CHAPTER V

The Nature of Law

One cannot determine how to use science appropriately in the domain of law without first considering the nature of law itself. This chapter focuses particularly on the unfolding of case law. This is not to suggest that legislation and administration are any less valid as expressions of the legal process. They do, however, involve specialized considerations beyond the legal behaviors that are the focus of this book.

The art of law involves distilling from prior authorities a common logic that can extend to new circumstances.[169] It is not a scientific expedition but rather a delicate dance of interpretation and adaptation. The enterprise involves identifying relevant groupings that provide comparisons,

169 *Cf.* Antonin Scalia, A Matter of Interpretation: Federal Courts and the Law 8–9 (1997) (comparing the growth of the common law to a Scrabble board in that no rule previously announced can be raised but qualifications can be added. "The first case lays on the board . . . and the game continues").

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choosing among the conflicting sets of logic that might emerge, and arguing persuasively for that choice.

In this process, one cannot overestimate the importance of the fact that the issues arising in case law are constantly new. Despite the massive volume of laws and cases, courts are continually faced with new circumstances and new legal issues for two reasons. First, society itself is constantly changing. The domain of interstate commerce, for example, took on an entirely different dimension with the invention of automotive transport.[170] Similarly, the question of what constitutes fair use of one's own copy of a recording must be analyzed differently when anyone with a computer can remix the sounds of the recording.

Consider an example from trademark law. Trademark law protects a trademark holder from others who would use the protected mark in a way that engenders consumer confusion.[171] The arrival of the Internet, however, creates a new level of complexity for the notion of consumer confusion. Suppose I sell cars and operate a Web site advertising my cars. Can I design my Web site so that Internet search engines offer my site as one of the results when someone enters "Toyota" as a search term? Am I violating trademark law even if those who visit my site never see the word "Toyota" and have full knowledge that they are clicking on a competitor rather than Toyota when they click on

170 *See* Ollman v. Evans, 750 F.2d 970, 995–96 (D.C. Cir. 1984) (Bork, J., concurring), cert. denied, 471 U.S. 1127 (1985).

Although, in modern American case law, authorities include mainly prior cases and legislation, at times in our history, custom and practice have played a greater role. *See* Lessig, *supra* note 92, at 1403 (noting that prior to 1870, custom held a more central focus in American judicial decision making).

171 *See, e.g.*, Qualitex Co. v. Jacobson Products Co. Inc., 514 U.S. 159 162, 173 (1995) (discussing the Lanham act).

my site?[172] In other words, can trademark law protect Toyota's interests even when, from the consumer's perspective, there is no use of the mark and no confusion? One could not even imagine this question without the invention of the Internet and the advent of search engines.[173]

It is not just technological change but also social change that creates new issues for the courts.[174] Questions concerning fathers' rights and grandparents' rights were unlikely to arise before the decline of the stable family unit in American society in the second half of the twentieth century. This constant march of technological and social change ensures a steady stream of new issues for the courts.

Most important, legal issues are constantly new because the law itself drives both behavior and legal argument into new areas. Judges set boundaries based on the case in front of them. Those wishing to escape the constraints will naturally look for open territory, the interstices among those things that have been decided. In this way, courts are continually driven to evaluate new questions, adapting and interpreting old precedents.

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172 *See* Margreth Barrett, *Internet Trademark Suits and the Demise of "Trademark Use"*, 39 UC DAVIS L. REV. 371, 433–34 (2006) (discussing metatag use); *see also* Brookfield Communications, Inc. v. West Coast Entertainment Corp., 174 F.3d 1036, 1045, 1066–67 (9th Cir. 1999) (finding that the use of a trademark in HTML metatags, invisible to the end user, established the requisite likelihood of consumer confusion); Bihari v. Gross, 119 F. Supp. 2d 309, 312 n.3 (S.D.N.Y. 2000) (explaining the use of metatags to describe the webpage to search engines).

173 For other wonderful examples of questions that could only arise in the modern era, *see* Sonia Katyal, *Semiotic Disobedience*, 84 Wash. U. L. REV. 489, 495 n.28 (describing artist-activist groups on the web that imitate the operations of a corporation or create fake membership networks).

174 *Cf.* Grey, *Langdell's Orthodoxy, supra* note 13, at 39 (noting that Langdell's formalism was not readily adapted to the period of rapid social change in the early years of the twentieth century).

Consider an example from employment law. In the 1980s and 90s, federal courts ruled that employers are strictly liable for sexual harassment that arises from hostile environments created by supervisors.[175] Employers responded by developing internal policies and investigation procedures to find and address bad behavior by supervisors. With this apparatus in place, employers asked the courts to create an affirmative defense to the strict liability. The defense would arise in cases in which employers had created adequate procedures, but the complaining employee had failed to take advantage of what the employer provided. The Supreme Court complied, creating a new defense in response to new forms of corporate behavior.[176] In this example, therefore, both human behavior and legal argument sought available openings in existing case law, and the courts were faced with novel issues.

Law can never be merely the static ordering of what exists. Societal change and human nature guarantee that cases will reach beyond the confines of existing legal doctrine. Novelty alone is not the problem. The problem is that cases will naturally emerge within the spaces created by whatever structure exists, rendering that structure insufficient for resolving the question. This inclination toward the undecided drives the evolution of law and dooms any attempt to capture law within a fixed structure. Thus, law

175 *See* Burlington Indus. Inc. v. Ellerth, 524 U.S. 742, 751–61 (1998) (describing the development of direct and vicarious employer liability standards by courts interpreting title VII).

176 *See id*. at 742; *see also* Faragher v. City of Boca Raton, 524 U.S. 775, 807 (allowing an affirmative defense for employers where "the plaintiff employee unreasonably failed to take advantage of any preventive or corrective opportunities provided by the employer or to avoid harm otherwise"); *cf*. State Department of Health Services v. Superior Court of Sacramento County, 31 Cal. 4th 1026, 1049 (2003) (creating a similar defense for employers under California law in the context of damages rather than liability).

cannot fulfill the vision of a great intelligence constantly learning and improving as it builds upon its experience. The pressure of change ensures that law is not a process of perfecting what has gone before but rather a constant struggle to adapt to the new.

This is not to suggest that every case is new. Some legal issues will fall squarely within precedent. Nevertheless, the path of law inevitably moves toward the new and undecided. The art of law involves adapting to those changed circumstances within the framework of what has gone before.

Law is also the engine of its own change, particularly case law. Legal doctrines exist that the average person either may not be aware of or may conveniently avoid thinking about. High-profile cases bring those doctrines to light not by making any changes in the law but simply by illuminating the law that exists. The informational effect of such cases can provoke reform efforts that change the law that existed. This pattern is exemplified in the case of *Kelo v. City of New London*.[177] *Kelo* concerned a city's plan to take possession of private homes through eminent domain for the purpose of transferring the properties to Pfizer Corporation.[178] The transfer was part of a plan to stimulate job growth and increase tax revenues. The Fifth Amendment has been interpreted to forbid states from acquiring property by eminent domain unless the acquisition is for "public use" rather than for the benefit of private individuals.[179] In *Kelo*, the Supreme Court upheld the city's right to take the property by eminent domain, rejecting the landowners' claims that the plan was merely a transfer from one private party to another.[180]

177 Kelo v. City of New London, 125 S. Ct. 2655 (2005).
178 *See id.* at 2658–2659.
179 *See id.* at 2672.
180 *See id.* at 2674 (O'Connor, J. dissenting).

Commentators have argued that the *Kelo* decision was no surprise in light of existing Supreme Court doctrines.[181] Nevertheless, the case set off a firestorm of popular protest and law reform efforts. In the two years following the case, twenty-four state legislatures approved state laws imposing greater limits on the state's power of eminent domain than those under the Federal Constitution.[182] Citizens in another eleven states voted on ballot measures to limit the state government's rights of eminent domain, and nine of the ballot measures were approved.[183] By highlighting existing doctrine in a stark manner, the case encouraged the evolution of existing law.

The role of legal academics is also a particularly curious one. As academics, we are never separate observers. It isn't just a question of observational bias, it is a question of observational interference, something that is much more of a problems for law than for science. To expand on a response Judge Easterbrook gave when asked to comment on the process of judging, you get a very different answer if you observe rats running in their mazes than if you ask them about the experience.[184] As legal academics, we are always

181 *See, e.g.*, David Schultz, *Economic Development and Eminent Domain After Kelo: Property Rights and "Public Use" Under State Constitutions*, 11 ALB. L. ENVTL. OUTLOOK 41, 44 (2006) (asserting that the precedents of Berman v. Parker and Hawaii Housing Authority v. Midkiff laid the foundation for the Kelo public use justification for the use of eminent domain for economic development purposes); Jeffery D. Gross and Robert V. Kerrick, *Eminent Domain: Pro: Should Kelo be Condemned? Arizona's Experience with the Public Use Requirement*, 43 AZ ATTORNEY 30, 33 (2006).

182 Margot Roosevelt, *This Land is My Land: How an Eye-Popping Supreme Court Decision Set Off One of This Year's Most Passionate Election Fights*, TIME (Nov. 1, 2006).

183 *See* Roosevelt, *supra* note 182.

184 When asked to comment on a topic related to judicial regulation, Judge Easterbrook replied, "I am, after all, one of the critters under study.

part of the rat pack, and our comments and observations are part of the workings of the system itself.

A. BOUNDED ADAPTATION

As described above, the art of law essentially involves adapting to changed circumstances within the framework of what has gone before. In this process of adaptation, however, is there only one right answer? Will careful legal analysis always point the way to a single result? The Langdellians certainly thought so. Even law and economics can be read to imply that economic analysis, properly applied, can suggest a single most efficient rule choice among the possible options.

The legal realists and progressives, however, did a remarkable job of demonstrating the futility of looking for a single right answer to a particular case.[185] As Holmes argued, outside those cases governed by unambiguously applicable law, plausible deductions can always be constructed on both sides.[186]

How is one to choose? Are the legal realists correct that judicial decision making is essentially unbounded? Are laws and precedents so indeterminate, so capable of a myriad of interpretations that we are left to rely on the unconscious instincts of judges who are merely responding to varying personal prejudices?

It is tempting to succumb to the legal realist vision that law is unconstrained or the even more pessimistic critical legal studies vision of law as inherently unstable and irresolvable.

You should watch the rats run their mazes, not ask them to describe or analyze the experience." *See* Frank H. Easterbrook, *When Does Competition Improve Regulation?*, 52 EMORY L.J. 1297, 1297 (2003).

185 *See supra* text accompanying notes 109–12 (discussing the legal realists).

186 *See* Grey, *Langdell's Orthodoxy, supra* 13, at 44 (discussing Holmes).

Nevertheless, law is bounded by two significant constraints: the pressure of precedent and the discipline of acceptance.

It is nothing novel to suggest that law is bounded by precedent. Even opinions that appear to deviate from precedent are bathed in language lauding the role of precedent in our legal system.[187] Our commitment to precedent is unquestionable. The more difficult question is whether that commitment is realistic when judges may be consciously or unconsciously pursuing the dictates of their own perspectives and biases. It is the discipline of acceptance, however, that gives strength to our commitment to precedent.[188]

In particular, the final act of the art of law is persuasion and acceptance. In addition to the process of distilling common logic that can extend to new circumstances, the art of law also involves the ability to articulate that common logic in a way that can gain general acceptance. This articulation and confirmation is essential in a system that claims allegiance to precedent, and it reinforces our ability to serve that allegiance.

Different legal actors operate in different acceptance spheres. Lawyers must convince judges. Trial judges convince appellate courts. Appellate judges convince other members of their panels, other members of their circuit, and the

187 *See, e.g. infra* text accompanying notes 485–89 (describing how the *Atlantic Thermoplastics* panel ignored the precedent of the *Scripps* case while arguing vigorously that *Scripps* had failed to follow precedent); *see also* Payne v. Tennessee, 501 U.S. 808, 827–28, 111 S.Ct. 2597, 2609, 115 L.Ed.2d 720 (1991) (describing stare decisis as usually the wise policy and the preferred course but not an inexorable command in a decision overruling prior cases holding that Eighth Amendment barred capital sentencing jury from considering "victim impact" evidence).

188 *See* Bix, *supra* note 13, at 898 (describing the view of some legal process scholars that "Reasoned Elaboration," the notion that rules and guidelines involved in judicial decision making are sufficient to create substantial constraint on both process and outcome, will incline courts towards the substantively best outcome).

Supreme Court. The Supreme Court must answer to Congress' ability to initiate constitutional amendments and the president's ability to replace retiring justices with those who hold differing viewpoints. In addition, the entire system is subject to pressure from scholarly and popular commentary.

A variant of this perspective can be found in the views of some legal process scholars who argued that the rules involved in judicial decision making are sufficient to create substantial constraint on both process and outcome. For these scholars, the requirement of "reasoned elaboration" would incline courts toward the substantively best outcome.[189]

The requirement of acceptance mitigates the distortion of personal perspective. Even if judges unconsciously follow their own biases or privilege one strain of conclusions over another, the decisions they reach and the arguments they offer in support must gain the acceptance of others with differing biases.

This perspective softens the bite of some criticisms of legal decision making offered by legal realists, critical legal studies scholars, and those influenced by their scholarship. For example, many scholars have complained that legal analysis is unreliable because it depends on the lens through which one observes the problem. As Katz explained, "one's moral vision of the world necessarily will shape the categories one chooses to describe it."[190] Thus, when Litowitz criticized Ellickson's description of nonlegal rules of behavior in Shasta County, he complained that what Ellickson saw was

189 *But see* text accompanying notes 193–95 (noting that the concept I call bounded adaptation does not contemplate inevitable movement toward a best outcome).

190 *See* Katz, *supra* note 13, at 2241.

filtered through distortive models and that only critical models could explain what Ellickson missed.[191] In a similar vein, Unger's seminal Critical Legal Studies piece argues that one cannot rely on reason for objectivity. Rather, reason is infused with subjectivity and the line between reason and desire is artificial.[192]

Despite the power of these observations, the legal system's requirement that one's reason or desire wrapped in reason bounce off of others offers some discipline. It creates an incentive to find that which is more widely acceptable and to readjust when one strays too far into the subjective. One's groupings, whatever they may be, will be subject to the scrutiny of different legal actors with varying experiences and visions, a process that imposes some measure of restraint, although by no means perfect restraint.

The American history of social mobility may also mildly tug against the narrowness of our personal perspectives. The thoughts, "There but for the grace of God go I" or "There with the grace of God will I go someday" may give us a view that supports not only what is in the interests of the position we now occupy but also what is in the interests of the position we could imagine for ourselves.

I have no rose-colored glasses. There will be errors—individual mistakes, collective mistakes, and inabilities to

191 *See* Douglas Litowitz, *A Critical Take on Shasta County and the "New Chicago School,"* 15 YALE J.L. & HUMAN. 295, 299 (2003) (arguing that Ellickson missed opportunities to explain "why Shasta County is overwhelmingly white, why it has a brutal history of environmental devastation and genocide against Native Americans, why most of the property owners are men, why it has shocking rates of child poverty and substandard housing, and why it is being overrun with strip malls and low-wage jobs").

192 *See* Unger, *supra* note 137, at 42–43 (discussing the use of reason to analyze desire, and the effect of desire upon reason); KELMAN, *supra* note 13, at 64 (discussing Unger).

reach any position of acceptance at all.[193] Nevertheless, this enterprise of searching for and trying out rational adaptations, unfolding across a span of cases, is at the core of the legal process.

One additional point about the process of acceptance bears mention. Adaptations will be evaluated within the prevailing norms of the society at large or of those within the sphere of acceptance. Thus, there is no assurance that law, as it evolves, will inexorably march toward the better, the more efficient, or the more enlightened. On this point, I agree with the CLS view that there is no uniform evolutionary path upon which societies tend to move and which will incline those societies toward the better.[194] Law may move slightly ahead or lag slightly behind the broader society to the extent that the legal actors who form the more immediate spheres of acceptance are stepping at a different pace from the members of society at large. Nevertheless, law is fundamentally anchored in the past through precedent and limited in its movement by the need for acceptance, defined only by the prevailing moral structures of the relevant society. Thus, although I have much sympathy for the legal process notion that rules and guidelines of discussion and explanation will constrain decision making, I part company on the notion that those constraints are sufficient to lead toward some objective notion of a substantively best outcome.[195]

193 Consider, for example, the decades-long struggle over the relationship between Constitutional rights and laws related to abortion.

194 *See* KELMAN, *supra* note 13, at 244 (describing the CLS critique of adaptionist functionalism). This view is in contrast to those law and economics scholars who view the path of law as marching towards greater efficiency in human relations. *See supra* text accompanying notes 119–30.

195 *See* Bix, *supra* note 13, at 89–98 (discussing legal process scholars).

B. IS THERE SOMETHING DIFFERENT ABOUT LAW RELATED TO TECHNOLOGY?

In describing the essential process of law, one might be tempted to ask whether there is something substantially different, however, about law related to technology? Perhaps it is appropriate to defer to science in legal areas related to science, particularly an area such as patent law that involves defining a scientific invention. Laws related to technology, however, are no different from any other areas of law. They require the same tools and proceeds by the same interpretative methods that we employ throughout law as we interpret precedent.

Consider the process of interpreting the meaning of a patent and determining its scope. When delineating the footprint of a patent, one must ask, among other things, what the terms meant to the person who drafted the patent, and whether there are any circumstances in which we would extend that meaning. For example, if a patent holder in the aerospace industry claims a method of calculating something and the patent describes making the calculation at a ground control center, does the patent extend to systems that accomplish the same steps onboard the spacecraft?[196]

In interpreting the scope of the patent language, we could declare that patent drafters must be clear and precise. If they wish to include something, they must describe it directly.[197] Alternatively, we could allow leeway, for example, interpreting language to include shared understandings in the field,

196 *See* Hughes Aircraft Co. v. United States, 717 F.2d 1351 (Fed. Cir. 1983).

197 *See, e.g.*, Chiron v. Genentech, 363 F.3d 1247, 1255 (Fed. Cir. 2004) (strictly applying the written description doctrine); Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473 (Fed. Cir. 1998) (same).

even if that information is not directly described in the words of the patent.[198] Reaching even more broadly, we could choose to interpret the language as including something that the drafters did not contemplate, perhaps even unknown at the time of the patent, but that we feel should be within the orbit of the invention. Perhaps the difference is trivial so that the accused device performs the same function in the same way reaching same result as the protected invention.[199] Perhaps there has been an external shock, a fundamental technological change across all industries, such as the advent of digital technology that the drafters of the patent could not have foreseen.[200] We might choose to expand the meaning of the terms to encompass that change if failure to expand would eviscerate the goal of protecting the invention.

Throughout this analysis, patent law is trying to understand terms established at a different time in a different context and apply that understanding to new facts.This enterprise, however, is at the heart of legal reasoning across all areas of

198 *See, e.g.*, Amgen Inc. v. Hoechst Marion Roussel, 314 F.3d 1313, 1334 (Fed. Cir. 2003) ("The specification need not explicitly teach those in the art to make and use the invention; the requirement is satisfied if, given what they already know, the specification teaches those in the art enough that they can make and use the invention without 'undue experimentation'"); *cf.* 3 DONALD S. CHISUM, CHISUM ON PATENTS §7.03[2][a] (2003) (noting that in patent law, the hypothetical person skilled in the art is presumed to know all of the prior art in the field).

199 *See* Sanitary Refrigerator, Co. v. Winters, 280 U.S. 30, 42 (1929) (applying the so-called function-way-result test of the doctrine of equivalents).

200 *See Hughes*, 717 F.2d 1351 (Fed. Cir. 1983); *see also* Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 740 (2002) (a patent holder's decision to narrow claims through amendments at the PTO generally is presumed to be a general disclaimer of territory, but that presumption is rebuttable for things that the patent holder could not have foreseen).

law. It is the essence of interpretation of precedent, whether that precedent is case law, legislation, or the Constitution.[201]

When interpreting a constitutional provision, for example, one might begin by asking what the provision meant to the drafters and whether there are circumstances in which we would extend that meaning.[202] One might decide that the drafters of a constitutional provision or amendment should be clear and precise. If the Constitution grants a power to Congress, for example, that grant must be indicated clearly, or the power is left to the states.[203] One could choose to interpret the language by reference to the social context and the shared understandings of the drafters and their contemporaries.[204] Reaching more broadly, one could

201 *Cf.* SmithKline Beecham Corp. v. Apotex Corp., 247 F. Supp. 2d 1011 (N.D.Ill.2003) (Posner, J. sitting by designation) (noting that the Federal Circuit deems statutory interpretation a useful analogy to claim construction and citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 987 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996)); Margaret Jane Radin, *The Linguistic Turn In Patent Law* 5 (manuscript on file with author) (comparing patents to statutes and contracts and arguing that the relationship of patents to the objects they cover is not unique). *See Hughes*, 717 F.2d 1351 (Fed. Cir. 1983).

202 *See* Lessig, *supra* note 92, at 1373 (explaining that the two basic steps in constitutional interpretation are to locate a meaning in an original context and then to ask how that meaning is to be carried to a current context).

203 *See* Martin v. Hunter's Lessee, 14 U.S. 304, 326 (holding that "[t]he government, then, of the United States, can claim no powers which are not granted to it by the constitution, and the powers actually granted, must be such as are expressly given, or given by necessary implication"); *cf.*, Deepsouth Packing Corp. v. Laitram Corp., 406 U.S. 518 (1972) (holding in a legislative interpretation case that if Congress wants § 271 of the patent act to apply outside US territory, it must say so explicitly).

204 *See* Powell v. McCormack, 395 U.S. 486, 522–48, 89 S.Ct. 1944, 1964–77, 23 L.Ed.2d 491 (1969) (examining English precedent, Constitutional Convention debates, and post-Convention ratification debates in interpreting the Qualification Clauses of Art. I in striking down a House resolution prohibiting elected representative from taking his seat).

choose to expand what would have been part of the shared understandings at the time of the drafters in light of changed circumstances in society and to give effect to the provision. Lessig offers a simple example of the third approach: Article I of the Constitution, which speaks of the army and navy, might reasonably be interpreted to include the air force, considering that the army and navy constituted the full complement of armed forces at the time of the Constitution whereas our nation's armed forces now include an Air Force given the advent of military flight.[205] As Judge Bork explained:

> Judges given stewardship of a constitutional provision-such as the first amendment-whose core is known but whose outer reach and contours are ill-defined, face the never-ending task of discerning the meaning of the provision . . . it is the task of the judge in this generation to discern how the framers' values, defined in the context of the world they knew, apply to the world we know. The world changes in which unchanging values find their application. . . . The first amendment's guarantee of freedom of the press was written by men who had not the remotest idea of modern forms of communication. But that does not make it wrong for a judge to find the values of the first amendment relevant to radio and television broadcasting. . . . Perhaps the framers did not envision libel actions as a major threat to that freedom. I may grant that, for the sake of the point to be made. But if, over time, the libel action becomes a threat to the central meaning of the first amendment, why should not judges adapt their doctrines?[206]

205 *See* U.S. CONST. art. I.; Lessig, *supra* note 92, at 1376–77.

206 *See* Ollman v. Evans, 750 F.2d 970, 995–96 (D.C. Cir. 1984) (Bork, J., concurring), *cert. denied*, 471 U.S. 1127 (1985).

The question of whether, how far, and under what circumstances we might expand application of a constitutional provision is a question that must be answered by legal theory and doctrine. No linguistics expert or other social scientist can answer the question for us.[207]

Patent interpretation is like constitutional interpretation at hyper speed. With a patent, we are trying to interpret a document, and the extent of rights granted with that document, in the context of rapidly changing meaning and knowledge. In this enterprise science can offer only limited assistance. Science, whether biochemistry or linguistics, can help identify the ways in which things are different or the same, but it cannot tell us the legal implications of those similarities or distinctions.

Thus, even in patent law, where the logic for using to science is at its strongest, the enterprise remains the same process of legal analysis and adaptation that we engage in throughout the law.

C. THE MISMATCH OF LAW AND SCIENCE

As described above, law is constantly driven to adapt to changing circumstances within existing frameworks as tested and refined through various spheres of acceptance. Science rules are particularly ill suited to this process of adaptation.[208]

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207 One can analogize to interpretation of a contract. A linguist can offer us varying interpretations of the words, but the questions such as what we understand the context of the agreement to be, and how much that matters, and when we will look outside the contract can only be answered by legal analysis.

208 *Cf.* Roscoe Pound, *Mechanical Jurisprudence*, 8 COLUM. L. REV. 605, 606 (1908) (arguing that "[p]erfection of scientific system and exposition tends to cut off individual initiative in the future, to stifle independent consideration of new problems and of new phases of old problems, and to impose the ideas of one generation upon another").

If legal actors lack sufficient information about a rule to both adapt it and to challenge those adaptations, the use of that rule will interfere with the unfolding of the legal process. Thus, science rules and terms, which embody assumptions and shared understandings beyond the legal realm, hinder this process. Most important, as described above, reaching for science can create the illusion of reasonable resolution without addressing the true problems at stake. The lack of analysis gives us insufficient information upon which to build and develop legal theories, leaving us to cling to rigid lines of demarcation instead.

The mismatch of law and science is particularly problematic in the modern legal system. Developments in philosophy of science over more than the last fifty years have radically altered our understanding of the nature of science, the difference between science and pseudo-science, and the limitations of any scientific endeavor. Law, however, maintains a pure and idealized vision of science, one that is far removed from any contemporary understanding within the scientific field itself. Thus, the problem is not only that science cannot do for law what we think it can, the problem is also that science is not even what we think it is. The following chapter explores the development of science as a separate intellectual discipline to illustrate the significant gaps between law's vision of science and the reality of science.