and employers a model for describing what they do, as well as how they might ascribe meaning to what they do. The challenge is to provide an opportunity to develop those metadisciplinary skills that Ben Heineman described—to learn to teach learning, which may well be nothing more than the willingness to see the metaphors and analogies that disturb our complacent categories. Here is an analogy: wisdom is to judgment as justice is to law. We assess each by way of reasoned argument, which we understand intuitively cannot be the sole province of any single discipline. Law and reasoned argument are, in themselves, subject to wide-ranging disputes about what they are, but they are undoubtedly of this practical world. Justice and wisdom, on the other hand, are aspirations. It is possible that only metaphysics can give us good conceptions or definitions of either. But as we aspire to, and fall short of, perfect justice in law, we will also aspire to, and fall short of, perfect wisdom in our judgments. But that is no reason not to aspire.

²⁷⁷ The sun is going to swallow the earth in a few billion years anyway, and sometimes late at night that kind of bugs me.

²⁷⁸ WINTER, *supra* note 19, at 88.