

# INCOMPLETE INNOVATION AND THE PREMATURE DISRUPTION OF LEGAL SERVICES

*Brian Sheppard\**

2015 MICH. ST. L. REV. 1797

## ABSTRACT

*Innovation has fueled the rise of the start up model, providing opportunity and benefits for millions. However, it has also destabilized industries and intimidated workers. This destabilization is most vivid in “disruptive innovations,” which strip power from established producers of goods and services. It is natural to worry that disruptive innovations will make the things we value obsolete, such as our favorite products and even our jobs.*

*For some time, it appeared that legal services might be immune to innovation. In the last few years, however, the tide has turned. Mainstream commentators now routinely declare that new technologies or business models will disrupt legal services, and some have even written that lawyers could become extinct. Workers in the legal services industry might be hurt by extinction, but such disruption could benefit society if there were a worthy substitute.*

*The problem is that innovation does not materialize across all aspects of an industry with the snap of a finger. Innovation might quickly reach and improve some industry functions—bringing about the disruption of its market leaders—but it might stall and leave the remaining functions untouched. I call this phenomenon “Incomplete Innovation.” When it occurs, those lingering, un-innovated functions are in danger of becoming obsolete. If they wither, and society is harmed as a result, then a “Premature Disruption” has occurred.*

*In this Article, I use these two new concepts to examine the innovation and disruption of American legal services. I argue that disruption will likely happen before the creative, bespoke services that are characteristic of today’s established firms can be innovated. As a result of this Incomplete Innovation, the continuing supply of*

---

\* Associate Professor, Seton Hall University School of Law; S.J.D., Harvard Law School. The author would like to thank Charles Sullivan, Kristen Boon, Alice Ristroph, Anna Ronkainen, Frank Pasquale and Gabe Friedman for their invaluable assistance.

*bespoke services will be threatened. Since those services play a role in the development of our laws, their scarcity could have profound consequences. Novel legal solutions could arise to fill the void, such as the development of rules that make our legal system friendlier to machine processing and technological tools that make legal services cheaper. While Incomplete Innovation could bring much needed access to justice for millions, it could also decrease autonomy or hamper progressive legal efforts. We must take stock of these potential consequences before deciding whether to embrace disruption or to resist it until innovation has matured.*

## TABLE OF CONTENTS

INTRODUCTION .....	1800
I. WHAT WE WORRY ABOUT WHEN WE WORRY ABOUT THE FUTURE OF LEGAL SERVICES.....	1804
A. What Is Disruptive Innovation?.....	1809
B. Is the Legal Services Industry Going to Be Disrupted?.....	1813
II. NEW CONCEPTS: INCOMPLETE INNOVATION AND PREMATURE DISRUPTION.....	1815
A. Incomplete Innovation .....	1815
1. <i>The Concept</i> .....	1816
2. <i>An Example of Complete Innovation</i> .....	1818
3. <i>An Example of Incomplete Innovation</i> .....	1820
4. <i>Factors that Increase the Likelihood of             Incomplete Innovation</i> .....	1824
B. Premature Disruption.....	1825
1. <i>The Basic Dynamics of Premature Disruption</i> .....	1826
2. <i>Defending the Concept of Premature Disruption</i> ....	1828
a. A Market-Based Objection .....	1828
b. A Rebuttal.....	1831
III. WILL THE DISRUPTION OF LAW BE INCOMPLETE? .....	1833
A. Relaxation of Gatekeeping Standards and Incomplete Innovation .....	1834
1. <i>Government Action and the Rise of Non-Lawyer             Services</i> .....	1838
2. <i>The Effect of Deregulation on Disruption and             Innovation</i> .....	1843
a. Deregulation and Disruption.....	1843
b. Deregulation and Innovation .....	1846
B. Hybrid Firms and Incomplete Demand Disruption .....	1846

C.	Natural Language Processing and Incomplete Technological Innovation.....	1849
1.	<i>The Path Towards Machine Understanding of Meaning</i> .....	1850
a.	The Rise of Syntactical Processing and Machine Learning .....	1852
b.	The Beginning of Semantic Processing .....	1856
c.	A Pragmatically Processed Future .....	1857
2.	<i>NLP and Incomplete Innovation of Law</i> .....	1860
a.	TAR and High-Volume Document Review .....	1860
b.	A Long Time to Wait: NLP and Complete Innovation .....	1862
i.	<i>Pure Rules and Syntactical Processing</i> .....	1864
ii.	<i>Semantic Processing and the “Knowledge Acquisition Bottleneck”</i> .....	1870
c.	We Can Expect Disruption from Non-Technological Forces to Occur Before Innovation of Bespoke Functions Will Occur.....	1875
IV.	WILL LEGAL DISRUPTION BE PREMATURE? .....	1876
A.	The Hallmarks of Premature Disruption .....	1876
1.	<i>The Long and Fragile Supply Chain for Bespoke Legal Services</i> .....	1876
a.	High Stakes and Risk Aversion at the Bottom of the Supply Chain.....	1877
b.	Bundled Duties, Overhead & Cartel Power .....	1879
2.	<i>Opacity of Value and Latent Demand for Bespoke Functions</i> .....	1880
B.	Shifting the Finish Line: Technological Innovation and the Plasticity of Law .....	1884
1.	<i>Plasticity in Norms Governing Conduct</i> .....	1885
2.	<i>Plasticity in Norms Governing Adjudication</i> .....	1887
a.	Naïve Textualism .....	1891
b.	New Textualism .....	1892
c.	Originalism.....	1893
d.	Moral Reading.....	1895
e.	Living Constitutionalism.....	1896
C.	A Post-Disruptive Legal Landscape: Two Important Dimensions.....	1898
1.	<i>Increased Access</i> .....	1898
2.	<i>Decreased Progressivism</i> .....	1902

- a. The Link Between Bespoke Lawyering and Progressivism..... 1902
- b. The Link Between Legal Openness and Progressivism..... 1907
- CONCLUSION ..... 1909

INTRODUCTION

Deep thinking is what makes us human, or so the thinking goes. Over the last sixty years or so, however, it became plausible to believe that intelligence will someday cease to be an exclusively human trait.<sup>1</sup> It appears possible, if not probable, that machines will learn to think deeply. Machine intelligence has become the object of fascination and fear. Indeed, it is an evergreen theme in film, television, comics, and literature.<sup>2</sup>

The stereotypical science fiction story about artificial intelligence follows a sequence: Humans make machines intelligent so that machines can better serve them; machines conclude that they are superior to humanity and therefore need not be servile; machines ultimately seek to subjugate or destroy humanity; and, finally, a heroic human rises up to defend humanity.<sup>3</sup> These sci-fi stories do not depict intelligent machines; they depict machines that are *almost* intelligent. In important ways, the machines are inhuman or, more accurately, inhumane. Were humans successful in their attempt to make machines intelligent, machines would share the human capacity for empathy, charity, timidity, and respect that are the byproducts of intelligence. In short, there might be no reason to fear machines more than humans because they would be, essentially, human.

Upon closer inspection, the tragic flaw in the stereotypical sci-fi account is that humans become convinced that being *almost* intelligent is sufficient to warrant the delegation of core societal functions to machines. The results of the delegation are disastrous. In a typical case, a society has given machines control over critical aspects of government, such as military, police, or judicial power.<sup>4</sup>

---

1. STEPHEN T. ASMA, ON MONSTERS: AN UNNATURAL HISTORY OF OUR WORST FEARS 257-58 (2011).

2. *Id.*

3. *See, e.g.*, THE TERMINATOR (Orion Pictures 1984).

4. *See, e.g.*, WARGAMES (United Artists 1983) (military); COLOSSUS: THE FORBIN PROJECT (Universal Pictures 1970) (military); ROBOCOP (Orion Pictures

Eventually, the machines do not exercise this power with nuance and sensitivity because the machines' programming has not yet advanced enough to perform human thinking.<sup>5</sup> As a result, machines pay little mind to morality or welfare, starting world wars without provocation or arresting and incarcerating the innocent.<sup>6</sup> While it is true that humans are capable of these very same awful actions, the story means for us to assume that the programming of the machines can do no better. Thus, the tragically flawed society decides that machines are good enough to do the job even though the progress of innovation is, as yet, incomplete.

The popular, technophobic lesson drawn from these stories is that we should not continue down the path of creating thinking machines.<sup>7</sup> There is an alternative lesson, however: We should wait until machines are truly and completely intelligent before we delegate important functions to them. In other words, the alternative lesson is to be wary of innovation that is incomplete.

The alternative lesson, too, is extant in the sci-fi literature. A smaller number of stories describe *complete* innovation. In such tales, a peculiar thing often happens—the roles reverse.<sup>8</sup> The villains are the humans, and the heroes are the machines. When machines achieve true, human thinking, they become sympathetic characters, often representing our best selves.<sup>9</sup> The tragic flaw becomes the human tendency to react with anger to that which exposes our weaknesses and to privilege those who most resemble ourselves. This “Frankenstein Complex” leads to unjust results for the machines, such as callous abandonment, demolition, or worse.<sup>10</sup> In short, it is the completeness of innovation that matters, at least as much as our choice of whether to innovate in the first place.

While these sci-fi stories play for thrills more than they seek genuine insight, the phenomenon of Incomplete Innovation is worthy of scholarly attention. This is particularly the case when the innovation is disruptive in nature, as the destabilizing effects of

---

1987) (police); MINORITY REPORT (Amblin Entertainment 2002) (police and judiciary).

5. See *supra* note 4.

6. See *supra* note 4.

7. See Isaac Asimov, *The Machine and the Robot*, in SCIENCE FICTION: CONTEMPORARY MYTHOLOGY 250 (Patricia Warrick, Martin Harry Greenberg & Joseph Olander eds., 1978).

8. See, e.g., WALL-E (Pixar 2008); A.I. ARTIFICIAL INTELLIGENCE (DreamWorks SKG 2001); ASTRO BOY (Imagi Animation Studios 2009).

9. See *supra* note 8.

10. See Asimov, *supra* note 7, at 251-52.

disruptive innovation make it more important and more dangerous than other types of innovation.

A concept coined by Harvard Business School professor Clayton Christensen, disruptive innovation “describes a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors.”<sup>11</sup> Historical examples of disruption include the development of the power loom, which disrupted the hand loom;<sup>12</sup> the mobile telephone, which disrupted the landline telephone;<sup>13</sup> and digital photography, which disrupted chemical photography.<sup>14</sup> While none of these examples reach the extremes of science fiction, in each a new innovation has wrested market power of a core function or set of core functions from an established competitor.

Whether a disruption occurs as a result of a complete innovation has important ramifications for the general welfare. It affects whether people will have a means to access the products, services, or functions that have been disrupted. This is not to suggest that such deprivation always serves to *lower* the general welfare; to the contrary, it can be a tonic that directs humans to more fruitful endeavors. Nevertheless, the completeness of innovation is a critical dimension of disruption because it is a standard by which we can evaluate its costs or benefits. When a disruption occurs before all of the core functions of an industry have been innovated, there is a risk that this Incomplete Innovation will force the un-innovated core functions to become scarce or disappear.

This is hardly a foreign notion: It taps into widely shared fears of obsolescence. We fear that the pace of innovation will leave the things we love (or us) behind. Yet no one has studied the phenomenon of completeness in disruptive innovation, let alone how it will impact one of the most important human endeavors—law.

---

11. *Disruptive Innovation*, CLAYTON CHRISTENSEN, <http://www.claytonchristensen.com/key-concepts> (last visited Jan. 25, 2016).

12. See generally Steven W. Congden, *Technology Lessons from Samuel Slater's Delayed Adoption of the Power Loom*, 10 J. APPLIED MGMT. & ENTREPRENEURSHIP 83 (2005).

13. CLAYTON M. CHRISTENSEN, *THE INNOVATOR'S DILEMMA: WHEN NEW TECHNOLOGIES CAUSE GREAT FIRMS TO FAIL*, at xxv (1997).

14. *Id.*

Law is not immune from disruptive innovation. Richard Susskind, the world's leading legal futurist,<sup>15</sup> is confident that technological innovation will march steadily into the legal services realm:

The widespread and pervasive deployment of disruptive technologies represents the end-game for legal service although, even then . . . there is no finishing line in the world of IT. In the long run, increasing amounts of legal work can and will be taken on by advanced computer systems, with a light hand on the tiller from human beings who are their users.<sup>16</sup>

I agree that there is no finish line for technological innovation, at least insofar as the line is understood as a point at which further progress is impossible. There is, however, a point at which progressing in a race becomes *immaterial*. When all of the other runners have dropped out of a race, there is no longer a need to run. This is a danger of Incomplete Innovation.

If lawyers are unseated by innovation, it is because non-lawyers, most likely with the help of machines, can perform at least some of the services that lawyers perform at a combination of quality and price that makes them attractive to consumers. The first question is whether this will be an Incomplete Innovation. Will disruption happen before innovators have created an alternative that can equal lawyer performance as to all of the core functions of the industry? If not, it could be because the lawyers “drop out of the race” when their practice becomes less feasible, even if the lawyers could still outperform their innovative competitor in some respects. The second question is whether this is bad thing. If society is worse off because disruption has made lawyer-quality legal services unfeasible without creating an adequate alternative as to *some* core functions, then the disruption of legal services has been “premature.” These complex phenomena, Incomplete Innovation and Premature Disruption, are the focal points of this Article.

In Part I, I explain why disruption matters to legal services and society as a whole. In Part II, I introduce the key concepts in this Article: Incomplete Innovation and Premature Disruption. In Part III, I analyze the disruptive forces bearing upon legal services and show how disruption will occur before innovation is complete. In Part IV, I

---

15. Tom Meltzer, *Robot Doctors, Online Lawyers and Automated Architects: the Future of the Professions?*, THE GUARDIAN (June 15, 2014, 2:00 PM), <http://www.theguardian.com/technology/2014/jun/15/robot-doctors-online-lawyers-automated-architects-future-professions-jobs-technology>.

16. RICHARD SUSSKIND, *TOMORROW'S LAWYERS: AN INTRODUCTION TO YOUR FUTURE* 82 (2013).

consider whether disruption will be premature by describing how disruption creates the risk that un-innovated aspects of legal services will be left behind and how their scarcity could affect law and society.

### I. WHAT WE WORRY ABOUT WHEN WE WORRY ABOUT THE FUTURE OF LEGAL SERVICES

This is a time of instability in American legal services. After decades of growth, the Great Recession gave the highest earning law firms their first taste of stagnation.<sup>17</sup> In that same period, law firm hiring plateaued, and layoffs of attorneys increased.<sup>18</sup> Consequently, law schools experienced a drop in demand, with the lowest enrollment totals since 1973.<sup>19</sup> Law school faculties are shrinking to meet demand.<sup>20</sup> It should come as little surprise, then, that there has been an increase in pessimism about the viability of a career in legal services.<sup>21</sup>

This is only the sad half of the story, however. In the wake of the Great Recession, there has been unprecedented optimism in legal reform through innovation. Analysts estimate that outside investment in legal technology topped \$450 million in 2013.<sup>22</sup> Many commentators are excited by the prospect that technological advancement and the adoption of alternative business models will lower the price of legal services and, therefore, expand access to

---

17. MICHAEL H. TROTTER, DECLINING PROSPECTS: HOW EXTRAORDINARY COMPETITION AND COMPENSATION ARE CHANGING AMERICA'S MAJOR LAW FIRMS 22-23 (2012) (describing over 200% in growth of profits per partner from 1995 to 2010); William D. Henderson, *From Big Law to Lean Law*, 38 INT'L REV. L. & ECON. 5, 10 (2014).

18. Henderson, *supra* note 17, at 7-8.

19. Elizabeth Olson & David Segal, *A Steep Slide in Law School Enrollment Accelerates*, N.Y. TIMES, Dec. 18, 2014, at B3.

20. See Debra Cassens Weiss, *Law School Faculty Numbers Shrink 11 Percent Since 2010; Which Schools Shed the Most Full-Timers?*, A.B.A. J. (Dec. 22, 2014, 6:15 AM), [http://www.abajournal.com/news/article/law\\_school\\_faculty\\_numbers\\_shrink\\_11\\_percent\\_since\\_2010\\_which\\_schools\\_shed](http://www.abajournal.com/news/article/law_school_faculty_numbers_shrink_11_percent_since_2010_which_schools_shed).

21. Michael Simkovic & Frank McIntyre, *The Economic Value of a Law Degree*, 43 J. LEGAL STUD. 249, 252 (2014).

22. Susanna Ray, *These Venture Capitalists Skip Law Firms for Legal Services Startups*, A.B.A. J. (May 1, 2014, 10:30 AM), [http://www.abajournal.com/magazine/article/these\\_venture\\_capitalists\\_skip\\_law\\_firms\\_for\\_legal\\_services\\_startups/](http://www.abajournal.com/magazine/article/these_venture_capitalists_skip_law_firms_for_legal_services_startups/).



underserved populations, such as members of the lower or middle classes.<sup>23</sup>

The progressive spirit motivates the innovators, as well. The innovation incubator, CodeX, describes its mission as follows: “CodeX seeks to architect online legal environments which, by their structure, reduce the incidence of legal and factual ambiguity, and thus allow for legal empowerment of ordinary citizens.”<sup>24</sup> Likewise, Casetext, a company that offers a legal research platform with unique social networking and crowdsourcing dimensions declares that “[o]ur mission above all else is to make all the world’s laws free and understandable.”<sup>25</sup> Legalforce, a self-styled “modern progressive law firm”<sup>26</sup> that offers automation software, consultative video chats with lawyers, and even an Apple-style law bookstore,<sup>27</sup> claims that its success is the “result of its intimate focus on every client, regardless of size or status.”<sup>28</sup>

The swell in good feeling is fueled by the ambitious claims of some legal technologists, many of whom assert that software can do some, perhaps all, of what lawyers do but cheaper and eventually better.<sup>29</sup> They might be right. Recently, Judge Cote in the Federal District Court for the Southern District of New York declared that predictive coding, a means of performing document review with software that incorporates machine learning, “had a better track

---

23. See, e.g., Raymond H. Brescia et al., *Embracing Disruption: How Technological Change in the Delivery of Legal Services Can Improve Access to Justice*, 78 ALB. L. REV. 553, 553-55 (2015).

24. CodeX, STAN. LAW, <https://www.law.stanford.edu/organizations/programs-and-centers/codex-stanford-center-for-computers-and-law/background> [<https://web.archive.org/web/20150621053135/https://www.law.stanford.edu/organizations/programs-and-centers/codex-stanford-center-for-computers-and-law/background>] (last visited Jan. 25, 2016).

25. CASETEXT, <https://casetext.com/about> (last visited Jan. 25, 2016).

26. LegalForce RAPC, LINKEDIN, <https://www.linkedin.com/company/legalforce-rapc-worldwide> (last visited Jan. 25, 2016).

27. Carolyn Elefant, *LegalForce: Forcing Law to Be Accessible*, MY SHINGLE (Feb. 7, 2013), <http://myshingle.com/2013/02/articles/myshingle-solo/legalforce-forcing-law-to-be-accessible/#sthash.SSiMeT3h.dpuf>.

28. *About*, LEGALFORCE, <http://www.legalforcelaw.com/about/> (last visited Jan. 25, 2016).

29. See, e.g., John O. McGinnis & Russell G. Pearce, *The Great Disruption: How Machine Intelligence Will Transform the Role of Lawyers in the Delivery of Legal Services*, 82 FORDHAM L. REV. 3041, 3041-42 (2014).

record in the production of responsive documents than human review.”<sup>30</sup>

It should come as no surprise that many legal services providers are wary of these innovations. Not only must they cope with clients who are unwilling to pay pre-Recession rates, they might eventually have to contend with competition from non-lawyers and machines. Some commentators suspect that lawyers, at least certain types of lawyers, could become extinct.<sup>31</sup>

For this to be the case, law must be the sort of thing that is apt for machine-based interpretation. Maybe law is intrinsically systematic and clear enough—like a programming language—to permit interpretation under existing technology. Or maybe machines will someday reach such an advanced state of interpretive power that they can enable anyone to identify the meaning or meanings in legal texts (or, short of that, devise convincing legal arguments from them) with ease despite inconsistency, ambiguity, falsehood, or the like.

If the rhetoric from some leading technologists is to be believed, the first account is true. Judicata, a legal data visualization platform, claims to be “mapping the legal genome.”<sup>32</sup> Robot, Robot & Hwang, a legal automation software developer and consultancy masquerading as a fictional law firm consisting of two robots and a single human,<sup>33</sup> echoes that sentiment, “[d]rawing from [Lawrence] Lessig’s commandment that code is law, we believe equally strongly that law can be [programming] code.”<sup>34</sup> Some commentators believe, however, that neither account is true.<sup>35</sup> “In this conception, legal

---

30. Fed. Hous. Fin. Agency v. HSBC N. Am. Holdings Inc., Nos. 11 Civ. 6189(DLC), 11 Civ. 6190(DLC), 11 Civ. 6193(DLC), 11 Civ. 6195(DLC), 11 Civ. 6198(DLC), 11 Civ. 6200(DLC), 11 Civ. 6201(DLC), 11 Civ. 6202(DLC), 11 Civ. 6203(DLC), 11 Civ. 6739(DLC), 11 Civ. 7010(DLC), 2014 WL 584300, at \*3 (S.D.N.Y. Feb. 14, 2014).

31. See Farhad Manjoo, *Will Robots Steal Your Job?: Software Could Kill Lawyers. Why That’s Good for Everyone Else*, SLATE (Sept. 29, 2011, 2:42 AM), [http://www.slate.com/articles/technology/robot\\_invasion/2011/09/will\\_robots\\_steal\\_your\\_job\\_5.html](http://www.slate.com/articles/technology/robot_invasion/2011/09/will_robots_steal_your_job_5.html).

32. JUDICATA, <https://www.judicata.com/> (last visited Jan. 25, 2016).

33. See Kashmir Hill, *The Busiest Man on the Internet*, FORBES (May 28, 2014, 8:30 AM), <http://www.forbes.com/sites/kashmirhill/2014/05/28/the-busiest-man-on-the-internet/>.

34. *About RRH*, ROBOT ROBOT & HWANG, <http://www.robotandhwang.com/about/> (last visited Jan. 25, 2016).

35. G. CHRISTOPHER RITTER, *POWERFUL DELIBERATIONS: PUTTING IT ALL TOGETHER FOR THE JURY* 193 (2009); Judith S. Kaye, *A Chief Judge’s After-Life: Reflections on Educating Lawyers Today*, 45 IND. L. REV. 291, 295 (2012); Garry S. Grossman & Lewis D. Solomon, *Computers and Legal Reasoning*, 69 A.B.A. J. 66

reasoning is too imbued with uncertainty, ambiguity, judgment, and discretion to permit computerized assessment.”<sup>36</sup>

Both positions are too extreme. On the one hand, technologists overstate the degree to which existing American law can be translated from natural language into formal, programming language.<sup>37</sup> Despite their laudable and progressive aims, the accounts of legality espoused by these technologists are decidedly old-fashioned. Not since the early nineteenth century has it been popular to view American law as having a structure akin to biological entities,<sup>38</sup> as being translatable into a gapless code-based system,<sup>39</sup> or as having greater certainty than our observation of the empirical world, itself.<sup>40</sup> To hold these views today is essentially to ignore more than a century of jurisprudence. It denies that there is indeterminacy or underdeterminacy in legal interpretation despite famous refutations by American Legal Realists and Critical Legal Studies theorists.<sup>41</sup>

---

(1983); Charles S. Rhyne, *The Computer Will Speed a Law-Full World*, 53 A.B.A. J. 420, 423 (1967) (“To allay unfounded fears, it should be stated that the computer will never replace the trained legal mind . . . . The computer is incapable of original thought, reasoning and creative achievement.”).

36. Harry Surden, *The Variable Determinacy Thesis*, 12 COLUM. SCI. & TECH. L. REV. 1, 3 (2011).

37. Harry Surden, *Computable Contracts*, 46 U.C. DAVIS L. REV. 629, 643 (2012).

38. See Howard Schweber, *The “Science” of Legal Science: The Model of the Natural Sciences in Nineteenth-Century American Legal Education*, 17 LAW & HIST. REV. 421, 421-22 (1999); Robin Feldman, *Law’s Misguided Love Affair with Science*, 10 MINN. J.L. SCI. & TECH. 95, 97-98 (2009).

39. IV TIMOTHY DWIGHT, *TRAVELS IN NEW ENGLAND AND NEW YORK* 296 (1823) (claiming that Tapping Reeve of the law school at Litchfield taught law “as a science, and not merely nor principally as a mechanical business; not as a collection of loose, independent fragments, but as a regular, well-compacted system.”).

40. See JOHN PICKERING, *A LECTURE ON THE ALLEGED UNCERTAINTY OF THE LAW* 8 (1830) (“In the art of *Navigation*, for example, if mathematical science could insure to us as much certainty as is expected in the law, we should be able to measure the progress of a ship at all times and through all regions of the globe, without the possibility of error.”).

41. See, e.g., Brian Leiter, *Rethinking Legal Realism: Toward a Naturalized Jurisprudence*, 76 TEX. L. REV. 267, 273-74 (1997) (“[According to Realists,] [b]ecause statutes or cases could be read in two ways, a statute or case could generate at least two different rules. Thus, even an honest application of the ‘methods’ of legal reasoning and interpretation would fail to determine as a matter of law a unique decision. The CLS writers, by contrast, have tended to locate the source of legal indeterminacy either—loosely following Derrida and Wittgenstein—in general features of language itself, or—loosely following Hegel via Lukács via

On the other hand, those who believe that computers will never be able to best lawyers when it comes to deriving meaning from legal texts or making legal arguments are far too confident in their own ability to predict the extent of technological advancement (or the extent to which legal texts might change to become computer-friendly). When American Bar Association President, Charles S. Rhyne, wrote in 1967 that lawyers would never be replaced because “[t]he computer is incapable of original thought, reasoning, and creative achievement,”<sup>42</sup> he had not contemplated the possibility that a machine could beat the very best human opponents in chess, that video games could procedurally generate virtual cities, or that a concealed iPhone can make anyone appear to be an unbeatable trivia expert on Shakespeare.

The truth is somewhere in between. There is little reason to doubt that, if given enough time and resources, innovators in the fields of artificial intelligence, robotics, or other technological fields could discover ways to make machines that can perform all of the core functions that lawyers now perform. To do so, however, they will need to surmount the interpretive obstacles created by law’s gaps, conflicts, and ambiguities, whether by technological or legal means.

This dynamic of upstart companies that use innovation to unseat incumbents in an established industry is hardly unique. It is the most discussed business phenomenon of the last decade: Disruptive Innovation.<sup>43</sup> The Disruptive Innovation framework has its shortcomings, but it is the best model for understanding this dynamic available. Using this framework, we can make educated guesses about the form, sequence, and timing of innovation. To be clear, the framework is not universally applicable. Nor does it yield fool-proof predictions or provide an exclusive approach for devising business strategies. Nevertheless, it can be a useful way to approach and categorize phenomena in a quickly changing market.

---

Unger—in conflicting moral and political principles that purportedly exist beneath the surface of the law, at some suitable level of abstraction.” (footnote omitted)).

42. Rhyne, *supra* note 35, at 423.

43. See, e.g., *Has ‘Disruptive Innovation’ Run Its Course? Not Yet . . .*, KNOWLEDGE@WHARTON (July 9, 2014), <http://knowledge.wharton.upenn.edu/article/disruptive-innovation-run-course-yet/>.

## A. What Is Disruptive Innovation?

Disruptive Innovation is a very popular term, which gives it the potential to be highly useful in discussions about the future of legal services.<sup>44</sup> Unfortunately, the term is often used in a loose and murky manner.<sup>45</sup> Its most famous proponent, Clayton Christensen, and most famous detractor, Jill Lepore, agree that the term has become cliché and intemperate in its usage.<sup>46</sup> Lepore recently wrote a polemic against disruption rhetoric in *The New Yorker*, claiming, “Disruptive innovation as an explanation for how change happens is everywhere. . . . Innovation and disruption are ideas that originated in the arena of business but which have since been applied to arenas whose values and goals are remote from the values and goals of business.”<sup>47</sup> For his part, Christensen conceded that the theory needs discipline and is still developing.<sup>48</sup> To avoid the common mistakes, I will define my

---

44. Drake Bennet, *Clayton Christensen Responds to New Yorker Takedown of ‘Disruptive Innovation,’* BLOOMBERG BUS. (June 20, 2014), <http://www.bloomberg.com/bw/articles/2014-06-20/clayton-christensen-responds-to-new-yorker-takedown-of-disruptive-innovation>.

45. *See id.*

46. *See id.*

47. *See* Jill Lepore, *The Disruption Machine*, NEW YORKER, June 23, 2014, at 30, 31-32, 35 (“Most big ideas have loud critics. Not disruption. Disruptive innovation as the explanation for how change happens has been subject to little serious criticism, partly because it’s headlong, while critical inquiry is unhurried; partly because disrupters ridicule doubters by charging them with fogginess, as if to criticize a theory of change were identical to decrying change; and partly because, in its modern usage, innovation is the idea of progress jammed into a criticism-proof jack-in-the-box.”).

48. Bennet, *supra* note 44. Christensen disagreed, however, with Lepore’s claims that he had mischaracterized certain historic events as disruptions and had engaged in cherry picking to bolster the theory. *See id.* While the Lepore–Christensen debate is a worthy object of attention, it is not my focus here. Because I am clear about my particular terminology and offer my own examples, the accuracy of Christensen’s historical analysis has little bearing on this Article. Moreover, much of Lepore’s criticism has nothing to do with the coherence of the theory or its usefulness as a conceptual frame—which is my modest use. *See* Lepore, *supra* note 47, at 35. Other than potential errors in Christensen’s history, Lepore is primarily concerned with debunking the more ambitious applications and extensions of disruption. *See id.* For instance, she notes that some have based investment strategies on the theory and performed quite poorly as a result. *Id.* at 34. She further points out that many have embraced disruption as a vision of progress or evolution, assuming that all areas of life *ought* to bend to disruptive forces. *Id.* at 35. In opposition, she points out that some industries are governed by more than just the values of business, including senses of obligation to customers or clients and therefore should not be shaped according to disruption-centric survival strategies.

terminology, particularly those terms that are my creation. If I depart from the manner in which some commentators have used the same terms, I hope that my definitions are clear enough that my departures are easily spotted and unproblematic.

Disruptive Innovation can be broken down into two components: disruption and innovation. Beginning with innovation, the word will take on a marginally narrower meaning than its dictionary definition, which is “the introduction of something new.”<sup>49</sup> Here, it means the introduction of something new that improves a product or service under prevailing, pre-disruption performance standards.<sup>50</sup> An inquiry like this assumes that the analyst has perfect knowledge of the performances under consideration and uses that knowledge to determine whether the innovated product or service performs better under typical pre-innovation performance metrics. In the real world, there will be hard cases. They might even be frequent. We can easily imagine a product that performs better along some metrics but worse along others, and some assessment of whether there is a net improvement will have to occur. For example, a television might be much thinner and lighter than those that preceded it, but it might be worse in color accuracy. In such instances, some sort of balancing may need to occur.

Innovations in disruptive situations often have different characteristics than those in other contexts. When innovations aim to assist established leaders (incumbents) to keep their position in a

---

*See id.* It will become clear that I find much to agree with in Lepore’s criticism. For one, I largely agree with her that it is “a theory about why businesses fail” and “not more than that” and that it is not a timeless “law of nature.” *Id.* at 36. Though I use Christensen’s conceptual framework as a point of departure, I do not mean to be taken as embracing disruption as a public good. To the contrary, I seek to avoid imbuing disruption with a categorical evaluative valence; it can be good or bad. Because I do not engage in these strident applications of the theory, I believe that I have avoided the crux of the Lepore–Christensen debate and need not take a side.

49. *Innovation*, MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY (11th ed. 2014).

50. In an effort to simplify and clarify the effect that I am analyzing, I have narrowed my definition of innovation compared to some other scholars, who additionally allow for innovation to be improved performance as measured in “new ways.” *See, e.g.*, Peter Dombrowski & Eugene Gholz, *Identifying Disruptive Innovation: Innovation Theory and the Defense Industry*, 4 *INNOVATIONS* 101, 102 (2009). I seek to devise a way to predict and determine when a disruptive innovation leaves something behind, and allowing innovation to be measured using “new ways” will obscure that effect. Nevertheless, I incorporate unforeseen benefits into my analysis when I discuss Premature Disruption.

market, they are categorized as “sustaining innovations.”<sup>51</sup> They generally keep the existing, mainstream customer base intact but capture new high-end users by offering improvements along the lines that mainstream consumers care about.<sup>52</sup> Thus, sustaining innovations are marked by their tendency to seek high-end, upmarket users but not to the extent that doing so threatens the benefits that are already provided to their mainstream customer base.

In disruptive scenarios, innovations often introduce “a different set of features, performance, and price attributes relative to the existing product.”<sup>53</sup> These characteristics might be unappealing to mainstream consumers before they mature into innovations due to “inferior performance on the attributes these customers value and/or a high price—although a different customer segment may value the new attributes.”<sup>54</sup> Over time, these products or services improve to the point that they appeal to those who were mid-level users before disruption occurred. They become “disruptive innovations,” and this allows them to wrest market power from the incumbents.<sup>55</sup> Disruptors have often catered to low-end users of the same product or service (which can lead to “Low-End Disruption”) or seek to create new markets for people who are not currently being served by the incumbent at all (which can lead to “New Market Disruption”).<sup>56</sup> In both cases, the aspiring innovator usually appeals to the non-traditional values of their customer targets, which gives them the freedom to provide a narrower range of benefits and face less competition.<sup>57</sup>

We might wonder why incumbents fail to develop the kinds of innovations that disrupt them. Incumbents are present winners, and as a result, they typically view the potentially disruptive innovation as unworthy of investment.<sup>58</sup> They do not believe the innovation will be attractive to consumers, or they see no sense in using the

---

51. *Id.*

52. Craig Lambert, *Disruptive Genius*, HARV. MAG., July-Aug. 2014, at 38, 39.

53. Vijay Govindarajan & Praveen K. Kopalle, *The Usefulness of Measuring Disruptiveness of Innovations Ex Post in Making Ex Ante Predictions*, 23 J. PROD. INNOVATION MGMT. 12, 15 (2006).

54. *Id.*

55. See CHRISTENSEN, *supra* note 13, at xii-xiii.

56. PAUL PAETZ, *DISRUPTION BY DESIGN: HOW TO CREATE PRODUCTS THAT DISRUPT AND THEN DOMINATE MARKETS* 49 (2014).

57. *Id.*

58. CLAYTON M. CHRISTENSEN & MICHAEL E. RAYNOR, *THE INNOVATOR’S SOLUTION: CREATING AND SUSTAINING SUCCESSFUL GROWTH* 35 (2003).

innovation to create a product or service that will compete primarily with their current, market leading offerings.<sup>59</sup> Disruptive innovations tend not to comport with the values of incumbents.<sup>60</sup> Besides, changing the very approach to innovation that placed them at the top of the pyramid can have very high transaction costs.<sup>61</sup>

We are still missing the part that makes disruptive innovation *disruptive*. Generally speaking, disruptive innovation leads to a shift in market power away from established competitors and into the hands of those pushing the innovation, “disruptors.”<sup>62</sup> Some scholars eager to understand the causal story of disruption so that it can serve as a more reliable predictive model have been unsatisfied with Christensen’s account, a byproduct of his tendency to keep the components simple.<sup>63</sup> I lean on these scholars, particularly Ashish Sood and Gerard Tellis and their account of “market disruption,” in articulating a simple, verifiable definition of disruption.<sup>64</sup>

An incumbent has been disrupted when either one of the following happens: (1) “Firm Disruption,” when the market share of the dominant incumbent firm (measured at the time a new approach is initiated) drops below the market share of a disruptor firm; or (2) “Demand Disruption,” when the total share of products or services in the market that are based on the new, disruptive approach outnumber the total share of products or services in the market for the industry market based on the once-dominant approach.<sup>65</sup>

---

59. See Ronald J. Gilson, *Locating Innovation: The Endogeneity of Technology, Organizational Structure, and Financial Contracting*, 110 COLUM. L. REV. 885, 905-06 (2010).

60. See PAETZ, *supra* note 56, at 49.

61. Gilson, *supra* note 59, at 914-15.

62. Thomas H. Lee, *Disruptive Innovation Comes to Health Care*, HARV. BUS. REV. (Nov. 5, 2012), <https://hbr.org/2012/11/disruptive-innovation-comes-to>.

63. Ronald N. Kostoff, Robert Boylan & Gene R. Simons, *Disruptive Technology Roadmaps*, 71 TECH. FORECASTING & SOC. CHANGE 141, 142 (2004).

64. Ashish Sood & Gerard J. Tellis, *Demystifying Disruption: A New Model for Understanding and Predicting Disruptive Technologies*, 30 MARKETING SCI. 339, 342-46 (2011) (“Firm disruption occurs when the market share of a firm whose products use a new technology exceeds the market share of the largest firm whose products use the highest-share technology. . . . Demand disruption occurs when the total share of products in the market based on a new technology exceeds the share of products based on the dominant technology.” (emphasis omitted)).

65. *Id.* at 342. Sood and Tellis also describe “Technological Disruption,” in which the performance of the new approach eclipses the performance of the dominant, incumbent approach. *Id.* I consider disruptive innovation to have two components—disruption and innovation. My definition for innovation bears such a close resemblance to their understanding of Technological Disruption that it would have caused redundancy to consider it a part of disruption as well. I prefer my



## B. Is the Legal Services Industry Going to Be Disrupted?

According to many analysts, legal services are ripe for disruption.<sup>66</sup> The global legal services market is massive enough to make it attractive to innovators and the investors that power disruption; indeed, its worth might exceed \$600 billion.<sup>67</sup> The incumbents in the American legal services market—practitioners organized into large law firms like those in the Am Law 100—have been targeting high-end consumers and leaving low- and middle-income people without the resources to afford them.<sup>68</sup> This grave problem<sup>69</sup> is partly a byproduct of regulation: As discussed below, there are legal barriers to offering lower quality products and services. Moreover, the incumbents have not changed the content and structure of the services they sell in many decades.<sup>70</sup> There have been sustaining innovations, such as online legal research, computerized word processing, and electronic document delivery, but they have not changed the sort of client-tailored work product

---

approach because it provides a more nimble model, making clear that there can be disruption without innovation and innovation without disruption.

66. See, e.g., Kristin E. Killian, *The Long Tail and Demand Creation in the Legal Marketplace*, 11 HASTINGS BUS. L.J. 157, 184 (2015); Joshua Kubicki, *6 Reasons the Legal Industry is Ripe for Startup Invasion*, TECH.CO (Mar. 25, 2013, 5:47 PM), <http://tech.co/legal-industry-startup-invasion-2013-03>; Ana Swanson, *Industries Ripe for Disruption: The End of Low-Level Lawyering*, FORBES (Sept. 17, 2014, 8:51 AM), <http://www.forbes.com/sites/anaswanson/2014/09/17/industries-ripe-for-disruption-the-end-of-low-level-lawyering/>; Bob Goodman & Josh Harder, *Four Areas of Legal Ripe for Disruption by Smart Startups*, LAW TECH. TODAY (Dec. 16, 2014), <http://www.lawtechnologytoday.org/2014/12/smart-startups/>; Scott Simpson, *Clio Focuses on Legal Space That's 'Ripe for Disruption'*, VANCOUVER SUN (Jan. 30, 2012, 10:37 AM), <http://blogs.vancouversun.com/2012/01/30/clio-focuses-on-legal-space-thats-ripe-for-disruption/>; Sharon Driscoll, *A Positive Disruption: The Transformation of Law Through Technology*, STAN. LAW. (Jun. 4, 2013), <http://stanfordlawyer.law.stanford.edu/2013/06/a-positive-disruption/>; "Disruptive" Pro Bono?, PRO BONO INST. (July 17, 2014), <http://thepbeye.probonoinst.org/2014/07/17/disruptive-pro-bono/>.

67. *Research and Markets: Global Legal Services Industry is Expected to Increase to a Value of \$645.2 Billion by the End of 2015*, BUSINESSWIRE (Dec. 14, 2011, 1:28 PM), <http://www.businesswire.com/news/home/20111214006462/en/Research-Markets-Global-Legal-Services-Industry-Expected#.VMfUoCfZtVU>.

68. Ethan Bronner, *Right to Lawyer Can Be Empty Promise for Poor*, N.Y. TIMES, Mar. 16, 2013, at A1; Ann Juergens, *Valuing Small Firm and Solo Law Practice: Models for Expanding Service to Middle-Income Clients*, 39 WM. MITCHELL L. REV. 80, 81 (2012).

69. See generally Brescia et al., *supra* note 23.

70. See Goodman & Harder, *supra* note 66.

that incumbents offer.<sup>71</sup> It is an industry with a tradition of bespoke offerings.

For his part, Susskind identifies about a dozen potential innovations that will lead to the allocation of critical portions of legal services to other functionalities.<sup>72</sup> I divide these into two categories: accessibility and automation. The former rely on advances in connectivity and storage, and the latter rely on processing power and artificial intelligence programs.

As to accessibility, Susskind predicts that open-sourcing of knowledge and the availability of online legal guidance will tear down the walls that currently surround legal information.<sup>73</sup> The gap between the search results of lay search engines and legal specialist search engines will narrow. With greater legal knowledge, the lay public will be more effective at managing risk, making it less likely that they will encounter legal problems. And when problems do arise, they will be more attracted to swift and cheap solutions, such as online dispute resolution.<sup>74</sup> Eventually, the collection of available data about legal problems and lawyers, themselves, will provide leaps in transparency, accountability, and predictability. Those in need of legal help will be better at determining the value of their cases or projects, will be better at determining the quality of legal services, and as a result, will be better at finding bargains.<sup>75</sup> As law firms face new challenges, legal service providers outside of that model will have new assets. Ease of social networking and information sharing will lead to the development of closed legal communities that consolidate their resources so that they can rival or exceed those of elite law firms.<sup>76</sup>

As to automation, advances will permit unprecedented delegation of legal work to machines. Automated document assembly will provide cheaper and faster document template creation.<sup>77</sup> We will more frequently encode legal norms into our machines, which will increase lay understanding of the laws and make it harder for anyone to transgress them.<sup>78</sup> Lastly, artificial

---

71. See Simkovic & McIntyre, *supra* note 21, at 275.

72. See SUSSKIND, *supra* note 16.

73. *Id.* at 43-45.

74. *Id.* at 42-44, 47-49.

75. *Id.* at 47-49.

76. *Id.* at 45.

77. *Id.* at 41.

78. *Id.* at 46-47.

intelligence will provide better legal research and problem-solving than human lawyers can.<sup>79</sup>

Even if Susskind is incorrect about some of these innovations, all that is necessary for disruptive innovation to occur is that one of them succeeds in innovating a single core function and dominant incumbents either choose to abandon their approach for the approach of the disruptor or lose their market share. The combination of a tantalizing and expensive product, a high-end consumer target, an innovation-resistant incumbent culture, and an increased interest among innovators make the disruption of legal services plausible in the short-term (within a few decades) and probable in the long-term (within many, many decades). It is entirely possible, of course, that the particular forces that I detail in this Article do not disrupt legal services; they might create a new market for only those who are currently priced out of the market and not affect the profits of incumbents. This might be the best imaginable outcome. But there is little reason to doubt that other forces will someday disrupt legal services, whether they resemble the forces I describe or they are unforeseeable. That said, my focus is not the question of whether legal services will be disrupted; rather, I seek to understand the character that disruption of legal services is likely to have.<sup>80</sup>

## II. NEW CONCEPTS: INCOMPLETE INNOVATION AND PREMATURE DISRUPTION

At the heart of this Article are two new concepts, both of which stem from disruptive innovation. The first is Incomplete Innovation, which occurs when disruption precedes innovation of all the core functions of an industry, and Premature Disruption, which occurs when Incomplete Innovation is harmful to overall social welfare. The following discussion defines these terms.

### A. Incomplete Innovation

Disruptive innovation is a polarizing topic, and this has had a deleterious effect on our understanding of it. “[The] stream of literature has primarily sought to understand the role of the market in terms of different segments, not the customer or the surrounding

---

79. *Id.*

80. Thus, I would not object to reading what follows as if it is assuming, for the sake of argument, that legal services will be disrupted. So long as the reader agrees that disruption is plausible, the analysis should be valuable.

value network. The role of the customer is often highlighted, but rarely addressed in further detail.”<sup>81</sup> In short, literature authored by or for incumbents tends to be critical of disruption, and literature authored by or for disruptors tend to be charitable to it, but few have taken the perspective of the vastly larger population of those who consume products or services. If commentators broadened the scope of consideration, they might see what animates public resistance to disruptive innovation—namely, the fear that something valuable will disappear. This goes beyond market share and profit.

Accordingly, I consider the broader consequences of disruptive innovation and, in particular, how the failure to innovate certain core functions will affect the supply of that function and, thereby, impact the overall welfare of its potential recipients. In this Section, I show how understanding the manner in which these forces co-occur has a bearing on the subsequent performance of core functions in an industry and, therefore, on the welfare of the consuming public.

### 1. *The Concept*

Industries provide a set of core functions to consumers, and, in the ideal world, vendors within that industry would supply the precise amount needed to meet consumer demand for that function. The core functions of an industry are the tasks that an industry typically performs through a service or a product in order to meet mainstream consumer demand.<sup>82</sup> For our purposes, a typical job description for a position within a service industry or a list of advertised product attributes in the goods industry is a suitable resource for determining core functions. And while there will surely be industries in which there is no consensus as to the functions that qualify as “core,” there will be obvious examples as well.

The foundation of this project is a common sense principle: If the disruptor innovates all of the core functions that were provided by the incumbent before disruption has taken place, then there is generally less danger that overall consumer welfare will suffer than

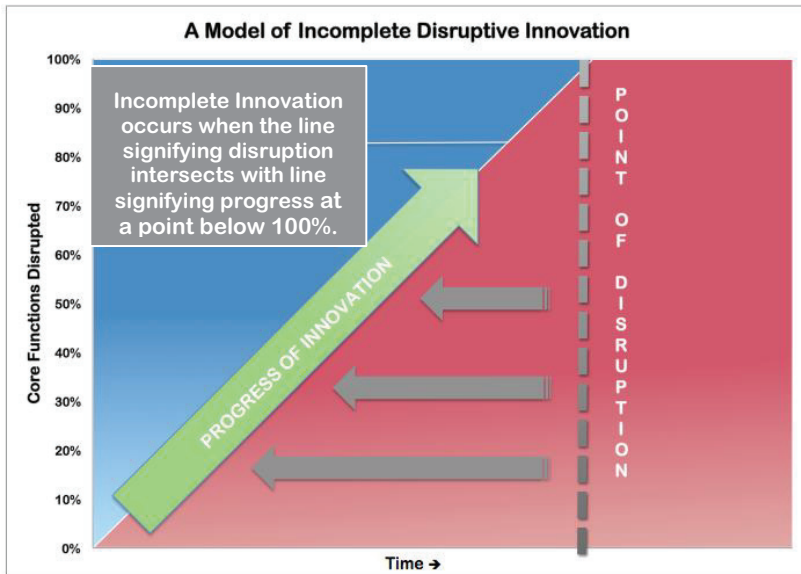
---

81. CHRISTIAN G. SANDSTRÖM, A REVISED PERSPECTIVE ON DISRUPTIVE INNOVATION: EXPLORING VALUE, NETWORKS AND BUSINESS MODELS 19 (2010), <http://www.sll.se/Global/Om%20landstinget/Forskning%20och%20utveckling/avhandling-c-g-sandstrom.pdf>.

82. This does not depart from other popular understandings of the term. See, e.g., Milton C. Regan, Jr. & Palmer T. Heenan, *Supply Chains and Porous Boundaries: The Disaggregation of Legal Services*, 78 *FORDHAM L. REV.* 2137, 2144 (2010).

when the disruptor innovates only some of them. When a disruption has occurred and the disruptor has innovated all core functions, there has been a “Complete Innovation.” When disruption has occurred, but the disruptor has not innovated at least one core function, there has been an Incomplete Innovation. Most disruptions, particularly Low-End Disruptions, are incomplete, at least for a period of innovative development. The figure below illustrates the basic principle of Incomplete Innovation.

**Figure 1**  
**INCOMPLETE INNOVATION**



In an Incomplete Innovation, there is a greater risk that those who demand (or might someday demand) the un-innovated core function will not be able to have their demand met, and overall welfare will fall. Something disappears. The disruptor might fail to serve that function entirely, or it might perform it in a weaker manner than the incumbents did. Whether welfare is increased or decreased depends upon whether the consumers are better served when the un-innovated functions fade from the marketplace.<sup>83</sup> I will call un-innovated core functions “lingering functions.”

83. For this Article, I do not set forth a minimum amount of time that a core function must remain in this state before we can declare that there has been an Incomplete Innovation. It should be lengthy so as not to trivialize the phenomenon.

Innovation is neither uniform nor perpetual across an industry, so it can occur with respect to some functions but not others and it can stall before performance can reach incumbent levels of quality.<sup>84</sup> Thus, the sequence and timing of innovation can be a critical feature of whether a disruption will be complete and, in that connection, whether it presents a great risk with respect to overall welfare.

The best way to understand these concepts is to provide examples of both Complete and Incomplete Innovation.

## 2. *An Example of Complete Innovation*

There can be little doubt that the music compact disc industry has been disrupted by the digital delivery of music files via the Internet. If we were to attempt to identify the core functions performed by the CD, we would come up with a list more or less like the following: a CD (1) provides a means to listen to recorded sound at a high quality, (2) while permitting nearly instantaneous access to files and high-speed rewinding and forwarding, (3) all with no discernible quality loss from repeated use or age.<sup>85</sup> This list mirrors the demands of early adopters of the product. A 1985 article in *The Chicago Tribune* reported that “[the first wave of CD supporters] rationalize that the disc’s special user convenience, wear-free permanence and superior sound are worth the premium.”<sup>86</sup> Indeed, this combination of functions led to the disruption of the cassette tape in the 1980s.

In recent years, the innovation of digital delivery of music files has disrupted the CD industry. The market share of music CD-makers has dropped below the market share of Internet music

---

84. Carol Van Alstyne, *Innovation: An Uneven Diffusion*, 11 CHALLENGE 35, 35-38 (1963); MATTHEW S. OLSON & DEREK VAN BEVER, STALL POINTS: MOST COMPANIES STOP GROWING—YOURS DOESN’T HAVE TO (2009) (discussing innovation management breakdown); Philip Anderson & Michael L. Tushman, *Technological Discontinuities and Dominant Designs: A Cyclical Model of Technological Change*, 35 ADMIN. SCI. Q. 604, 605 (1990).

85. An image of a Sony advertisement from the period is available at *Sony Ad for CDP-101 Player from Audio, 1984/01*, AUDIO ENGINEERING SOC’Y, <http://www.aes.org/aeshc/docs/recording.technology.history/images2/PDRM1985a.jpg> (last visited Jan. 25, 2016).

86. Jonathan Takiff, *Keeping Up with Jones’ Means Trouble for Cd Buyers*, CHI. TRIB. (May 24, 1985), [http://articles.chicagotribune.com/1985-05-24/entertainment/8502020361\\_1\\_laser-read-cd-buyers-boom-boxes](http://articles.chicagotribune.com/1985-05-24/entertainment/8502020361_1_laser-read-cd-buyers-boom-boxes).

delivery.<sup>87</sup> Downloads eclipsed CD sales in 2006, with the gap widening thereafter.<sup>88</sup> Furthermore, music-CD stalwarts, like Sony, are abandoning the format, putting their efforts towards digital music delivery and closing CD manufacturing plants.<sup>89</sup> Lastly, as described below, Sony's and other incumbents' performance has been bested with respect to targeted core functions. The question, however, is whether it was a complete innovation. Because it innovated all of the core functions of the CD, the answer is yes.

Years ago, mainstream digital delivery achieved near perfect mimicry of core CD functions, and today it even trumps the CD on almost all of these measures. Digital delivery was initially a Low-End Disruption. Slow Internet speeds and limited hard drive space made the low-quality MP3 a necessary evil for a handful of years, but they could be accessed cheaply through Internet delivery.<sup>90</sup> By the mid-2000s, however, the distinction between the sound quality of digitally delivered music and the CD was nearly inaudible because mainstream consumers of CDs possessed fast enough Internet access and enough memory to have CD-quality music files delivered through the Internet. It did not take long for disruptive innovation of the music CD to follow. Indeed, Internet delivery is now capable of providing instantaneous access to greater sampling rates and provides greater facility at navigating through songs and libraries than CDs did.<sup>91</sup> Furthermore, files delivered to a hard drive via the Internet are more resilient than CDs, which were easily scratched. In

---

87. Michael Degusta, *The REAL Death of the Music Industry*, BUS. INSIDER, (Feb. 18, 2011, 12:13 PM), <http://www.businessinsider.com/these-charts-explain-the-real-death-of-the-music-industry-2011-2>.

88. *Id.*

89. Greg Tito, *Sony Blames Digital Downloads for Closing 50 Year Old CD Factory*, THE ESCAPIST (Jan. 12, 2011, 4:30 PM), <http://www.escapistmagazine.com/forums/read/7.256733-Sony-Blames-Digital-Downloads-for-Closing-50-Year-Old-CD-Factory>.

90. The original iPod could hold 1,000 songs of average length at 160kbps bit rate. See *Apple iPod 5 GB M8513LLA White (1st Generation) (Discontinued by Manufacturer)*, AMAZON, <http://www.amazon.com/Apple-M8513LLA-Generation-Discontinued-Manufacturer/dp/B00005SOM5> (last visited Jan. 25, 2016). Spotify offers millions of songs at a 320kbps bit rate to premium subscribers, but a new service, Tidal, offers millions of songs at 1411kbps bit rates. See James Rivington, *Spotify has a New Rival—A Lossless Music Streaming Service Called Tidal*, TECHRADAR (Sept. 4, 2014), <http://www.techradar.com/us/news/audio/spotify-has-a-new-lossless-rival-and-it-s-called-tidal-1263912>.

91. See Stephen Shankland, *Sound Bite: Despite Pono's Promise, Experts Pan HD Audio*, CNET (Mar. 20, 2014, 7:17 AM), <http://www.cnet.com/news/sound-bite-despite-ponos-promise-experts-pan-hd-audio/>.

short, by the time disruption occurred, Internet music delivery performed all of the core functions that music CDs did.<sup>92</sup>

### 3. *An Example of Incomplete Innovation*

One of the most popularly cited examples of disruption is the travel agency industry.<sup>93</sup> I will show how this is best understood as an Incomplete Innovation. It will be helpful to begin by listing a set of pre-disruption, core travel-agent functions. An American magazine from the 1980s provides the following job description:

- i) Preparation of individual pre-planned itineraries, personally escorted tours and group tours and sale of pre-paid package tours.
- ii) Making arrangements for hotels, motels, resort accommodation, meals, car rentals, sightseeing, transfer of passengers and luggage between terminals and hotels . . . .
- iii) Handling of and giving advice on the many details involved in modern day travel, e.g., travel and baggage insurance, language study material, travelers' cheques, foreign currency exchange, documentary requirements . . . and health requirements . . . .
- iv) Possession of professional knowledge and experience, as for instance, schedules of air and train connections, rates of hotels, their quality, whether rooms have baths, etc. . . .
- v) Arrangement of reservations for special interest activities . . . .<sup>94</sup>

In the early 1960s, IBM helped develop an automated computer-based reservation system (CRS) that permitted carriers to issue tickets to subscribers as well as provide subscribers with information about schedules, fares, rules or availability.<sup>95</sup> In the early 1980s, the airline industry revised CRS so that one with access to the database could comparison shop between multiple airlines for flights

---

92. One objection to this view is that the CD, by merit of being a physical object, provided an opportunity for tangible artwork or other valuable items to make their way into the hands of consumers. It is important to remember, however, that most digital delivery services provide album artwork and other materials in digital form, which can be easily made tangible through printing at low cost.

93. See, e.g., Steve Denning, *Business's Worst Nightmare: Big Bang Disruption*, FORBES (Jan. 7, 2014, 4:23 PM), <http://www.forbes.com/sites/stevedenning/2014/01/07/businesss-worst-nightmare-big-bang-disruption>.

94. A.K. BHATIA, INTERNATIONAL TOURISM MANAGEMENT 220-21 (2001).

95. Dirk Gunther, Richard Ratliff & Abdoul Sylla, *Airline Distribution, in* QUANTITATIVE PROBLEM SOLVING METHODS IN THE AIRLINE INDUSTRY: A MODELING METHODOLOGY HANDBOOK 170 (Cynthia Barnhart & Barry C. Smith eds., 2012); see 14 C.F.R. § 256.3 (2001).



across the world.<sup>96</sup> The resulting tool, known as a Global Distribution Systems (GDS), could be accessed via network, but doing so was (and still is) costly.<sup>97</sup> As a result, access to the network was effectively limited to repeat players such as travel agencies, who could leverage costs by doing high volumes of transactions. Moreover, coordinated efforts between travel agents and airlines blocked access to GDS.<sup>98</sup> Consequently, ordinary consumers could not effectively comparison shop between airlines. Travel agents became a vital part of typical air travel transactions because of their ability to serve reservation functions (ii) and (iv).<sup>99</sup> Of course, consumers seeking long vacations or other elaborate trips would also benefit from individualized services (i), (iii), and (v). Nevertheless, reservation functions were essential to the cost-conscious traveler.

When the GDS became Internet-accessible in the 1990s, the Internet booking engine (IBE) was born.<sup>100</sup> These engines gave consumers nearly unmediated access to multiple airlines that were willing to fly the route desired by the consumer.<sup>101</sup> The travel agent was no longer the primary gateway to ticket reservations.

The rise of the IBE has overwhelmed, though not yet destroyed, the brick-and-mortar travel agency industry. Analysts estimate that online booking accounts for nearly half of total travel sales in America and Europe.<sup>102</sup> Since the mid-2000s, Internet bookings have outnumbered travel agent bookings, and they now

---

96. See Dimitrios Drosos & Nikolaos Tsotsolas, *Customer Satisfaction Evaluation for Greek Online Travel Agencies*, in II HOSPITALITY, TRAVEL, AND TOURISM: CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS 863 (2015); Larry G. Locke, *Flying the Unfriendly Skies: The Legal Fallout over the Use of Computerized Reservation Systems as a Competitive Weapon in the Airline Industry*, 2 HARV. J.L. & TECH. 219, 220-21 (1989).

97. *The Ineluctable Middlemen*, THE ECONOMIST (Aug. 25, 2012), <http://www.economist.com/node/21560866>.

98. David Diaz Benavides, *Overcoming Poverty in Developing Countries Through Self-Sustainable International Tourism*, in COOPERATING FOR SUSTAINABLE TOURISM 9, 23 (Burghard Rauschelbach, Annette Schäfer & Birgit Steck eds., 2002).

99. JAMES MAK, TOURISM AND THE ECONOMY: UNDERSTANDING THE ECONOMICS OF TOURISM 48-49 (2004).

100. Patrick S. Merten, *The Transformation of the Distribution Process in the Airline Industry Empowered by Information and Communication Technology*, in INFORMATION AND COMMUNICATION TECHNOLOGIES IN SUPPORT OF THE TOURISM INDUSTRY 95 (Wayne Pease, Michelle Rowe & Malcolm Cooper eds., 2007).

101. See *id.*

102. See *Sea, Sun, and Surfing: The Market for Booking Travel Online Is Rapidly Consolidating*, THE ECONOMIST (June 21, 2014), <http://www.economist.com/news/business/21604598-market-booking-travel-online-rapidly-consolidating-sun-sea-and-surfing>.

outnumber voice bookings from the airlines themselves.<sup>103</sup> Moreover, travel agencies have adopted the product strategy of the disruptors. Market leader Liberty Travel, for example, allows users of its website to book flights.<sup>104</sup>

IBEs were a quintessential Low-End Disruption because they began as a lesser product targeting bargain hunters who were willing to drop individualized services. Such services had dubious value. A 1976 *New York Magazine* article warned that “there are plenty of bad apples. . . . In fact, some insiders say that only about 30 percent of all agents are ‘good.’”<sup>105</sup> Making incumbents even riper for disruption was the fact that they engaged in anti-competitive practices; travel agencies were encumbered by exclusivity arrangements with GDSs.<sup>106</sup> While these arrangements helped incumbents leverage their exclusive access to the GDS, IBEs brought an end to exclusivity.<sup>107</sup> Consequently, IBEs were able to perform reservations at impressive levels of performance even in their early days.

Even today, however, IBEs do not offer pre-disruption quality service with respect to individualized travel itineraries (i) and special-interest reservations (v). In other words, they do not serve highly personalized dimensions of travel particularly well. Thus, at present, core functions remain unfulfilled by the disruptor.

We might wonder, however, whether the unfulfilled functions will soon be fulfilled. There is evidence that the pace of innovation has sharply decelerated. Most of the dominant IBEs are more than twelve years old.<sup>108</sup> In that time span, all major competitors expanded offerings to include hotels, cars, and cruises.<sup>109</sup> The only major innovation to come since the turn of the millennium was the

---

103. Mark Haley, *Biz-Changing Trends in Travel Distribution*, HOTEL ONLINE (Mar. 2008), [www.hotel-online.com/News/PR2008\\_1st/Mar08\\_Biz-ChangingTrendsInTravelDistribution.html](http://www.hotel-online.com/News/PR2008_1st/Mar08_Biz-ChangingTrendsInTravelDistribution.html).

104. *Flights from New York*, LIBERTY TRAVEL, <http://www.libertytravel.com/flight-list?tid=New+York&dest=> (last visited Jan. 25, 2016).

105. *Choosing a Travel Agent*, N.Y. MAG., May 10, 1976, at 63.

106. CORPORATE RIVALRY AND MARKET POWER: COMPETITION ISSUES IN THE TOURISM INDUSTRY 138 (Andreas Papatheodorou ed., 2006).

107. Compounding the problem was the fact that airlines decided to stop paying direct commissions to travel agencies that booked flights through the GDS when the Internet age began. See *The Ineluctable Middlemen*, *supra* note 97.

108. Lauren Hockenson, *The Evolution of Online Travel [Infographic]*, MASHABLE (Feb. 21, 2012), <http://mashable.com/2012/02/21/online-travel-infographic/>.

109. See generally LORRAINE SILEO & SUSAN STEINBRINK, PHOCUSWRIGHT, TRAVEL MKT. ANALYSIS 2002-2004 (July 25, 2002), <http://govinfo.library.unt.edu/nccic/hearings/PCWITravelMarketAnalysis.pdf>.

development of meta-IBEs that simply compile the results of existing, popular IBEs and apps that allow access of IBEs on mobile phones.<sup>110</sup> This has led some travel industry analysts to declare, “[T]he travel startup space has hit a plateau where few new ideas are being generated and founders are looking for small ways to improve existing services.”<sup>111</sup> Recently, newly established incumbent IBEs have dipped their toes into the water of individualization of recommendations, but the results have been unimpressive.<sup>112</sup>

Thus, while there was swift innovation with respect to some of the core functions provided by travel agents, the pace of innovation with respect to the lingering functions has ground to a near halt. In addition, travel agencies are a shrinking presence in the market place.<sup>113</sup> The current result is that the supply of providers for those lingering functions has become relatively scarce, but the innovation appears unable or unwilling to fill the void. The remaining providers of individualized services have ceased to be mainstream, leading them to emphasize their competitive differences with IBEs and, in turn, forcing them to cater to the only customer base that remains—those who are willing to pay a premium for individualization either because they have a more than ample disposable income (the rich) or because someone else is footing the bill (corporate clients).<sup>114</sup> Many of those who once had the means to purchase individualized travel services can no longer do so.

---

110. See, e.g., KAYAK, <http://www.kayak.com> (last visited Jan. 25, 2016).

111. Samantha Shankman, *5 New Travel Startups That Want to Break into Crowded Travel Markets*, SKIFT (June 2, 2014, 12:30 PM), <http://skift.com/2014/06/02/5-new-travel-startups-that-want-to-break-into-crowded-travel-markets/#1>.

112. The world’s most popular IBE, Booking.com, now has a “Destination Finder,” a link that is nestled into a bar on the site’s front page under the moniker “Ideas and Inspiration.” See BOOKING.COM, <http://www.booking.com/destinationfinder.html> (last visited Jan. 25, 2016). It does not appear to be populated with much data. As of January 25, 2016, if one enters the immensely popular dessert “ice cream,” the search returns no matches. See *id.*

113. Steve Olenski, *Are OTAs Really Killing Brick and Mortar Travel Agencies?*, FORBES (Apr. 27, 2015, 12:41 PM), <http://www.forbes.com/sites/steveolenski/2015/04/27/are-otas-really-killing-brick-and-mortar-travel-agencies/#39293186321e>.

114. Samantha Shankman, *The 3 Types of Trips That Travel Agents Sell Most*, SKIFT (May 10, 2014, 11:00 AM), <http://skift.com/2014/05/10/the-3-types-of-trips-that-travel-agents-sell-most/>.

#### 4. *Factors that Increase the Likelihood of Incomplete Innovation*

Incomplete Innovation happens when disruption occurs at a point before all of the core functions have been innovated. Thus, anything that slows innovation as to any of the core functions or that hastens disruption after innovation of a core function has occurred has the capacity to make it more likely for disruption to be incomplete.

Sometimes a disruptor might be uninterested in all of the core functions of an industry, so it is likely that some functions will remain un-innovated. It is commonplace that disruptors focus on some rather than all core functions; indeed, a common feature of new market disruption is that the disruptor has innovated with respect to only certain aspects of a product or service.<sup>115</sup> When mobile phones became popular, non-luxury wristwatch sales began to slow as a result of the fact that phones noted the current time.<sup>116</sup> Yet, the phone industry did not seek to innovate with respect to the lingering functions of wristwatches until only very recently.<sup>117</sup>

Secondly, the state of technology might create asymmetries in the progress that innovators can make across core functions. Some core functions might be easier to innovate than others. Robotics has had more success with automating repetitive gross movements than with automating improvisational, adapted fine movements.<sup>118</sup>

Thirdly, regulators and firms can bring about asymmetric innovation by stifling innovation as to some, but not all, core functions. The government might set legal barriers or economic hurdles around core functions. For example, our federal law permits limited monopolies in intellectual property through our patent and copyright law, which might create a chilling effect on would-be innovators who fear legal action from incumbents.<sup>119</sup>

---

115. See CHRISTENSEN & RAYNOR, *supra* note 58, at 103-07 (discussing how transistor technology was a new market disruption to vacuum tubes because it focused on portability and durability rather than sound quality).

116. William George Shuster, *Is the Wristwatch Past Its Time?*, JCK MAG. (Mar. 1, 2007), [http://www.jckonline.com/2015/10/21/wristwatch-past-its-time\\*](http://www.jckonline.com/2015/10/21/wristwatch-past-its-time*).

117. See Matt Clinch, *Samsung Seeks 'iPod Moment' with Smartwatch Launch*, CNBC (Sept. 2, 2013, 6:15 AM), <http://www.cnbc.com/id/101002543>.

118. See Conner Forrest, *Google and Robots: The Real Reasons Behind the Shopping Spree*, TECHREPUBLIC (Mar. 5, 2014, 4:30 AM), <http://www.techrepublic.com/article/google-and-robots-the-real-reasons-behind-the-shopping-spree/>.

119. See generally MICHELE BOLDRIN & DAVID K. LEVINE, *AGAINST INTELLECTUAL MONOPOLY* (2008) (arguing against copyright and patent protection).

Lastly, certain business models or practices can hasten disruption. When innovation as to a core function occurs, it puts pressure on incumbents to recoup revenue losses. One strategy that incumbents might adopt when disruption is on the horizon is to double down on performing functions that the disruptor has either ignored or not yet improved.<sup>120</sup> It is even possible that a supplier might increase prices for the lingering function in order to offset losses they incurred from a disruptor's innovation of other core functions. Doubling down is less likely to provide profits to offset the loss caused by innovation as to other core functions when the lingering functions have high fixed costs or when there is lower consumer demand for them than for the innovated core function. Thus, when lingering functions require extensive research and development, lengthy training, expensive education, rare materials, or the like, they are unlikely to serve as a means to preserve market share. Moreover, if consumers paid for lingering functions primarily because they were bundled to the now-innovated functions, doubling down on unbundled lingering functions is unlikely to yield success.<sup>121</sup> If doubling down is not available, then it is more tempting for incumbents to adopt the approach of the disruptors, thereby hastening disruption.

## B. Premature Disruption

Premature Disruption is a simple concept: It occurs when Incomplete Innovation is bad.<sup>122</sup> While there may be a variety of reasonable ways to determine whether Premature Disruption has occurred, my measuring stick here will be overall wellbeing or welfare.<sup>123</sup> When Incomplete Innovation reduces overall welfare for a

---

120. Daniel Martin Katz, *The MIT School of Law? A Perspective on Legal Education in the 21st Century*, 2014 U. ILL. L. REV. 1431, 1459 n.137.

121. Nicholas Economides, *Tying, Bundling, and Loyalty/Requirement Rebates*, in RESEARCH HANDBOOK ON THE ECONOMICS OF ANTITRUST LAW 121, 125-27 (Einer Elhauge ed., 2012).

122. It is important to point out that Incomplete Innovation can be good. For example, moveable type was an Incomplete Innovation of illuminated manuscripts that led to their disruption, but it has been widely hailed as the greatest innovation of the last two millennia. See KENDALL HAVEN, 100 GREATEST SCIENCE INVENTIONS OF ALL TIME 48 (2006) ("Many have called the printing press the greatest single invention in the last 2,000 years. . . . The printing press made mass literacy and education possible.").

123. My goal is merely to identify a social phenomenon and assist our ability to predict whether it will occur. I believe this project could be equally helpful if a

significant amount of time, then it is a Premature Disruption. The primary way that it occurs is that an industry has experienced a diminution in its capacity or willingness to meet demand<sup>124</sup> for a core function at pre-disruption levels of quality, leading to a reduction in welfare that exceeds the benefits brought by the innovation. In other words, the good of innovation is outweighed by the bad of disruption.

Whereas the concept of Incomplete Innovation has a significant descriptive component, the concept of Premature Disruption is largely evaluative: It likely involves balancing the aftermath of disruption against what preceded it. Nevertheless, there are non-evaluative hallmarks of Premature Disruption, which permit us to make reasonable predictions of its likelihood. Those hallmarks will be my focus here. In addition, I will face a likely objection from neoclassical economics.

### 1. *The Basic Dynamics of Premature Disruption*

With innovation of a core function, there is likely an increase in effective demand for that innovated function. This might come at the expense of any un-innovated lingering functions, reducing effective demand for them. Maybe customers in a disrupted industry are satisfied enough by the innovated functions that they no longer believe the lingering functions are worth the price. Maybe the relative salience of the lingering functions is lowered, making them drop out of the public consciousness or harder to find. In any event,

---

different means of assessing good and bad were to be adopted. Therefore, I can avoid the debates between economists and philosophers on how to define welfare and, relatedly, whether welfare is the best way to analyze social policy. See Jules L. Coleman, *The Grounds of Welfare*, 112 YALE L.J. 1511 (2003). I will only briefly explain what I mean by welfare: Broadly speaking, it is the well-being of people in a society, regardless of whether it is measured by preference-satisfaction or objective-values. See DANIEL M. HAUSMAN, PREFERENCE, VALUE, CHOICE, AND WELFARE 78-79 (2012). The only significant qualification is that my understanding of welfare is not a mental state definition, whereby well-being is understood only in terms of how our mental states are affected and does not require a corresponding change in the other aspects of reality. *Id.* My approach to demand could be inconsistent with that notion. Lastly, the nature of this paper does not necessitate that I align myself with non-economic or economic criteria for optimality, whether it be Kaldor-Hicks, Pareto, or some other popular variation.

124. When I discuss demand, I make the standard assumption used by economists that people have perfect knowledge of the value of the product or service considered. See Douglas A.L. Auld, *Imperfect Knowledge and the New Theory of Demand*, 80 J. POL. ECON. 1287, 1287-88 (1972).

the drop in demand will likely reduce the revenue that can be gained by the supply of lingering functions. In turn, the marginal cost for production might exceed marginal revenue for those functions, leading to a drop in output and, eventually, supply.<sup>125</sup> Alternatively, incumbents might keep output and supply the same but engage in cost-cutting measures that reduce quality, hoping that consumers will not notice.<sup>126</sup>

Importantly, the drop in supply might exceed the drop in actual demand for lingering functions: There might be latent demand<sup>127</sup> for them—unnoticed by the suppliers—because consumers do not comprehend their full value and unwisely choose not to purchase them. In other words, the suppliers expect consumers to speak with their wallets, and since the consumers are spending less on lingering functions, suppliers assume that those functions are not in demand and shrink output. A supply gap might arise because the incumbent concludes that continuing to offer the lingering function is not worthwhile.<sup>128</sup> Whether the response is to reduce supply, reduce quality, or even increase prices, there is the risk that people are made worse off from the innovation of other core functions.

The risk can arise under each kind of disruption because all of them increase the likelihood that effective demand for lingering functions will drop. When the incumbents have decided to adopt the approach of the disruptors, Demand Disruption occurs. The result is that lingering functions become scarce, risking the possibility that a supply gap will occur that reduces overall welfare. In Firm Disruption, the incumbents have been pushed out of a dominant position in the market. Consumers will consequently have a harder time finding market actors who are willing to perform that function at pre-disruption levels of quality or price.

Thus, the hallmarks of Premature Disruption are (1) a drop in supply to the extent that (2) it falls below the level of demand for the lingering functions. The factors that make supply volatile or fragile,

---

125. See EDWIN MANSFIELD, *APPLIED MICROECONOMICS* 347 (1994) (describing dropping supply when this occurs to maximize profit).

126. See *id.*

127. Latent demand often means a want that is not satisfied by any existing product or service, but I have in mind situations in which demand is latent because consumers would demand a product or service were it not for their lack of knowledge of its value.

128. To be sure, there might be surplus supply initially; as consumer demand gets drawn to the disruptor, it increases the supply of the product or service that would otherwise have been sold. The important point, however, is that suppliers eventually decide to limit or stop producing the product or supply.

or that make demand difficult to ascertain, all increase the likelihood of Premature Disruption. If these two conditions are satisfied, it is more likely that disruption has imposed a cost on the consuming public that is greater than the benefit brought by innovation.

## 2. *Defending the Concept of Premature Disruption*

I anticipate that Premature Disruption will face a major objection. Some critics will argue that disruptive innovation, whether incomplete or not, should redound to the welfare of the general public. Incomplete Innovation, on my reasoning, is important because it increases the possibility that a valuable product or service will either disappear or suffer from quality loss. Nevertheless, a critic might argue that the disappearance of un-innovated core functions is always a good thing. In the following two sections I set forth the critique and then respond.

### a. A Market-Based Objection

Critics, particularly neoclassical economists, might wonder whether disruptive innovation, incomplete or otherwise, could ever cause a reduction in overall welfare. Innovation often brings about greater efficiency in production, which increases supply—moves the supply curve “out”—and, therefore, lowers prices.<sup>129</sup> According to some economists and Christensen himself, this principle holds for disruptive innovation.<sup>130</sup> Simply put, if consumers generally favor the

---

129. See Thomas O. Barnett, *Maximizing Welfare Through Technological Innovation*, 15 GEO. MASON L. REV. 1191, 1193-94 (2008).

130. See Clayton M. Christensen, Sally Aaron & William Clark, *Disruption in Education*, in THE INTERNET AND THE UNIVERSITY: FORUM 2001, at 19, 20 (Maureen Devlin, Richard Larson & Joel Meyerson eds., 2002) (“We view disruptive innovation as a dynamic form of industry change that unlocks tremendous gains in economic and social welfare. Disruption is the mechanism that ignites the true power of capitalism in two ways. First, it is the engine behind creative destruction . . . . Disruption allows relatively efficient producers to blossom and forces relatively inefficient producers to wither. This destruction, and the subsequent reallocation of resources, allows for the cycle of construction and destruction to begin anew, enhancing productivity, lowering consumer prices, and greatly increasing economic welfare. . . . The second way that disruption drives improved welfare is through creative construction. . . . A disruptive company starts by creating a large, new growth opportunity, almost always by allowing a broader group of people to do things that only experts or the wealthy could do in the past. Convenience goes up, prices eventually drop, and consumption increases dramatically as a result of disruption.” (emphasis omitted)); Ron Adner & Peter



disruptor over the incumbent due to a lower price point or better performance at the same price point, then it should mean that the disruption has brought about an increase in overall preference satisfaction or has otherwise increased consumer well-being.<sup>131</sup> How can there be bad disruption, incomplete or otherwise?

Considering the supply side, if a disruptor chooses not to innovate a core function, and if, as a consequence, a disrupted incumbent chooses to reduce the supply or quality of goods or services with respect to that core function, then both the disruptor and incumbent recognize that pre-disruption customer demand for that core function is lower than the incumbent thought. In other words, the market has signaled that the disruptor offers a more attractive product or service despite the fact that it has not chosen to innovate that core function of the industry, so the lingering function must have been relatively unattractive to the consuming public. This will make the rational supplier think twice about performing the lingering function, and it minimizes the likelihood that letting lingering functions fade through market operation will hurt overall welfare.

On this account, the disruption has shown the market that incumbents were overshooting consumer demand, and therefore price becomes more important to consumers than the supplier's ability to improve performance. Ron Adner, who developed a mathematical model of disruption, concluded as follows:

[T]he essential aspect of consumer choice which allows for disruptive displacement may be consumers' decreasing marginal utility from performance improvements beyond their requirements, rather than a new found appreciation for previously marginal attributes. This decreasing marginal utility translates into a decreasing willingness to pay for improvements.<sup>132</sup>

---

Zemsky, *Disruptive Technologies and the Emergence of Competition*, 36 RAND J. ECON. 229, 231 (2005) ("In considering the effects of disruption, we show that social welfare is unambiguously increasing because prices for both products fall with disruption. We show that the profits of new-technology firms need not increase with disruption because their increased volumes can be more than offset by increased competition. Indeed, it is possible that established-technology firms increase their output in response to disruption. We find that concentration tends to increase with disruption because the effect of cost asymmetries on market share is amplified by the increased number of competitors.").

131. Adner & Zemsky, *supra* note 130, at 231.

132. Ron Adner, *When Are Technologies Disruptive? A Demand-Based View of the Emergence of Competition*, 23 STRATEGIC MGMT. J. 667, 684-85 (2002).

When an incumbent has overshot the needs of consumers, further innovations along the lines of the incumbent's values have diminishing marginal utility, making a cheaper product that performs worse along the incumbent's lines more attractive when considering the values of consumers.<sup>133</sup>

On this neoclassical market-based account,<sup>134</sup> Incomplete Innovation is a happy story because it allows the market to shed gaps between supply and demand.<sup>135</sup> In other words, the disappearance of an industry for lingering functions is simply the market doing its salutary work.

---

133. *See id.* If we imagine a market moving towards perfect competition, the abandonment of an industry by incumbents and the refusal of disruptors to take over lingering functions at pre-disruption quality is a byproduct of the fact the reservation price for that core function is lower than reservation demand. *See id.*; *see also* GORDON MILLS, *RETAIL PRICING STRATEGIES AND MARKET POWER* 102 (2002); RICHARD A. IPPOLITO, *ECONOMICS FOR LAWYERS* 319 (2010). For instance, if the maximum price that consumers are willing to pay for individualized services is lower than the lowest price that travel agencies are willing to accept, then the optimal course of action is for consumers not to buy that service at prices that would satisfy sellers and for sellers not to sell it at a price that would satisfy buyers. The persistence of that core function will cease unless there is a change in demand or in supply.

134. *Cf.* E. Roy Weintraub, *Neoclassical Economics*, in *THE CONCISE ENCYCLOPEDIA OF ECONOMICS* (David R. Henderson ed., 2007), <http://www.econlib.org/library/Enc1/NeoclassicalEconomics.html> (“Those fundamental assumptions [of Neoclassical Economics] include the following: 1. People have rational preferences among outcomes. 2. Individuals maximize utility and firms maximize profits. 3. People act independently on the basis of full and relevant information. Theories based on, or guided by, these assumptions are neoclassical theories.”); Paul Krugman, *How Did Economists Get It So Wrong?*, *N.Y. TIMES MAG.* (Sept. 2, 2009), <http://www.nytimes.com/2009/09/06/magazine/06Economic-t.html?pagewanted=all&r=0> (“But the basic presumption of ‘neoclassical’ economics (named after the late-19th-century theorists who elaborated on the concepts of their ‘classical’ predecessors) was that we should have faith in the market system.”).

135. Take travel agents as an example. Disruption served to unbundle service packages, allowing consumers to get only some of the services that were available, if they so chose. It is possible that travel agents in the pre-disruption market were taking advantage of the momentum of demand created by their ability to negotiate for low fares, using that momentum to sell lesser services, such as individualized itineraries. Pre-disruption buyers might have regretted paying additional money for individualized services, and the unbundling of service meant that they need no longer fear being strong-armed into buying the snake oil. It is possible that Internet booking engine disruptors have heretofore left individualized services largely untouched because those services are relatively unpopular aspects of the travel agency business model. On this account, the disruption has served to correct the gap between demand and supply for that core function, which might have been one of the very reasons that disruption took place in the first instance.

## b. A Rebuttal

The neoclassical account can be a useful tool for *prima facie* economic models, but we should be wary when it is used to justify all market outcomes. It hardly needs to be said that markets are imperfect in the real world. Thus, it is possible to articulate examples of Incomplete Innovation in which overall welfare suffers.<sup>136</sup> One must acknowledge imperfections in the post-disruption market to do so, but even the neoclassical account assumes imperfections in the pre-disruption market.

In this context, a disruption is likely to lower overall welfare when (1) consumers underestimate the value of lingering functions; (2) those functions diminish as a result of disruption; and (3) the innovated core functions do not provide enough of an increase in value to make up for the loss.

Consider again the travel agent industry. Even if the pre-disruption provision of individualized services capitalized on the fact that the airline tickets initially drew customers to the travel agency door, it is possible that the customers were generally happy with the individualized services that were bundled with the airline tickets. Consumers might have been unable to see the benefits of those services until they were forced, through bundling, to purchase them. When IBEs arrived on the scene, first-time travelers would have suffered from the same lack of knowledge. From the *ex ante* perspective, they would anticipate that they would be most benefitted by getting the cheapest price on their purchase of airline tickets, and acting on that guess, they would choose an IBE over a travel agent. This ultimately leads to the disruption of the latter, but their preference might have been the result of imperfect knowledge and projection bias.<sup>137</sup> At the time of purchase they preferred money and speed over individualized services, and they further assumed that their ranking of preferences would not change if they were to experience individualized services for the first time.<sup>138</sup> In other

---

136. See generally CHRISTOPHER HUHNE, *REAL WORLD ECONOMICS: ESSAYS ON IMPERFECT MARKETS AND FALLIBLE GOVERNMENTS* (1990).

137. George Loewenstein, Ted O'Donoghue & Matthew Rabin, *Projection Bias in Predicting Future Utility*, 118 Q.J. ECON. 1209 (2003) ("People exaggerate the degree to which their future tastes will resemble their current tastes. We present evidence from a variety of domains which demonstrates the prevalence of such projection bias, develop a formal model of it, and use this model to demonstrate its importance in economic environments." (emphasis omitted)).

138. See *id.*

words, they might have assumed that if they do not want individualized services now, they will not want them after getting exposed to them.<sup>139</sup> Suppliers, in turn, might make a similar mistake when they extrapolate consumer preferences from their purchases. They might wrongly associate a drop in consumer demand with a new understanding among consumers that they can better satisfy their preferences with another service or product. This could lead them to withdraw resources from a service that consumers would demand if only they had better knowledge of their preferences. In short, the fact that effective demand is low even though latent demand is high leads to a supply shortage that is impossible to fill without great cost.

I assume both that people can fail to prefer that which is likely to bring them the greatest welfare and that their preferences can change. Traditional cost-benefit analysis discounts these possibilities.<sup>140</sup> Moreover, my assumptions run counter to the notions that undergird neoclassical economics—namely, that market purchases reveal consumers' true preferences<sup>141</sup> and that those preferences are exogenous and static.<sup>142</sup> So long as my account of consumer preferences is plausible, I have cast doubt on a categorical

---

139. Incidentally, there is some empirical evidence to suggest that this might not have been the case; at least one study shows higher loyalty to online vendors than offline in the travel context. See Venkatesh Shankar, Amy K. Smith & Arvind Rangaswamy, *Customer Satisfaction and Loyalty in Online and Offline Environments*, 20 INT'L J. RES. MARKETING 153, 168-72 (2003).

140. See Daniel M. Hausman & Michael S. McPherson, *Preference Satisfaction and Welfare Economics*, 25 ECON. & PHIL. 1, 1 (2009) ("The tenuous claims of cost-benefit analysis to guide policy so as to promote welfare turn on measuring welfare by preference satisfaction and taking willingness-to-pay to indicate preferences. Yet it is obvious that people's preferences are not always self-interested and that false beliefs may lead people to prefer what is worse for them even when people are self-interested.").

141. See generally Philip Mirowski, *Foreword* to STANLEY WONG, *THE FOUNDATIONS OF PAUL SAMUELSON'S REVEALED PREFERENCE THEORY: A STUDY BY THE METHOD OF RATIONAL RECONSTRUCTION*, at ix (rev. ed. 2006) (linking revealed preference theory to neoclassical economics).

142. David Krackhardt, *Endogenous Preferences: A Structural Approach*, in *DEBATING RATIONALITY: NONRATIONAL ASPECTS OF ORGANIZATIONAL DECISION MAKING* 239, 239-40 (Jennifer J. Halpern & Robert N. Stern eds., 1998) ("This paper speaks to one of the key assumptions in the rational model as assumed by neoclassical economists. This assumption is that preferences are exogenous, that they are determined by forces outside the system, and that they are unchanging through time. In contrast, I will propose a model of endogenous preferences, one that captures the dynamics of preference formation as people interact with one another.").

objection that Incomplete Innovation always increases overall welfare. We can now apply these concepts to the legal services industry.

### III. WILL THE DISRUPTION OF LAW BE INCOMPLETE?

In order to predict whether an industry is going to undergo an Incomplete Innovation, the first step is to form a list of its core functions. Following Susskind's influential example, I will "decompose" legal services into a number of functions,<sup>143</sup> any one of which could separately be subject to innovation.<sup>144</sup> My list will be nearly identical to his, with a bit of custodial work to make it simpler and more manageable as well as a single addition. Susskind has omitted the keystone core function that is responsible for setting the quality of several other core functions at a high, "bespoke" level:<sup>145</sup> the duties that lawyers owe their clients. Lawyers are fiduciaries and, in that connection, owe their clients a series of ethical obligations that increase the sophistication and price of many kinds of legal work. If something qualifies as a legal service, these duties are bundled in with it.

---

143. SUSSKIND, *supra* note 16, at 30. In doing so, it is important to distinguish this from the attempt in American courts to define the outer parameters of what constitutes the practice of law for the purposes of unauthorized practice of law analyses. "The organized bar has been notoriously unsuccessful in defining the practice of law in order to exclude nonlawyers from engaging in what lawyers traditionally have done." See Regan & Heenan, *supra* note 82, at 2153-54. This is an opportunity to list and categorize those delineated products and services that law firms typically sell.

144. SUSSKIND, *supra* note 16, at 29-33.

145. One further distinction with Susskind is that he characterizes only one of his core functions, drafting, as bespoke. *Id.*

**Table 1**  
**CORE FUNCTIONS**

CORE FUNCTIONS OF THE LEGAL SERVICES INDUSTRY
<ul style="list-style-type: none"> <li>• High-Volume Document Analysis (Discovery/Document Review/Due Diligence)</li> <li>• Project/Transaction Management</li> <li>• Low-Stakes Legal Document Creation (Template Selection)<sup>146</sup></li> <li>• Negotiation</li> <li>• High-Stakes Legal Document Creation<sup>147</sup></li> <li>• Advocacy</li> <li>• Suite of Ethical Duties</li> </ul>

I will often describe the bottom four functions on this list as the “bespoke” legal services.

In the next Section, I will detail how the features of the legal services industry create the conditions that maximize Incomplete Innovation. To do this, I will describe the interaction between those features and the disruptive forces now emerging on the market.

#### A. Relaxation of Gatekeeping Standards and Incomplete Innovation

Legal services are heavily regulated.<sup>148</sup> With few exceptions, one may not engage in the practice of law unless she is a lawyer, which typically requires that she be an active member of the bar of the state in which she provides legal products and services.<sup>149</sup> To become a lawyer, all states require a minimum score on a bar examination, usually a combination of the Multistate Bar Examination,<sup>150</sup> the Multistate Essay Examination,<sup>151</sup> the Multistate

---

146. This category concerns the creation of legal documents that are so routine or otherwise unlikely to concern lawyers that the use of standard forms or templates plays a prominent role.

147. This category concerns the creation of legal documents of high concern, whether because of their complexity, variability, or impact.

148. See Gillian K. Hadfield, *Legal Barriers to Innovation: The Growing Economic Cost of Professional Control over Corporate Legal Markets*, 60 STAN. L. REV. 1689, 1706 (2008) [hereinafter Hadfield, *Legal Barriers*].

149. See Vijay Sekhon, *The Over-Education of American Lawyers: An Economic and Ethical Analysis of the Requirements for Practicing Law in the United States*, 14 GEO. MASON L. REV. 769, 770 (2007).

150. See NAT’L CONFERENCE OF BAR EXAM’RS & ABA SECTION OF LEGAL EDUC. AND ADMISSIONS TO THE BAR, COMPREHENSIVE GUIDE TO BAR ADMISSION REQUIREMENTS 2015, at 26 (2015).

Performance Test,<sup>152</sup> and the Multistate Professional Responsibility Examination, as well as jurisdictionally drafted essay questions.<sup>153</sup> All states also perform a character and fitness evaluation of each applicant.<sup>154</sup> Further, all states have educational requirements for eligibility to take these exams, with most mandating law school graduation and fifteen requiring graduation from an ABA-accredited law school.<sup>155</sup>

Those who practice law but do not meet these gatekeeping requirements are subject to punishment for engaging in the “unauthorized practice of law.” Courts often have the power to enjoin unauthorized practice and to force those who engage in it to pay money damages to those that they serviced and to pay civil fines.<sup>156</sup> As I describe below, these gatekeeping functions allow stakeholders to exercise limits on the supply of lawyers, which, in turn, can stem competition and inflate prices. In this respect at least, it is fair to characterize the legal services industry as oligopolistic or as a cartel.<sup>157</sup>

This is not to suggest that gatekeeping requirements only serve the lawyer class, however. The competency requirements support duties that aim to protect clients from their lawyers. When a lawyer engages in the practice of law, she will generally be in a fiduciary relationship with any of the clients that she, or her firm, obtains.<sup>158</sup>

---

151. *Id.* (half of the states use this test).

152. *Id.* (three-fourths of the states use this test).

153. *Id.*

154. *See generally id.*

155. *Id.* at 8-9.

156. *See* N.C. GEN. STAT. § 84-10.1 (2011) (allowing civil damages and attorneys’ fees); *Disciplinary Counsel v. Brown*, 905 N.E.2d 163, 171-72 (Ohio 2009) (imposing a fine).

157. *See* Richard Susskind, *Tomorrow’s Lawyers*, 39 LAW PRAC. MAG. (July-Aug. 2013), [http://www.americanbar.org/publications/law\\_practice\\_magazine/2013/july-august/tomorrows-lawyers.html](http://www.americanbar.org/publications/law_practice_magazine/2013/july-august/tomorrows-lawyers.html) (“However, a major problem here, according to skeptics, is that this closed body of legal specialists may not offer sufficient choice to the consumer. For many years, this has led critics and reformers to claim that the legal profession is a monopoly that cannot be justified and that its practices are anticompetitive.”). That said, their control is likely less than it was in prior eras. *See* M.H. Hoeflich, *Legal Fees in Nineteenth-Century Kansas*, 48 U. KAN. L. REV. 991, 992-93 (2000) (“What the Suffolk rules do not mention is that competition for law clients was fierce at this time and that competition tends to lead to price-cutting. So, the Bar came together collectively and decided to exercise oligopoly power. All lawyers who became members of the Bar Association agreed to abide by the minimum fees established in the rules.”).

158. *See, e.g.,* *Wilson v. Draper & Goldberg, P.L.L.C.*, 443 F.3d 373, 377 (4th Cir. 2006) (“Generally speaking, all lawyers are fiduciaries for their clients.”);

Therefore, consumers of legal services have the right to sue lawyers for legal malpractice or other breach of fiduciary duty claims.<sup>159</sup>

Lawyers owe clients a group of duties, which includes duties of confidentiality, loyalty, and competence, among others.<sup>160</sup> These expose compliant lawyers to operating expenses and opportunity costs. Confidentiality keeps the lawyer from exploiting useful information, which otherwise might have brought personal gain.<sup>161</sup> Loyalty keeps the lawyer from taking on potentially lucrative clients whose interests conflict with current or even past clients.<sup>162</sup> The same duty of competence that forced her to pay for a law school education will continue to force a lawyer to engage in extensive research, careful drafting, and continuing education to limit the exposure to liability for malpractice.<sup>163</sup> Incumbents must pay for extensive malpractice coverage; the ABA estimates “that five to six percent of all private attorneys face legal malpractice charges each year.”<sup>164</sup> Moreover, there is an emerging push among states to mandate disclosure of whether a lawyer has malpractice insurance, so that

---

Iowa Supreme Court Bd. of Prof'l Ethics & Conduct v. Aplan, 577 N.W.2d 50, 57 (Iowa 1998).

159. See, e.g., *Ulico Cas. Co. v. Wilson, Elser, Moskowitz, Edelman & Dicker*, 843 N.Y.S.2d 749, 756 (N.Y. Sup. Ct. 2007) (discussing malpractice and breach of fiduciary duty).

160. MODEL RULES OF PROF'L CONDUCT R. 1.1, 1.6-1.10.

161. RESTATEMENT (THIRD) OF THE LAW GOVERNING LAWYERS § 60(2) (“[A] lawyer who uses confidential information of a client for the lawyer’s pecuniary gain other than in the practice of law must account to the client for any profits made.”); RESTATEMENT (SECOND) OF AGENCY § 395 (1958) (stating that an agent must not use confidential information “on his own account”).

162. See, e.g., *Santacroce v. Neff*, 134 F. Supp. 2d 366, 367 (D.N.J. 2001) (“The ‘Hot Potato Doctrine’ has evolved to prevent attorneys from dropping one client like a ‘hot potato’ to avoid a conflict with another, more remunerative client.”); *Hartford Accident & Indem. Co. v. RJR Nabisco, Inc.*, 721 F. Supp. 534, 540 (S.D.N.Y. 1989); *AmSouth Bank, N.A. v. Drummond Co.*, 589 So. 2d 715, 721-22 (Ala. 1991) (“[A] law firm should not be allowed to abandon its absolute duty of loyalty to one of its clients so that it can benefit from a conflict of interest that it has created.”).

163. See, e.g., *Grindstaff v. State*, 297 S.W.3d 208, 221 (Tenn. 2009) (“Criminal defense attorneys must conduct adequate legal research in order to meet the required range of competence.”); Jordan W. Lorence, Alan E. Sears & Benjamin W. Bull, *No Official High or Petty: The Unnecessary, Unwise, and Unconstitutional Trend of Prescribing Viewpoint Orthodoxy in Mandatory Continuing Legal Education*, 44 S. TEX. L. REV. 263, 270-71 (2002) (“The purpose of CLE is to improve attorney competence.”).

164. *Malpractice Insurance*, A.B.A., [www.americanbar.org/portals/solo\\_lawyers/going\\_solo/malpractice\\_insurance.html](http://www.americanbar.org/portals/solo_lawyers/going_solo/malpractice_insurance.html) (last visited Jan. 25, 2016).



clients will be able to use it as a reason to favor one lawyer over another.<sup>165</sup>

A saving grace for incumbents has been that all of the suppliers of bespoke services are subject to these duties. This uniformity has made it easier for them to pass off these expenses to consumers with little fear that doing so would drive down demand for their particular services. In short, the regulatory regime, while costly, created forces that allow incumbents to behave like a cartel: They can, to some extent, set their supply and their price to a point where marginal revenue equals marginal cost, which maximizes profits.<sup>166</sup>

Yet, unauthorized practice of law rules have potentially slowed innovation.<sup>167</sup> They have been invoked against would-be innovators of the legal services industry. For instance, the United States District Court for the District of Missouri held in *Janson v. LegalZoom.com, Inc.* that the online legal document and service provider, LegalZoom.com, had engaged in the unlawful practice of law.<sup>168</sup> The court concluded that LegalZoom's legal document preparation service went beyond the mere provision of blank legal document templates or sample forms because LegalZoom relied upon non-lawyer employees to review the data files submitted by customers for completeness, spelling and grammatical errors, as well as consistency of factual biographical information.<sup>169</sup> In addition, the court noted that LegalZoom used non-lawyers to review final documents for quality in formatting and for customer service.<sup>170</sup> As a result, LegalZoom was ordered to pay a settlement class.<sup>171</sup> Recent developments here and abroad suggest, however, that gatekeeping regulations could be relaxed in the near future.

---

165. Farbod Solaimani, *Watching the Client's Back: A Defense of Mandatory Insurance Disclosure Laws*, 19 GEO. J. LEGAL ETHICS 963, 963-64 (2006).

166. See D.N. DWIVEDI, MICROECONOMICS: THEORY AND APPLICATIONS 400 (2002) ("Yet, cartels in the broader sense of the term exist in the form of trade associations, professional organisations and the like.").

167. See, e.g., Ray Worthy Campbell, *Rethinking Regulation and Innovation in the U.S. Legal Services Market*, 9 N.Y.U. J.L. & BUS. 1, 3 (2012) ("For decades, academics have argued that the U.S. system for regulating the practice of law inhibits innovation.").

168. 802 F. Supp. 2d 1053, 1062-65 (W.D. Mo. 2011).

169. *Id.* at 1064.

170. *Id.*

171. *Janson v. LegalZoom.com, Inc.*, 2012 U.S. Dist. LEXIS 60019 (W.D. Mo. Apr. 30, 2012).

### 1. *Government Action and the Rise of Non-Lawyer Services*

In 2013, a special referee appointed by the South Carolina Supreme Court in the case *Medlock v. LegalZoom.com* recommended that the Court hold that a host of automated legal document production services performed by LegalZoom does not constitute the practice of law.<sup>172</sup> The judge concluded that because “LegalZoom records verbatim the original input that a customer provides and transfers that information verbatim into pre-existing forms” and “[a]ny later edits to the information to address spelling or other similar typographical issues are to be approved by the customer,” they are acting as mere scribes.<sup>173</sup> Under this reasoning, LegalZoom’s conduct in that case will not form a lawyer–client relationship and, therefore, will not give rise to the suite of duties that typically bind lawyers.

The *Medlock* recommendation signals that courts might play a role in hastening disruption. While the special referee characterized LegalZoom as a scrivener, the company routinely offers services that go beyond that rather modest role. To take the example of “Last Will and Testament” production, LegalZoom offers not only “a personalized legal document specific to your state” and “advanced provisions” to safeguard your family, but also a “\$50,000 Peace of Mind Guarantee” if the document that LegalZoom.com created “is found by a court . . . to be invalid solely because it was created online through an Internet website.”<sup>174</sup> Most notably, LegalZoom.com has claimed that it can offer the guarantee because it “was founded by attorneys with experience at some of the best law firms in the country.”<sup>175</sup> This conduct appears to go beyond the ABA’s understanding of a scrivener, which is to “simply transcribe the parties’ agreement verbatim, without suggesting or adding language, including legal boilerplate clauses, that may have legal affect on the parties’ agreement.”<sup>176</sup> Courts might be willing to bend

---

172. *Medlock v. LegalZoom.com, Inc.*, 2013 S.C. LEXIS 362, at \*16 (S.C. Oct. 18, 2013).

173. *Id.* at \*17-18.

174. *Last Will and Testament Pricing*, LEGALZOOM, <http://www.legalzoom.com/legal-wills/wills-pricing.html> (last visited Jan. 25, 2016).

175. *Id.*

176. ABA SECTION OF DISPUTE RESOLUTION COMMITTEE ON MEDIATOR ETHICAL GUIDANCE, SODR-2010-1, at 6 (2010), [http://www.americanbar.org/content/dam/aba/directories/dispute\\_resolution/0048\\_sodr\\_2010\\_1.authcheckdam.pdf](http://www.americanbar.org/content/dam/aba/directories/dispute_resolution/0048_sodr_2010_1.authcheckdam.pdf).

their definition of scrivener for policy reasons. Indeed, the special referee in *Medlock* was motivated, in part, by the notion that

[the Court's] "duty to regulate the legal profession is not for the purpose of creating a monopoly for lawyers, or for their economic protection; instead, it is to protect the public from the potentially severe economic and emotional consequences which may flow from the erroneous preparation of legal documents or the inaccurate legal advice given by persons untrained in the law."<sup>177</sup>

Likewise, the tide has turned in LegalZoom's favor in the neighboring state of North Carolina. There, the North Carolina Bar refused to register LegalZoom's legal service plan, which prevented LegalZoom from offering those services.<sup>178</sup> LegalZoom sued the bar under the Sherman Act, citing the recent Supreme Court decision, *North Carolina State Board of Dental Examiners v. Federal Trade Commission*,<sup>179</sup> in which the Court held that state licensing boards are open to antitrust actions when a controlling number of the board's decisionmakers are active participants in the occupation that the board regulates and the board is not subject to active supervision by the state.<sup>180</sup> During the dispute, LegalZoom offered a proposed consent agreement, in which it agreed, among other things, to have licensed North Carolina attorneys review each legal template and inform customers that its services are no substitute for advice from real attorneys.<sup>181</sup> In late 2015, the parties reached a settlement, in which LegalZoom agreed to endorse a bill<sup>182</sup> aimed to change unauthorized practice of law rules in the state, the provisions of which, in many respects, mirror the concessions of the consent agreement.<sup>183</sup>

---

177. *Medlock*, 2013 S.C. LEXIS, at \*16 (quoting *Linder v. Ins. Claims Consultants, Inc.*, 560 S.E.2d 612, 617 (2002)).

178. See Lisa Ryan, *LegalZoom Settles \$14M Antitrust Dispute with NC Bar*, LAW360 (Oct. 23, 2015, 5:04 PM), <http://www.law360.com/articles/718347/legalzoom-settles-14m-antitrust-dispute-with-nc-bar>.

179. 135 S. Ct. 1101, 1114 (2015).

180. Complaint at 3-5, *LegalZoom.com, Inc., v. N.C. State Bar* (D.N.C. June 3, 2015) (No. 1:15-CV-439), [http://online.wsj.com/public/resources/documents/2015\\_0604\\_legalzoom.pdf](http://online.wsj.com/public/resources/documents/2015_0604_legalzoom.pdf).

181. See Terry Carter, *LegalZoom Resolves \$10.5M Antitrust Suit Against North Carolina State Bar*, A.B.A. J. (Oct. 23, 2015, 3:15 PM), [http://www.abajournal.com/news/article/legalzoom\\_resolves\\_10.5m\\_antitrust\\_suit\\_against\\_north\\_carolina\\_state\\_bar](http://www.abajournal.com/news/article/legalzoom_resolves_10.5m_antitrust_suit_against_north_carolina_state_bar).

182. H.B. 436, 2015 Gen. Assemb. (N.C. 2015), <http://www.ncleg.net/Sessions/2015/Bills/House/HTML/H436v4.html>.

183. Daniel Fisher, *LegalZoom Settles Fight with North Carolina Bar over Online Law*, FORBES (Oct. 22, 2015, 2:16 PM), <http://www.forbes.com/sites/>

Developments like these pave the way for consumers to purchase unbundled automated products that have traditionally been handled by attorneys, such as registering an LLP, drafting a living will, or filing Articles of Amendment, but the LegalZoom products are stripped of the promises of competence, secrecy, and loyalty that are customarily part of lawyer services.<sup>184</sup> The LegalZoom website contains a disclaimer on every page of the website that “[c]ommunications between you and LegalZoom are protected by our Privacy Policy but not by the attorney-client privilege or as work product” and “[w]e cannot provide any kind of advice, explanation, opinion, or recommendation about possible legal rights, remedies, defenses, options, selection of forms or strategies.”<sup>185</sup> Consequently, LegalZoom is not subject to the same risks or overhead costs.

At this price point, there appears to be consumer demand for the product. LegalZoom claims to have had over three million customers.<sup>186</sup> Rocket Lawyer, another online legal document creator, claims to have created over three million documents for customers, and it, too, disclaims the duties that attach in a lawyer–client relationship.<sup>187</sup>

Sometimes, the value that a lawyer provides is not the advice she gives, or the work she creates, but insulation from liability or punishment when something goes wrong. In such situations, an authority could declare that a non-lawyer is good enough to provide the same insulation.

Good-enough decrees of this sort have been issued in the tax preparation context. Although professional tax preparation is ordinarily performed by accountants, both accountants and lawyers can owe fiduciary duties to their clients.<sup>188</sup> Thus, tax preparation decrees provide a useful parallel. Under 26 U.S.C. § 6662, underpayment of taxes shall be penalized if, among other things, it is attributable to negligence or disregard of rules or regulations.<sup>189</sup> Under 26 C.F.R. § 1.6664-4, however, a person who has underpaid for a reasonable cause and in good faith will not have to pay the

---

danielfisher/2015/10/22/legalzoom-settles-fight-with-north-carolina-bar-over-online-law/#67265b7e693e.

184. *See Our Products and Services*, LEGALZOOM, <http://www.legalzoom.com/products-and-services.html> (last visited Jan. 25, 2016).

185. LEGALZOOM, <http://legalzoom.com> (last visited Jan. 25, 2016).

186. *Id.*

187. ROCKET LAWYER, <http://rocketlawyer.com> (last visited Jan. 25, 2016).

188. *See, e.g.,* Petrilli v. Gow, 957 F. Supp. 366, 372 (D. Conn. 1997).

189. *See* 26 U.S.C. § 6662 (2012).

penalty.<sup>190</sup> “A common means of demonstrating reasonable cause is to show reliance on the advice of a competent and independent professional advisor.”<sup>191</sup> Two recent cases have extended this reasoning to tax-preparation software.

In *Olsen v. Commissioner*, the taxpayer upgraded to a more comprehensive version of tax preparation software when faced with uncertainty regarding his receipt of a form K-1 that listed his wife’s trust interest income.<sup>192</sup> When prompted by the automated interview, the taxpayer correctly entered the name and tax identification number of the trust, but he later omitted this information when transcribing it for a subsequent portion of his return.<sup>193</sup> He ran an error check on the software, but it failed to find his error.<sup>194</sup> Even so, the tax court concluded that the taxpayer’s “isolated transcription error” was not enough to justify the penalty.<sup>195</sup> The fact that the taxpayer relied on tax preparation software was an important factor behind the court’s decision.<sup>196</sup>

Similarly, in *Thompson v. Commissioner*, the Tax Court excused the penalty for a taxpayer who improperly deducted educational expenses for flight school.<sup>197</sup> The court stated, “[The taxpayer] made a reasonable attempt to comply with the internal revenue laws and exercised ordinary and reasonable care by obtaining software to aid him in the preparation of his 2002 Federal income tax return.”<sup>198</sup>

Many commentators suspect that courts will help close the gap between permissible non-lawyer practice and the practice of law.<sup>199</sup> The idea is not so far-fetched. The Parliament of the United Kingdom passed the Legal Services Act of 2007, which allowed non-lawyers to invest in—or even own—law firms, subject to regulatory approval, and ushered in an era in which the LegalZooms and Rocket

---

190. 26 C.F.R. § 1.6664-4(a) (2015).

191. *Am. Boat Co., LLC v. United States*, 583 F.3d 471, 481 (7th Cir. 2009) (citing 26 C.F.R. § 1.6664-4(b)(1); *United States v. Boyle*, 469 U.S. 241, 251 (1985)).

192. *Olsen v. Comm’r*, T.C. Summ. Op. 2011-131, at 2 (2011).

193. *Id.* at 3.

194. *Id.*

195. *Id.* at 5.

196. See Rodney P. Mock & Nancy E. Shurtz, *The TurboTax Defense*, 15 FLA. TAX REV. 443, 478 (2014).

197. *Thompson v. Comm’r*, 94 T.C.M. (CCH) 24, at 4-7 (2007).

198. *Id.* at 7.

199. See, e.g., Regan & Heenan, *supra* note 82, at 2154.

Lawyers of the world have the freedom to expand offerings.<sup>200</sup> Indeed, “[t]he move has given birth to—among other things—‘MinuteClinic-style’ legal services shops in retail establishments owned by the giant Co-operative Brands Limited.”<sup>201</sup> The move only made the United Kingdom more like the European Union, where such practices have existed for some time.<sup>202</sup> “The reforms have also caught the eye of the Big 4 accounting firms which are looking at legal services as a potential service line extension.”<sup>203</sup>

In addition, several states have begun to consider licensure of non-lawyers for the provision of limited legal services or “Limited-License Legal Technicians” (LLTs). In 2015, a task force of the State Bar of California recently called for the bar to “study the design of a pilot program” for LLTs.<sup>204</sup> Also that year, a task force of the State Bar of Oregon called for its Board of Governors to consider the possibility of implementing an LLT model.<sup>205</sup> Even the American Bar Association has dipped its toes into LLT waters. In 2016, the ABA adopted a series of regulatory objectives for state supreme courts to consider when they assess “non-traditional legal service providers.”<sup>206</sup>

Thus far, the only state to actually ordain LLTs is Washington. The Washington Supreme Court’s rule allows non-lawyers who meet certain educational requirements to advise and assist clients in approved practice areas of law.<sup>207</sup> Currently, the

---

200. Joe Harpaz, *Innovation, Meet Regulation: Professional Services Start-Ups Test Age-Old Boundaries*, FORBES (June 27, 2014, 11:23 AM), <http://www.forbes.com/sites/joeharpaz/2014/06/27/innovation-meet-regulation-part-ii-professional-services-start-ups-test-age-old-boundaries/>.

201. *Id.*

202. See Mary C. Daly, *The Ethical Implications of the Globalization of the Legal Profession: A Challenge to the Teaching of Professional Responsibility in the Twenty-First Century*, 21 FORDHAM INT’L L.J. 1239, 1264-65 (1998).

203. See Harpaz, *supra* note 200.

204. STATE BAR OF CAL., CIVIL JUSTICE STRATEGIES TASK FORCE REPORT & RECOMMENDATIONS 19 (2015), <http://board.calbar.ca.gov/docs/agendaitem/Public/agendaitem1000013042.pdf>.

205. LEGAL TECHNICIANS TASK FORCE, FINAL REPORT TO THE BOARD OF GOVERNORS 9 (Feb. 13, 2015), [http://bog11.homestead.com/LegalTechTF/Jan2015/Report\\_22Jan2015.pdf](http://bog11.homestead.com/LegalTechTF/Jan2015/Report_22Jan2015.pdf).

206. ABA COMM’N ON THE FUTURE OF LEGAL SERVICES ET AL., REPORT TO THE HOUSE OF DELEGATES 1 (2016), [http://www.americanbar.org/content/dam/aba/images/office\\_president/final\\_regulatory\\_objectives\\_resolution\\_november\\_2015.pdf](http://www.americanbar.org/content/dam/aba/images/office_president/final_regulatory_objectives_resolution_november_2015.pdf).

207. WA. APR 28 (2013), [http://www.wsba.org/~media/Files/Licensing\\_Lawyer%20Conduct/LLT/APR%2028%20and%20Regs%203-31-2015.ashx](http://www.wsba.org/~media/Files/Licensing_Lawyer%20Conduct/LLT/APR%2028%20and%20Regs%203-31-2015.ashx).

Court has approved only domestic relations.<sup>208</sup> These LLLTs may advise clients on how best to pursue their legal rights, draft legal documents (so long as they are among the types documents approved by the LLLT Board), and perform legal research, among other things, but they may not represent a client in court or negotiate on her behalf.<sup>209</sup> While this initiative eliminates some of the gatekeeping costs associated with becoming a lawyer—such as law school and bar exam expenses—it imposes some as well. Washington LLLTs must still take courses in approved practice areas offered through a law school, pay an annual fee, pass the Legal Technical Exam, have an associate’s degree or higher, and complete 3,000 hours of paralegal experience under the supervision of a lawyer.<sup>210</sup> In addition, Washington’s LLLTs are subject to numerous ethical duties, including fiduciary responsibility and confidentiality, and must carry liability insurance in excess of \$100,000 per claim.<sup>211</sup> Nevertheless, this reflects unprecedented gatekeeping flexibility and, perhaps, the emergence of a deregulation trend.

## 2. *The Effect of Deregulation on Disruption and Innovation*

For disruption to occur, the sorts of innovations that have been described must impact the provision of incumbent services, which often reside upmarket. For example, scholars speculate that automated document assembly will follow in the path of Low-End Disruptions and move upmarket, threatening profits and, in turn, bespoke services.<sup>212</sup> It might be difficult for novel approaches to gain a foothold, however, without further changes to the regulatory structure that governs legal services.

### a. Deregulation and Disruption

The relaxation of regulations can set in motion changes that will hasten disruption and increase the likelihood that it will occur before innovation is complete. Jillian Hadfield wrote in an influential article that the legal profession has three “imperfections” that make it depart from perfect competition: Incumbents operate in a cartel-like

---

208. *Id.* at 10.

209. *Id.* at 1.

210. *See id.* at 18.

211. *See id.* at 8, 21.

212. *See* Campbell, *supra* note 167, at 14 (“In the legal market, automated document assembly may provide an example of a technology moving upmarket.”).

fashion, its complexity makes its value opaque, and its pricing structure uniformly caters to corporate money.<sup>213</sup> In this Subsection, I will show how those factors operate to increase the likelihood of disruption in the wake of deregulation.

Deregulation will weaken incumbents' ability to exercise cartel-like powers and their ability to extract profits from a lack of competition. Even if the products offered by non-lawyers would initially focus on low-end consumers, disruptions tend not to stay there, particularly when mainstream and even high-end consumers deal with services that routinely overshoot demand.<sup>214</sup> Upmarket movement will also be fueled by progress in interpretive technologies, such as natural language processing, that shrink the performance gap between lawyers and non-lawyers.<sup>215</sup>

The argument that legal services have traditionally overshoot client demand is premised on the notion that incumbents have been able to exploit information asymmetries regarding the value that lesser services and products might have provided.<sup>216</sup> Since law is complex, clients have traditionally been willing to defer to a lawyer's assessment of the resources that a case or transaction requires. Legal services are credence goods; incumbents act as experts determining the clients' requirements and therefore have a hand in determining perceptions of their utility.<sup>217</sup> Because of their perceived expertise, lawyers have had the freedom to overestimate or overstate the risk,<sup>218</sup> and the standards of competence incented them to err on the side of overstatement. From this perspective, law firms' fondness for the billable hour makes a great deal of sense. Billing by the hour allows

---

213. Gillian K. Hadfield, *The Price of Law: How the Market for Lawyers Distorts the Justice System*, 98 MICH. L. REV. 953, 995-98 (2000) [hereinafter Hadfield, *Price*] (using the term "monopoly").

214. See Darryl R. Mountain, *Disrupting Conventional Law Firm Business Models Using Document Assembly*, 15 INT'L J.L. & INFO. TECH. 170, 181 (2007).

215. This will be discussed extensively in *infra* Section III.C.

216. See Clayton M. Christensen, Dina Wang & Derek van Bever, *Consulting on the Cusp of Disruption*, HARV. BUS. REV. (Oct. 2013), <https://hbr.org/2013/10/consulting-on-the-cusp-of-disruption> (describing the Am Law 100 ranking's effect on information access).

217. See Hadfield, *Price*, *supra* note 213, at 968-69.

218. There is some evidence that information asymmetries have lessened with the rise of in-house counsel. See Kimberly D. Krawiec, *Organizational Form as Status and Signal*, 40 WAKE FOREST L. REV. 977, 993 (2005).



lawyers to align their interest in minimizing malpractice risk with their interest in maximizing revenue.<sup>219</sup>

One way that incumbents have been able to justify their status as experts is by pointing to the high standards of competence under which they operate. With those weakened or gone, it is less likely that lawyers will be given the benefit of the doubt. Likewise, when clients see non-lawyers performing services that lawyers used to perform, they might doubt whether lawyers deserve credence. According to Hadfield's analysis, "[L]awyers who can provide services to individuals and corporations alike—overwhelmingly allocate[] legal resources to clients with interests backed by corporate aggregations of wealth."<sup>220</sup> As more sophisticated work is being performed by the corporations, themselves, corporate clients will be less likely to allow lawyers to overshoot demand, thereby cutting into law firm profits.

There is a clear parallel to the rise of in-house legal departments. In the 1990s, corporate clients began to develop their own internal lawyers to handle routine matters at low cost.<sup>221</sup> These in-house lawyers used their knowledge of the legal process to decompose legal services, handling simpler matters on their own and relying on firms for more complex work.<sup>222</sup> The rise of in-house departments has led law firms to mimic them by decomposing their own work and pursuing aggressive cost-cutting measures.<sup>223</sup> It is possible that a rise in non-lawyer-driven legal work will similarly narrow the knowledge gap and increase competition for routine work, driving prices down in far-reaching corners of the legal market.

Thus, the proliferation of discount legal services in the United States would make it harder for firms to rely on their exclusive ability to offer bespoke, high-quality services in order to maintain market share, which could eventually lead to Firm Disruption or, if

---

219. See Niki Kuckes, *The Hours*, LEGAL AFF. (Sept.-Oct. 2002), [http://www.legalaffairs.org/issues/September-October-2002/review\\_kuckes\\_sepoct2002.msp](http://www.legalaffairs.org/issues/September-October-2002/review_kuckes_sepoct2002.msp).

220. Hadfield, *Price*, *supra* note 213, at 998.

221. See Paul Lippe, *Disruption, Eruption or Interruption: 3 Views of Change in Law*, A.B.A. J. (July 31, 2014, 1:30 PM), [http://www.abajournal.com/legalrebels/article/disruption\\_eruption\\_or\\_interruption\\_3\\_views\\_of\\_change\\_in\\_law](http://www.abajournal.com/legalrebels/article/disruption_eruption_or_interruption_3_views_of_change_in_law).

222. See *id.*

223. See Bernard A. Burk & David McGowan, *Big but Brittle: Economic Perspectives on the Future of the Law Firm in the New Economy*, 2011 COLUM. BUS. L. REV. 1, 36-38 (2011).

the incumbents adopt a monkey-see-monkey-do approach, to Demand Disruption.

#### b. Deregulation and Innovation

The remaining question is whether deregulation would allow innovation to reach all of the core functions of legal services before disruption occurs. The answer is no. I discuss technological development at length in Section C, but I will briefly address an important aspect of incompleteness here.

By its very nature, relaxing regulation will assist innovation as to some, but not all, core functions. Because competence and character guarantees form part of the suite of core functions that lawyers owe clients, their relaxation or eradication cannot constitute an innovation of that particular core function.

Even if we were to decide that legal duties are not a core function of legal services, the likelihood of incompleteness remains. Note that the cases dealing with unauthorized practice of law generally concern functions that are at the fringes of legal services, particularly Low-Stakes Legal Document Creation or Template Selection. Conceivably, relaxation might extend to some other core functions as well.<sup>224</sup> Even so, there is little likelihood that the bespoke functions—Negotiation, High-Stakes Legal Document Creation, and Advocacy—would be opened to non-lawyers without the wholesale eradication of gatekeeping requirements. This is not likely because they undergird constitutional guarantees of effective counsel in criminal cases<sup>225</sup> and federal statutory guarantees in some civil proceedings.<sup>226</sup> Thus, it is probable that relaxed regulation would bring about Firm or Demand Disruption before innovation is complete.

#### B. Hybrid Firms and Incomplete Demand Disruption

Disruption can occur even under existing regulations, of course. A rising disruptive business model change is the creation of

---

224. The ABA stated in a 2008 ethics opinion that outsourcing of discovery functions to non-lawyers is “nothing unethical” and is “salutary . . . for our globalized economy.” ABA Comm. on Ethics and Prof'l Responsibility, Formal Op. 08-451, at 2 (Aug. 5, 2008).

225. *Strickland v. Washington*, 466 U.S. 668, 686 (1984).

226. *See Jerman v. Carlisle, McNellie, Rini, Kramer & Ulrich LPA*, 559 U.S. 573, 600 (2010).

the hybrid firm. These entities are comprised of trained lawyers but are not law firms.<sup>227</sup> Hybrids form teams of temporary attorneys for each project that they are given, and they pay teams at typically low temporary attorney rates.<sup>228</sup> When a project is finished, its team likely disbands.<sup>229</sup> The individual attorneys who make up the team might immediately find other contract work available at that organization, but they might have to wait until a fitting project arises.<sup>230</sup> In the meantime, they will not be paid.

Hybrids are potentially innovative.<sup>231</sup> Unlike technological innovations, business model innovations bring value by “delivering existing products that are produced by existing technologies to existing markets.”<sup>232</sup> In other words, hybrids could represent a successful change in the recipe or framework for making money.<sup>233</sup> They do not require that companies invest in research and development (R&D), so they can proceed even in the face of technological or scientific stagnation.<sup>234</sup> Thus, they can advance at a faster pace than technological innovations, though they also allow the disruptive effects of business model change to proceed at a fast pace as well.

Hybrids are not subject to the same requirements that law firms are. Existing regulations focus almost exclusively on the conduct of law firms and do not contemplate rotating casts of temporary lawyers under the same banner. Hybrid firms are not subject to the same limitations on firm ownership as law firms—which are ongoing associations of lawyers<sup>235</sup>—freeing them to be owned by non-lawyers and seek funding from investors.<sup>236</sup> Indeed, the most famous company that uses this model, Axiom Law, received \$28 million in

---

227. See Stephen Gillers, *A Profession, if You Can Keep It: How Information Technology and Fading Borders Are Reshaping the Law Marketplace and What We Should Do About It*, 63 HASTINGS L.J. 953, 986-89 (2012).

228. See *id.*

229. *Id.* at 987.

230. *Id.*

231. See ALLAN AFUAH, BUSINESS MODEL INNOVATION: CONCEPTS, ANALYSIS, AND CASES 4 (2014).

232. See Karan Girotra & Serguei Netessine, *Four Paths to Business Model Innovation*, HARV. BUS. REV. (July-Aug. 2014) (emphasis omitted), <https://hbr.org/2014/07/four-paths-to-business-model-innovation>.

233. AFUAH, *supra* note 231, at 4.

234. See Henry Chesbrough, *Business Model Innovation: Opportunities and Barriers*, 43 LONG RANGE PLAN. 354, 358-59 (2010).

235. See Gillers, *supra* note 227, at 987-88.

236. *Id.*

outside funding in 2013.<sup>237</sup> The tradeoff is that hybrids cannot claim that they are law firms, which might have increased the perceived value of their products or services.<sup>238</sup> They can, however, staff attorneys on cases, just like law firms do.<sup>239</sup>

In some ways, hybrids have taken a page out of the same cost-cutting playbook that incumbents use. Between 1997 and 2005, temporary legal staffing by law firms increased annually by over 16%, primarily for document review in litigation.<sup>240</sup> Temporary attorneys are paid much less than their permanent counterparts but billed at high rates.<sup>241</sup> Law firms have begun sending word processing and proofreading tasks to processing hubs in remote locations.<sup>242</sup> These functions have traditionally been used to cut costs with respect to High-Volume Document Analysis, but they are now beginning to play a role in aspects of Low-Stakes Document Creation, such as proofreading and word processing.<sup>243</sup> Hybrid firms, however, have taken cutting overhead costs to a new extreme by resisting the creation of centralized locations to the extent they can.<sup>244</sup>

Importantly, hybrids do not seek to compete with incumbents by offering a comparable product to high-end consumers; rather, they focus on routine projects in a wider variety of areas, including some areas that, for incumbent firms, are bespoke functions.<sup>245</sup> It is entirely possible that they will take market share away from

---

237. Jennifer Smith, *Axiom Scores \$28 Million Round of Funding*, WALL ST. J. (Feb. 6, 2013, 5:01 PM), <http://blogs.wsj.com/law/2013/02/06/axiom-scores-28-million-round-of-funding/>.

238. *Disclaimer*, AXIOM, <http://www.axiomlaw.com/credits-and-disclaimer> (last visited Jan. 25, 2016).

239. *See id.*

240. Irwin Speizer, *Temp Lawyers Offering a Permanent Solution*, WORKFORCE (Sept. 12, 2007), <http://www.workforce.com/articles/temp-lawyers-offering-a-permanent-solution>.

241. *See* Julie Trieman, *Temporary Solution*, AM. LAW. (Sept. 1, 2006), <http://www.americanlawyer.com/id=900005461461/Temporary-Solution>.

242. Jennifer Smith, *Law Firms Wring Costs from Back-Office Tasks*, WALL ST. J. (Oct. 7, 2012), <http://www.wsj.com/articles/SB10000872396390443294904578042592833016774>.

243. David Lat, *Nationwide Layoff Watch: The Upside of Outsourcing?*, ABOVE THE L. (Feb. 20, 2014, 2:21 PM), <http://abovethelaw.com/2014/02/nationwide-layoff-watch-the-upside-of-outsourcing/>.

244. Debra Cassens Weiss, *Virtual Law Firm Axiom Grows and Profits in DC*, A.B.A. J. (Sept. 12, 2011, 12:18 PM), [http://www.abajournal.com/news/article/virtual\\_law\\_firm\\_axiom\\_grows\\_and\\_profits\\_in\\_dc/](http://www.abajournal.com/news/article/virtual_law_firm_axiom_grows_and_profits_in_dc/).

245. *Id.* (“They exist in a good middle space for us, which is not quite the bet-the-company type matters where you hire the big law firms for \$500 to \$700 an hour.” (quoting Jeff Peters, associate general counsel for MedImmune)).

incumbents by offering similar services but without the same overhead costs. This will allow them to sell their services at lower rates than law firms can stomach, so long as consumers are willing to part with the items that overhead costs pay for in exchange for drop in rates: offices and libraries, on-site support staff, partnership structure, firm supervision of individual attorneys, and, sometimes,<sup>246</sup> malpractice insurance.<sup>247</sup> Here, the fact that legal services are credence goods can favor the disruptors who might be able to leverage a lack of client knowledge regarding the value of these items to their advantage.

In short, the hybrid model provides an avenue for disruption; hybrids can leverage cost-avoidance strategies that are not feasible under the traditional incumbent approach. It is hardly certain that these innovations will be disruptive, of course, but if they are, it is important to consider whether disruption will occur before innovation is complete. When the focus of the hybrid model is considered, it becomes apparent that any disruption would likely occur before all core functions have been innovated.

Like other business model innovations, the hybrid model aims to find more efficient ways to turn profits with existing parts than with the introduction of a game-changing product. The innovation here takes shears to overhead costs like deep malpractice insurance protection and infrastructure. An injured client of a hybrid will have trouble reaching the deepest pocket, the hybrid, itself. As a result, hybrid firms are designed for low-stakes, low-complexity cases that do not require the use of those resources. Accordingly, they are unlikely to innovate the bespoke functions, which are most salient in cases that hybrid firms do not target.

### C. Natural Language Processing and Incomplete Technological Innovation

I have yet to discuss the disruptive innovation that Susskind believes will be the “end-game” for incumbents in legal services:

---

246. There is evidence that Axiom carries malpractice insurance of some kind that its lawyers can rely upon if sued, but this might not be the case at many hybrid firms. See Melissa Mortazavi, *Lawyers, Not Widgets: Why Private-Sector Attorneys Must Unionize to Save the Legal Profession*, 96 MINN. L. REV. 1482, 1489 n.36 (2012) (showing that Axiom lists that it carries malpractice insurance for its lawyers but finding no such notation in the list for Counsel on Call).

247. See John S. Dzienkowski, *The Future of Big Law: Alternative Legal Service Providers to Corporate Clients*, 82 FORDHAM L. REV. 2995, 3017-19 (2014).

automation of legal work.<sup>248</sup> Technological advancement is ubiquitous. There are few, if any, aspects of life that are immune to it, and it would be folly to say that certain core functions of legal services will remain forever un-innovated by it. But establishing Incomplete Innovation does not require proof that lingering functions will *never* be innovated; rather, it requires only proof that lingering functions will remain un-innovated for a considerable period of time after disruption has occurred. For technological innovation, then, it is particularly important to explain how its pace, sequence, and aim will lead to disruption long before innovation of all core functions.

Here, I will consider how technology will assist people, particularly non-lawyers, in deriving meaning from legal texts. Since legal texts are typically written in natural language, my focus will be the increasingly vital field of Natural Language Processing (NLP). Admittedly, the discussion that follows is technical and detailed, but understanding the character of innovation will be an important part of judging whether legal services disruption is likely to be a good thing. The starkest difference between lawyers and non-lawyers is that only the former routinely have the capacity to perform bespoke functions, so if technology narrows this performance gap, it is a possible vehicle for complete innovation. It would be fair to say that the likelihood that we will experience Incomplete Innovation is related to the point at which disruption occurs along the curve of innovation in NLP. Consequently, a detailed analysis is warranted.

### 1. *The Path Towards Machine Understanding of Meaning*

Natural Language Processing is the most critical technology to help close the gap between non-lawyers and lawyers in quality of legal interpretation.<sup>249</sup> NLP has emerged as a means for machines to process the colossal amount of information available on the Internet.<sup>250</sup> There is tremendous promise in harnessing the Internet's "Big Data," but the data therein are housed in separate files that do not follow a uniform structure.<sup>251</sup> If machines are able to derive meaning from web documents, then they will allow us to understand

---

248. SUSSKIND, *supra* note 16, at 82.

249. *See id.* at 91.

250. YORICK WILKS & CHRISTOPHER BREWSTER, NATURAL LANGUAGE PROCESSING AS A FOUNDATION OF THE SEMANTIC WEB 1-5 (2009).

251. CARLOS CORONEL & STEVEN MORRIS, DATABASE SYSTEMS: DESIGN, IMPLEMENTATION, AND MANAGEMENT 48-49 (2015).

data on the web in a structured way and at a pace that far exceeds human interpretation.<sup>252</sup>

Computer scientists follow philosopher Charles Morris<sup>253</sup> in dividing language into three components: syntax (or syntactics), semantics, and pragmatics.<sup>254</sup> While linguists have refined Morris's framework somewhat over the last century,<sup>255</sup> there is not a great distance between the usage of these concepts in the linguistics literature and in the computer programming literature. Both linguists and computer scientists understand syntax to be the formal relations of signs to one another or, more broadly, to be the formal aspects of a language.<sup>256</sup> They understand semantics to be the "relations between expressions" or, more specifically, to be that to which a sign refers.<sup>257</sup> Finally, they understand pragmatics to be the "relations among expressions," their meanings, and the use that speakers make of these expressions in contexts of utterance.<sup>258</sup> Placing these components in the context of automated text processing, it is helpful to think of syntax as processing at word level, semantics as processing at concept level, and pragmatics as processing at the action or narrative level.<sup>259</sup> These components are in ascending order of complexity, with pragmatics presenting the greatest challenges for computer codification.<sup>260</sup> The brass ring for NLP is understanding the largest network of human knowledge in history—the Internet.

---

252. Marco Visibelli, *How Big Data Can Mean Big Money—Or Big Losses*, WIRED (Aug. 2014), [www.wired.com/2014/08/big-data-can-mean-big-money-big-losses/](http://www.wired.com/2014/08/big-data-can-mean-big-money-big-losses/).

253. Charles W. Morris, *Scientific Empiricism*, in 1.1 INTERNATIONAL ENCYCLOPEDIA OF UNIFIED SCIENCE 63, 70 (Otto Neurath et al. eds., 1938).

254. See, e.g., Erik Cambria & Bebo White, *Jumping NLP Curves: A Review of Natural Language Processing Research*, 9 IEEE COMPUTATIONAL INTELLIGENCE MAG. 48, 48 (2014); MAURIZIO GABBRIELLI & SIMONE MARTINI, PROGRAMMING LANGUAGES: PRINCIPLES AND PARADIGMS 27 (2010).

255. This paper will follow those linguists who view morphology, phonology, and graphemics as subcategories of syntax or syntactics. See Roland Posner, *Syntactics*, in NACH-CHOMSKYSCHER LINGUISTIK 247 (Thomas T. Ballmer & Roland Posner eds., 1985).

256. GABBRIELLI & MARTINI, *supra* note 254, at 27.

257. DANIEL VANDERVEKEN, 1 MEANING AND SPEECH ACTS: PRINCIPLES OF LANGUAGE USE 65 (1990); GABBRIELLI & MARTINI, *supra* note 254, at 28.

258. See VANDERVEKEN, *supra* note 257, at 65; GABBRIELLI & MARTINI, *supra* note 254, at 28.

259. See Cambria & White, *supra* note 254, at 48-49.

260. See Bernd-Olaf Küppers, *Elements of a Semantic Code*, in EVOLUTION OF SEMANTIC SYSTEMS 67, 71 (Bernd-Olaf Küppers, Udo Hahn & Stefan Artmann eds., 2013).

Ideally, NLP would permit us to derive a narrative from an otherwise un-traversable sea of isolated, differentiated documents.<sup>261</sup>

a. The Rise of Syntactical Processing and Machine Learning

For many decades, research has progressed along these three paths, but those taking a syntactical approach have been able to produce the most visible results. “NLP research has made great strides in producing artificially intelligent behaviors, e.g., Google, IBM’s Watson, and Apple’s Siri,” and “the most popular NLP technologies [such as these] view text analysis as a word or pattern matching task.”<sup>262</sup> This technique is agnostic as to meaning; it essentially searches for matching sequences of characters and sorts based on distance between matching sequences within documents or based on match frequency.<sup>263</sup> To be sure, it can tell us about word placement and frequency, and this data might, through statistical analysis, give us a probabilistic sense of when words relate to each other in a conceptual manner. Even so, errors are likely to be frequent, and any emergent relations will not be of much use without significant human intervention.<sup>264</sup>

One weakness of the syntactical methodology is that it can struggle to perform elementary interpretive tasks. Famously, syntactical approaches have been challenged by elementary word-sense disambiguation, such as when a single word—like “light”—can be used in different senses such that it takes on different meanings.<sup>265</sup>

Computer programmers have attempted to find ways to instruct computers to deal with these complexities of language. Early attempts programmed computers to follow machine-readable rule sets or texts that bolster computers’ ability to identify patterns in the

---

261. See DEAN ALLEMANG & JAMES HENDLER, SEMANTIC WEB FOR THE WORKING ONTOLOGIST: EFFECTIVE MODELING IN RDFS AND OWL 11 (2d ed. 2011).

262. Cambria & White, *supra* note 254, at 51.

263. *Id.*

264. See Nebrasse Ellouze et al., *CITOM: Incremental Construction of Topic Maps*, in NATURAL LANGUAGE PROCESSING AND INFORMATION SYSTEMS: 14TH INTERNATIONAL CONFERENCE ON NATURAL LANGUAGE TO INFORMATION SYSTEMS 49 (Helmut Horacek et al. eds., 2010).

265. See Mark Stevenson & Yorrick Wilks, *Word-Sense Disambiguation*, in OXFORD HANDBOOK OF COMPUTATIONAL LINGUISTICS 249, 249-50 (Ruslan Mitkov ed., 2003).



text that yield correct interpretations.<sup>266</sup> The earliest technique to bring impressive successes was a rule-based (or “knowledge-based”) approach.<sup>267</sup> Computers relied on machine-readable dictionaries or thesauruses to find and match words to corresponding meanings.<sup>268</sup>

In the late 1980s, however, NLP techniques began to incorporate machine learning, a technique that uses a set of teaching data to improve computers’ abilities to analyze subsequent data.<sup>269</sup> To do this, a computer must be programmed to follow an algorithm that allows it to order and classify data in the desired fashion.<sup>270</sup>

A learning-enabled NLP processor is powered by an algorithm that allows it to adjust the way it interprets text based on the success rate of prior interpretations.<sup>271</sup> The text upon which the machine bases its subsequent analysis is called a corpus.<sup>272</sup> Generally, corpora are exemplars of the texts that will be subsequently analyzed, and they must be machine-readable.<sup>273</sup> Typically, corpora fall into one of three categories: those used for supervised, unsupervised, or semi-supervised approaches to NLP.

Supervised NLP corpora are similar to the knowledge sets that powered rule-based NLP; they are comprehensively labeled so that the computer understands all input and output relations in the text.<sup>274</sup> Unlike rule sets, however, corpora are used to *train* the computer,

---

266. See Harold Somers, *Machine Translation*, in HANDBOOK OF NATURAL LANGUAGE PROCESSING 329, 331 (Robert Dale, Hermann Moisl & Harold Somers eds., 2000).

267. See *id.*

268. Hans C. Boas, *Introduction: Recent Trends in Multilingual Computational Lexicography*, in MULTILINGUAL FRAMESETS IN COMPUTATIONAL LEXICOGRAPHY: METHODS AND APPLICATIONS 1, 1 (Hans C. Boas ed., 2009).

269. See STEVEN ABNEY, SEMISUPERVISED LEARNING FOR COMPUTATIONAL LINGUISTICS, at v (2007).

270. See SHAI SHALEV-SHWARTZ & SHAI BEN-DAVID, UNDERSTANDING MACHINE LEARNING: FROM THEORY TO ALGORITHMS 19 (2014).

271. *Id.* at 19-21.

272. See Richard Xiao, *Corpus Creation*, in HANDBOOK OF NATURAL LANGUAGE PROCESSING 147, 147 (Nitin Indurkha & Fred J. Damerau eds., 2d ed. 2010).

273. See Douglas Biber, *Representativeness in Corpus Design*, in CORPUS LINGUISTICS: READINGS IN A WIDENING DISCIPLINE 174, 174 (Geoffrey Sampson & Diana McCarthy eds., 2005).

274. STEVEN BIRD, EWAN KLEIN & EDWARD LOPER, *Learning to Classify Text*, in NATURAL LANGUAGE PROCESSING WITH PYTHON ch. 6 (2014), <http://www.nltk.org/book/ch06.html>.

providing more data so that the computer can refine its algorithm and make better probabilistic textual interpretations.<sup>275</sup>

When such corpora are generated, supervised NLP provides state-of-the-art results within the narrow domains to which the corpora apply.<sup>276</sup> The larger and more elaborate a properly tagged corpus is, the more sophisticated the processor will be.<sup>277</sup> Of course, the larger the corpus, the harder it is to be confident that it is a reliable exemplar of the structure that a computer should follow for the task at hand.<sup>278</sup> Supervised NLP requires people to have complete knowledge of the structure of the corpus used as well as the ability to translate that knowledge into tags or codes that are machine-readable. This is known as the “knowledge acquisition bottleneck” because it slows the progress of NLP.<sup>279</sup>

Unsupervised learning techniques rely on “raw corpora.”<sup>280</sup> This means that the text upon which the computer trains has not been structured to assist the learning process.<sup>281</sup> The computer will have to find the patterns on its own, then, upon finding them, it will incorporate them into its algorithm.<sup>282</sup> The utility of unsupervised techniques, however, is that human beings do not need a full understanding of the patterns or other structures in the corpus in order to generate helpful results.<sup>283</sup> Because there is no posited, labeled structure in raw corpora, however, the results of unsupervised learning are often unlabeled as well.<sup>284</sup> Simply put, it is

---

275. See LINGUISTICS ENCYCLOPEDIA 84 (Kirsten Malmkjær ed., 2d ed. 2002).

276. See generally DOUGLAS B. LENAT & R.V. GUHA, BUILDING LARGE KNOWLEDGE-BASED SYSTEMS, at xviii-xix (1990).

277. See, e.g., Paul Deane & Derrick Higgins, *Using Singular-Value Decomposition on Local Word Contexts to Derive a Measure of Constructional Similarity*, in CORPUS LINGUISTICS BEYOND THE WORD: CORPUS RESEARCH FROM PHRASE TO DISCOURSE 45, 46-47 (Eileen Fitzpatrick ed., 2007).

278. See VIVIAN DE KLERK, CORPUS LINGUISTICS AND WORLD ENGLISHES: AN ANALYSIS OF XHOSA ENGLISH 38-39 (2010).

279. Michael Aikenhead, *The Uses and Abuses of Neural Networks in Law*, 12 SANTA CLARA COMPUTER & HIGH TECH. L.J. 31, 33 (1996).

280. Geoffrey Leech, *Developing Linguistic Corpora: A Guide to Good Practice*, AHDS: ARTS AND HUMANITIES DATA SERVICE (2004), <http://www.ahds.ac.uk/creating/guides/linguistic-corpora/chapter2.htm>.

281. *Id.*; see also Stephen C. Mouritsen, *The Dictionary Is Not a Fortress: Definitional Fallacies and a Corpus-Based Approach to Plain Meaning*, 2010 BYU L. REV. 1915, 1928.

282. *Id.* at 1954.

283. *Id.*

284. See Alexander Clark & Shalom Lappin, *Unsupervised Learning and Grammar Induction*, in THE HANDBOOK OF COMPUTATIONAL LINGUISTICS AND

good for clustering data into potentially useful categories, but human beings need to decide what the categories are and whether they matter.<sup>285</sup> Some authors have drawn a parallel to the classroom.

Supervision invokes the idea of a teacher who guides the learning process. . . . This external guidance is absent in unsupervised learning; thus the process of building a model from the data is more difficult. Often all that can be done is to cluster or organize the data in some way.<sup>286</sup>

Semi-supervised learning techniques are a hybrid: Both labeled and unlabeled data serve as training corpora.<sup>287</sup> The labeled data provide a basic framework for interpreting data that can be revised or supplemented in light of emergent patterns in unlabeled corpora. Once these patterns are drawn and incorporated into the algorithm, the computer can apply the revised algorithm to the text being interpreted. The initial provision of a labeled corpus increases the reliability of subsequent results over unsupervised approaches and, in the best cases, can rival even supervised approaches.<sup>288</sup>

Note that these approaches may be powered by computers that simply parse text according to its syntactical elements—the simplest component of natural language. When they are, the computers are nevertheless capable of performing impressive grammar-related tasks, such as identifying parts of speech or providing word definitions, and they can often guess word sense correctly.<sup>289</sup> Still, syntactic techniques are not, without supplementation, able to provide any conceptual understanding of the text being analyzed, and

NATURAL LANGUAGE PROCESSING 197, 201 (Alexander Clark, Chris Fox & Shalom Lappin eds., 2010).

285. Derek Greene, Pádraig Cunningham & Rudolf Mayer, *Unsupervised Learning and Clustering*, in MACHINE LEARNING TECHNIQUES FOR MULTIMEDIA: CASE STUDIES ON ORGANIZATION AND RETRIEVAL 51, 51 (Matthieu Cord & Pádraig Cunningham eds., 2008).

286. *Id.*

287. Xiaojin Zhu & Andrew B. Goldberg, *Introduction to Semi-Supervised Learning*, in SYNTHESIS LECTURES ON ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING 9, 9 (Ronald J. Brachman & Thomas Dietterich eds., 2009).

288. See, e.g., Ang Sun, Ralph Grishman & Satoshi Sekine, *Semi-Supervised Relation Extraction with Large-Scale Word Clustering*, in PROCEEDINGS OF THE 49TH ANNUAL MEETING OF THE ASSOCIATION FOR COMPUTATIONAL LINGUISTICS, 521, 521-29 (2011).

289. Christopher D. Manning, *Part-of-Speech Tagging from 97% to 100%: Is It Time for Some Linguistics?*, in COMPUTATIONAL LINGUISTICS AND INTELLIGENT TEXT PROCESSING 171, 171-89 (Alexander Gelbukh ed., 2011).

this has hampered their ability to solve problems like word sense disambiguation.<sup>290</sup>

b. The Beginning of Semantic Processing

In order to determine whether words fit into a particular conceptual relationship, some sort of outside knowledge is needed—specifically, semantic knowledge.<sup>291</sup> The outside knowledge that powers semantic searches comes from a particular kind of rule base known as an ontology.<sup>292</sup> Ontologies are formalizations of the conceptual relations between the agents in a system. They are networks of established or literal meaning such as “x is a y” or “x and y comprise z.”<sup>293</sup>

Because of the difficulty in devising true conceptual relations in natural language, ontologies take more resources to create than do syntactical rule bases, thus exacerbating the “knowledge acquisition bottleneck.”<sup>294</sup> Consequently, researchers are seeking to find shortcuts using some of the same methods that yielded positive results in syntactical processing: They are hoping that corpus-based machine learning can help automate the creation of semantic ontologies.<sup>295</sup> They have had some success. Recently, Patrick Winston developed a semantics-powered program that allowed a

---

290. Stevenson & Wilks, *supra* note 265, at 249. It is not unusual that the same word admits of multiple senses, such as when a single word—like “light”—can be used in different senses such that it takes on different meanings: an illumination vs. whiter in color vs. not heavy. Human beings are adept at disambiguating such words through the use of surrounding words or context. Computers continue to struggle with the task, however.

291. *Id.*

292. Thomas R. Gruber, *A Translation Approach to Portable Ontology Specifications*, 5 KNOWLEDGE ACQUISITION 199, 199 (1993).

293. See generally Craige Roberts, *Context in Dynamic Interpretation*, in THE HANDBOOK OF PRAGMATICS (Lawrence R. Horn & Gregory Ward eds., 2002).

294. See Andreas Hotho, *Data Mining on Folksonomies*, in INTELLIGENT INFORMATION ACCESS 57, 73 (Giuliano Armano et al. eds., 2010) (“The knowledge acquisition bottleneck characterizes the phenomena that the transformation process from unstructured to structured information is possible but does not scale to the size of the web. The reason is that a certain expertise is needed to create ontologies and to maintain them. This raises the cost of knowledge acquisition and only few people are contributing. Learning ontologies from text is a first way to simplify the acquisition process by utilizing machine learning approaches and linguistic knowledge.”).

295. *Id.*

computer to determine that *Macbeth* involved revenge even though the word “revenge” does not appear in the play.<sup>296</sup>

There are problems with automated creation, however. It is not entirely clear that semantic ontologies are scalable to large, heterogeneous domains, such as the web.<sup>297</sup> The amount of data needed for an algorithm to make a reliable model of semantics might be exponentially larger than that needed for a syntactical model.<sup>298</sup> One thing is clear: Automated sense tagging—labeling the sense in which a word is used when it might otherwise be unclear—is at an early stage of development,<sup>299</sup> which puts more pressure on human beings to create knowledge bases.<sup>300</sup>

### c. A Pragmatically Processed Future

Pragmatics is the most challenging aspect of language for machines because it is more dynamic, complex and, therefore, less “rule-ifiable.”<sup>301</sup> “Principles of pragmatics . . . are not rules that bind their subjects as do, say, rules of chemistry or mathematics. They are not invalidated by individual counter-examples, and they can even conflict with one another.”<sup>302</sup> Syntactic processors treat language as a bag of words that follow distinct rules of grammar, and semantic processors treat language as a bag of concepts that have static meanings.<sup>303</sup> Pragmatic processors, however, seek to identify the

---

296. Patrick Henry Winston, *The Strong Story Hypothesis and the Directed Perception Hypothesis*, ASS'N FOR THE ADVANCEMENT OF ARTIFICIAL INTELLIGENCE 345 (2011), <https://www.aaai.org/ocs/index.php/FSS/FSS11/paper/viewFile/4125/4534>.

297. *Id.*

298. See Bernhard Hengst, *Hierarchical Reinforcement Learning*, in ENCYCLOPEDIA OF MACHINE LEARNING 495, 495 (Claude Sammut & Geoffrey I. Webb eds., 2011).

299. See Nancy Chang, *Scaling Semantic Frame Annotation*, PROC. LAW IX - 9TH LINGUISTIC ANNOTATION WORKSHOP, June 5, 2015, at 1, 1 (“Semantically annotated resources have been comparatively harder to come by . . .”).

300. Cf. Daniel Gildea & Daniel Jurafsky, *Automatic Labeling of Semantic Roles*, 28 COMPUTATIONAL LINGUISTICS 1, 40 (2002) (“Semantic roles do not seem to be simple functions of a sentence’s syntactic tree structure, and lexical statistics were found to be extremely valuable, as has been the case in other natural language processing applications . . . . Automatically learning generalizations about the semantics and syntactic behavior of predicates is an exciting problem for the years to come.”).

301. See, e.g., Karen S. Lewis, *Discourse Dynamics, Pragmatics, and Indefinites*, 158 PHIL. STUD. 313, 314 (2012).

302. M.B.W. Sinclair, *Law and Language: The Role of Pragmatics in Statutory Interpretation*, 46 U. PITT. L. REV. 373, 382 (1985).

303. See Cambria & White, *supra* note 254, at 48.

context-dependent narratives that lay behind natural language.<sup>304</sup> The context of a statement includes the interests of the speaker and the audience, among other things, so a machine must understand more than simply the text before it.

Syntactics or semantics would be weak tools for the disambiguation of many simple statements, such as Yehoshua Bar-Hillel's famous example, "The box is in the pen."<sup>305</sup> While syntactics could tell us that "pen" is a noun with multiple definitions, and semantics could tell us that the pen in this case is an object housing a box, we might need to know something about the relative sizes of the box and the pen or about the purposes of the statement to disambiguate the meaning of "pen" in this statement.<sup>306</sup> If context tells us that the speaker is a pig farmer, we would be on the way toward understanding that "pen" refers to an enclosure rather than a writing tool.

Some liken the mix of context and statements to narrative or discourse.<sup>307</sup> To follow a discourse requires interpretive adjustments as statements are being made, as well as the capacity to gather data from aspects of the discourse that are not evident in the words of the statements themselves. Thus, for machines to understand natural language as well as humans do will take advancement in the ability of machines to gather data from situations.

Early pragmatics progress is evident in the field of sentiment analysis, which analyzes written text to determine authors' attitudes toward entities.<sup>308</sup> In the 2012 election, *USA Today* ran a daily feature in which it analyzed the text in social media posts to determine a "sentiment score" for each candidate, though the results left some critics unsatisfied due to their lack of reliability and failure to incorporate more data about the speakers into the analysis.<sup>309</sup> While machine sensors have made great strides with the ubiquity of

---

304. See ROBERT PORZEL ET AL., TOWARDS A SEPARATION OF PRAGMATIC KNOWLEDGE AND CONTEXTUAL INFORMATION 12 (2006), <http://ceur-ws.org/Vol-210/paper2.pdf>.

305. Yehoshua Bar-Hillel, *A Demonstration of the Nonfeasibility of Fully Automatic High Quality Translation*, in 1 ADVANCES IN COMPUTERS 158, 158-63 (1960) (emphasis omitted).

306. See *id.*

307. Somers, *supra* note 266, at 331.

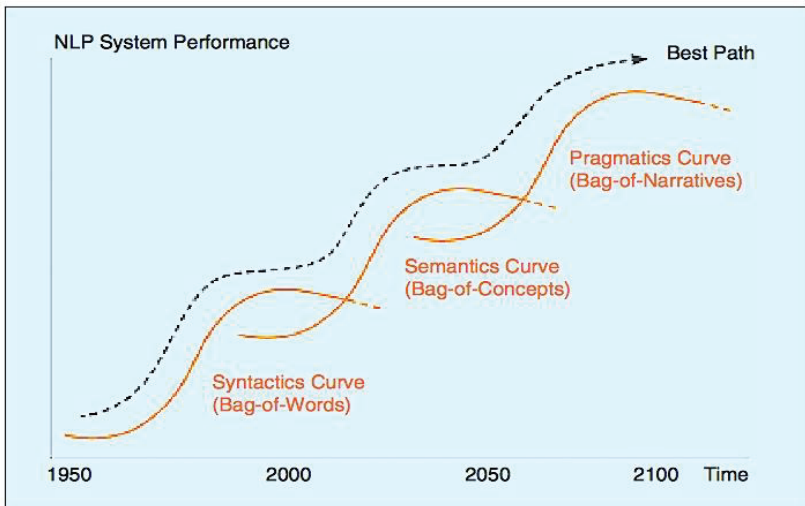
308. See BING LIU, SENTIMENT ANALYSIS: MINING OPINIONS, SENTIMENTS, AND EMOTIONS 1 (2015).

309. Sarah Kessler, *The Problem with Sentiment Analysis*, FAST COMPANY (Nov. 5, 2014, 9:00 AM), [www.fastcompany.com/3037915/the-problem-with-sentiment-analysis](http://www.fastcompany.com/3037915/the-problem-with-sentiment-analysis).

cellphones, they still have a way to go before situational data can usefully be brought into knowledge bases.

Thus, the sequence of advancement in NLP is clear: We should expect innovations to continue along syntactical lines, but we will see a shift towards semantic approaches, followed finally by the beginning of the pragmatic era. Less clear is when each of these is going to occur. Last year, computer scientists Eric Cambria and Bebo White published an influential article in which they estimated the timing of each wave.<sup>310</sup> They predicted that the transition to semantics is likely to take place in just a few years and that the transition to pragmatics should begin around 2060. They set forth their prediction in the following figure.

**Figure 2**  
NATURAL LANGUAGE PROCESSING (NLP) CURVE



© 2014 IEEE

Accordingly, we can expect machines to reach mastery of syntactical elements of NLP very soon, but we will have to wait decades before mastery of semantics and a half-century before mastery of pragmatics occurs.

310. See Cambria & White, *supra* note 254, at 48.

## 2. NLP and Incomplete Innovation of Law

I will now discuss the progress that has already been made in legal NLP and the pace with which it will proceed. For decades, lawyers have been reliant on computers for research tasks, and their research queries are syntactical in nature.<sup>311</sup> Syntactic processing should be familiar to law students and lawyers who performed legal research before 2012 because the most popular research software relied exclusively on that technique (e.g., Lexis and Westlaw).<sup>312</sup> Few would consider this usage of NLP—essentially manual keyword searching—to be disruptive.<sup>313</sup> In recent years, however, complex syntactical and even basic semantic techniques have gained favor.

### a. TAR and High-Volume Document Review

One of the most technologically advanced cost-cutting measures in wide use among legal process outsourcers (LPOs) is using data analytics called “Technologically Assisted Review” (TAR) for e-discovery.<sup>314</sup> Leading LPOs employ unsupervised and semi-supervised syntactical machine learning approaches.<sup>315</sup> At the early stages of analysis, unsupervised syntactical processing of documents reveals basic structures within them, such as email threads, nearly identical documents, key word frequency, and the like.<sup>316</sup> Note that this takes a “rulified” bag-of-words approach that has yielded results in many different contexts. Thereafter, cutting-edge LPOs might employ unsupervised semantic processing, known in the trade as “latent semantic indexing,” to identify concepts in the documents by finding clusters of documents in which the words

---

311. See F. Allan Hanson, *From Key Numbers to Keywords: How Automation Has Transformed the Law*, 94 L. LIBR. J. 563, 575 (2002).

312. See Kiwi Camara, *LFD 2—Westlaw- and Lexis-Style Search Syntax*, DISCOVERY: DISCO BLOG (July 26, 2014, 1:43:05 AM), <http://blog.csdisco.com/2014/07/26/lfd-2-westlaw-and-lexis-style-search-syntax/>.

313. See Michele R. Pistone & John J. Hoeffner, *No Path but One: Law School Survival in an Age of Disruptive Technology*, 59 WAYNE L. REV. 193, 257 n.278 (2013) (referring to this searching as earlier technology, implying that it is not disruptive).

314. *Rio Tinto PLC v. Vale S.A.*, 306 F.R.D. 125, 126 (S.D.N.Y. 2015).

315. See, e.g., Edward Sohn, *Predictive Coding 101: What It Is and How It Works*, PANGEA3 BLOG (July 19, 2012), <http://www.pangea3.com/legalblog/how-predictive-coding-works-html> [<https://web.archive.org/web/20150711002756/http://www.pangea3.com/legalblog/how-predictive-coding-works-html>].

316. JENNY LE, PRACTICAL USES OF ANALYTICS IN E-DISCOVERY - A PRIMER (n.d.), [http://nationallawinstitute.com/pdf/pp\\_pdf/evd%20cle%20slides.pdf](http://nationallawinstitute.com/pdf/pp_pdf/evd%20cle%20slides.pdf).



within them fall into certain structures that are statistically likely to indicate a conceptual relationship.<sup>317</sup>

As mentioned, in unsupervised cases, the resulting clusters are not labeled, so a lawyer needs to review them to determine whether they are representative of important dimensions of the case and, if so, to assign them to categories. Using this information, specialists can select a sample of the documents under consideration—a “seed set”—and analyze it with the trained algorithm to determine the accuracy of the program and whether it labels the appropriate number of documents as relevant while still being representative of the documents as a whole. The courts have routinely blessed this practice.<sup>318</sup>

While other LPOs might truncate this process, with some jumping right to the creation of seed sets derived from a randomized sample of the overall documents, expert reviewers still adjust the seed set to improve results.<sup>319</sup> Discovery and ethics rules force lawyers into the process in some capacity,<sup>320</sup> but it is also true that the state of current technology is such that human expert knowledge is needed to produce good results in this context.<sup>321</sup>

Though lawyers are still part of the process, technologically assisted review can bring state-of-the-art results—even better than manual review by attorneys<sup>322</sup>—at a fraction of the cost, by cutting down on the manual work that lawyers would have otherwise

---

317. See *Nat'l Day Laborer Org. Network v. U.S. Immigration & Customs Enf't Agency*, 877 F. Supp. 2d 87, 109-10 (S.D.N.Y. 2012).

318. See, e.g., *Rio Tinto PLC*, 306 F.R.D. at 127.

319. See Edward Sohn, *Top Ten Concepts to Understand About Predictive Coding*, ACC (May 22, 2013), [www.acc.com/legalresources/publications/topten/tctuapc.cfm](http://www.acc.com/legalresources/publications/topten/tctuapc.cfm).

320. Courts frequently impose sanctions when attorneys do not adequately supervise technologically assisted review. See, e.g., *Clay v. Consol. Pa. Coal Co., LLC*, No. 5:12-cv-92, 2013 U.S. Dist. LEXIS 129809, at \*4, \*14-16 (N.D. W. Va. Aug. 13, 2013); *1100 West, LLC v. Red Spot Paint & Varnish Co.*, No. 1:05-cv-1670-LJM-JM8, 2009 WL 1605118, at \*28-29 (S.D. Ind. June 5, 2009); *Diabetes Ctrs. of Am., Inc. v. Health Pia Am., Inc.*, No. H-06-3457, 2008 U.S. Dist. LEXIS 8362, at \*10-12 (S.D. Tex. Feb. 5, 2008); *Phx. Four, Inc. v. Strategic Research Corp.*, No. 05 Civ. 4837(HB), 2006 WL 1409413, at \*6-9 (S.D.N.Y. May 23, 2006). Courts have also found ethics violations for similar conduct. *In re Rosenthal*, No. H-04-186, 2008 WL 983702, at \*11 (S.D. Tex. Mar. 28, 2008).

321. See *Nat'l Day Laborer Org. Network*, 877 F. Supp. 2d at 108-09.

322. Maura R. Grossman & Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient than Exhaustive Manual Review*, 17 RICH. J.L. & TECH., Spring 2011, at 1, 20-21, 52-55, 61.

performed.<sup>323</sup> It is a true innovation for High-Volume Document Review.

In this regard, however, it poses the same threats that other forms of outsourcing and offshoring do—specifically, Demand Disruption. If the incumbents widely adopt TAR, shedding the lawyers who ordinarily perform such work, then the market offerings will shift, with the total share of products or services in the market coming from the new approach outnumbering the total share of products or services based on the old approach.<sup>324</sup>

Having established that NLP is both disruptive and innovative, the remaining question is whether it is complete: Has it (or will it soon) innovate the remaining core functions, particularly the bespoke functions? The answer is, of course, no.

#### b. A Long Time to Wait: NLP and Complete Innovation

At the bespoke level, lawyering can be a complex interpretive enterprise requiring the use of uncommon knowledge. The California Appeals Court recently stated:

[Lawyers must] know “those plain and elementary principles of law which are commonly known by well informed attorneys” and also “to discover those additional rules of law which, although not commonly known, may readily be found by standard research techniques.” . . . Where the law is doubtful or uncertain, an attorney is obliged “to undertake reasonable research in an effort to ascertain relevant legal principles and to make an informed decision as to a course of conduct based upon an intelligent assessment of the problem.”<sup>325</sup>

While there are interpretive dimensions in all of the core functions that lawyers perform, only the bespoke functions routinely demand lawyers to offer a justification of their approach grounded in the law and in anticipation of contrary legal interpretations.

Non-bespoke functions might require that lawyers make practical or even strategic determinations, but they do not typically ask lawyers to derive non-obvious meaning from the domain of legal texts. The focus of case management is planning and efficiency

---

323. Rachael Anna, *Predictive Coding Slowly Becoming a Game Changer*, ABOVE THE L. (Jan. 12, 2015, 10:23 AM), <http://abovethelaw.com/2015/01/predictive-coding-slowly-becoming-a-game-changer/>.

324. See Alexandra Hanson, *Legal Process Outsourcing to India: So Hot Right Now!*, 62 SMU L. REV. 1889, 1893-94 (2009).

325. *Hopkins & Carley v. Gens*, 135 Cal. Rptr. 3d 1, 11-12 (Cal. Ct. App. 2011) (citation omitted) (quoting *Osorino v. Weingarten*, 21 Cal. Rptr. 3d 246, 266 (Cal. Ct. App. 2004)).

rather than legal interpretation.<sup>326</sup> Likewise, Low-Stakes Document Creation does not force lawyers to perform advanced legal research; rather, it forces them to respond to routine filing necessities that have long been streamlined. And while knowledge of evidence law might prove useful in High-Volume Document Analysis, the task is, at its core, a fact-finding expedition that can be completed with a meager understanding of relevance and privilege in most cases.<sup>327</sup>

In comparison, bespoke functions require that lawyers actively engage with the law, itself. In advocacy before a court, a lawyer cannot raise whatever argument she fancies regardless of the legal directives that govern her case lest she risk punishment for advancing a frivolous claim.<sup>328</sup> Nor may she cut and paste boilerplate language when drafting a high-stakes contract without concern for how the specific facts of her case might make a difference under the law.<sup>329</sup> Even when negotiating a settlement, a lawyer must use legal argument to gain leverage or at least be aware of the probability that her particular case will succeed under the law in the event that talks break down, or she risks facing a malpractice claim.<sup>330</sup>

At the risk of being trite, these are the functions in which one is asked to “think like a lawyer,” broadly understood, and which are the focus of law school education.<sup>331</sup> Nearly all American law schools have specialized courses in trial and appellate advocacy, negotiation, and legal writing, but they seldom offer courses in document review, case management, and boilerplate legal forms.<sup>332</sup>

---

326. See *Legal Case Management*, WIKIPEDIA, [https://en.wikipedia.org/wiki/Legal\\_case\\_management](https://en.wikipedia.org/wiki/Legal_case_management) (last visited Jan. 25, 2016).

327. Cf. Regan & Heenan, *supra* note 82, at 2188-89.

328. See, e.g., FED. R. CIV. P. 11(b)(2).

329. See, e.g., *In re Seare*, 493 B.R. 158, 200 (Bankr. D. Nev. 2013) (“[Boilerplate] disclosures may sufficiently communicate what unbundling is and the general risks associated with it, but a boilerplate disclosure cannot be expected to capture the specific risks that a client will face if her lawyer does not perform certain services.”).

330. Douglas R. Richmond, *Lawyers’ Professional Responsibilities and Liabilities in Negotiations*, 22 GEO. J. LEGAL ETHICS 249, 250, 297 (2009).

331. FREDERICK SCHAUER, *THINKING LIKE A LAWYER: A NEW INTRODUCTION TO LEGAL REASONING 1* (2009).

332. See Raymond E. Bayley, *Avoiding Inadvertent Production*, LAW 360 (Sept. 12, 2011, 11:49 AM), <http://www.law360.com/articles/270563/avoiding-inadvertent-production> (explaining that law schools do not ordinarily teach the skills for document review); Sally Simpson, *Students with “CLAS”: An Alternative to Traditional Bar Examinations*, 20 GA. ST. U. L. REV. 813, 836-37 (2004); Lucy Isaki, *From Sink or Swim to the Apprenticeship: Choices for Lawyer Training*, 69 WASH. L. REV. 587, 588-89 (1994).

The likelihood that the NLP technologies that power TAR will innovate bespoke functions depends on whether bespoke functions can leverage the existing strengths of the technology. We must ask ourselves whether technologies that seek to derive legal meaning from texts will make it easier to think like a lawyer. This demands that we consider the structure of law, itself.

i. *Pure Rules and Syntactical Processing*

We are hurtling along the syntactical curve of NLP, approaching the transition to the semantics curve. Recall that syntactics performs best when powered by a well-drawn rule base. Thus, the degree to which syntactics is adequate in a context is a function of how much the rules of its rule base correspond with the rules of meaning in that context.<sup>333</sup>

Syntactical rules have to do with the structure of words in a sentence, the bulk of which are rules of grammar and popular dictionary definitions. Insofar as those rules can be translated into specific commands to be followed by computers, syntactical processing will be successful. It struggles when the words admit of multiple, context-sensitive meanings or when they are arranged in ways that violate grammar or standard usage. It further struggles if the rules that apply to a text are in flux rather than in stasis.<sup>334</sup> It is easy to see why discourse on the web, which is unstructured and often fails to conform to such rules, has proven to be such a challenge for syntactical processing. Is law different?

Justice Antonin Scalia famously declared that the rule of law—is a “law of rules.”<sup>335</sup> To be sure, when we think about law, we might picture rows of bound statutes and regulations, arranged in a logical and static fashion—a sort of multi-volume rulebook. And laws tend to be written with clarity in mind so as to maximize the likelihood that those subject to them will be able to understand them and

---

333. Linda Wiecheteck, Francis M. Tyers & Thomas Omma, *Shooting at Files in the Dark: Rule-Based Lexical Selection for a Minority Language Pair*, in *ADVANCES IN NATURAL LANGUAGE PROCESSING: 7TH INTERNATIONAL CONFERENCE ON NLP* 418, 426 (Hrafn Loftsson, Eiríkur Rögnvaldsson & Sigrún Helgadóttir eds., 2010) (“The higher the level of abstraction, either in terms of semantic sets or in syntactic contexts, the more carefully the rules need to be made to achieve good performance.”).

334. *Id.*

335. Antonin Scalia, *The Rule of Law as a Law of Rules*, 56 U. CHI. L. REV. 1175, 1175 (1989).

conform their conduct to the legal authorities.<sup>336</sup> Viewed in this way, the law might be low-hanging fruit for a syntactical processor, at least compared to something like the web.<sup>337</sup>

But even Scalia understood that the law is not always clear or code-like. His very point about making law into rules was not descriptive but prescriptive; he wanted to convince other judges to stop engaging in discretion-conferring rulings like the “totality of the circumstances” test, which fails to set out determinate legal meaning, and instead announce clear, specific rules.<sup>338</sup>

Scalia’s distinction mirrors the oft-cited distinction between rules and standards. In the scholarly literature, a rule is a directive containing criteria for compliance that, on a straightforward reading, provides clear guidance about what falls within the scope of the directive.<sup>339</sup> A standard is a directive containing criteria that, on a straightforward reading, forces the interpreter to make an evaluative judgment.<sup>340</sup> In their purest forms, rules are clear, specific directives; and standards are broad directives with determinacy issues.<sup>341</sup> The more rule-like our laws are, the more successful current NLP will be in the legal services context. The quintessential, or pure, legal rule sets forth a bright-line test, such as a numerical speed limit, for compliance.<sup>342</sup> A pure rule presents fewer obstacles to NLP; it is possible for a rule to set forth a directive in terms that have single, context-independent definitions such that ordinary powers of syntactical interpretation are all that are necessary for one to reach correct legal meaning. A syntactical approach is a sophisticated

---

336. Ryan J. Owens & Justin Wedeking, *Justices and Legal Clarity: Analyzing the Complexity of Supreme Court Opinions*, 45 LAW & SOC’Y REV. 1027, 1029 (2011).

337. Elaine McCardle, *The Laws of Adaptation*, HARVARD LAW TODAY (Oct. 5, 2015), <http://today.law.harvard.edu/feature/the-laws-of-adaptation/#> (“In fact, lawyers may be far more susceptible than physicians, says Harvard Law Professor David B. Wilkins ‘80, vice dean for global initiatives on the legal profession. As a rules-based system, law is similar to chess, he notes, in which Watson’s predecessor, Deep Blue, prevailed 14 years earlier, beating the world chess champion.”).

338. Scalia, *supra* note 335, at 1181.

339. Brian Sheppard, *Norm Supercompliance and the Status of Soft Law*, 62 BUFF. L. REV. 787, 803-04 (2014).

340. *Id.*

341. See Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 559-60 (1992).

342. Rules can become more standard-like after judges apply them in a fashion that is at odds with a straightforward reading of the bright-line directive in a precedent-setting case. *Id.* Accordingly, this discussion assumes “pure” rules that have maintained their bright-line character.

parrot; it is adept at calling up rules when given sufficiently clear prompts. If legal rules come in readily understandable form, then the computer or the human being using the computer will be able to respond in a correct manner with minimal translation of law to machine code. Even though it knows nothing about what the speed limit means, Siri or Google is perfectly capable of providing adequate legal guidance when asked the question, “What is the speed limit in a school zone?” Standards make it difficult for this sequence to take shape. Merely parroting back a standard, like “do not act willfully,” might not provide adequate guidance to those unfamiliar with the manner in which courts have understood that term. Alternatively, translating that term into a sufficiently clear directive would likely require deriving multiple context-sensitive rules from cases and, thereafter, instructing the computer how to respond to each contextual cue.

The proof is in the pudding: Pure rules have already been incorporated into the programming of machines that regulate human conduct directly. All states have legal rules that set forth a bright-line blood-alcohol level for drunk driving penalties.<sup>343</sup> These states further require or permit that certain kinds of drunk-driving offenders have ignition interlocks installed in their cars.<sup>344</sup> An ignition interlock is a device installed in a motor vehicle that measures the blood-alcohol content of the operator and disallows the mechanical operation of such motor vehicle until the blood-alcohol content falls below a certain level.<sup>345</sup> These devices encode the bright-line legal rule concerning blood-alcohol content such that it will prevent an ignition circuit until the data the machine receives from the breath intake on the device falls below the bright-line.<sup>346</sup> There is no evidence that this encoding of drunk-driving directives fails to capture their proper function. All states have imposed reliability testing on interlock devices,<sup>347</sup> and no states have seen fit to revoke the laws.<sup>348</sup> Indeed, this integration of legal language and programming is so straightforward that the role of natural language understanding is minimal.

---

343. *Drunk Driving Laws*, GOVERNORS HIGHWAY SAFETY ASS'N, [http://www.ghsa.org/html/stateinfo/laws/impaired\\_laws.html](http://www.ghsa.org/html/stateinfo/laws/impaired_laws.html) (last visited Jan. 25, 2016).

344. *Id.*

345. CONN. GEN. STAT. ANN. § 14-227j (West 2011).

346. *Id.*

347. *See, e.g.*, N.Y. VEH. & TRAF. LAW § 1198 (LexisNexis 2013).

348. *See, e.g.*, ARIZ. REV. STAT. ANN. § 28-1462 (2003).

Similarly, with the advent of driverless cars, companies have been forced to encode speed limits and other laws of the road into the vehicles' programming. This is considerably more ambitious than the interlock because the computer must consider multiple laws at once and discern from a 3D-mapped environment how the vehicle should proceed.<sup>349</sup> For instance, an autonomous car might sense a sign of a particular shape with the characters "SPEED LIMIT 20" arranged in a particular fashion, and that data might trigger a simple syntactical program that limits its speed in accordance with the sign.<sup>350</sup> Though the cars are still in preliminary development, early results show that Google's driverless car operates more safely than human-controlled cars.<sup>351</sup> Presumably, the car drives more legally, too. Nevada scrutinized the car and issued the country's first self-driving vehicle testing license,<sup>352</sup> which has not been revoked despite a law that allows denial or revocation for "willful failure of the applicant or licensee to comply with the motor vehicle laws."<sup>353</sup> That said, the test occurred on a route chosen by Google, and the human driver had to intervene twice.<sup>354</sup> Even though the car does not understand the meaning of the traffic laws that it follows, it is perfectly capable of processing 3D data, applying the results to a test for compliance that accurately encodes a legal rule, and then responding accordingly. The clarity of these and other traffic-related legal directives is a critical component of the car's success. Unsurprisingly, successful challenges to traffic laws on the ground of ambiguity are quite rare.<sup>355</sup>

---

349. Erico Guizzo, *How Google's Self-Driving Car Works*, IEEE SPECTRUM (Oct. 18, 2011), <http://spectrum.ieee.org/automaton/robotics/artificial-intelligence/how-google-self-driving-car-works>.

350. Because the Google car is limited to small pre-mapped areas that already have speed limits programmed, there is not yet a need for this sort of text perception.

351. Tom Simonite, *Data Shows Google's Robot Cars Are Smoother Safer Drivers than You or I*, MIT TECH. REV. (Oct. 25, 2013), <http://www.technologyreview.com/news/520746/data-shows-googles-robot-cars-are-smoother-safer-drivers-than-you-or-i/>.

352. Matt Peckham, *Google's Driverless Cars Now Officially Licensed in Nevada*, TIME (May 8, 2012), <http://techland.time.com/2012/05/08/googles-driverless-cars-now-officially-licensed-in-nevada/>.

353. NEV. REV. STAT. ANN. § 487.650(d) (West 2009).

354. Mark Harris, *How Google's Autonomous Car Passed the First U.S. State Self-Driving Test*, IEEE SPECTRUM (Sept. 10, 2014), <http://spectrum.ieee.org/transportation/advanced-cars/how-googles-autonomous-car-passed-the-first-us-state-selfdriving-test>.

355. A search of all courts going back to at least 1936 in Lexis for "traffic law" and "unconstitutionally vague" brings up only 143 reported decisions, only a

Comprehending motor-vehicle laws is one thing, but serving a client with a legal problem is quite another. The tax law provides an illustrative example because it marks the edge of progress with computerization. The U.S. Tax Code is “the paradigmatic system of rules.”<sup>356</sup> This feature has permitted the development of a computerized tax preparation industry, an industry that has thrived despite some errors in legal interpretation.<sup>357</sup> Though there is evidence that accountants can still outperform tax preparation software in even moderately complex personal income tax scenarios,<sup>358</sup> tax preparation software is gaining ground.<sup>359</sup> A syntactical approach is appropriate for basic personal income tax preparation because the structure of the tax code is sufficient to create an ordered set of commands in an elaborate decision tree.<sup>360</sup> It need not understand the content of the tax code or the data entered by its users.<sup>361</sup>

But tax preparation is not a legal service. This is true even when *lawyers* perform it.<sup>362</sup> One court explained why:

---

fraction of which were successful at all. *But see* *People v. Meola*, 19 Misc. 2d 837, 838 (N.Y. Cty. Ct. 1959) (finding law that “the headlamps, if of the multiple beam type, shall be operated so that dazzling light does not interfere with the driver of the approaching vehicle” was unconstitutionally ambiguous), *overruled by* 165 N.E.2d 851, 854-55 (N.Y. 1960).

356. David A. Weisbach, *Formalism in the Tax Law*, 66 U. CHI. L. REV. 860, 860 (1999).

357. *See More Taxpayers Filing from Home Computers in 2014*, IRS (Mar. 13, 2014), <http://www.irs.gov/uac/Newsroom/More-Taxpayers-Filing-from-Home-Computers-in-2014--Many-Taxpayers-Eligible-to-Use-Free-File>.

358. *See, e.g.,* Kate Ashford, *TurboTax vs. Human: Best Way to Save on Your Tax Return*, CBSNEWS (Mar. 15, 2010, 3:00 AM), <http://www.cbsnews.com/news/turbotax-vs-human-best-way-to-save-on-your-tax-return/>.

359. *See* Jonnelle Marte, *Stop Paying so Much for Tax Help*, WASH. POST (Jan. 26, 2015), <http://www.washingtonpost.com/news/get-there/wp/2015/01/26/stop-paying-so-much-for-tax-help/>.

360. The computer is asked only to do simple tasks: to transpose numerical data into specified areas of tax forms, to detect the sequence of characters that have been entered or buttons pressed (e.g., “YES” or “NO”), to call up the pre-programmed plain English question in the decision tree that corresponds to that sequence of characters, or to perform simple calculations. *See* Press Release, Jackson Hewitt, Jackson Hewitt Professional Tax Preparers Help Taxpayers Maximize Returns Through Proprietary Software (Feb. 9, 2015), <http://www.pnewswire.com/news-releases/jackson-hewitt-professional-tax-preparers-help-taxpayers-maximize-returns-through-proprietary-software-72487207.html>.

361. *See id.*

362. *See, e.g.,* *Canaday v. United States*, 354 F.2d 849, 857 (8th Cir. 1966); *In re Grand Jury Investigation*, 842 F.2d 1223, 1225 (11th Cir. 1987); *United States*



Unlike most other areas in which statutes impose legal obligations on the citizenry, in the income tax return preparation context the government has researched and interpreted the tax laws for the taxpayer in advance. . . . [The government's] instructions and publications are supposedly written in everyday language, to permit a taxpayer to prepare his or her own return.<sup>363</sup>

Tax work for lawyers arises from situations in which legal meaning is not readily translatable into everyday language directives, even though the code surely conforms to the rules of English syntax.<sup>364</sup>

The legal meaning of certain provisions might not be easily encoded in a rule because of shifts in semantics or pragmatics. Such shifts can be caused by judicial application or other forces.<sup>365</sup> As linguistic scholars Pasternak & Rico explain, "Indeed, the graphic signs that comprise the legislative, administrative and judicial rules may be stable, but their semantic contents are constantly changed and abused."<sup>366</sup> For example, Internal Revenue Code § 6672, states that "[a]ny person required to collect, truthfully account for, and pay over any tax imposed by this title who willfully fails to collect such tax . . . [shall] be liable."<sup>367</sup> The Fifth Circuit described the definition of "willful" as "smothered with a maze of semantics" and pointed out how courts have struggled, in particular, with the issue of whether an action was done without reasonable cause.<sup>368</sup> The courts are not saying that the term lacks legal meaning; rather, as the Seventh Circuit stated, "The precise content to be given the concept of 'willfulness' varies according to the legal context in which it appears."<sup>369</sup> With such provisions, a syntactical approach will not do.

Other areas of law prove more challenging. Tort law, where the legal standard of "reasonableness" reigns supreme, is but one example.<sup>370</sup> Scholars have concluded that standards are commonplace in areas of law as varied as criminal,<sup>371</sup> contract,<sup>372</sup> securities,<sup>373</sup>

---

v. Lawless, 709 F.2d 485, 487 (7th Cir. 1983); *United States v. Davis*, 636 F.2d 1028, 1043 (5th Cir. 1981).

363. *United States v. Willis*, 565 F. Supp. 1186, 1189-90 (S.D. Iowa 1983).

364. Menahem Pasternak & Christophe Rico, *Tax Interpretation, Planning, and Avoidance: Some Linguistic Analysis*, 23 AKRON TAX J. 33, 78-79 (2008).

365. See generally Sheppard, *supra* note 339.

366. See Pasternak & Rico, *supra* note 364, at 78.

367. I.R.C. § 6672 (1998).

368. *Frazier v. United States*, 304 F.2d 528, 529 (5th Cir. 1962).

369. *Monday v. United States*, 421 F.2d 1210, 1215 (7th Cir. 1970).

370. See Benjamin C. Zipursky, *Snyder v. Phelps, Outrageousness, and the Open Texture of Tort Law*, 60 DEPAUL L. REV. 473, 496 (2011).

371. See Abner S. Greene, *Is There a First Amendment Defense for Bush v. Gore?*, 80 NOTRE DAME L. REV. 1643, 1692 (2005).

corporate governance,<sup>374</sup> custody law,<sup>375</sup> among others. Some surmise that they are predominant over the great majority of law in the United States.<sup>376</sup> Thus, there are vast areas of American law that would not play nice with computer programming and NLP. This might not hold true for all countries, of course. Code-based systems such as those that are widespread in continental Europe have a reputation for being more rule-centric, which might be the reason that most of the research on A.I. and the law is taking place there.<sup>377</sup>

ii. *Semantic Processing and the “Knowledge Acquisition Bottleneck”*

If syntactical approaches suffer from an inability to comprehend legal meaning under legal standards or impure rules, then the only hope for a solution in the near future will have to come from semantics. Unfortunately, existing semantic rule bases (ontologies) are not nearly up to the task.

One of the few American legal scholars working on this issue Kevin Ashley recently explained that even though rules may be derived from the legal materials and applied in a logical fashion by machines, the meaning of those rules, as well as the rules themselves, are often subject to argument in the actual practice of law. This challenge arises, in part, because of the complexity of word sense disambiguation. He explains:

A primary task of the ontology is to coordinate the ordinary and legal institutional descriptions of events and, from the context, to keep track of the factual and legal senses of apparently identical terms. Some intermediate legal concepts may appear the same as general factual concepts. For instance, “causing” may have both an ordinary

---

372. See Robert E. Scott, *A Theory of Self-Enforcing Indefinite Agreements*, 103 COLUM. L. REV. 1641, 1686 (2003).

373. See Arthur B. Laby, *Differentiating Gatekeepers*, 1 BROOK. J. CORP. FIN. & COM. L. 119, 150 (2006).

374. See Michael Klausner, *Fact and Fiction in Corporate Law and Governance*, 65 STAN. L. REV. 1325, 1339 (2013).

375. See David L. Chambers, *Rethinking the Substantive Rules for Custody Disputes in Divorce*, 83 MICH. L. REV. 477, 481 (1984).

376. See Steven Shavell, *On Optimal Legal Change, Past Behavior, and Grandfathering*, 37 J. LEGAL STUD. 37, 81 (2008).

377. Indeed, of the thirty-three authors who contributed to the recent book, *APPROACHES TO LEGAL ONTOLOGIES THEORIES, DOMAINS, METHODOLOGIES* (Giovanni Sartor et al. eds., 2011), only two work at universities that are in common law countries (and both work in the United States).

commonsense and a technical legal meaning as an intermediate legal concept.<sup>378</sup>

Even when the particular sense of a legal term is clear, problems can also arise from the open texture of language—the notion that even the most clearly stated expression can be vague with respect to an unforeseen case.<sup>379</sup> It is possible that this problem is more pronounced in the legal setting, where an adversary system pressures lawyers to argue both sides of interpretive issues, even those that seem determinate at first glance.<sup>380</sup> Worse yet, there might arise cases that have no legal answer at all, requiring the adjudicator to create a brand new legal rule.<sup>381</sup>

Let's assume that a correct legal result exists in a case involving a legal standard. It would still be difficult to craft, in advance, a series of sub-rules that lend enough structure to the analysis that a machine could tell its user what that legally correct answer is or, short of that, what the best arguments are under the law to support the position that she wishes to advance.<sup>382</sup> The necessity for new concepts might arise through application. Ashley agrees:

---

378. Kevin D. Ashley, *The Case-Based Reasoning Approach: Ontologies for Analogical Legal Argument*, in APPROACHES TO LEGAL ONTOLOGIES: THEORIES, DOMAINS, METHODOLOGIES 99, 106-07 (Giovanni Sartor et al. eds., 2011).

379. Frederick Schauer, *On the Open Texture of Law* (Sept. 13, 2011), <http://ssrn.com/abstract=1926855>.

380. See Alan R. Madry, *Analytic Deconstructionism? The Intellectual Voyeurism of Anthony D'Amato*, 63 FORDHAM L. REV. 1033, 1066 (1995); Laura E. Little, *Hairsplitting and Complexity in Conflict of Laws: The Paradox of Formalism*, 37 U.C. DAVIS L. REV. 925, 943-44 (2004).

381. See Cass R. Sunstein, *Problems with Rules*, 83 CALIF. L. REV. 953, 984 (1995); H.L.A. HART, *THE CONCEPT OF LAW* 128 (2d ed. 1994).

382. To be clear, a computer might be able to make an accurate prediction of the outcome of a case that is governed by standards or other indeterminate or underdeterminate norms. Indeed, there is vast academic literature showing that computer-powered statistical analysis is good at predicting winners in cases, even when the only available data is a superficial knowledge of the kind of legal issue in the case and the names of the judges making the decision. See, e.g., JEFFEY A. SEGAL & HAROLD J. SPAETH, *THE SUPREME COURT AND THE ATTITUDINAL MODEL REVISITED* 316-19 (2002) (predicting accurately 88% (92 out of 105) of the Court's decisions between 1970 and 1976 and 85% of the Justices' votes); Jeffrey A. Segal & Albert D. Cover, *Ideological Values and the Votes of U.S. Supreme Court Justices*, 83 AM. POL. SCI. REV. 557, 561 (1989) (finding that ideology explains 80% of Justices' votes in civil liberties cases between 1953 and 1988). But this must be distinguished from the task of understanding legal concepts or crafting legal arguments under the norms that currently govern legal services. See Tracey E. George, Mitu Gulati & Ann C. McGinley, *The New Old Legal Realism*, 105 NW. U. L. REV. 689, 690-91 (2011) ("Indeed, the sometimes heated debates between traditional legal scholars and political scientists center on what to make of the

A comprehensive ontological organization of the legal and factual concepts to guide substitutions would be essential, but it may not be enough. In fashioning proposed tests and tailoring them to past cases, principles, and policies, human participants in the process, such as advocates, judges, professors, and students, commonly invent new intermediate legal concepts.<sup>383</sup>

Thus, an ontological approach faces a considerable knowledge acquisition bottleneck.<sup>384</sup>

Academics who work in this field are confident that the project will eventually be successful, but they admit to hurdles. Wyner, Peters, and Katz performed a case study in which they used law students to construct a published case-based legal ontology, which might be able to be used as a training corpus for machine learning.<sup>385</sup> The tags that the law students applied to the text of each case were somewhat modest in complexity, particularly for students with training: judge's name, hearing date, jurisdiction, decision date, case citation, facts, and reasoning outcomes.<sup>386</sup> While they found that there was considerable agreement among the students as to the text that should be tagged for elementary items like *judge's name* and *decision date*, there were low levels of agreement for more complex items, like *facts* and *reasoning outcomes*.<sup>387</sup> The authors concluded that "it is essential to provide extensive training and rich training

---

reasons offered by judges."). Whether or not it makes a difference to the outcome, the parties and judges in a case are expected to offer persuasive justifications for the positions they take. See Frank B. Cross, *Decisionmaking in the U.S. Circuit Courts of Appeals*, 91 CALIF. L. REV. 1457, 1476 (2003); Lawrence M. Friedman et al., *State Supreme Courts: A Century of Style and Citation*, 33 STAN. L. REV. 773, 774 (1981). An argument that the case should come out in one's favor because a computer predicted it would is not likely to be satisfactory under the existing standards of practice. Moreover, an understanding of legal concepts is useful in legislation in ways that predicting outcomes under preexisting law is not.

383. See Ashley, *supra* note 378, at 113.

384. Pompeu Casanovas, Núria Casellas & Joan-Josep Vallbé, *Empirically Grounded Developments of Legal Ontologies: A Socio-Legal Perspective*, in APPROACHES TO LEGAL ONTOLOGIES: THEORIES, DOMAINS, METHODOLOGIES, *supra* note 378 ("Moreover, legal knowledge is dynamic. Therefore, grounding empirically the legal knowledge to be modeled through ontologies is also an evolving and ongoing process.").

385. Adam Wyner, Wim Peters & Daniel Katz, *A Case Study on Legal Case Annotation*, in LEGAL KNOWLEDGE AND INFORMATION SYSTEMS 165, 165 (Kevin D. Ashley ed., 2013).

386. *Id.* at 167-68.

387. *Id.*

materials even to law school students” because of variety in the way judges linguistically signal the structures of their opinions.<sup>388</sup>

There is even reason to believe that legal-ontology construction might proceed at a slower pace than the overall NLP project. In other contexts, including construction of semantic web ontologies, the concepts being discussed in natural language are relatively static. While language evolves over time in ordinary discourse, seldom does the sudden decision of an individual or a small group of people upend conceptual meaning. For this reason, many data scientists who have analyzed the web project believe that any new ontology can simply be added to an older one in that context. In short, it is a cumulative process rather than an iterative one.<sup>389</sup> It is, at best, unclear whether ontology construction for law will be cumulative. At a moment’s notice, a precedential decision or legislation can put a strain on the viability of a previous conceptual understanding. This dynamic is characteristic of common-law legal ontologies, and it could make it even harder to make a large, reliable corpus.<sup>390</sup>

We should not ignore that private legal technologists appear to have made real progress in improving semantic legal research using automated techniques, but the difference from prior methods does not evince a break from the predicted trajectory of the semantic curve.

Though it is still being developed and there has never been a publicly available reliability study, the claims of Ravel Law suggest that they have overcome some of the tagging problems faced in the Wyner, Peters, and Katz study through automation. Ravel uses semantics to allow legal searching by concept, which yields lists of cases that are arranged in order of “relevance” or “importance” and which can further be arranged by a term they call “Ravel.” Both types appear to weight cases by the amount of times that they are cited by other cases.<sup>391</sup> Note that the proxy for these concepts is based on readily discernable criteria—the number of times that a sequence of words in a particular format (a cite) appears in other cases. In addition, Ravel uses sentiment analysis to power a “5-star system”<sup>392</sup> that indicates, not only whether a paragraph in a case has

---

388. *Id.* at 173-74.

389. Muthukkaruppan Annamalai & Leon Sterling, *Guidelines for Constructing Reusable Domain Ontologies*, PROC. AAMAS, 2003, at 1, 1.

390. Ashley, *supra* note 378, at 113-14.

391. *See, e.g.*, RAVEL LAW, RAVEL LAW QUICK START GUIDE (n.d.), [https://d2xkqp20fm9wy8.cloudfront.net/downloads/Ravel\\_QuickStart\\_Guide.pdf](https://d2xkqp20fm9wy8.cloudfront.net/downloads/Ravel_QuickStart_Guide.pdf).

392. *Id.* at 7.

been cited, but also whether it is positive or negative.<sup>393</sup> Apparently, this system is powered by an ontology of “the possible semantic relations that can be asserted between two citations,”<sup>394</sup> though it is fair to wonder whether it can be as comprehensive as they say. How might they categorize Justice Kagan’s recent citation to Dr. Seuss in her dissent in *Yates v. United States*?<sup>395</sup>

Arguably more ambitious is Judicata.com, which appears to automate tagging of opinions along numerous lines, including the distinction between fact and law, as well as categorizing facts by type.<sup>396</sup> Because Judicata is in stealth mode,<sup>397</sup> it is impossible to know how reliable this method is, but the founder of the company, Itai Gurari, offers a parallel, “Say you’re shopping for shoes, you just click on the checkbox for sneakers then select puma, red, size 9.5, so on, it’s all structured data which you can quickly query. So that’s what we’re offering from the user perspective.”<sup>398</sup>

Without taking anything away from Ravel’s and Judicata’s impressive work, it would be fair to say that these advancements are efficiency improvements on age-old services like Shepard’s or West’s Key Number service rather than game changers for bespoke services.<sup>399</sup> In the near future at least, they have a chance of increasing lawyer productivity, but it is doubtful that they will allow non-lawyers to narrow the performance gap with lawyers.

Because it is at such an early stage of development, little need be said of efforts to incorporate pragmatics into legal NLP. Legal theorists, like linguists and computer scientists of natural language,

---

393. *Caleb Goodwin Profile*, LINKEDIN, <https://www.linkedin.com/pub/caleb-goodwin/3/188/b67> (last visited Jan. 25, 2016) (describing Ravel Law data science lead’s work as “Entity-level sentiment analysis”).

394. *Id.*

395. 135 S. Ct. 1074, 1091 (2015) (“A fish is, of course, a discrete thing that possesses physical form.” (citing DR. SEUSS, *ONE FISH TWO FISH RED FISH BLUE FISH* (1960))).

396. Michelle Jalowski, *Q&A with a Legal Startup: Judicata on “Mapping the Legal Genome,”* LIFE L. (Mar. 4, 2014), <http://www.lifeofthelaw.org/2014/03/qa-with-a-legal-startup-judicata-on-mapping-the-legal-genome/>.

397. See Christine Langorio-Chafkin, *The First Rule of Stealth Mode Is . . .*, INC. (Jan. 21, 2014), <http://www.inc.com/christine-lagorio/lets-talk-about-stealth-mode.html>; *Stealth Mode*, WIKIPEDIA, [https://en.wikipedia.org/wiki/Stealth\\_mode](https://en.wikipedia.org/wiki/Stealth_mode) (last visited Jan. 25, 2016).

398. See Jalowski, *supra* note 396.

399. Itai Gurari, head of Judicata, admits as much. When asked “So how do you think Judicata will change the way that law is practiced?” he responded, “It’s mostly an efficiency tool.” *Id.*

generally believe that pragmatics is a part of legal meaning.<sup>400</sup> Scott Brewer even claims that it is a critical component of law's most distinctive form of argument—analogy.<sup>401</sup> Moreover, when interpretation does not yield clear legal meaning, perhaps because a reasonableness standard creates vagueness as to the case at hand, then the process of determining how to give legal effect to whatever legal meaning can be derived—the act of construction—is much more likely to be contextual and, thus, reliant on pragmatics.<sup>402</sup> This only reinforces the notion that we have little reason to believe that these technologies will advance faster in legal settings.

c. We Can Expect Disruption from Non-Technological Forces to Occur Before Innovation of Bespoke Functions Will Occur

The bar for innovation is not set at the same height for all of legal services' core functions. The bespoke functions are those for which lawyers have historically felt compelled to set a higher bar, demanding greater sophistication in their performance.<sup>403</sup>

Applications of NLP to law and legal services have thus far provided little reason to believe that the pace of NLP innovation in law will be any faster than the pace of NLP innovation in more ordinary contexts, such as the web. The bottom line is that bespoke functions will likely remain un-innovated for a lengthy period of time. As a consequence, the non-technological disruptive forces such

---

400. See Geoffrey P. Miller, *Pragmatics and the Maxims of Interpretation*, 1990 WIS. L. REV. 1179, 1182, 1194 (1990).

401. Scott Brewer, *Exemplary Reasoning: Semantics, Pragmatics, and the Rational Force of Legal Argument by Analogy*, 109 HARV. L. REV. 923, 926-27 (1996) (Brewer argues that analogy is, at heart, contextual; "when a legal reasoner . . . accepts certain rule of law ideals, the context of legal justification shapes the structure of that reasoner's legal analogical argument by requiring him to construct and rely on a type of *deductively applicable* rule within the legal analogy.").

402. In the last few years, the distinction between interpretation and construction has been an important area of constitutional theory. See Tun-Jen Chiang & Lawrence B. Solum, *The Interpretation-Construction Distinction in Patent Law*, 123 YALE L.J. 530, 534-35 (2013); Jack M. Balkin, *Nine Perspectives on Living Originalism*, 2012 U. ILL. L. REV. 815, 816 (2012). Though scholars have recognized an affinity between the distinction and the semantics/pragmatics distinction, this area is still largely unexplored. See Lawrence B. Solum, *Originalism and Constitutional Construction*, 82 FORDHAM L. REV. 453, 490 (2013); B. Jessie Hill, *Resistance to Constitutional Theory: The Supreme Court, Constitutional Change, and the "Pragmatic Moment,"* 91 TEX. L. REV. 1815, 1831-32 (2013).

403. See SUSSKIND, *supra* note 16, at 58.

as deregulation and business model changes have a long period in which they can disrupt legal service industry before technological innovation can approach pre-disruption performance thresholds.

#### IV. WILL LEGAL DISRUPTION BE PREMATURE?

The question of whether a disruption is premature is ultimately an evaluative one. Because the disruption that we are considering has not yet occurred, it is even more speculative than it would be post-disruption. We must make our best guess of what the post-disruption world will be like and then evaluate it against our current world. My remaining efforts will be directed toward the first half of that process: I will first explain why the legal services profession bears the hallmarks of Premature Disruption, then I will track how these features might interact with disruptive forces to create a very different, yet plausible, legal landscape.

##### A. The Hallmarks of Premature Disruption

The concept of Premature Disruption seeks to lend rigor to the popular notion that disruptive innovation is disconcerting because it might lead to something of value being left behind. More technically, the concept highlights that there is a gap between the demand for lingering functions (at pre-disruption quality) and their post-disruption supply. Two hallmarks of Premature Disruption, then, are scarcity of a core function and unmet demand for that core function. To establish that legal disruption can lead to that scenario, I will need to explain how the functions of the lingering, bespoke functions will become scarce and how this scarcity is likely to affect the provision of legal services to consumers and law, itself.

1. *The Long and Fragile Supply Chain for Bespoke Legal Services*

Disruption will very likely cause bespoke legal services to become scarce. This might seem odd for two reasons. According to conventional economic wisdom, when there is a drop in demand for a commodity in a market that was at equilibrium, there will be excess supply, which leads suppliers to lower prices to meet the new, lower



equilibrium price.<sup>404</sup> Disruption should, if anything, make it harder for scarcity to occur because fewer lawyers are needed or wanted under the lower equilibrium price. The problem is that the legal-services industry has features that make it possible that it will not return to equilibrium. In short, there is a good chance that consumers could undervalue bespoke services, leading providers to drop supply and price below the point that it would be were proper valuations made.<sup>405</sup> In the following Subsection, I explain how this is possible.

a. High Stakes and Risk Aversion at the Bottom of the Supply Chain

The supply chain for bespoke lawyering is long. The creation of a lawyer capable of performing bespoke functions begins at college graduation.<sup>406</sup> That graduate must decide to go to law school, which will likely take three years and cost between \$90,000 and \$250,000 depending largely on whether the school is private and the amount of subsidies received.<sup>407</sup> Upon graduating law school, the future lawyer will need to pass a state bar exam, which probably requires her to pay hefty expenses for bar preparation and test fees. At this point, it would not be unusual for her to have a six-figure debt from her post-college education, alone.<sup>408</sup> Because adequate compensation for bespoke services is not guaranteed, the decision to satisfy the preconditions for becoming a person capable of performing bespoke services has high stakes.

---

404. RICHARD G. LIPSEY & COLIN HARBURY, *FIRST PRINCIPLES OF ECONOMICS* 72-79 (1988).

405. More technically, substantial entry and overhead costs can make supply inelastic at low prices, leaving the possibility that supply might drop below demand levels. In addition, the opacity of the value of bespoke legal services can reduce effective demand for those services too far, leaving high latent demand for them. A similar phenomenon occurs with petroleum supply. M.A. Al-Sahlawi, *Structure of the Oil and Gas Industry*, in *PETROLEUM ECONOMICS AND ENGINEERING* 21, 27 (Hussein K. Abdel-Aal & Mohammed A. Alsahlawi eds., 3d ed. 2014).

406. See Sekhon, *supra* note 149, at 771.

407. Gregory Crespi, *Will the Income-Based Repayment Program Enable Law Schools to Continue to Provide "Harvard-Style" Legal Education?*, 67 *SMU L. REV.* 51, 67 (2014) (estimating full costs of three-year private legal education beginning 2013 are approximately \$250,000); Simkovic & McIntyre, *supra* note 21, at 281 (estimating 3-year net-tuition cost at \$90,000).

408. See MARK KANTROWITZ, *WHO GRADUATES COLLEGE WITH SIX-FIGURE STUDENT LOAN DEBT?* 1 (Aug. 1, 2012), [www.finald.org/educators/20120801sixfiguredebt.pdf](http://www.finald.org/educators/20120801sixfiguredebt.pdf).

Just because it is a high-stakes proposition does not mean it is not worthwhile. There is evidence that getting a law degree has been and, for the time being at least, is a good bet to make.<sup>409</sup> Historically, the profile of the person who decides to become qualified as a lawyer capable of performing bespoke services is smart<sup>410</sup> but risk-averse,<sup>411</sup> and we can gather that many people decided to go to law school based on a sensible assessment of the economic value of the law degree and the conclusion that it was a safe bet for them.

But there is flip side of the coin: This is also the profile of a person who will pay attention to downturns in demand for bespoke services and get easily spooked upon seeing them. Recent history is instructive. The post-recession plateau in incumbent revenue and the three-year drop in entry-level hiring<sup>412</sup> at incumbent law firms brought hiring back to late-nineties levels,<sup>413</sup> but the response among law school applicants was more extreme, bringing first-year enrollment to early-seventies levels.<sup>414</sup> Those levels persist despite three straight years of modest hiring increases and a return to pre-recession revenue growth at incumbent firms.<sup>415</sup> Those opting out appear to be coming from the high LSAT range, the very people who incumbent law firms tend to hire.<sup>416</sup> Since disruption will likely bring

---

409. See Simkovic & McIntyre, *supra* note 21, at 285.

410. Peter Zwick, Comment, *Rethinking Atticus Finch*, 60 CASE W. RES. 1349, 1365 (2010).

411. Arden Rowell & Jessica Bregant, *Numeracy and Legal Decision Making*, 46 ARIZ. ST. L.J. 191, 211-12 (2014); Anita Bernstein, *Pitfalls Ahead: A Manifesto for the Training of Lawyers*, 94 CORNELL L. REV. 479, 500 (2009).

412. Jennifer Smith, *Big Law Firms Resume Hiring*, WALL ST. J. (June 23, 2014, 10:06 AM), <http://www.wsj.com/articles/big-law-firms-resume-hiring-1403477513>.

413. Karen Sloan, *Study: Slack Large-Firm Hiring Is Everybody's Headache*, NAT'L L.J. (Aug. 15, 2013), [www.njlawjournal.com/id=1202615672797?slreturn=20150627172627](http://www.njlawjournal.com/id=1202615672797?slreturn=20150627172627).

414. ABA Section of Legal Education, *Reports 2014: Law School Enrollment Data*, A.B.A. (Dec. 16, 2014), [www.americanbar.org/news/abanews/aba-news-archives/2014/12/aba\\_section\\_of\\_legal.html](http://www.americanbar.org/news/abanews/aba-news-archives/2014/12/aba_section_of_legal.html) ("The 2014 1L enrollment is the lowest since 1973, when there were 151 ABA-approved law schools.").

415. *Entry-Level Law Firm Recruiting Ticks Up*, NALP (Mar. 4, 2015), [http://www.nalp.org/march15\\_perspectives\\_pressrel](http://www.nalp.org/march15_perspectives_pressrel) (hiring increases); Deborah McMurray, *The Fifth Annual AmLaw 200 Trends Analysis*, LAW FIRM 4.0 BLOG (July 1, 2013, 3:14 PM), [http://lawfirm4-0.typepad.com/law\\_firm\\_40\\_blog/2013/07/this-post-was-originally-published-by-content-pilots-patrick-fuller-on-the-deductive-intelligence-blog-this-is-the-fifth-yea.html](http://lawfirm4-0.typepad.com/law_firm_40_blog/2013/07/this-post-was-originally-published-by-content-pilots-patrick-fuller-on-the-deductive-intelligence-blog-this-is-the-fifth-yea.html) (revenue growth).

416. Natalie Kitroeff, *The Smartest People Are Opting Out of Law School*, BLOOMBERG (Apr. 15, 2015), <http://www.bloomberg.com/news/articles/2015-04-15/the-smartest-people-are-opting-out-of-law-school>.

about a more significant reduction in revenue for bespoke services, we can expect that it will, in turn, cause an even more precipitous decline in the bottom of the supply chain.<sup>417</sup>

Of course, some people might be interested in being a bespoke lawyer, not because of the profits that it is likely to yield, but because of the prestige that is ordinarily associated with sophisticated work. Indeed, survey results show that money and prestige come in first and second place, respectively, among the reasons cited for entering the profession.<sup>418</sup> Even for those folks, bespoke functions would likely become less attractive after disruption. If less credentialed human beings or machines perform some of the core functions of legal services, then occupational prestige could drop, leading some lawyers to abandon their careers and others to forego law school.

Lastly, law schools could hasten the limitation of supply by switching emphasis to non-bespoke aspects of legal training in the wake of lowered demand for law degrees. They might spend less time probing conceptual, political or other non-doctrinal dimensions of law, which are primarily of use in cases where the law does not clearly point to a particular outcome. They might switch emphasis to teaching black-letter law, instilling computer-based skills, and providing real-world experience. Several legal scholars have recently predicted or suggested that law schools change their pedagogical approaches along those lines.<sup>419</sup> This is not a criticism of that approach, but it could further limit the supply of new bespoke lawyers.

#### b. Bundled Duties, Overhead & Cartel Power

The stakes increase as we move up the supply chain into law practice. Recall that many disruptive forces seek to change the value proposition for clients by unbundling core functions from duties. For

---

417. Of course, it is possible that the typical law school applicant will change. The odds that young lawyers will land a job at an incumbent decrease, but the prize for winning such a job and advancing to a stakeholder position increases. This is unlikely to appeal to a risk-averse population, but it could appeal to risk-takers.

418. Susan Daicoff, *Lawyer, Know Thyself: A Review of Empirical Research on Attorney Attributes Bearing on Professionalism*, 46 AM. U. L. REV. 1337, 1358 (1997) (discussing survey results indicating that money varied in importance to students but that a vast majority of students indicated that prestige was of some importance to them).

419. See Campbell, *supra* note 167, at 3; BRIAN Z. TAMANAHA, *FAILING LAW SCHOOLS* 172-77 (2012); Crespi, *supra* note 407, at 57.

instance, deregulation will shrink the realm of duty-bound tasks that are considered the practice of law, and, even under existing regulations, hybrid firms make an end-run around ethical duties that would otherwise place law firms on the hook, making their overhead costs less onerous.<sup>420</sup> In effect, these operate to make the oligopolistic market into something more contestable. If incumbents cannot compete with disruptors as to innovated functions, then they must decide whether to imitate the disruptors or to double down on what makes them unique—their ability to provide lingering functions. If incumbents generally choose the former approach, then it is rather easy to see how this would limit supply: The primary group that has the skills to perform bespoke services has chosen to do something else.

There is a chance, however, that incumbents will choose to double down. Just as travel agencies have renewed emphasis on personalized service to upscale clients,<sup>421</sup> law firms that face new competition from relaxed regulation might seek to emphasize their most sophisticated core functions to risk-averse, wealthy clients. But disruptive forces will make it harder for them to leverage their perceived expertise by whittling away the credence that they have been accorded thus far, thereby threatening billing strategies (like the billable hour) that support overshooting demand. This could lead incumbents to look farther upmarket in search of less price-conscious clientele. That strategy demands that firms stick to high prices and premium services in the hope that bespoke services can survive as a luxury good. While this preserves a supply of bespoke services for the market, that supply is considerably smaller and less accessible than it was pre-disruption, even accounting for the fact that only a small population can currently afford legal services.

## 2. *Opacity of Value and Latent Demand for Bespoke Functions*

The next hallmark of Premature Disruption is unmet demand. A simple way this can occur is that demand is latent and therefore unnoticed. For example, it would happen if people underestimated the value of bespoke services and, therefore, did not express their demand. The constituency that stands to benefit most directly from

---

420. See Dzienkowski, *supra* note 247, at 3034 (“Traditional law firms often maintain a significant reserve or fund for self-insurance against malpractice claims. The fund constitutes one source of assets, but the firms also have other physical assets that are available to cover claims.”).

421. See discussion *supra* Subsection II.A.3.

expressed demand for bespoke legal services is the group of potential purchasers. Accordingly, I will focus on the value of bespoke services for clients, even though there are other constituencies that might receive indirect benefits.

Recall that Hadfield characterized legal services as a credence good because its value is unclear to consumers. As a consequence, consumers are forced to rely on valuations from lawyers. This, she argues, is due to the complexity of law:

[It] is so extensive that even the expert providing the service has difficulty assessing the quality and necessity of services provided. This makes price and quantity in the market predominantly the result of beliefs and wealth, rather than of cost. . . . And complexity places a practical limit on the supply of individuals who have the capacity to engage in legal reasoning.<sup>422</sup>

She claims that even lawyers have difficulty determining the true value of their work, which is embodied in their unwillingness to deviate from billable hour pricing structures.<sup>423</sup>

Some might still doubt that disruption will create a latent demand problem. They might believe that the value of bespoke services is obvious enough that people will still express accurate levels of demand for them. It is important to remember two things, however. First, the value of bespoke services is positively correlated with the complexity of the law that governs their matters. Secondly, the value of interpretive legal technology is negatively correlated with the complexity of law that governs their matters. These complications make value difficult to discern, particularly for non-lawyers.

Determining the value of bespoke legal services to a client requires that we have at least some sense of the degree to which the outcome of a matter would be different if it had been handled by someone who does not have the capacity to deliver bespoke services.<sup>424</sup> Part of this inquiry turns on the capacity of the law to constrain a case's outcome. For Litigation, Negotiation, and Advocacy, if the outcome of a case is obvious enough under law, then the value of legal argumentation is relatively low. The same holds for High-Stakes Document Creation and Negotiation; when it is easy to discern how the law governs the conduct being regulated

---

422. Hadfield, *Price*, *supra* note 213, at 995-96.

423. *Id.* at 980.

424. See Frank Pasquale & Glynn Cashwell, *Four Futures of Legal Automation*, 63 UCLA L. REV. DISCLOSURES 26, 44 (2015).

by an agreement, the likelihood that a lawyer's specialized legal knowledge will fruitfully come to bear on the drafting of terms in contract is relatively low. If that which the lawyer brings to the table is of little value, then the Ethical Duties that guarantee top lawyer performance are of little value too.

The same relationship holds under the converse scenario. If law is obviously and thoroughly indeterminate and has no constraining power at all, then specialized legal knowledge is unlikely to have much value.<sup>425</sup> Generally speaking, then, the value of bespoke services to consumers is, to some extent, contingent on law being difficult, but possible, to interpret. The same applies to the willingness of legal authorities to consider lawyers' interpretations in arriving at their own.

Randomized empirical studies lend some support to this view. Most notably, James Greiner led two separate studies, one that provided support for the notion that lawyers significantly increase the likelihood of a favorable outcome for their clients and one that did not. In the former, the team compared the outcomes achieved by summary eviction defendants who received traditional legal assistance from legal aid lawyers with outcomes achieved by defendants who only attended instructional clinics and found that those with lawyers were significantly more likely to retain possession of their housing.<sup>426</sup> In the latter, his team analyzed whether representation from a legal aid clinic headed by trained lawyers made a significant difference to the outcomes of appeals of unemployment benefits denials and did not detect a difference. The best explanation for the contrasting results was the difference in complexity. The researchers explained that regardless of representation, the unemployment cases were more likely than typical cases to be successful; the system for appeals in that court had mechanisms that lightened the labor burden for document collection; cases could be adequately worked up in a matter of a few

---

425. It might be possible to predict case outcomes under such a scenario, but it is likely that a bespoke lawyer would be no better than a layperson at making the prediction (and would likely be worse than a social scientist or statistician). See Oliver Roeder, *Why the Best Supreme Court Predictor in the World Is Some Random Guy in Queens*, FIVETHIRTYEIGHT (Nov. 17, 2014, 12:04 PM), <http://fivethirtyeight.com/features/why-the-best-supreme-court-predictor-in-the-world-is-some-random-guy-in-queens/>.

426. D. James Greiner, Cassandra Wolos Pattanayak & Jonathan Hennessy, *The Limits of Unbundled Legal Assistance: A Randomized Study in a Massachusetts District Court and Prospects for the Future*, 126 HARV. L. REV. 901, 908 (2013).

weeks; and expert testimony was rarely needed.<sup>427</sup> By contrast, “[t]he substantive law applicable in summary eviction cases bears notable complexity,” and this might hamper “judicial efforts to nudge self-represented litigants toward achieving full self-sufficiency” because the litigants lack a litigator to “educate the judge regarding what the law is.”<sup>428</sup>

My recent randomized study with Andrew Moshirnia lends some support as well.<sup>429</sup> Using a simulated case in which law students served as judges, we found that exposure to legal argument did not make a difference to case outcomes under a pure standard.<sup>430</sup> We further found, however, that it did make a difference when the judges faced a legal rule, the straightforward reading of which would have blocked them from reaching their favored result.<sup>431</sup> In other words, the argument mattered when it came to the complex task of circumventing a legal rule that would lead to an unjust result but not when it came to the easy task of reaching a just result under a discretionary standard.

Other scholars have identified a similar connection when reviewing non-randomized studies. After performing a meta-analysis, Rebecca Sandefur found that “[o]ne factor that seems to shape variation in the magnitude of lawyers’ impact is procedural complexity.”<sup>432</sup>

Thus, a proper valuation of legal services will probably turn, to some extent, on the degree to which legal directives are straightforward and readily discernible. While empirical work supports this rule of thumb, considerably more study will be required before the value of bespoke services will be readily available. If legal academics are not yet in the position to make a precise evaluation, the situation is nigh hopeless for ordinary consumers, even if they are likely to increase their understanding of legal value as disruption goes on.

---

427. D. James Greiner & Cassandra Wolos Pattanayak, *Randomized Evaluation in Legal Assistance: What Difference Does Representation (Offer and Actual Use) Make?*, 121 YALE L.J. 2118, 2173-74 (2012).

428. Greiner, Pattanayak & Hennessy, *supra* note 426, at 915, 943-44.

429. Brian Sheppard & Andrew Moshirnia, *For the Sake of Argument: A Behavioral Analysis of Whether and How Legal Argument Matters in Decisionmaking*, 40 FLA. ST. U. L. REV. 537, 559 (2013).

430. *Id.* at 568-79.

431. *Id.*

432. Rebecca L. Sandefur, *The Impact of Counsel: An Analysis of Empirical Evidence*, 9 SEATTLE J. SOC. JUST. 51, 52 (2012).

In the face of uncertainty, consumers in a post-disruption world will hear a new and loud voice on valuation—namely, the voice of the disruptor. Already, would-be disruptors like Axiom proudly claim on their website that “[f]rom the beginning, our goal has always been to put the law firm in a wind tunnel and strip away the unnecessary work that does not need to be done by law firms.”<sup>433</sup> As disruption occurs, consumers will be more inclined to think that bespoke services are not worth high prices, and if the price for them is inelastic, this will drive effective demand downward. Unfortunately, there is little reason to believe that those who are in competition with suppliers of bespoke services will be better at valuing them; the opposite is likely true, particularly where valuation likely turns on knowledge of legal complexity.

The bottom line is that disruption increases the likelihood that effective demand significantly undervalues bespoke legal services, meaning that latent demand for them will be high. There is a considerable chance that supply will become scarce and it will stay there because people do not realize what they are missing.

#### B. Shifting the Finish Line: Technological Innovation and the Plasticity of Law

For simplicity’s sake, the preceding Section assumed that our future law will be like our current law. However, our laws are not set in stone; only the most ardent natural law theorist or historicist<sup>434</sup> would deny that there is a plasticity to the content, expression, and structure of law.<sup>435</sup> While there are practical limits on what legal directives will be accepted by a government or population—unpopular prohibitions will face political hurdles, for example—legislators have wide berth to change legal meaning and especially, the clarity thereof.<sup>436</sup> Law may be written in natural language, but its meanings are partly the result of stipulation, which gives it an artificial quality that allows its terms to change more quickly than

---

433. *What We’re Not*, AXIOM L., <http://www.axiomlaw.com/what-were-not/> (last visited Jan. 25, 2016).

434. See Thomas C. Grey, *Holmes and Legal Pragmatism*, 41 STAN. L. REV. 787, 808 (1989) (discussing historicists’ denial that law can be changed any faster than custom and ordinary language).

435. See Lawrence Lessig, *The New Chicago School*, 27 J. LEGAL STUD. 661, 679 n.68 (1998); Lawrence Lessig, *Plastics: Unger and Ackerman on Transformation*, 98 YALE L.J. 1173 (1989) [hereinafter Lessig, *Plastics*].

436. Lessig, *Plastics*, *supra* note 435, at 1188-89.



terms change in ordinary language.<sup>437</sup> Moreover, legislators have some freedom to choose whether they want their legal directives to fall closer to the rule or the standard side of the spectrum. Although rules are costlier to make for conscientious legislators, they are better suited for machine processing when it comes to subsequent interpretation and application.<sup>438</sup>

### 1. *Plasticity in Norms Governing Conduct*

There is already a movement at work to change the way laws and legal documents are written so that they are machine-readable. As to laws, themselves, groups are pushing governmental bodies such as the European Union, to draft legislation using universal, machine-readable languages, such as XML, RDF, and OWL.<sup>439</sup> Whereas NLP ordinarily has to find structure from preexisting unstructured sentences, these languages provide a standardized, labeled structure from the very beginning, thereby lightening the load for machine processing and ontology creation.<sup>440</sup> Through these initiatives, laws might pre-specify distinct relationships between subjects, predicates, and objects. The law might be structured to follow an agreed upon deontic logic, using labels that apply uniformly across a legal code.<sup>441</sup> The same forces are at work in the

---

437. In describing this as “artificial,” I mean it as a contrast to the organic way in which meaning is typically formed in other natural language contexts. I do not use it in the same sense that Lawrence Solum uses the term; he uses it to distinguish artificial meaning (which can be created by artificial beings or groups of natural persons), from natural meaning (which is created by an individual natural person). See Lawrence B. Solum, *Artificial Meaning*, 89 WASH. L. REV. 69, 84 (2014). I mean only that the artificial quality of legal meaning makes it more plastic than communicative meaning in non-legal, ordinary contexts like the web. See *id.* Coincidentally, Solum’s thought experiment about the role that artificial intelligence might play in the creation of legal norms would be an interesting companion to this article, though he describes a state of computer integration that is more imaginative and integrated than what I describe here.

438. Sheppard, *supra* note 339, at 790-91.

439. See Raffaella Brighi et al., *Towards Semantic Interpretation of Legal Modifications Through Deep Syntactic Analysis*, in LEGAL KNOWLEDGE AND INFORMATION SYSTEMS 202, 202 (Enrico Francesconi, Giovanni Sartor & Daniela Tiscornia eds., 2008).

440. *Id.*

441. Vern R. Walker et al., *A Framework for the Extraction and Modeling of Fact-Finding Reasoning from Legal Decisions: Lessons from the Vaccine/Injury Project Corpus*, 19 ARTIFICIAL INTELLIGENCE & L. 291, 305 (2011) (discussing deontic logic tagging).

word of legal document creation and management.<sup>442</sup> George Triantis recently noted that “[d]evelopments in automated contract drafting and management have spurred the entry of low-cost competition, beginning with the production of standardized documents but moving up-market with increasing customization capability.”<sup>443</sup>

These forces could lower the value of legal services in at least two ways. First, a shift towards simplification and straightforwardness will likely provide fewer opportunities for novel legal knowledge to come to bear in disputes or other matters in light of the aforementioned connection between complexity and value. Secondly, a shift towards rules and away from standards will make it easier for systems of control to regulate behavior so that legal disputes never arise in the first instance.<sup>444</sup>

As they catch on, autonomous vehicles will likely diminish traffic violations by setting their programming to obey stop signs and lights, stay within lanes, signal appropriately, and operate within speed limits.<sup>445</sup> Interlock systems will reduce instances of driving while intoxicated. We might soon see age detection software used to thwart underage purchases from vending machines.<sup>446</sup> As laws become more “rulified,” more aspects of human conduct can be encoded into machines that limit our conduct.

---

442. George G. Triantis, *Improving Contract Quality: Modularity, Technology, and Innovation in Contract Design*, 18 STAN. J.L., BUS. & FIN. 177, 191 (2013).

443. *Id.* at 177.

444. Adam Kolber has speculated that a similar phenomenon, which he calls “concretizing.” Adam J. Kolber, *Will There Be a Neurolaw Revolution?*, 89 IND. L.J. 807, 842-43 (2014) (“One speculative possibility is that the law will ‘concretize,’ by which I mean that it will become more clearly expressed and more transparently applied. . . . First, laws on the books may converge more closely with the legal norms we are actually expected to follow. . . . Second, the law may become more concrete as computers play a larger role in making legally relevant decisions. . . . Third, the law might concretize by creating greater pressure to clarify the theoretical underpinnings of the law.”).

445. Jeffrey K. Gurney, *Driving into the Unknown: Examining the Crossroads of Criminal Law and Autonomous Vehicles*, 5 WAKE FOREST J.L. & POL’Y 393, 413 (2015). Notably, Google has recently claimed that it has programmed its vehicle to exceed the speed limit by up to 10 mph when the flow of traffic around the car makes traveling the speed limit unsafe. Joe Miller, *Google’s Driverless Cars Designed to Exceed Speed*, BBC (Aug. 19, 2014), [www.bbc.com/news/technology-28851996](http://www.bbc.com/news/technology-28851996).

446. Kia Kokalitcheva, *This Microsoft Website Will Detect People’s Age in Photos*, FORTUNE (Apr. 30, 2015), <http://fortune.com/2015/04/30/microsoft-photo-age-detection/>.

Even when the occasional violation or dispute arises, technology can limit the likelihood of litigation by removing doubt or disagreement about what actually occurred. The Google Car was recently in an injury-producing accident.<sup>447</sup> Its project head, Chris Urmson, published an animated video of the incident created from real-time data gathered by the car's 360-degree sensors.<sup>448</sup> Urmson used the video to demonstrate that the Google Car was legally stopped at an intersection and was struck from behind by a car that had failed to brake.<sup>449</sup> Though reliable estimates are hard to come by, some scholars estimate that many, if not most, of the cases litigated at the trial level arise from factual uncertainty.<sup>450</sup> A reliable, detailed record of an event would go a long way toward eliminating that uncertainty. Moreover, automated reports might be given special evidentiary weight by litigants or even courts. The thought of going against this evidence might seem too daunting to those who, in a prior era, might have gone forward with a case. If these reports become commonplace, they would drive down the number of cases, a portion of which would have been handled by bespoke service providers.<sup>451</sup>

## 2. Plasticity in Norms Governing Adjudication

Thus far, we have focused on plasticity in primary rules of conduct, but there is plasticity in secondary norms as well, such as those that govern adjudication of cases and, relatedly, interpretation or construction of legal meaning.<sup>452</sup> These norms also affect the value of legal services.

---

447. See Chris Urmson, *The View From the Front Seat of the Google Self-Driving Car Chapter 2*, MEDIUM (May 11, 2015), [https://medium.com/@chris\\_urmson/the-view-from-the-front-seat-of-the-google-self-driving-car-chapter-2-8d5e2990101b](https://medium.com/@chris_urmson/the-view-from-the-front-seat-of-the-google-self-driving-car-chapter-2-8d5e2990101b).

448. *Id.*

449. *Id.*

450. Kenney Hegland, *Goodbye to Deconstruction*, 58 S. CALIF. L. REV. 1203, 1214 (1985) ("At the trial level the answer seems to be that most litigation stems from factual uncertainty, not doctrinal uncertainty.")

451. A similar phenomenon could arise from companies that use statistics to predict case outcomes, such as Lex Machina and Premonition. See Zach Abramowitz, *Moneyball for Litigation? A Conversation with Premonition's Toby Unwin*, ABOVE THE L. (July 31, 2015, 5:31 PM), <http://abovethelaw.com/2015/07/moneyball-for-litigation-a-conversation-with-premonitions-toby-unwin/>.

452. H.L.A. Hart famously made the distinction between primary and secondary norms, and he describes "rules of adjudication" as a type of secondary rule. HART, *supra* note 381, at 97. My understanding of rules of adjudication in this

Ideally, adjudicative norms serve to make judicial interpretative methodologies uniform and reduce ambiguity and vagueness,<sup>453</sup> but many believe that they have fallen short. Judges have endorsed statutory canons in justification of their decisions, but Karl Llewellyn famously illustrated that equally legitimate canons so often conflict with each other that they fail to resolve indeterminacy.<sup>454</sup> Moreover, scholarly and judicial disagreements about proper judicial interpretation of law, particularly constitutional law, are endemic.<sup>455</sup>

Scholars divide into various camps, some believing that we ought to use the norms governing interpretation that the original authors of the law used,<sup>456</sup> that a reasonable person would have used at the time of enactment,<sup>457</sup> or that a reasonable person would use at the moment a case is being adjudicated,<sup>458</sup> to name but a few positions. There are also different positions when it comes to

---

context are the rules that govern the proper application of law to the facts of a case, which would include such items as canons of construction, rules of interpretation, and the like.

453. See, e.g., TIMOTHY A.O. ENDICOTT, *VAGUENESS IN LAW* 63 (2000) (discussing the role that Ronald Dworkin's approach to adjudication plays in limiting indeterminacy).

454. See Karl N. Llewellyn, *Remarks on the Theory of Appellate Decision and the Rules or Canons About How Statutes Are To Be Constructed*, 3 VAND. L. REV. 395, 395 (1950) ("One does not progress far in legal life without learning that there is no single right and accurate way of reading [a] case.").

455. See, e.g., Christopher J. Peters, *What Lies Beneath: Interpretive Methodology, Constitutional Authority, and the Case of Originalism*, 2013 BYU L. REV. 1251, 1253; Adam M. Samaha, *Dead Hand Arguments and Constitutional Interpretation*, 108 COLUM. L. REV. 606, 613 (2008); Richard H. Fallon, Jr., *How to Choose a Constitutional Theory*, 87 CALIF. L. REV. 535, 537 (1999).

456. John O. McGinnis & Michael B. Rappaport, *Original Methods Originalism: A New Theory of Interpretation and the Case Against Construction*, 103 NW. U. L. REV. 751, 758 (2009) ("The original intent theory is part of a more general and comprehensive theory about language and meaning. The theory holds that the intent of the author of words or language determines the meaning of those words.").

457. *Id.* at 761 ("Theories of original public meaning, in contrast to original intent, interpret the Constitution according to how the words of the document would have been understood by a competent and reasonable speaker of the language at the time of the document's enactment.").

458. We might think of Living Constitutionalism in this way. Cf. Michael C. Dorf, *The Majoritarian Difficulty and Theories of Constitutional Decision Making*, 13 U. PA. J. CONST. L. 283, 294-95 ("[L]iving constitutionalism—a capacious term that I shall use to refer to a family of non-originalist theories that task judges with incorporating current values and attitudes in their understanding of the Constitution.").

construction, whether it be to abstain from it entirely and leave it to political branches,<sup>459</sup> to be deferential to precedent,<sup>460</sup> to engage in a complex analysis of political morality,<sup>461</sup> to maximize welfare,<sup>462</sup> or to give effect to successful contemporary social movements,<sup>463</sup> among others.

The depth and sophistication of these debates might lead one to the conclusion that there is something intractably complex about adjudication, and this might be true. But we should not ignore that the plasticity of law permits court systems or other government organs to circumvent many problems of indeterminacy by stipulating simple, straightforward approaches, brutal though they may be.

Under English law, land disputes were once resolved by ordering legal representatives to battle in an arena, with the victor earning title to the property right for his principal.<sup>464</sup> Because the fighting prowess of each champion was known (either because it was readily discernible or because of reputation), legal disputes had rather predictable outcomes and lacked most of the linguistic complications that we have today.<sup>465</sup> This example is neither a just nor a plausible alternative for the American justice system, of course, but it illustrates that there are streamlining alternatives, some of which might be less interpretatively demanding than others.

From a justice perspective, we can do considerably better by choosing among the major alternatives advanced in debates over proper adjudication of American law. Were authoritative legal officials, such as the Justices of the Supreme Court, to stipulate that one alternative is the winner, and were that alternative friendlier to machine processing than the mix of methods now used, then it might shorten the distance for the finish line of innovation.

Before hastily dismissing this as a fanciful notion on the ground that the judiciary would never agree to adopt a single approach, let alone one that is computer-friendly, consider the forces

---

459. See, e.g., Michael Stokes Paulsen, *How to Interpret the Constitution (and How Not to)*, 115 YALE L.J. 2037, 2057 (2006).

460. See, e.g., Randy J. Kozel, *Original Meaning and the Precedent Fallback*, 68 VAND. L. REV. 105, 148 (2015).

461. RONALD DWORIN, A MATTER OF PRINCIPLE 328-29 (1985).

462. Thomas W. Merrill, *Faithful Agent, Integrative, and Welfarist Interpretation*, 14 LEWIS & CLARK L. REV. 1565, 1572-73 (2010).

463. See Jack M. Balkin, *Abortion and Original Meaning*, 24 CONST. COMMENT. 291, 293 (2007).

464. Peter T. Leeson, *Trial by Battle*, 3 J. LEGAL ANALYSIS 341, 341 (2011).

465. See *id.* at 362, 364 (estimating that over 80% of cases settled before trials by battle reached conclusion due to knowledge of champions' prowess).

that will act upon it over the coming decades. Take our highest court as an example. Currently, the Supreme Court's approval rating is below 50%,<sup>466</sup> and it has been on the decline since the late 1980s, when it was 66%.<sup>467</sup> Some have argued that the legitimacy of the Constitution, or even law itself, is threatened by continued disagreement over legal interpretation and construction.<sup>468</sup> If the approval rating continues on its downward trajectory, the Court might grow concerned and seek greater methodological consensus. For their part, the President and Senate might consider similar factors when selecting and approving nominees. Furthermore, successful legal technologists will become an increasingly powerful force in the discussion about methodology. According to Pasquale and Cashwell, we underestimate at our peril the power of profitable corporations and individuals to influence opinion on these matters:

Most importantly, when neoliberal corporations and individuals become wealthy enough, they are able to shape a climate of opinion that tends toward the marginalization and even trivialization of the type of legal work traditionally considered essential to the fair and efficient working of markets, public programs, and society in general.<sup>469</sup>

Finally, if the supply of people qualified to perform the complex protocols of adjudication or make persuasive arguments in favor of following them (that is, the supply of people capable of bespoke services at current quality levels) shrinks, then there will be even more pressure to adopt simpler interpretation and construction methodologies.

Assuming that such a change is plausible, I turn to the following question: Which of the popular approaches to interpretation and construction are likely to be attractive in a post-disruption legal world?<sup>470</sup> Because a comprehensive analysis is impossible here, I will select a handful to illustrate the principle that

---

466. *Supreme Court*, GALLUP, <http://www.gallup.com/poll/4732/supreme-court.aspx> (last visited Jan. 25, 2016).

467. Adam Liptak & Allison Kopicki, *Approval Rating for Justices Hits Just 44% in New Poll*, N.Y. TIMES (June 7, 2012), [http://www.nytimes.com/2012/06/08/us/politics/44-percent-of-americans-approve-of-supreme-court-in-new-poll.html?\\_r=0](http://www.nytimes.com/2012/06/08/us/politics/44-percent-of-americans-approve-of-supreme-court-in-new-poll.html?_r=0).

468. See Frank I. Michelman, *Is the Constitution a Contract for Legitimacy?*, 8 REV. CONST. STUD. 101, 105 (2003).

469. Pasquale & Cashwell, *supra* note 424, at 29.

470. For simplicity's sake, I will not give separate treatment to the interpretive and constructive aspects of these theories unless it bears on the question of how much technological advancement would be required to perform them.

those approaches falling closer to the syntactical side of the spectrum could become more popular in a climate of disruption.

a. Naïve Textualism

I begin with the most syntactical theory that merits attention, Naïve Textualism. This approach “is distinguished by its naive attitude that statutes can be best understood by simply looking up their words in a dictionary, applying a few canons of statutory construction, and eschewing other considerations.”<sup>471</sup> It shares the tenet with all forms of Textualism that we give primacy to the text of the law under consideration and seek to understand what the words mean, but it narrows the parameters of that search more narrowly than other forms of Textualism such that interpretation does not extend far beyond the statute or other law, itself.<sup>472</sup>

Existing technology can do a fair job of approximating the methodology of Naïve Textualism. Indeed, the small team at the non-profit organization, State Decoded, is already undertaking an effort to provide an open-access platform that “displays legal codes, court decisions, and information from legislative tracking services to make it all more understandable to normal humans” with “embedded definitions of legal terms.”<sup>473</sup> The project is in development, but the team has designed a “Definition Scraper,” which will automatically scan a passage of text and determine whether it contains defined legal terms (e.g., terms that have definitions in *Black’s Law Dictionary*) and, if so, return definitions for them.<sup>474</sup> If we are willing to adopt a Naïve Textualist rule of adjudication, a rather simple program such as this might suffice to resolve many legal disputes by providing an authoritative individual definition or ranking of definitions for a dispositive term. A computer-provided definition might match the definition advanced by one disputant but not the other, or the rank of one disputant’s definition might be higher than the other. In situations where this is not the case, a computerized,

---

471. Jonathan R. Siegel, *Naïve Textualism in Patent Law*, 76 BROOK. L. REV. 1019, 1020 (2011).

472. See John F. Manning, *What Divides Textualists from Purposivists?*, 106 COLUM. L. REV. 70, 91 (2006).

473. *About*, ST. DECODED, <http://www.statedecoded.com/about/> (last visited Jan. 25, 2016).

474. Waldo Jaquith, *Two Mini-Projects: Subsection Identifier and Definition Scraper*, ST. DECODED (Feb. 27, 2013), <http://www.statedecoded.com/2013/02/subsection-identifier-definition-scraper/>.

predictable tie-breaker could be used that assesses the degree to which the competing definitions resemble the authoritative one. As with trial by battle, however, this approach might be dubiously just in complex, novel, or socially important cases.<sup>475</sup>

#### b. New Textualism

Few people are Naïve Textualists; New Textualists are more common.<sup>476</sup> This approach, if successful, is less likely than Naïve Textualism to encounter ties among rival interpretations because it has a wider area of inquiry and, therefore, has the potential to provide more information and finer-grained rankings of meaning. New Textualists are willing to consider contemporary linguistic aids, such as those resources that indicate ordinary meaning, and the surrounding body of law.<sup>477</sup> Because the universe of digestible text is expanded (and the varieties of word sense with it), syntactical methods are likely to fall short, but sophisticated techniques such as semantic analysis could prove to be helpful. Ontologies might provide a means of categorizing competing definitions into different semantic groups.

Stephen Mouritsen described a New Textualist approach using existing ontology-based technology.<sup>478</sup> In particular, he used the Corpus of Contemporary American English (COCA),<sup>479</sup> a tagged

---

475. Indeed, some have called the ranking approach fallacious. See Stephen C. Mouritsen, *Hard Cases and Hard Data: Assessing Corpus Linguistics as an Empirical Path to Plain Meaning*, 13 COLUM. SCI. & TECH. L. REV. 156, 198 (2011).

476. To be clear, though I compare Naïve Textualism to New Textualism, I do not mean to imply that the former is the same as “Old Textualism.” Indeed, “Old Textualism” might have an even more expansive view of proper interpretive resources than even New Textualism. See William N. Eskridge, Jr., *The New Textualism and Normative Canons*, 113 COLUM. L. REV. 531, 532 (2013) (“The new textualists maintain that legislative history should be marginalized or ignored, unless used simply like a dictionary of word use; old textualists, purposivists, and pragmatic interpreters maintain that legislative history is often relevant and useful to figure out or confirm statutory meaning.”).

477. See William N. Eskridge, Jr., *The New Textualism*, 37 UCLA L. REV. 621, 655 (1990); Aharon Barak, *A Judge on Judging: The Role of a Supreme Court in a Democracy*, 116 HARV. L. REV. 16, 82-83 (2002). I should add that most New Textualists share some aspects of Originalism—namely, that the linguistic meaning of the text is fixed at the time of enactment. See, e.g., James E. Ryan, *Laying Claim to the Constitution: The Promise of New Textualism*, 97 VA. L. REV. 1523, 1552 (2011).

478. Mouritsen, *supra* note 475.

479. CORPUS OF CONTEMPORARY AMERICAN ENGLISH, <http://corpus.byu.edu/coca/> (last visited Jan. 25, 2016).



corpus of ordinary English usage. He described a preexisting ontology that permits computers to identify the various ways that a word can serve as a part of speech (such as a noun, verb, etc.) and rank the frequency with which that word is used as the part of speech in question under various conceptual categories. He used that technology to tackle a question that arose in *National Organization for Women, Inc. v. Scheidler*.<sup>480</sup> Does “enterprise” in RICO require an organization to have an economic motivation? Using the ontology, he was able to rank the uses of the word “enterprise” in ordinary English as a noun and determined that its usage was much more likely to bespeak economic use than non-economic uses.<sup>481</sup> While he did not claim that this settled the question in *Scheidler*, he did assert that the methodology was an appealing way to adjudicate cases searching for ordinary meaning because it analyzes ordinary language in a way that is “quantifiable and verifiable” and embodies ideals of objectivity by allowing transparency and replication.<sup>482</sup> He conceded, however, that current technology does not eliminate problems of bias entirely because the judge must still read through the results and perceive how the results fit into the concepts and questions that she seeks to consider.<sup>483</sup>

### c. Originalism

Further along the NLP curve is Originalism—at least the age-old<sup>484</sup> variety, which maintains both that meaning must be assessed at the point at which the law under consideration was enacted and that it is permissible to consider the intents of the framers, ratifiers, or legislators when interpreting the linguistic meaning of that law.<sup>485</sup> As far as NLP technology is concerned, Originalism is a mixed bag. On the one hand, fixing meaning to the past is welcome because it limits

---

480. *Nat'l Org. for Women, Inc. v. Scheidler*, 968 F.2d 612 (7th Cir. 1992), *rev'd*, 510 U.S. 249 (1994).

481. Mouritsen, *supra* note 475, at 195-99.

482. *Id.* at 202.

483. *Id.*

484. See Vasán Kesevan & Michael Stokes Paulsen, *The Interpretive Force of the Constitution's Secret Drafting History*, 91 GEO. L.J. 1113, 1114 (2003) (“As originalist methodology has evolved over the past several decades from ‘original intent’ to ‘original understanding’ to, most recently, ‘original meaning,’ the interpretive force of the Constitution’s secret drafting history has been kicked all over the field.”).

485. See, e.g., Charles A. Lofgren, *The Original Understanding of Original Intent?*, 5 CONST. COMMENT. 77, 113 (1988).

the necessity of rule base or ontology revision. On the other hand, making intent an important part of legal meaning introduces significant<sup>486</sup> dimensions of pragmatics that will be challenging for machines.<sup>487</sup> Insofar as it demands that interpreters attempt to enter into the minds of legislators and ask how the legislators would have resolved the problem facing them, Originalism will involve a good degree of historical digging and inquiry into underlying interpretive desires.<sup>488</sup> It might even require interpreters to consider complex contextual dimensions of meaning such as the perceived problems, goals, hopes, or ideals of the actors at the time in an effort to identify or make a best guess as to the collective intent of a legislature.<sup>489</sup> The degree to which law is clear, thereby downplaying the role of doubt as to legislative intent, will influence how quickly technology will be able to emulate this methodology.<sup>490</sup>

---

486. In omitting mention of pragmatics' role in New Textualism, I did not mean to imply that pragmatics is utterly absent in its process. See Balkin, *supra* note 463, at 304 (describing how pragmatics figures into New Originalism, which shares features of New Textualism as I describe it). Rather, it plays a considerably less significant role than it does in Originalism or other approaches that I discuss below.

487. See Michael S. Moore, *A Natural Law Theory of Interpretation*, 58 S. CAL. L. REV. 277, 290-91 (1985).

488. See Martin Redish & Theodore Chung, *Democratic Theory and the Legislative Process: Mourning the Death of Originalism in Statutory Interpretation*, 68 TUL. L. REV. 803, 813-15 (1994).

489. Part of the reason that this form of Originalism has lost its appeal among contemporary scholars is the sentiment that identifying the collective intent of the legislature is impossible. See Thomas Colby, *The Sacrifice of the New Originalism*, 99 GEO. L.J. 713, 720 (2014). *But see* Solum, *supra* note 437, at 85 ("Some legal theorists argue that the framers' intentions cannot provide the meaning of the constitutional text, because different framers had different mental states. Similar arguments are made about the intent of Congress and the meaning of federal statutes. . . . Our puzzlement about group intentions does not translate into an inability to grasp the artificial meaning of the texts produced by group agents."). Even if we consider Purposivism—the more abstract variety of Intentionalism that does not seek to identify specific collective intent—the inquiry still involves pragmatics in interpreting meaning, only at a grander level. See Redish & Chung, *supra* note 488, at 815.

490. Some who fall generally into the Originalist camp due to their belief that Originalism best captures proper interpretation nevertheless believe that more dynamic approaches, such as those that incorporate aspects of Living Constitutionalism, could permissibly or should play a role in construction for hard cases. See, e.g., Lawrence B. Solum, *Originalism and Constitutional Construction*, 82 FORDHAM L. REV. 453, 535 (2013) (describing Jack Balkin and Randy Barnett in these terms). Those versions of Originalism would fall at some point higher on the NLP curve. This same principle holds true for New Textualists who do the same. *Id.* (describing James Ryan in these terms). The precise point on the NLP curve at which these approaches fall depends on how often the dynamic theory is used,

## d. Moral Reading

Even higher up the NLP curve are Moral Reading theories of interpretation and construction such as the approaches articulated by Ronald Dworkin and James Fleming. These theories generally require that judges “fit and justify” the existing legal materials to the case at hand.<sup>491</sup> The requirement of fit involves an identification of the relevant principles in the law that might decide the case and an assessment of consistency between each principle and the overall body of law. Only those principles that are consistent remain as candidates.<sup>492</sup> Thereafter, remaining candidate principles are subjected to a bounded moral analysis to determine which one puts the law in its best possible light.<sup>493</sup> It is not unfettered moral analysis; rather, the judge must consider the moral values articulated by accepted law and attempt to make them into a coherent whole. Dworkin explained this is an exercise in narrative-building from existing narrative parts, as if “a group of novelists writes a novel *seriatim*; each novelist in the chain interprets the chapters he has been given in order to write a new chapter, which is then added to what the next novelist receives, and so on” while “aim[ing] jointly to create, so far as they can, a single unified novel that is the best it can be.”<sup>494</sup>

Moral Reading is somewhat dynamic and quite pragmatic. Through this process, judges seek to allow the law to work itself out over time, which involves repeated efforts to “redeem” principles in the legal materials. Thus, there is a dynamic element to legal meaning, though it is forever tied to prior determinations thereof.<sup>495</sup> Thus, even though meaning is not typically fully revisable under Moral Reading, it is less fixed than it is under the other theories we

---

which will likely turn on perceptions of how determinate law is. Because of this complexity, I have chosen not to focus on them here. That said, the subsequent discussion of dynamic theories such as Moral Reading might illuminate the proper placement along the curve.

491. Cass R. Sunstein, *Second-Order Perfectionism*, 75 *FORDHAM L. REV.* 2867, 2872-73 (2007).

492. Michael C. Dorf, *Truth, Justice, and the American Constitution*, 97 *COLUM. L. REV.* 133, 141 (1997) (reviewing RONALD DWORKIN, *FREEDOM’S LAW: THE MORAL READING OF THE AMERICAN CONSTITUTION* (1996) and DENNIS PATTERSON, *LAW AND TRUTH* (1996)).

493. *Id.* at 142.

494. RONALD DWORKIN, *LAW’S EMPIRE* 229 (1986).

495. James E. Fleming, *Fidelity, Change, and the Good Constitution*, 62 *AM. J. COMP. L.* 515, 544 (2014).

have considered, making it less machine-friendly. Moreover, Moral Reading relies very heavily on pragmatics. Principle-guided interpretation is quite similar to the general maxims that govern pragmatics; both frequently involve taking stock of policies and purposes and evaluating what is the best justification.<sup>496</sup> The very paradigm of pragmatics in NLP is the successful implementation of a “bag-of-narratives” model, whereby “each piece of text will be represented by mini-stories or interconnected episodes, leading to a more detailed level of text comprehension and sensible computation.”<sup>497</sup> We are a long way away from a computer being able to perform narrative tasks of this magnitude.

#### e. Living Constitutionalism

Lastly, the theory of Living Constitutionalism<sup>498</sup> is at the highest place along the NLP curve, though I caution that it is difficult to reduce it to a specific method. Critics accuse the theory of being methodless, while apologists are more inclined to describe it as a principles-based approach akin to Moral Reading.<sup>499</sup> Even if we take the apologist position, there appears to be an important difference with Moral Reading. Both approaches seek to identify the principles that animate the laws under consideration, but Living Constitutionalists are not likely to claim that fitting and justifying candidate principles in accordance with preexisting law is necessary in order to determine which one ought to prevail.<sup>500</sup> More likely, they will generally evaluate the principles according to how practical they

---

496. Sinclair, *supra* note 302, at 382 n.39 (“Pragmatic principles are in this respect quite similar to the jurisprudential *principles* that Ronald Dworkin distinguishes from rules and policies in that they have ‘the dimension of weight.’”).

497. Cambria & White, *supra* note 254, at 52.

498. Of course, the object of interpretation for Living Constitutionalism is the U.S. Constitution, but the methodology might be repurposed to apply to other types of laws, and that is how I will treat it here.

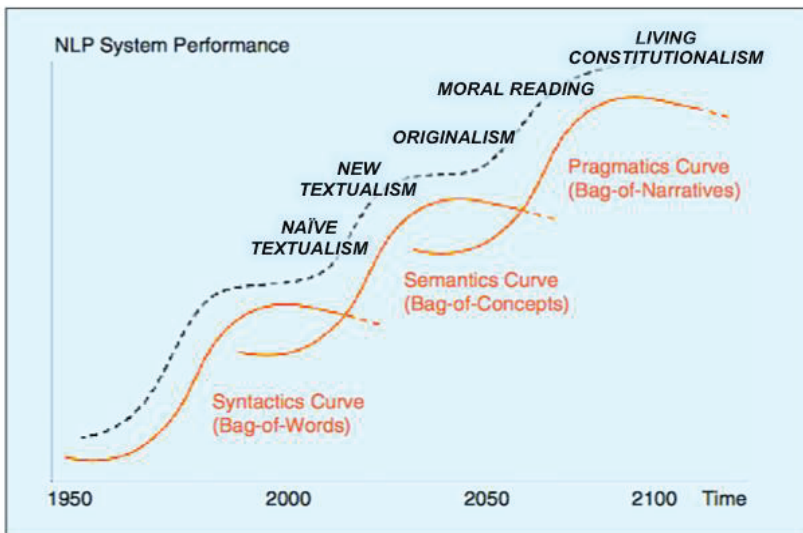
499. Compare Jack M. Balkin, *Framework Originalism and the Living Constitution*, 103 NW. L. REV. 549, 606 (2009) (describing it as “an under-theorized concept” and “substantively empty” when directed at individual judges), with Adam Winkler, *A Revolution Too Soon: Woman Suffragists and the “Living Constitution,”* 76 N.Y.U. L. REV. 1456, 1523-24 (2001) (“They proposed to construe the textual provisions of the Constitution by reference to the text’s deeply embedded principles, rather than its literal wording or traditional application.”).

500. Fleming, *supra* note 495, at 517 (“Living constitutionalists characteristically are more pragmatic, instrumentalist, and forward-looking in their approaches to the Constitution [than Moral Reading theorists] and, as such, tend to be anti-fidelity.”)

are and how well they promote democratic legitimacy under the evolving values of the time.<sup>501</sup> Thus, Living Constitutionalism is the most dynamic of the theories we have considered and is at least equally responsive to context as Moral Reading. It derives meaning using highly pragmatical techniques, though it does so in a way that defies codification. In short, it is our least computer-friendly approach.

In Figure 3, I have located these theories along our NLP curve.

**Figure 3**  
**THEORIES OF INTERPRETATION AND CONSTRUCTION AND NATURAL LANGUAGE PROCESSING**



© 2016 IEEE

The card up the sleeve of technological innovation is that law can be changed. If the plasticity of law shifts the rules of adjudication so that judges narrow the dimensions of proper interpretation and construction to fall closer on the NLP curve, then technologists might capture the entire market for legal services without having to innovate the full breadth of pre-disruption quality bespoke services. Under such a scenario, the popular adage “we are

501. Balkin, *supra* note 499, at 604; David Rudenstein, *Self-Government and the Judicial Function*, 92 TEX. L. REV. 161, 185 (2013) (reviewing J. HARVIE WILKINSON III, *COSMIC CONSTITUTIONAL THEORY: WHY AMERICANS ARE LOSING THEIR INALIENABLE RIGHT TO SELF-GOVERNANCE* (2012)).

all textualists now” could take on an entirely new meaning.<sup>502</sup> While this outcome is less than probable, it is nevertheless important to know which way the wind blows.

### C. A Post-Disruptive Legal Landscape: Two Important Dimensions

Understanding the forces that will affect the supply and demand for bespoke services, we can now make an educated, broad-brush guess about what the legal services landscape will look like after disruption. Given all of the variables at play, this is a highly speculative exercise, but it is a first step towards a balanced position on the value of disruption.

In general, the landscape that I imagine gives more people access to non-bespoke legal services but less access to bespoke services at pre-disruption levels of quality. The scarcity of such bespoke services could have an impact on the legal system’s ability to respond to changing social needs, affecting overall welfare.

#### 1. *Increased Access*

Many commentators embrace legal disruption because they believe it to be a promising way to increase access to legal services.<sup>503</sup> Legal services have become cost prohibitive to those outside of the upper class, with the gap widening since the Great Recession.<sup>504</sup> Before it adopted the rule allowing LLLTs, the Washington Supreme Court commissioned a study of access to justice and reported that, even though three-fourths of low-income households in the state had at least one civil legal problem a year, they faced these problems without the help of a lawyer more than

---

502. See, e.g., Jonathan R. Siegel, *Textualism and Contextualism in Administrative Law*, 78 B.U. L. REV. 1023, 1057 (1998); Marjorie O. Rendell, 2003—*A Year of Discovery: Cybergenics and Plain Meaning in Bankruptcy Cases*, 49 VILL. L. REV. 887, 887 (2004); Jonathan T. Molot, *The Rise and Fall of Textualism*, 106 COLUM. L. REV. 1, 43 (2006).

503. See, e.g., Brescia et al., *supra* note 23, at 554; Cassandra Burke Robertson, *The Facebook Disruption: How Social Media May Transform Civil Litigation and Facilitate Access to Justice*, 65 ARK. L. REV. 75, 77 (2012); Mary Russell, *Future Realities Present New Challenges, Opportunities for Delivering Justice Solutions*, 70 J. MO. B. 250, 252 (2014).

504. See Nathan Koppel, *More Strapped Litigants Skip Lawyers in Court*, WALL ST. J. (July 22, 2010, 12:01 AM), <http://www.wsj.com/articles/SB10001424052748704229004575371341507943822>.

85% of the time.<sup>505</sup> The seriousness of the problem for overall social welfare cannot be understated.

All of the disruptive forces that I have described will likely lower the cost of non-bespoke aspects of legal practice, eliminating price barriers for a large segment of the population. With limited exception,<sup>506</sup> the success of these forces partially relies upon their ability to circumvent or avoid expensive ethical duties. In order to evaluate whether this is a positive development, we have to ask whether low-cost legal services—which will almost certainly lack some of the protections and resources that typically come with legal services today—are better than no services at all. Many scholars answer that question in the affirmative, though they focus little on the deleterious effects that they might have on the supply of bespoke services and how that, in turn, might affect social welfare.<sup>507</sup>

For its proponents, disruption is a business solution to a problem that is currently being handled largely by goodwill: clinics funded by the government or by private charitable donations and by law firm pro bono services.<sup>508</sup> Deregulation creates an opportunity to close the gap between actual demand and the overshot demand currently on offer. The hope is that there is still enough profit to be made in closing that gap to sustain a competitive market, which will ultimately benefit those in need.

If there is anything unusual about this, it is that it has made otherwise progressive scholars sound so conservative.<sup>509</sup> Just because an idea deviates from one's usual mode of thinking does not necessarily make it a bad one; this might be the only solution.

---

505. TASK FORCE ON CIVIL EQUAL JUSTICE FUNDING, THE WASHINGTON STATE CIVIL LEGAL NEEDS STUDY 8 (2003), <https://www.courts.wa.gov/newsinfo/content/taskforce/CivilLegalNeeds.pdf>.

506. Outsourcing is an example.

507. See, e.g., Brescia et al., *supra* note 23, at 554; Michael J. Wolf, *Collaborative Technology Improves Access to Justice*, 15 N.Y.U. J. LEGIS. & PUB. POL'Y 759, 784 (2012); Lindzey Schindler, *Skirting the Ethical Line: The Quandary of Online Legal Forms*, 16 CHAP. L. REV. 185, 191 (2012).

508. See Susan Beck, *Big Law and Legal Aid*, AM. L., July 2015, at 36, 39; GILLIAN K. HADFIELD, SUMMARY OF TESTIMONY BEFORE THE TASK FORCE TO EXPAND ACCESS TO CIVIL LEGAL SERVICES IN NEW YORK 1, 2-3 (2012), <http://richardzorza.files.wordpress.com/2012/10/hadfield-testimony-october-2012-final-2.pdf>.

509. See, e.g., Gillian Hadfield, *The Second Wave of Law and Economics: Learning to Surf*, in THE SECOND WAVE OF LAW AND ECONOMICS 50, 58 (Megan Richardson & Gillian Hadfield eds., 1999) (describing progressiveness of second wave of law and economics, of which she is a prominent member).

Government funding of legal clinics has fallen precipitously.<sup>510</sup> And in fairness, most proponents call for consumer protections of some kind.<sup>511</sup>

But protections risk driving up prices, shedding profits, or otherwise making market entry less desirable for those they expect to carry the torch. It could be that we cannot have our cake and eat it too through market-based approaches.

The LLLT program in Washington is an illustrative example because it imposes some, but not all, of the ethical duties on LLLTs to which lawyers are subject.<sup>512</sup> The size of the inaugural class was small, and the program had a high attrition rate: Fifteen people enrolled in the program,<sup>513</sup> nine people took the test, and only seven passed.<sup>514</sup> The second class was only marginally better: Eighteen people enrolled in the program,<sup>515</sup> fifteen took the test, and ten passed.<sup>516</sup> The sample is too small to provide reliable lessons, but it should give us pause. Projected enrollment was between 50 and 100 people, with some experts expecting as many as 125,<sup>517</sup> but enrollment fell far short of the lowest expectation. The University of Washington, which has served as a provider of mandatory LLLT

---

510. See Beck, *supra* note 508, at 39 (“Private contributions to legal aid have become increasingly important, given the precarious nature of public support. The federally funded Legal Services Corporation is the largest single source of legal aid funding, but represents less than one-fourth of total support. . . . Adjusted for inflation, LSC’s funding has shrunk 40 percent in 10 years, and it’s not clear how it will fare in the current federal budget process.”).

511. See Brescia et al., *supra* note 23, at 554.

512. See *supra* note 207.

513. Robert Ambrogi, *Washington State Moves Around UPL, Using Legal Technicians to Help Close the Justice Gap*, A.B.A. J. (Jan. 1, 2015), [http://www.abajournal.com/magazine/article/washington\\_state\\_moves\\_around\\_upl\\_using\\_legal\\_technicians\\_to\\_help\\_close\\_the/](http://www.abajournal.com/magazine/article/washington_state_moves_around_upl_using_legal_technicians_to_help_close_the/).

514. *Limited License Legal Technicians*, WASH. ST. B. ASS’N, <http://www.wsba.org/licensing-and-lawyer-conduct/limited-licenses/legal-technicians> [<https://web.archive.org/web/20150622090459/http://www.wsba.org/Licensing-and-Lawyer-Conduct/Limited-Licenses/Legal-Technicians>] (last visited Jan. 25, 2016).

515. WASH. STATE BAR ASS’N, LTD. LICENSE LEGAL TECHNICIAN (LLLT) BD., MEETING MINUTES 2 (Sept. 24, 2015) [hereinafter MINUTES], [http://www.wsba.org/~media/Files/Legal%20Community/Committees\\_Boards\\_Panels/LLLT%20Board/Meeting%20Materials/2015-10-15%20LLLT%20Board%20Meeting%20Materials.ashx](http://www.wsba.org/~media/Files/Legal%20Community/Committees_Boards_Panels/LLLT%20Board/Meeting%20Materials/2015-10-15%20LLLT%20Board%20Meeting%20Materials.ashx).

516. *Limited License Legal Technicians*, WASH. ST. B. ASS’N, <http://www.wsba.org/licensing-and-lawyer-conduct/limited-licenses/legal-technicians> (last visited Feb. 12, 2016).

517. WASH. STATE BAR ASS’N, LTD. LICENSE LEGAL TECHNICIAN (LLLT) BD., MEETING MINUTES 2 (June 18, 2015), [http://www.wsba.org/~media/Files/Legal%20Community/Committees\\_Boards\\_Panels/LLLT%20Board/Minutes/2015-06-18%20Meeting%20Minutes.ashx](http://www.wsba.org/~media/Files/Legal%20Community/Committees_Boards_Panels/LLLT%20Board/Minutes/2015-06-18%20Meeting%20Minutes.ashx).



education, is losing money on the program, which requires 30 people per cohort simply to break even.<sup>518</sup>

Thus, even lowered barriers to entry might prove too much to entice profit seekers. Indeed, Hadfield claims that this sort of business model is likely to fail on its own, but her solution doubles down on large corporations. She claims that their power to lower overhead and gatekeeping costs through economies of scale will ultimately benefit low-end consumers:

LegalZoom or Rocket Lawyer could hire LLLTs and have them answering phone calls, engaging in online chats—maybe even manning retail outlets—and giving assistance actually filling out the forms and navigating the procedures, all based on protocols developed by lawyers and by the company. . . . That’s the way you significantly reduce the gap. Then the LLLT can be hired at lower cost.<sup>519</sup>

Even if this is a way to make the unbundled legal services business attractive, we still know very little about how good these services will be. While there have been studies in the United Kingdom that show positive results,<sup>520</sup> it is unclear how generalizable they are. Indeed, Greiner’s study of unbundled services showed alarming gaps in performance compared to lawyer representation.<sup>521</sup> Furthermore, the population that is arguably in most need of legal services is the very same that is least likely to have access to, or facility with, the new tools that might benefit them in a post-disruption world.<sup>522</sup> In this way, the advance of technology might widen the gap between computer-assisted non-lawyers and computer-assisted lawyers, perhaps even until technology progresses so far that difference between computer and lawyer performance becomes largely immaterial.<sup>523</sup> Lastly, there is a risk that the presence of these tools might drive full-service lawyering even further away, lulling lawmakers to shrink legal aid budgets even more. Still, the

---

518. MINUTES, *supra* note 515, at 2 (“Current enrollment in the LLLT practice area education classes is eighteen students. In order to break even, the UW needs to have at least 30 students in each cohort.”).

519. Ambrogi, *supra* note 513.

520. See BLACKWELL COMM. GR. BRIT., THE INVESTIGATION OF NON-LEGALLY QUALIFIED CLAIMS ASSESSORS AND EMPLOYMENT ADVISERS WHO ACT FOR REWARD: A REPORT 30-31, 48 (2000).

521. See Greiner, Pattanayak & Hennessy, *supra* note 426, at 908-09.

522. Michael Zuckerman, *Is There Such a Thing as an Affordable Lawyer?*, THE ATLANTIC (May 30, 2014), [www.theatlantic.com/business/archive/2014/05/is-there-such-a-thing-as-an-affordable-lawyer/371746/](http://www.theatlantic.com/business/archive/2014/05/is-there-such-a-thing-as-an-affordable-lawyer/371746/).

523. Cf. PETER M. TIERSMA, PARCHMENT PAPER PIXELS: LAW AND THE TECHNOLOGIES OF COMMUNICATION 75 (2010).

problem with access to justice might be so profound and the likelihood of a non-market solution so low, that these risks are worth taking.

## 2. *Decreased Progressivism*

I have already explained how disruption will likely limit the supply of people who are capable of performing bespoke services and how this could affect the state of law and adjudication. In this final Subsection, I would like to draw a vivid connection between bespoke lawyering and social welfare—namely, the capacity for progressivism. While disruption might bring unprecedented access to the legal system, it might come with the cost that the system is less able to deliver progressive outcomes.

The following Subsection briefly describes the intellectual tradition asserting that lawyers are a vital part of the social mission to protect and advance the causes of the less fortunate or marginalized. It further analyzes whether this contribution is contingent upon a healthy supply of people capable of providing bespoke legal skills.

### a. The Link Between Bespoke Lawyering and Progressivism

In his classic work, *Democracy in America*, Alexis de Tocqueville characterized lawyers as vital agents of reform and protection, noting that “[t]he members of the legal profession have taken a part in all the movements of political society in Europe for the last five hundred years.”<sup>524</sup> Tocqueville believed that American lawyers were a force against tyranny because they could stifle the execution of unjust laws by fighting their on-the-ground operation.<sup>525</sup> Lawyers’ training provides both the capacity and inclination to fight oppression:

The special information which lawyers derive from their studies insures them a separate rank in society, and they constitute a sort of privileged body in the scale of intellect. This notion of their superiority perpetually recurs to them in the practice of their profession: they are the masters of a science which is necessary, but which is not very generally known: they serve as arbiters between the citizens; and the habit of directing to their

---

524. ALEXIS DE TOCQUEVILLE, 1 *DEMOCRACY IN AMERICA* 348 (Francis Bowen ed., Henry Reeve trans., Sever & Francis 3d ed. 1863) (1835).

525. *Id.* at 348, 355-56.

purpose the blind passions of parties in litigation, inspires them with a certain contempt for the judgment of the multitude.<sup>526</sup>

Though lawyers' contempt might be expected to breed elitism and insularity, Tocqueville believed the opposite was true, "The profession of the law is the only aristocratic element which can be amalgamated without violence with the natural elements of democracy, and be advantageously and permanently combined with them."<sup>527</sup> They operate, in this regard, to assist those who do not conform to the powerful and potentially oppressive majority.<sup>528</sup>

Tocqueville's notion that lawyers can be agents of change and resistance when those in the minority are threatened found a home in the sociologically minded Functionalist Movement that developed a century later.<sup>529</sup> Prominent Functionalist Talcott Parsons claimed that lawyers were guarantors of welfare<sup>530</sup> because they are tolerant of their clients' abnormal ideas and values and give their expressions voice in a forum of persuasion.<sup>531</sup> Parsons described a two-way dynamic: The therapeutic nature of the lawyer-client relationship socializes the client to the moral values of society, and the lawyer's advocacy for the client legitimizes the client within that moral framework.<sup>532</sup> Like Tocqueville, Parsons believed that lawyers' training and duties enable this function:

[Lawyers] are trained in and integrated with a distinctive part of our cultural tradition, having a fiduciary responsibility for its maintenance, development and implementation. They are expected to provide a "service" to the public within limits without regard to self-interest. The lawyer has a position of independent responsibility so that he is neither a servant only of the client though he represents his interest, nor of *any* other group, in the lawyer's case, of public authority.<sup>533</sup>

Critically, the lawyer's function is to stand between "two major aspects of our social structure; in the case of the law between public

---

526. *Id.* at 349.

527. *Id.* at 352.

528. *Id.* at 355-56.

529. See Bill Ong Hing, *In the Interest of Racial Harmony: Revisiting the Lawyer's Duty To Work for the Common Good*, 47 STAN. L. REV. 901, 922-32 (1995).

530. UTA GERHARDT, *THE SOCIAL THOUGHT OF TALCOTT PARSONS* 135 (2011).

531. TALCOTT PARSONS, *ESSAYS IN SOCIOLOGICAL THEORY* 382 (rev. ed. 1954).

532. See A. JAVIER TREVIÑO, *TALCOTT PARSONS ON LAW AND THE LEGAL SYSTEM* 14-17 (2009); PARSONS, *supra* note 531, at 381-82.

533. PARSONS, *supra* note 531, at 381.

authority and its norms, and the private individual or group whose conduct or intentions may or may not be in accord with the law,”<sup>534</sup> exerting influence on both. Parsons believed that this is only possible because lawyers form an institution that is integrated with independent social structures like law schools.<sup>535</sup>

A close cousin of Functionalism,<sup>536</sup> the aptly named Progressive Legal Movement shared the belief that lawyers perform a fundamental public service. Its most famous articulation came when Louis Brandeis gave a speech, “The Opportunity in Law,” to the Harvard Ethical Society.<sup>537</sup> He claimed that the “opportunity” for lawyers was to help the labor movement in the “ever-increasing contest between those who have and those who have not.”<sup>538</sup> The practice of law was best suited to this task because the “training fits [lawyers] especially to grapple with the questions which are presented in a democracy.”<sup>539</sup> It imbues them with great judgment, logic, attentiveness to facts, memory, and tolerance, all of which can translate the thoughts into action on behalf of those who are thinking of ways to solve problems like wealth disparity.<sup>540</sup>

For most of the twentieth century, the values of Functionalism and Progressivism predominated in discussions about the potential for lawyering and legal education.<sup>541</sup> Contemporary scholars, too, have identified lawyers’ overall welfare function. According to Deborah Rhode, “No occupational group in American history has a more distinguished tradition of leadership in the struggle for social justice.”<sup>542</sup>

---

534. *Id.*

535. *Id.* at 378-79.

536. See Hing, *supra* note 529, at 927-30 (drawing a parallel between movements but saying progressivism was more focused on skills than law); David Luban, *The Noblesse Oblige Tradition in the Practice of Law*, 41 VAND. L. REV. 717, 723-24 (1988) (same); William H. Simon, *Babbitt v. Brandeis: The Decline of the Professional Ideal*, 37 STAN. L. REV. 565, 565-72 (1985) (same).

537. Louis D. Brandeis, *Speech to the Harvard Ethical Society: The Opportunity in the Law* (May 4, 1905), [http://www.minnesotalegalhistoryproject.org/assets/Brandeis%20-%20%20\(1905\).pdf](http://www.minnesotalegalhistoryproject.org/assets/Brandeis%20-%20%20(1905).pdf).

538. *Id.* at 15.

539. *Id.* at 8.

540. *Id.* at 8-9.

541. Simon, *supra* note 536, at 565 (“The dominant account of professionalism in the past century can be called the Progressive-Functionalist Vision.”).

542. Deborah L. Rhode, *Institutionalizing Ethics*, 44 CASE WESTERN. RES. L. REV. 665, 736 (1994).

The skills and duties that support the changes described in the progressive vision are obviously bespoke in nature. Individualized attention, creativity in argument and strategy, pragmatism, and adherence to ethical duties, are distinctive of bespoke lawyering. Assuming that lawyers can fulfill that vision to some degree, it is reasonable to guess that the scarcity of bespoke skills could harm our progressive capacities.

In the last few decades, however, many scholars have become skeptical of that assumption. The lawyer's role is a mediated one. Her work is framed to some extent by the interests of her client, often in the backdrop of an adversary system that pits one client against another. Rightly, scholars noted that observing ethical duties can conflict with acting as an autonomous progressive source for the betterment of society.<sup>543</sup> Empirical studies in the 1980s showed that lawyers at incumbent firms were growing more likely to act in pursuit of corporate clients and, to get them, were willing to act as little more than hired guns.<sup>544</sup> Some believe that even when progressive client-lawyer interests are aligned, ethical rules can keep people, particularly those in stigmatized groups, from getting effective representation (to say nothing about how ethical rules inflate the price for legal services).<sup>545</sup>

In evaluating disruption, we must account for these critiques in determining how much weight to give the power of undisrupted legal services to bring about progressive ends. But just as we should be

---

543. See generally LAWYERS' ETHICS AND THE PURSUIT OF SOCIAL JUSTICE: A CRITICAL READER 1-2 (Susan D. Carle ed., 2005).

544. Compare JEROME E. CARLIN, LAWYERS' ETHICS: A SURVEY OF THE NEW YORK CITY BAR 119-32 (1966) (finding large firms more likely to observe ethics rules and act autonomously than small firms primarily because they had stable client bases and did not appear in court as often), and ERWIN O. SMIGEL, THE WALL STREET LAWYER 342 (1969) (finding support for Functionalism at large firms saying that "[t]heir cautious use of societal brakes provides the liberal with time and opportunity to seek change in a relatively stable society"), with ROBERT L. NELSON, PARTNERS WITH POWER: THE SOCIAL TRANSFORMATION OF THE LARGE LAW FIRM 247 (1988) (explaining that survey results do not comport with the Functionalist-Progressivist paradigm because "[i]f there is a distance between large-firm lawyers and their corporate clientele over general social and political questions, there is not much disparity between client concerns and the lawyers' agenda for change in the legal fields in which they practice."), and Kimberly Kirkland, *Ethics in Large Law Firms: The Principle of Pragmatism*, 35 U. MEM. L. REV. 631, 658 (2005) (explaining preliminary empirical results show the nature of power in large law firms is similar to that found in Nelson's work).

545. See David Luban, *Taking Out the Adversary: The Assault on Progressive Public-Interest Lawyers*, 91 CALIF. L. REV. 209, 209, 220 (2003).

mindful of the critiques before we allow ourselves to be enraptured by the stirring words of Tocqueville and others, we must be equally mindful that the critiques do not necessarily lend support to disruption.

It is unlikely that these critics would embrace a market-based makeover of legal services, even if it might yield greater access.<sup>546</sup> Indeed, many of them argue that a fundamental barrier to progressivism is the fact that lawyers, law firms, and bar associations have been too willing to behave like typical profit-seeking market actors. For example, Richard Abel, arguably the premier decrier of the relationship between ethics rules and cartel power, concedes that such protectionist actions are a natural byproduct of markets.<sup>547</sup> The critics might prefer more regulation to less. For example, they might prefer stronger measures to increase pro bono service, which (surprisingly) increased among incumbent firms after the Great Recession,<sup>548</sup> or funded non-profit alternatives.<sup>549</sup>

If lawyers stand as a critical buffer between the operation of legal authorities and the heterogeneous goals and values of the public, then disruption would move these two structures closer together, squeezing out the buffer. This has important consequences. Considering the public's efforts to seek relief from the law, legal self-help will increase. When people help themselves rather than seek the assistance of a lawyer, efforts to socialize (which arise from the interactions between client and lawyer) and legitimize (which occur when the lawyer expertly works within the legal framework to persuade others of the legitimacy of the client's non-conformist values or goals) might be weakened. Sometimes it takes a professional third person, or so the argument goes. The hope,

---

546. See, e.g., Cornel West, *The Role of Law in Progressive Politics*, 43 VAND. L. REV. 1797, 1805 (1990) ("Progressive legal practice must put forward interpretations of the precious ideal of democracy that call into question the unregulated and unaccountable power of corporate America.").

547. See RICHARD L. ABEL, *AMERICAN LAWYERS* 20 (1989) ("Markets compel all occupations to compete. . . . It is not surprising, therefore, that producers energetically try to escape from that freedom, notwithstanding their professed enthusiasm for markets. Producers of goods can seek protection from market forces in a variety of ways: through horizontal monopolies or cartels, vertical control over raw materials, and rights to technology or other intellectual inputs (patent, trade mark, and copyright).") (footnote omitted).

548. See SCOTT L. CUMMINGS, *What Good Are Lawyers?*, in *THE PARADOX OF PROFESSIONALISM* 1, 4 (Scott L. Cumming ed., 2011).

549. See Richard Zorza & David Udell, *New Roles for Non-Lawyers to Increase Access to Justice*, 41 FORDHAM URB. L.J. 1259, 1279 (2014).

however, is that we have been underestimating the ability of people, particularly disenfranchised people, to reach these results on their own or with improved technological tools. Even so, we must be mindful of the possibility that self-help could hurt, rather than help, to bring about progressive ends through the machinery of the law.

#### b. The Link Between Legal Openness and Progressivism

Parsons warned against retreating into the “formalism” of the law: Following “the ‘letter’ of the law without due regard to a ‘reasonable’ balance of considerations” that matter to those who progressive lawyers can benefit.<sup>550</sup> Doing so meant that the lawyer was no longer acting as a buffer *between* the state and the public but as an instrument *of* the state. Contemporary advocates of progressive lawyering share this belief. Even those who are skeptical that law firms will fulfill the Parsonian promise have favored standards over rules,<sup>551</sup> purposivism over plain reading,<sup>552</sup> and narrative-based<sup>553</sup> or destabilizing argumentation over traditional legalistic argumentation.<sup>554</sup> In short, they have endorsed laws and principles of adjudication that are dynamic, fact-laden, and sometimes indeterminate. These features provide greater opportunities for lawyers to experiment with imaginative tactics on behalf of the less fortunate.

By contrast, disruptive forces, particularly those that are technology-driven, push for predictability and constraint in conduct and adjudication. They favor less regulation of business but sharper and unmediated control of consumers and those who might threaten commerce. Some scholars are willing to embrace disruption despite

---

550. Parsons, *supra* note 531, at 377, 381.

551. See, e.g., Rob Atkinson, *A Dissenter's Commentary on the Professionalism Crusade*, 74 TEX. L. REV. 259, 334-35 (1995); cf. Richard Delgado, *Shadowboxing: An Essay on Power*, 77 CORNELL L. REV. 813, 814 (1992) (explaining how those without power are more likely to favor standards but stopping short of embracing them over rules).

552. See David B. Wilkins, *Legal Realism for Lawyers*, 104 HARV. L. REV. 468, 523-24 (1990); Robert W. Gordon, *The Independence of Lawyers*, 68 B.U. L. REV. 1, 23-26 (1988).

553. See Richard Delgado, *Storytelling for Oppositionists and Others: A Plea for Narrative*, 87 MICH. L. REV. 2411, 2440-41 (1989).

554. See Anthony V. Alfieri, *Impoverished Practices*, 81 GEO. L.J. 2567, 2661-62 (1993).

this possibility,<sup>555</sup> but others have expressed reservations, such as Pasquale and Cashwell:

This scenario portends what French social theorist Gilles Deleuze called a “Society of Control;” namely, a world in which human action is increasingly managed and monitored by machines. As Peter Reinhardt recently observed, at firms like Uber and 99designs, “lines of code directly control real humans.” In government, too, software can effectively make determinations about who will be audited, who will receive benefits, or who will be denied access to a flight. It is possible to imagine whole areas of law relegated to computational implementation.<sup>556</sup>

In Parsonian terms, by moving the contrasting structures of law and society closer together, technologists have unprecedented opportunities to insert the norm-governed machinery of the haves into the heterogeneous space of the have-nots. The consumer might not be able to exceed the speed limit in her Google Car. And if somehow she hacks the car, drives a few miles per hour over the speed limit and gets a ticket as a result, her prospect for successfully challenging the ticket in court against Google Evidence with only the power of Google Legal Search could be so low that the whole exercise of litigation seems pointless. This is an exaggeration, of course, but it nevertheless shows how these forces push down the mutability of law that animates progressivism.

But maybe this is the point; law is supposed to evolve, according to popular belief.<sup>557</sup> Using its plasticity to render it less

---

555. Compare John O. McGinnis, *Machines v. Lawyers*, CITY J., Spring 2014, [http://www.city-journal.org/2014/24\\_2\\_machines-vs-lawyers.html](http://www.city-journal.org/2014/24_2_machines-vs-lawyers.html). (“In contrast, the entrepreneurs and innovators driving our computational revolution benefit more from a stable regulatory regime and limited government. As they replace lawyers in influence, they’re likely to shape a politics more friendly to markets and less so to regulation.”), with McGinnis & Pearce, *supra* note 29, at 3065-66 (“Ultimately, therefore, the disruptive effect of machine intelligence will trigger the end of lawyers’ monopoly and provide a benefit to society and clients as legal services become more transparent and affordable to consumers, and access to justice thereby becomes more widely available.”).

556. Pasquale & Cashwell, *supra* note 424, at 30-31 (footnotes omitted). A potential distinction between my view and theirs is that they contend that this scenario arises under a “high regulation” environment, at least with respect to non-business conduct, whereas I believe these developments could occur with the same level of overall regulation, so long as the existing law is modified so as to be friendly to computerization, such as through rulification.

557. E. Donald Elliot, *The Evolutionary Tradition in Jurisprudence*, 85 COLUM. L. REV. 38, 38 (1985) (“Today the idea that law ‘evolves’ is so deeply ingrained in Anglo-American legal thought that most lawyers are no longer even conscious of it as a metaphor.”).



plastic<sup>558</sup> and integrating technology into our rules of conduct could lead to minimization of conflict and the maximization of conformity. Maybe this is a different sort of progress.

Twisting Holmes's famous adage, a computer-friendly approach to law and adjudication could alter the felt necessities of that time; the syllogism might someday seem a perfectly adequate way to determine the rules that govern us.<sup>559</sup> Under such circumstances, we might not have the motivation to reach the pre-disruption heights in legal imagination that were characteristic of common law American lawyering. We might forget why we ever even wanted to grant speed limit breakers the chance to win in the first place or why we wanted imprecise legal standards at all. This might not be a reason to be concerned: If our preferences change and we thereafter become very good at satisfying them, why should it matter that we have become worse at satisfying the preferences that we no longer have?

Perhaps the best answer is that when society changes, and it always does, the need for the skills that we once had and cared for might resurrect itself. If the development of law slows, there arises the possibility that law becomes prematurely entrenched, stifling modification before the technology has figured out how to maximize welfare or how to allow for revision to meet the changing needs of society. Under those circumstances, we might regret that bespoke lawyering has become another lost art.

## CONCLUSION

Legal services will be disrupted. It might come from technological innovation, business model innovation, or some combination of the two. It might come from the forces described here or something new. It might take a decade, or it might take more than a lifetime. I have aimed to show that the character of the legal services industry gives rise to the risk that, when it occurs, bespoke aspects of lawyering will linger un-innovated, and that the sooner

---

558. See Lessig, *Plastics*, *supra* note 435, at 1179 ("The plasticity of a social structure, however, is not itself simply fixed or given; plasticity too can be changed.").

559. See OLIVER WENDELL HOLMES, JR., *THE COMMON LAW* 1 (1881) ("The felt necessities of the time, the prevalent moral and political theories, intuitions of public policy, avowed or unconscious, even the prejudices which judges share with their fellow-men, have had a good deal more to do than the syllogism in determining the rules by which men should be governed.").

disruption happens, the more likely this Incomplete Innovation will occur.

I have further sought to explain why that state of affairs is important. I have argued that it sets the stage for the aspect of disruption that people find most frightening—specifically, that something we value could be left behind. In that regard, I demonstrated how bespoke lawyering skills could become scarce in a post-disruption world and how the developmental arc of disruptive forces, particularly technological forces, interacts with that scarcity. The combination could change the very character of law and adjudication, making them more static and rulified. Lastly, I highlighted two important dimensions of our potential post-disruption landscape: Access to justice for millions of people at the potential expense of our capacity to bring about the progressive ends of the legal system, itself.

Many aspects of my analysis are speculative, and there are certainly dimensions of legal practice, jurisprudence, economics, and computer science that deserve further elaboration and discussion. My hope is that other scholars who recognize the pivotal nature of Incomplete Innovation and Premature Disruption will fill in these gaps. At times, I have painted a rather stark portrait of our possible future, and our eventual reality is likely to be considerably more nuanced. But my abstractions serve to highlight aspects of disruptive forces that have not been given enough attention. Like Herbert Kritzer, who made predictions of the future of legal services more than fifteen years ago, “[a]lthough I may be overstating the changes that are occurring, it is also very possible that I have grossly underestimated the changes that will be coming,” and “[i]f knowledge becomes increasingly accessible in ways that require less and less specialized training and experience, we may see forms of organization delivering services that we cannot at this time readily imagine.”<sup>560</sup> With any luck, this analysis and others like it will expand our imagination, allowing us to make better choices as we frame our future.

---

560. Herbert M. Kritzer, *The Professions Are Dead, Long Live the Professions: Legal Practice in a Postprofessional World*, 33 *LAW & SOC’Y REV.* 713, 749 (1999).