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CONTRACT ADJUDICATION IN A COLLABORATIVE ECONOMY[†]

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ABSTRACT

In order to explore the debate between contextualist versus formalist contract interpretation, this article examines dispute resolution procedures in a novel class of contracts: agreements governing interfirm collaboration. Analysis of these contracts reveals two phenomena: first, agreements governing collaboration include arbitration clauses more frequently than other commercial contracts; and second, these agreements routinely situate arbitration at the summit of complex escalation procedures. These observations raise, in turn, the following question: why do collaborators prefer these private dispute resolution systems to conventional litigation in public courts?

The Article's central claim is that litigation is shunned because contemporary contextualist contract law poorly interprets the meaning of collaborative activity. Note, however, that neither contextualism's deficiencies nor the prevalence of arbitration may necessarily suggest a return to formalism: formalism's standard justifications appear problematic when applied to collaborative production relationships. Thus, this article considers the possibility of transcending the debate between contextualist and formalist enforcement, finding some promise in the application of the "experimentalist" model of adjudication, theorized to describe current trends in public law litigation, as a template for modern contract enforcement.

INTRODUCTION

WHAT is the role of the court in contemporary capitalism? The conventional wisdom is that, through consistent enforcement of property rights, courts provide the institutional stability necessary for investment.¹ Committing resources into an uncertain endeavor is less risky when one can rely on a court to protect one's claim to the rents resulting from one's investment.² Thus, by enforcing executory agreements, contract

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1. See, e.g., John McMillan & Christopher Woodruff, *Private Order Under Dysfunctional Public Order*, 98 Mich. L. Rev. 2421, 2421 (2000) ("Businesspeople need contractual assurance.").
 2. Avner Greif, *Commitment, Coercion, and Markets: The Nature and Dynamics of Institutions Supporting Exchange*, in HANDBOOK OF NEW INSTITUTIONAL ECONOMICS 727, 730 (Claude Menard and Mary Shirley, eds., 2005). See also Michael Trebilcock & Jing Leng, *The Role of Formal Contract Law and Enforcement in Economic Development*, 92 VA. L. REV. 1517, 1522–25 (2007). For the canonical work in this area, see DOUGLASS NORTH, INSTITUTIONS, INSTITUTIONAL CHANGE, AND ECONOMIC PERFORMANCE (1990). See also Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Schleifer & Robert Vishny, *Law and Finance*, 106 J. OF POLITICAL ECONOMY 1113 (1998). At its bluntest, this view leads to a minimalist

law provides the infrastructure necessary for the impersonal, intertemporal exchange that constitutes modern markets.³

This story grows complicated, however, when one acknowledges the reality of contractual incompleteness. Due to limits of foresight, resources, and/or language, events inevitably arise that a written contract does not explicitly cover.⁴ By overlooking contingencies that are as unforeseeable as they are unavoidable, incomplete contracts challenge the court's presumed ability to enforce executory agreements. The question then is what the court is to do with these contractual "gaps."

To date, the perennial debate between "formalist" and "contextualist" contract enforcement has framed whatever solutions are proposed for the problem of contractual incompleteness.⁵ Both sides agree that contract enforcement takes place within a constellation of interdependent governance institutions: namely, formal enforcement mechanisms (such as courts) operate side-by-side with informal constraints (such as reputation effects).⁶ However, the camps do not agree over how these complementary institutions should interact. According to contextualists, the court itself, using informal business norms as a guide, should proactively fill the agreement's gap on behalf of the parties.⁷ On the other hand, modern formalists argue that a court asked to enforce an incomplete contract should follow a minimalist understanding of its role and refuse to extrapolate the contract's indefinite language to reach the unforeseen situation. Such an approach addresses incompleteness by creating incentives for parties to draft clearer agreements and/or because informal

conception of the court's role. See, e.g., Alan Schwartz & Robert E. Scott, *Contract Theory and the Limits of Contract Law*, 113 YALE L. J. 541, 547 (2003) ("[A] modern commercial economy can function well with little more than honest courts and a set of enforcement rules.") [hereinafter Schwartz & Scott, *Limits of Contract Law*].

3. See MORTON HORWITZ, *THE TRANSFORMATION OF AMERICAN LAW 1780–1860* 174 (1977) ("[T]he moment at which courts focus on expectation damages rather than restitution or specific performance to give a remedy for nondelivery is . . . [when] [c]ontract then becomes an instrument for protecting against changes in supply and price in a market economy.").
4. See Robert E. Scott & George G. Triantis, *Incomplete Contracts and the Theory of Contract Design*, 56 CASE W. RES. L. REV. 187, 190 (2004).
5. For a concise overview of the debate, see Robert E. Scott, *The Case for Formalism in Relational Contract*, 94 NW. U.L. REV. 847, 849–53 (2000) [hereinafter Scott, *Case for Formalism*].
6. *Id.* at 852 ("The debate that divides the academics who think about these questions is not over the nature of contract as an institution. We are all relationalists now. In that sense Macneil and Macaulay have swept the field. Contract, we now know, is complex and subjective and synthetic in every sense of those terms. The debate, rather, is over the proper nature of contract law.").
7. See *infra* Part II.A.

governance will compensate for the courts' minimized role.⁸ In either respect, defining the court's proper role in enforcing contracts has been cast largely as an interpretive problem.⁹

Inspired by recent research, which argues that transaction type should determine which interpretation regime is more appropriate,¹⁰ this Article explores the contextualism versus formalism debate by analyzing the contracts that govern the interfirm collaboration that characterizes much of the modern economy. The simple intuition driving this study is that the dramatic changes observed in the organization of production¹¹ may portend corresponding evolution in the economy's legal apparatus. The contracts I examine—innovation-centered collaboration agreements,¹² which incorporate a new type of governance mechanism that allows parties to control behavior in environments where they are still learning the scope and scale of what it is they are trying to innovate¹³—suggest that the enforcement system

8. See *infra* Part III.A.

9. Benjamin E. Hermalin, Avery W. Katz & Richard Craswell, *The Law of Contracts*, in THE HANDBOOK OF LAW & ECONOMICS 68 (A. Mitchell Polinsky & Steven Shavell, eds., 2006) ("Probably the most common source of contractual disputes is differences in interpretation, if only because the parties have limited incentive to pursue a dispute if they can foresee and agree upon its likely outcome. The problem of contract interpretation thus provides a central backdrop for the law of contracts, which contains many rules and principles that are designed to address it.").

10. See, e.g., Adam B. Badawi, *The Attributes of Transactions and Interpretive Preferences: The Limits and Borders of Contractual Formalism* (Bepress working paper, 2007), available at http://works.bepress.com/adam_b_badawi/3 (presenting a theoretical model centered on transaction characteristics that attempts to explain parties' preferences for contextualist or formalist interpretation) (on file with the Virginia Law & Business Review Association); Theodore Eisenberg & Geoffrey P. Miller, *The Flight from Arbitration: An Empirical Study of Ex Ante Arbitration Clauses in the Contracts of Publicly Held Companies*, 56 DEPAUL L. REV. 335 (2007) (arguing that preference for arbitration depends, in part, on transaction type) [hereinafter Eisenberg & Miller, *Flight from Arbitration*].

11. Over the past thirty years, networked forms of production have become a regular fixture on the economic landscape. See generally Walter Powell, *Neither Market nor Hierarchy: Network Forms of Organization*, 12 RES. IN ORGANIZATIONAL BEHAV. 295 (1990).

12. Interfirm collaborative relationships typically have an innovative element at their core: parties often partner in order to access competencies that, when combined with in-house assets, allow them to escape commodity pricing. See JOSH WHITFORD, *THE NEW OLD ECONOMY: NETWORKS, INSTITUTIONS, AND THE ORGANIZATIONAL TRANSFORMATION OF AMERICAN MANUFACTURING* 69 (2005).

13. See *infra* Part I.C. A thorough discussion of these new contract mechanisms is provided in Matthew Jennejohn, *Collaboration, Innovation, and Contract Design*, 14 STAN. J.L. BUS. & FIN. 83 (2008) [hereinafter Jennejohn, *Contract Design*]. For a similar treatment of these contract mechanisms, see Ronald J. Gilson, Charles F. Sabel & Robert E. Scott, *Contracting for Innovation: Vertical Disintegration and Interfirm Collaboration*, 109 COLUM. L. REV. 431 (2009).

appropriate for the twenty-first century economy may be untraditional. First, these contracts typically incorporate complex dispute escalation procedures that systematize problem-solving and attempt to create resolutions before resorting to an outside tribunal.¹⁴ Second, these contracts include alternative dispute resolution (“ADR”) clauses at a significantly higher rate than other contracts: compared to the general average of 10.64% across a variety of types of commercial agreements,¹⁵ contracts between collaborators include arbitration clauses at a significantly higher rate—49.73%.¹⁶ Therefore, a puzzle arises: why do firms avoid litigation when they collaborate on an innovative project compared to when they enter into other transactions? Furthermore, what is the motivation behind these multi-layered dispute resolution mechanisms?

Collaborators’ predilection for ADR is especially puzzling when considered in light of the literature on private ordering for two reasons. First, the original work on private ordering highlighted the advantages private adjudication, such as arbitration, presents to discrete trading communities.¹⁷ In these insular groups where interactions between agents repeat, private enforcement is preferred because it accommodates informal enforcement mechanisms such as reputation effects.¹⁸ This story does not apply here, however, because collaborators operate in global, heterogeneous markets where the preconditions for informal governance obtain only with difficulty. Later work on private ordering has rightly emphasized that the trade-off between public and private adjudication must include a third dimension: ordering production within a vertically integrated firm.¹⁹ Because vertical integration has similar benefits to private adjudication—namely, greater speed, expertise, and reliability than public adjudication—but does not require cohesive community norms to be effective,²⁰ we might expect vertical integration to be the governance mechanism of choice in dynamic, complex modern markets. We observe the exact opposite, however. Rather than solely governing production through monolithic vertically integrated enterprises, modern firms since the late 1970s have instead often chosen to

14. See *infra* Part I.D.

15. Eisenberg & Miller, *Flight from Arbitration*, *supra* note 10, at 356.

16. See *infra* Part I.D.

17. See, e.g., ROBERT ELLICKSON, ORDER WITHOUT LAW: HOW NEIGHBORS SETTLE DISPUTES (1991); Lisa Bernstein, *Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115 (1992).

18. See Barak D. Richman, *Firms, Courts, and Reputation Mechanisms: Towards a Positive Theory of Private Ordering*, 104 COLUM. L. REV. 2328, 2335 (2004).

19. *Id.* at 2348–51.

20. *Id.*

“deverticalize” production and rely upon contractual mechanisms.²¹ In summary, collaborators are behaving contrary to our basic assumptions about the utility of private law: they use private adjudication when concomitant community norms are weak, and they prefer contractual control to governance through ownership even though contracts are prone to incompleteness.

My argument, which is divided into three separate components, is that these developments may raise the possibility that neither contextualism nor formalism is the appropriate contract enforcement paradigm for the modern economy. My first and most central claim is that collaborators embrace ADR because the conventional paradigm of contract enforcement in the United States—that of parties seeking to vindicate rights before a detached tribunal, which interprets their commitments with the contextualist doctrines found in the Uniform Commercial Code (“UCC”) and the Second Restatement of Contracts (“2d Restatement”)—is counterproductive as applied to disputes arising in a networked economy. Contextualist doctrines, such as course of performance, that are supposed to create flexibility for parties, actually undermine collaborations because there is a constant risk that a collaborators’ experimentation will be interpreted as a modification of the contract. Furthermore, doctrines such as trade usage, which use wider industry norms to interpret the meaning of a contract, will likely lead the court astray since collaborators are often actively trying to forsake industry conventions as they innovate. Because of such doctrines, collaborators have abandoned conventional contract enforcement for private alternatives.

Collaborators’ embrace of private adjudication, however, may not necessarily reveal a preference for formalism. My second argument is that formalist theory does not adequately explain why formalism complements parties’ choice to use escalation and arbitration. As currently formulated, there are two standard arguments for formalism: one, formalism creates better incentives for parties to draft clearer agreements (standardization theory); and two, formalism better allows informal governance to flourish (self-enforcement theory). In conventional form, both arguments are insufficient explanations for the behavior we observe. Standardization theory fails because the endemic uncertainty that accompanies innovative activity prevents parties from creating standardized contractual terms that a court can readily recognize—i.e., collaborations are often too unique for meaningful standardization to be possible. Self-enforcement theory also fails because reputational information does not necessarily circulate easily through

21. See *infra* Part I.A.

production networks: first, contrary to conventional wisdom, interfirm collaborations are often neither lengthy nor repeated; and second, global industry networks, through which reputational information must flow, are both heterogeneous and dynamic.

My third—and most tentative—argument is that a new conception of contract enforcement may be necessary.²² A potential framework for such a re-conception is available in the “experimentalist” model of adjudication that Professors Dorf and Sabel have developed to theorize the transformation of public law litigation.²³ Experimentalist theory may provide a ready approach to conceptualizing dispute resolution between collaborators because the same logic of social cooperation that animates Dorf and Sabel’s model appears to be reflected in the contracts between collaborators. Whereas traditional executory contracts outline future rights and duties, of which the failure to perform authorizes an aggrieved party to seek damages for its unrealized expectations, contracts designed to achieve innovative outcomes, which I refer to as “generative contracts,” establish a framework of bilateral experimentation that not only guides the parties towards discovering the collaboration’s innovative potential but also polices against defection through heightened transparency. With the drug treatment court as its exemplar, experimentalist adjudication mirrors this exploratory model of social organization: rather than vindicating rights, an experimentalist tribunal repairs a malfunctioning learning process as the court works with the parties in discovering and continually improving upon piecemeal solutions. In particular, the court’s task is to help the parties set a series of performance benchmarks, monitor progress and aide in the detection and correction of emergent errors, and, if necessary, discipline recalcitrant parties through use of penalty defaults. Experimentalism fights fire with fire. In short, an experimentalist model of adjudication, which highlights the tribunal’s role in problem-solving rather than rights vindication, may best explain the system of dispute resolution that collaborators are trying to approximate through a mix of escalation provisions and arbitration clauses.

Exploring the relationship between collaborative production and contract adjudication provides new insights into a wide range of current debates. First,

22. For a practical perspective on the need for a new paradigm, see Jeswald W. Salacuse, *So What Is the Deal Anyway? Contracts and Relationships as Negotiating Goals*, 14 NEGOTIATION J. 5 (1998).

23. See, e.g., Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267 (1998) [hereinafter Dorf & Sabel, *Democratic Experimentalism*]; Michael C. Dorf & Charles F. Sabel, *Drug Treatment Courts and Emergent Experimentalist Government*, 53 VAND. L. REV. 831 (2000) [hereinafter Dorf & Sabel, *Drug Treatment Courts*].

by raising the question of law's role in supporting innovation-centered transactions, this Article suggests a new avenue for strengthening the often fragile interfirm networks upon which the modern global economy depends. Recent challenges in Boeing's collaborations with suppliers in the 787 Dreamliner project,²⁴ shows the need for a clear articulation of dispute resolution institutions operating among collaborators. The theoretical analysis presented here addresses this need by providing judges, arbitrators, and counsel with an overarching framework to inform their approach to dysfunctional collaborations. Second, this article addresses the under-theorized topic of contract law's role in facilitating economic innovation—while the relationship between law and innovation has received extensive attention in the antitrust and intellectual property literatures, it has been routinely overlooked among contract scholars. Third, and finally, by re-conceptualizing the court's place in capitalism, this article suggests a new view of the law's role in promoting and sustaining economic development.

Lest I oversell, it is important to note this Article's limits. First, the Article uses contract "interpretation" as a proxy for a wider discussion regarding the nature of contract law. Thus, I do not directly address the important related issues of contract formation, breach, damages, etc. I believe that focusing on interpretation captures the essence of the issues at hand, since interpreting the meaning of the agreement is often an enforcing court's central task. Second, I adopt the view from the law and economics literature that interpretation is a matter of the court's ability to access the information necessary to discern the meaning of a contract.²⁵ Thus, I do not address the

24. See, e.g., Hal Weitzman, *Boeing Admits Dreamliner Rethink*, FINANCIAL TIMES, March 19, 2008; Leslie Wayne, *Latest Delay Puts Boeing's Dreamliner a Year Behind*, N.Y. TIMES, April 9, 2008; Christopher Drew, *Boeing Cites Progress Gains on Dreamliner, but No Test Flight Yet*, N.Y. TIMES, July 23, 2009.

25. Hermalin, Craswell, and Katz, *supra* note 9, at 68–69 (“From a theoretical perspective, it is useful to model a contract as a mapping from *verifiable* events to outcomes. For instance, an insurance contract could contain a provision that related damage to one's car (a verifiable event) to a payment to the insured (an outcome). In this context, ‘verifiable’ means an event is observable not only by the parties to the contract, but also by any third party (e.g., a judge) who might be called upon to adjudicate a dispute. The focus on verifiable events is motivated as follows. Were an outcome contingent on an unverifiable event (i.e., one not observable to the third party), then there would be no way for the third party to judge the extent of breach of contract (if any) or even who breached (if anyone did). Hence, a contractual obligation that is contingent on an unverifiable event cannot be effectively enforced by a third party.”) (emphasis in original).

large literature discussing the linguistic issues found in the interpretation of any written document.²⁶ This is not an article about language.

The Article is organized as follows: Part I discusses the recent development of collaborative production and the novel contract mechanisms that the private bar has created to govern this new form of economic organization. To frame the subsequent discussion of the courts' proper role in this new economic order, Part I presents simple descriptive statistics that show that collaborators avoid litigating disputes far more frequently when compared with other commercial agreements. Part II explains why contextualist doctrines fail when applied to disputes between new economy collaborators. Part III explains why the standard arguments for a return to formalism are unconvincing and why even an amended form of formalist theory is strained. Part IV examines the possibility that a model of experimentalist adjudication may best explain the complementarities between private adjudication and collaborative contracting. Finally, Part V summarizes the article's findings and briefly outlines my argument's policy ramifications.

I. THE EMERGENT INFRASTRUCTURE OF THE NETWORK ECONOMY

The evolution of contract enforcement that is explored in this Article is a response to an ongoing transformation in the organization of the modern economy. In this section, I outline the pertinent characteristics of this transformation. First, to provide background, I describe the general traits of the new networked economy, using a collaboration involving Boeing as an illustrative case study. Second, I outline the pragmatic governance mechanisms which parties use to direct their collaborations. Understanding the differences between these new contractual arrangements and traditional executory agreements provides necessary context for later theoretical arguments regarding the limits of conventional contract adjudication. Finally, I present evidence showing that contracts governing collaboration include arbitration clauses far more frequently than other commercial agreements, raising the question of why parties avoid litigating these new contractual relationships.

26. See generally Kent Greenawalt, *A Pluralist Approach to Interpretation: Wills and Contracts*, 42 SAN DIEGO L. REV. 533, 539–43 (2005).

A. Three Hallmarks of the “New Economy”

The “new economy” has passed in the last decade from over-hyped miracle to a vulnerable but persistent reality. Here “new economy” refers to a production system, found in both “new” and “old” industries alike,²⁷ defined by three complementary features: first, the de-integration of the vertically-integrated firm; second, the increasing prevalence of product innovation as the criterion upon which companies compete; and third, the use of collaborative arrangements as both a replacement for vertical integration and a means for accelerating innovation processes. Globalization, another characteristic of the new economy, underlies all three in that increased exposure to foreign markets pushes firms to embrace the three complementary strategies.

Over the first three quarters of the twentieth century, firms tended to vertically integrate production—i.e., design, manufacture, and marketing processes were all collected under the aegis of a single authority.²⁸ Beginning around the late 1970s, however, firms began “deverticalizing”: shedding processes not located within the firms’ core competencies.²⁹ Resulting from deverticalization are not only leaner but also more interconnected firms.³⁰ Thus, a network structure arises as manufacturers simultaneously give more business to fewer suppliers and encourage those suppliers to build

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27. Thus, Josh Whitford refers to the “new old economy”—e.g., manufacturing industries where traditional processes are giving way to new modes of production. WHITFORD, *supra* note 12, at 2.
 28. ALFRED CHANDLER, *THE VISIBLE HAND: THE MANAGERIAL REVOLUTION IN AMERICAN BUSINESS* 285–86 (1977) (“The modern industrial enterprise—the archetype of today’s giant corporation—resulted from the integration of the processes of mass production with those of mass distribution within a single business firm By 1917 the integrated industrial enterprise had become the most powerful institution in American business and, indeed, in the entire American economy.”).
 29. See Robert C. Feenstra, *Integration of Trade and Disintegration of Production in the Global Economy*, 12 J. OF ECON. PERSPECTIVES 31, 31 (1998); see also WHITFORD, *supra* note 12, at 17 (describing the shift of “once-vertically-integrated manufacturers” from using *capacity* to *specialized* subcontracting).
 30. Powell, *supra* note 11, at 301 (“Many firms are no longer structured like medieval kingdoms, walled off and protected from hostile outside forces. Instead we find companies involved in an intricate latticework of collaborative ventures with other firms, most of whom are ostensibly competitors.”); see also Luigi Zingales, *In Search of New Foundations*, 55 J. OF FINANCE 1623, 1626 (2000); Richard Florida, *Regional Creative Destruction: Production Organization, Globalization, and the Economic Transformation of the Midwest*, 72 ECON. GEOGRAPHY 314, 327 (1996).

relationships with end-users and other suppliers.³¹ Firms pursue this strategy not only out of intentions to cost-save but also because “[b]y divesting non-core functions, lead firms can more quickly reap value from innovations while spreading risk in volatile markets.”³² The networks between firms that arise are crucial to innovation: in order to compete in the “high-speed learning race” characteristic of the new economy,³³ firms must “build and maintain an increasing number of ‘knowledge nodes’ with lead users, universities, technical-service institutes, [and] user communities.”³⁴ Within these networks, firms engage in disciplined experimentation to realize innovative product development.³⁵

B. Case Study: Production of the Boeing 787

Boeing’s recent effort to make the manufacture of its commercial airplanes more collaborative provides a good example of deverticalization. Reacting to rapid loss of market share to Airbus, Boeing overhauled its product development process with an eye to replicating the Toyota model of collaboration.³⁶ Boeing’s goal was to realize process innovations, such as

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31. Whitford, *supra* note 12, at 17 (“OEMs give more business to fewer suppliers, and forge closer relationships with a core strategic group that they hope to align with their own goals. Importantly, these key suppliers are not envisioned as mere satellites orbiting a dominant but benevolent patron, dependent and beholden. Rather, in a practice somewhat in tension with the desire to extract priority treatment when needed, OEMs push many of their suppliers to be more independent and to work closely with other customers and end-use industries.”).
 32. Timothy Sturgeon, *Modular Production Networks: A New American Model of Industrial Organization*, 11 INDUS. AND CORP. CHANGE 451, 452 (2002).
 33. WHITFORD, *supra* note 12, at 18 (citing PAUL DIMAGGIO, THE TWENTY-FIRST-CENTURY FIRM 222 (2001)). See also ROBERT PITOFKY, HARVEY J. GOLDSCHMID & DIANE P. WOOD, TRADE REGULATION: CASES AND MATERIALS 402 (5th ed. 2003) (“In many high-tech industries, and increasingly in modern economies generally, successful innovation is the key to commercial success.”).
 34. Nicolai Foss & Snejina Michailova, *Knowledge Governance: Themes and Questions*, in KNOWLEDGE GOVERNANCE: PROCESSES AND PERSPECTIVES 7 (Nicolai Foss and Snejina Michailova, eds., 2009); see generally Walter Powell & Stine Grodal, *Networks of Innovators*, in THE OXFORD HANDBOOK OF INNOVATION 56 (Jan Fagerberg, David Mowery, and Richard Nelson, eds., 2005).
 35. See, e.g., Kathleen M. Eisenhardt & Behnam N. Tabrizi, *Accelerating Adaptive Processes: Product Innovation in the Global Computer Industry*, 40 ADMINISTRATIVE SCIENCE QUARTERLY 84 (1995).
 36. NAT’L COUNCIL FOR ADVANCED MFG., THE NETWORK-CENTRIC INNOVATION IMPERATIVE: HOW MANUFACTURERS WORK WITH THEIR SUPPLIERS TO DEVELOP NEW PRODUCTS 61, 69 (2006), available at <http://www.nacfam.org/Reports/tabid/68/Default.aspx> (on file with the Virginia Law & Business Review Association).

reducing assembly time,³⁷ and product innovations, such as integrating carbon fiber composites into airframes in order to improve fuel efficiency.³⁸ Unlike its previous relationships with suppliers, who typically made parts according to Boeing's designs, Boeing's new approach "fully integrate[d] partners into the entire product development process, from concept refinement to system-level design, manufacture, and delivery."³⁹ For instance, Boeing manufactured only 35% of the critical components for the 787, setting up a separate umbrella organization, which included seven key partners, to handle the design and manufacture of the majority of the new plane's airframe.⁴⁰ Boeing's in-house activity focused primarily on system interoperability and integration of the supply chain.⁴¹ Boeing did perform some functions that overlapped with suppliers activities—for instance, it "retained strong cross-functional engineering capabilities in stress, integration and weight"; however, this was to preserve the know-how necessary to coordinate what the various partners were doing.⁴² The collaboration between Boeing and its suppliers was continuous: suppliers were consulted not only during the initial definition of specifications but also throughout implementation.⁴³ Furthermore, the collaboration entailed what Boeing terms "holistic involvement"—suppliers not only collaborated on their particular component but worked together on how their respective subsystems were integrated.⁴⁴ This was accomplished by organizing hundreds of "volume teams," which pooled engineers from all of the organizations involved in producing a particular component.⁴⁵ Thus, with a federated design and production process that blurred the boundaries between collaborating firms, the 787 exemplifies the deverticalization phenomenon we observe throughout the economy.

37. *Id.* at 69.

38. *Id.* at 62–64.

39. *Id.* at 62.

40. *Id.* at 64.

41. *Id.*

42. *Id.* For a theoretical treatment of the decision to retain in-house competencies so as to facilitate knowledge transfer, see Stefano Brusoni, Andrea Principe & Keith Pavitt, *Knowledge Specialization, Organizational Coupling, and the Boundaries of the Firm: Why Do Firms Know More than They Make?*, 46 ADMIN. SCI. Q. 597, 597 (2001).

43. NAT'L COUNCIL FOR ADVANCED MFG., *supra* note 36, at 66.

44. *Id.*

45. *Id.*

C. Pragmatic Governance and Generative Contracts

Coordinating production across networks presents a number of challenges. To many observers, the most obvious problem with deverticalization is the opportunity it gives parties to “hold up” their partners. However, networked production may also introduce other coordination issues, such as spillovers, agency costs, and learning problems. How one conceptualizes the problem determines how one understands the contract’s collaborators design to govern their networks.

Since Oliver Williamson began elaborating on Coase’s original thesis, the standard approach to understanding contractual governance problems is through the lens of opportunism.⁴⁶ From this perspective, deverticalized production—fraught with incomplete contracts—seems to invite hold-ups.⁴⁷ Hold-up problems arise wherever firms make investments that have little or no value outside of the relation to which they are initially dedicated: when investments are highly relationship-specific, the less vulnerable party can always threaten to withhold its contribution unless the terms of exchange are changed in its favor.⁴⁸ Vertical integration is typically viewed as the traditional mechanism for overcoming hold-ups: i.e., where relationship-specific investments stymie parties’ efforts to collaborate, it becomes efficient for one of the parties to acquire the other, thus governing the relationship through ownership rather than contract.⁴⁹ As Section I.A above illustrates, however, contemporary firms have been substituting property rights governance with

46. Oliver Williamson, *Transaction Cost Economics: The Governance of Contractual Relations*, 22 J.L. & ECON. 233, 234 n.3 (1979) (discussing Ronald Coase, *The Nature of the Firm*, 16 *ECONOMICA* 386 (1937)).

47. See David Robinson & Toby Stuart, *Just How Incomplete Are Incomplete Contracts? Evidence from Biotech Strategic Alliances* 1 (University of Chicago, working paper, 2000) (on file with the Virginia Law & Business Review Association) (“[C]ollaborative arrangements between distinct organizations are a popular and important method of organizing investment in this sector. This in spite of the fact that these deals appear ripe with opportunities to exploit serendipitous discoveries, mis-allocate resources, and otherwise violate the spirit, if not the letter, of an alliance agreement.”).

48. The logic of the hold-up problem is that where a firm, such as Spirit Aerosystems, has invested in assets highly specific to the relationship, the opportunity arises for the other party to leverage Spirit’s investment into concessions—or, in other words, to hold Spirit up. This is possible due to the high-specificity of Spirit’s investment, the second-best use of the invested assets is significantly lower than the first-best; thus, Spirit will concede more of the bargain’s benefit to its partner threatening to abandon the relationship. If parties are aware of this possibility before the bargain is struck, then they will under-invest *ex ante* or be reluctant to bargain at all. See Benjamin Klein, *Why Hold-ups Occur: The Self-Enforcing Range of Contractual Relationships*, 34 *ECON. INQUIRY* 444, 445–46 (1996).

49. See *id.*

contract mechanisms. This is puzzling because uncertainty precludes parties from being able to draft all of the terms necessary to eliminate all forms of potential opportunism.⁵⁰ In other words, contracts are very incomplete. But if contracts are incomplete, what is governing these relationships?

Working within this opportunism paradigm, Professors Gilson, Sabel, and Scott have recently outlined an intriguing theory on how collaborations are governed.⁵¹ They argue that collaborators guard against opportunism by drafting contracts that require iterated relationship-specific investments, which raise the parties' costs of switching to an external partner as the collaboration progresses.⁵² As the parties gradually build barriers to exit through repeated symmetrical investments in the partnership, they build a mechanism for deterring hold-up problems.⁵³

But what if opportunism is not collaborators' sole concern? As Holmström and Roberts have noted, "[governance] problems relate to contractual externalities of various kinds, of which holds-ups are just one."⁵⁴ For instance, in an important paper analyzing R&D agreements, Joanne Oxley introduced the possibility that appropriability problems—or spillovers—animate contract design in innovation-driven situations.⁵⁵ Indeed, what if opportunism is not even the collaborators' primary concern? For example, Baker, Gibbons, and Murphy's report of their discussions with executives

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50. See OLIVER HART, FIRMS, CONTRACTS, AND FINANCIAL STRUCTURE 23 (1995) ("First, in a complex and highly unpredictable world, it is hard for people to *think* very far ahead and to plan for all the various contingencies that may arise. Second, even if individual plans can be made, it is hard for the contracting parties to *negotiate* about these plans Third, even if the parties can plan and negotiate about the future, it may be very difficult for them to *write* their plans down in such a way that, in the event of a dispute, an outside authority—a court, say—can figure out what these plans mean and enforce them.").
 51. Gilson et al., *supra* note 13, at 436 ("As with the conventional account of the forces pushing toward vertical integration, opportunism plays a central role in explaining the organization of disintegrated innovation in the supply chain.").
 52. *Id.* at 435 ("What we see instead is a rich braiding of explicit (i.e., legally enforceable) obligations and implicit (i.e., legally unenforceable) obligations. The explicit and implicit obligations interact within a formal governance structure that regulates the exchange of highly revealing information but does not necessarily impose legally enforceable obligations to buy or sell anything. This braiding creates an interactive process that constrains opportunism as the parties' investments in detailed knowledge of their respective character and capabilities raise switching costs—the costs one party to a contract must incur in order to replace the other party to the contract.").
 53. See *id.* at 59–74.
 54. Bengt Holmstrom & John Roberts, *The Boundaries of the Firm Revisited*, 12 J. OF ECON. PERSP., 73, 86 (1998).
 55. Joanne Oxley, *Appropriability Hazards and Governance in Strategic Alliances: A Transaction Cost Approach*, 13 J.L. ECON. & ORG. 387 (1997).

managing strategic alliances indicates that spillovers and *ex post* renegotiation problems are frequent concerns in collaborations, while potential hold-ups are relatively unimportant.⁵⁶

In this spirit, I raised the possibility in an earlier paper that contracts governing collaborations incorporate terms that respond to learning problems rather than opportunism alone.⁵⁷ Such learning problems may arise between collaborators because “[n]ew knowledge is inherently uncertain, so there may be multiple ways to try to complete [a given] task, and the two [collaborating] firms need to have a common understanding of what is to be done and how”⁵⁸ In other words, parties struggle to coordinate the joint experimentation necessary for successful collaborative innovation not because of potential opportunism but because it is difficult for the collaborators to construct a mutual understanding of their evolving environment.⁵⁹ As evidence of contract design responsive to learning problems, I pointed to a number of contract terms commonly found in agreements among collaborators that appear to exhibit characteristics of “pragmatic coordination.”⁶⁰

1. Pragmatic Coordination Mechanisms

The contract terms that structure collaborators’ joint learning processes reflect three integrated mechanisms that Helper, MacDuffie, and Sabel have identified as the pillars of a new mode of economic organization they term “pragmatic coordination”: simultaneous engineering, benchmarking, and error

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56. George Baker, Robert Gibbons & Kevin Murphy, *Strategic Alliances: Bridges Between “Islands of Conscious Power,”* 22 J. OF THE JAPANESE AND INT’L ECONOMIES 146, 147 (2008) (“Two ideas emerged [during the discussions with executives] as especially important factors determining the form and performance of strategic alliances: spillovers (or externalities) from the joint project onto the parents; and the need for governance structures to induce efficient behavior *ex post*, since contracts often cannot. Standard ideas—such as inefficient hold-ups motivated by specific investments and inadequate investments motivated by bargaining over returns—played markedly smaller roles in what we heard from practitioners.”). See also Kyle Mayer, *Spillovers and Governance: An Analysis of Knowledge and Reputational Spillovers in Information Technology*, 49 ACADEMY OF MGMT. J. 69 (2006).
57. Jennejohn, *Contract Design*, *supra* note 13, at 136–49.
58. Kyle Mayer, *Spillovers and Governance: An Analysis of Knowledge and Reputational Spillovers in Information Technology*, 49 ACADEMY OF MGMT. J. 69, 71 (2006).
59. See, e.g., Walter Powell, *Learning from Collaboration: Knowledge and Networks in the Biotechnology and Pharmaceutical Industries*, in READINGS IN ECONOMIC SOCIOLOGY (Nicole Biggart ed. 2002) (discussing “the problem of learning how to learn” in collaborative production).
60. Jennejohn, *Contract Design*, *supra* note 13, at 112–25.

detection/correction institutions.⁶¹ “Simultaneous engineering” is a catch-all phrase for the immediate, side-by-side cooperation between collaborators: also called “concurrent” engineering, it takes place where “‘upstream’ and ‘downstream’ steps proceed simultaneously, each taking account of the (changes in the) requirements of the other.”⁶² “Benchmarking” is the origin of the creative collaborative process: without explicit instructions on how to innovate a solution for a particular problem, firms find an idea of how to proceed by probing possibilities and then building the results of this probing into flexible development plans.⁶³ Finally, “error detection and correction” is the process for changing rules that were originally approximated through benchmarking: as parties use techniques such as “root cause analysis”⁶⁴ to reveal the fundamental barriers to innovation, they alter corollary rules of performance without renegotiation.⁶⁵

What makes these contract mechanisms so novel is that this joint learning process requires the parties to unilaterally set their performance standards. While these contract provisions require the parties to interact extensively, continuing performance is rarely negotiated explicitly. Rather, frameworks of information sharing are constructed and the parties’ explorations define the specific substance of the agreement’s unfolding requirements. Rules “roll,”⁶⁶ not through ongoing renegotiation but through the parties’ own progress through the process of continuous improvement.

These pragmatic governance mechanisms are responses to the collaborators’ need to learn about what it is they are actually doing. This is not simply a problem of information asymmetry. Rather, the ignorance involved here arises from innovation itself: as the collaborators jointly abandon convention and move into a novel production environment, both parties have equal trouble interpreting how new developments impact their respective self-interests.⁶⁷ That is, collaborators experience uncertainty—which has been created by their own purposeful actions and not by external

61. Susan Helper, John P. MacDuffie & Charles Sabel, *Pragmatic Collaborations: Advancing Knowledge While Controlling Opportunism*, 9 INDUS. AND CORP. CHANGE 443, 445 (2000).

62. Charles Sabel, *A Real-Time Revolution in Routines*, in *THE FIRM AS A COLLABORATIVE COMMUNITY* 131 (Charles Heckscher & Paul Adler, eds., 2006).

63. *Id.*

64. Jean-Paul MacDuffie, *The Road to “Root Cause”: Shop-Floor Problem Solving at Three Auto Assembly Plants*, 43 MGMT. SCI. 479, 494 (1997).

65. Sabel, *supra* note 62.

66. See generally William Simon, *Toyota Jurisprudence: Legal Theory and Rolling Rule Regimes* (Columbia Center for Public Law & Legal Theory, Working Paper No. 479, 2004).

67. For a full discussion, see Jennejohn, *Contract Design*, *supra* note 13, at 145–49.

events—that is endogenous to the relationship.⁶⁸ In such a situation, the imperative is not to only prevent defection but also to promote joint learning. This is because achieving “best efforts” in a collaboration is a learning problem, not a motivational one. Incentives are necessary, of course, or there would be no reason to learn; however, where the problem is relationship-specific learning, incentives alone are insufficient to overcome ignorance. In other words, the problem is that the principal wants the agent to exert “right efforts”—i.e., those efforts that appropriately diagnose and address the problem—not just “best efforts.”⁶⁹

Thus, to ensure the realization of “right efforts,” the parties systematize the learning process through the use of pragmatic governance mechanisms. This systematization not only promotes learning but also aligns the parties’ interests: as the collaborators learn together about what possible outcomes can result from their joint efforts, their self-interests converge accordingly.⁷⁰ From this perspective, these contracts can be considered *generative*—for, like generative grammar, they provide the constituent parts from which an infinite set of possibilities can be constructed.⁷¹

2. Case Study: Production of the Boeing 787 Redux

The provisions found in two agreements between Boeing and Spirit Aerosystems, one of Boeing’s key suppliers in the design and production of the 787, provide a good example of the logic of continuous improvement and “rolling rules” that suggests the need for a new theory of contract design. To establish the parameters of a just-in-time production relationship, the parties entered into an overarching General Terms Agreement (“GTA”) and a more detailed “Special Business Provisions” agreement (“SBP”). The agreements required Spirit to innovate not only new products but also new processes.⁷² To govern this innovative collaboration, pragmatic mechanisms were included

68. See generally Samuel Bowles, *Endogenous Preferences: The Cultural Consequences of Markets and other Economic Institutions*, 36 J. OF ECON. LIT. 75 (1998) (arguing that actors’ preferences are not given but shaped by social institutions in which the actors participate).

69. I am indebted to Josh Whitford for sharing in conversation this idea of the distinction between “best efforts” and “right efforts.” The term “right efforts” is his.

70. For a discussion of this issue, see Jennejohn, *Contract Design*, *supra* note 13, at 147–149.

71. See generally NOAM CHOMSKY, *TOPICS IN THE THEORY OF GENERATIVE GRAMMAR* (1966).

72. See, e.g., Boeing–Spirit SBP at § 3.3.4.2 (“As of the date hereof, [Spirit] is responsible for providing all New Contractor-Use Tooling (as defined in New Tooling) needed to manufacture and deliver Products as required in the performance of this SBP. Seller shall plan, design, manufacture or procure, and test all New Contractor-Use Tooling.”) (on file with the Virginia Law & Business Review Association).

in the contracts. First, the contracts provided the preconditions for simultaneous engineering. The GTA established that “Boeing may, in its sole discretion and in coordination with Seller, and for such period as Boeing deems necessary, locate resident personnel (Resident Team) at Seller’s facility to assist or support Seller.”⁷³ The GTA also allowed Boeing to “have unencumbered access to Seller’s facility to operate or assist in operating the facility in order to assure completion of the requirements for the Order.”⁷⁴ Furthermore, the SBP included a reciprocal requirement that “Life Cycle Product Teams” from Spirit would be located at Boeing’s facilities.⁷⁵ Thus, teams from each party were co-located with each collaborator. The SBP also set up the conditions for an iterated design process: first, the back-and-forth of co-design was described; and second, Spirit was required to have IT systems compatible with Boeing to facilitate real time design collaboration.⁷⁶ Thus, the parties established a regimen of simultaneous engineering.

Second, the contract set forth benchmarking terms. The first step in this regard was an initial planning process to establish the rough goals envisioned in the contract.⁷⁷ Next, the results of this initial planning were incorporated into formal “Supplier Specification Plans” for each individual “Production Article” through the use of “Contract Change Notices”—i.e., Spirit could unilaterally alter the specifications for a Production Article where necessary.⁷⁸ These adjustments were organized and driven by the overarching Statement of Work, the primary benchmarking device, which established the “Baseline PRR Engineering Thresholds” and gave “summary matrices depicting the Engineering Delegation requirements for each product.”⁷⁹ These benchmarks were to be ratcheted-up (or down) on a yearly basis:

Each year, an adjustment will be made concurrent with the quantity based price adjustment process outlined within Attachment 20 to establish the appropriate threshold for each

73. Boeing–Spirit GTA at § 5.2 (on file with the Virginia Law & Business Review Association).

74. Boeing–Spirit GTA at § 13.2(F).

75. Boeing–Spirit SBP at § 3.3.5.

76. *Id.* at § 12.8 (“Seller shall implement and maintain systems as required to ensure: i) compatibility with Boeing systems; and ii) Seller’s performance under this SBP, including, but not limited to, business, manufacturing and engineering systems.”).

77. *Id.* at § 3.3.4.5.

78. *Id.* at Attachment 2(A) (“The configuration of each Production Article shall be as described in the latest released Supplier Specification Plan (SSP) revision in the Order and/or in the Contract Change Notices.”).

79. *Id.* at Attachment 4(A).

program for the following year. To calculate the new threshold, the PRR Engineering Thresholds per Airplane as identified above will be multiplied by [*****] (beta factor) times the change in delivery rates by program for the target year vs. 2003 Airplane Deliveries by Program. This value will then be added to (or subtracted from) the Baseline PRR Engineering Thresholds. In other words, the PRR Engineering Threshold for any given year will be increased (or decreased) by [*****] of the variation in airplane deliveries by program for that year versus 2003 airplane deliveries.⁸⁰

In order to maintain a consistent production plan in the face of such volatility, the contract also included a “Lead Time Matrix”—such was to allow the parties to accelerate or decelerate related production schedules vis-à-vis changes in a given product.⁸¹ The benchmarking process was incentivized through a milestone system.⁸² Finally, the contract made provision for the inclusion of new products developed during the collaboration into the pragmatic governance system.⁸³

Third, Boeing and Spirit established a robust error detection/correction system. Although a formal committee was not established, “authorized representatives” were chosen to act as both decisionmakers and liaisons.⁸⁴ Furthermore, the contract required that Spirit “will assign a full-time program manager whose exclusive responsibility will be to oversee and manage Seller’s performance.”⁸⁵ The heart of the error detection/correction mechanism was a “technical and cost improvement program” in which the partners would collaborate to identify “new technologies and process improvements intended to reduce [Spirit’s] costs or improve product performance.”⁸⁶ Another program, the “Total Cost Management System,” tied such improvements to reductions in the overall price of the products Spirit was selling to Boeing.⁸⁷ These programs were to apply not only to Spirit and Boeing but also to Spirit’s subcontractors.⁸⁸ This was part of a wider effort to further rationalize

80. *Id.* (redactions in the original).

81. *Id.* at Attachment 6.

82. *Id.* at § 5.2.1; *see also id.* at Attachment 4 (establishing which projects would be on the milestone track).

83. *See, e.g., id.* at § 4.5.

84. *See, e.g., id.* at § 3.4.10.

85. *Id.* at § 12.10.

86. *Id.* at § 7.6.1.

87. *Id.* at § 7.6.

88. *Id.* at § 12.11.

Boeing's entire global supply chain.⁸⁹ In addition to the cost and performance improvement programs, another scheme required Boeing and Spirit to collaborate in improving production cycle times.⁹⁰

Progress through these programs was formally tracked through an extensive reporting system. First, Spirit was required to "provide to Boeing a Product Definition and manufacturing milestone chart identifying the major engineering, purchasing, planning, Tooling and manufacturing operations for the applicable Product(s)."⁹¹ As design and production proceeded, regular management reviews to discuss "total cost performance and schedule performance" were to be held.⁹² As errors were detected, Spirit was further required to make immediate "problem reports" that contained a "detailed description of the problem, impact on the program or affected tasks, and corrective/remedial action, with a recovery schedule."⁹³ In light of the corrective measures identified in such reporting, Spirit was obligated to then "revise and maintain the production planning as required to support the production and certification of Production Articles."⁹⁴ Boeing also had the right to alter the production plan in response to revisions.⁹⁵ To accommodate such change, a price-adjustment process was outlined.⁹⁶ Thus, Spirit was pre-authorized to make unilateral changes as long as those changes fell within the remit of the Statement of Work (as found in Attachment 4 to the SBP)—only those changes too radical to be considered within the SOW were required to have written approval from Boeing.⁹⁷ In this manner, the tentative performance requirements established in the initial benchmarking process were subject to continual revision through the error-detection/correction process.

An additional layer of complexity is found when one reads the GTA and SBP in conjunction with Boeing's online supplier portal. The website is designed to be an interface where suppliers can find the most up-to-date versions of the clauses in their contracts with Boeing. For example, the website contains, among many other things, a database of the constituent

89. *Id.* at § 12.12.1.

90. *Id.* at § 12.7.

91. *Id.* at § 9.2.

92. *Id.* at § 9.3.

93. *Id.* at § 9.4.

94. *Id.* at § 3.4.7.

95. *See id.* at § 6.

96. *Id.* at § 7.9; the formulae for adjusting prices is found in Attachment 20.

97. *Id.* at § 24.0.

clauses that comprise Boeing's Quality Management System (BQMS),⁹⁸ which is a key component to the error detection/correction regimen that Boeing uses in its collaborations. Noting that "these clauses are living documents," the website provides the latest version of particular modules of the BQMS, the date of the latest revision being given beside each contract clause.⁹⁹ Suppliers are encouraged to reference the database to keep track of the latest developments and their corresponding commitments.¹⁰⁰ This arrangement allows the clauses to be adjusted individually in real-time as necessities arise. In other words, one can think of the BQMS as a complex machine: when parts of the machine malfunction, the operators are able to replace the dysfunctional sub-system with an improved version. The "living" contract is the structure that provides both the architecture within which such change takes place and the interface through which the various portions of the pragmatic governance system communicate. In this fashion, the rules of the Boeing-Spirit collaboration rolled as the parties explored the possibilities of the partnership.

D. Generative Contracts and Dispute Resolution

Besides reflecting a new logic of contract design, generative contracts also embody a novel approach to the enforcement of contract terms. First, these contracts frequently incorporate elaborate "escalation procedures" by which increasingly senior levels of management are brought into the dispute resolution process. Second, a simple analysis of the incidence of arbitration clauses in generative contracts indicates that collaborators avoid resolving disputes through traditional litigation and rely heavily upon arbitration.

1. Escalation Procedures

Disputes among collaborators are addressed through an overarching "escalation" procedure in the generative contract.¹⁰¹ This escalation

98. Doing Business with Boeing, <http://www.boeing.com/companyoffices/doingbiz/clauses/clauses.html> (last accessed Sep. 15, 2010) (on file with the Virginia Law & Business Review Association).

99. *Id.*

100. *Id.*

101. See generally Thomas Stipanowich, *Contract and Conflict Management*, 2001 WIS. L. REV. 831, 853 (2001) ("As lawyers and contracting parties have become more familiar with various strategies for out-of-court resolution of disputes, they have explored the possibilities of combining two or more approaches in multi-step dispute resolution programs. Such stepped 'filtering systems'—increasingly visible in construction, commercial and

procedure interacts with and, in turn, resembles the problem-solving governance mechanisms discussed above. First, the escalation procedure is linked to the pragmatic governance mechanisms in the generative contract. For example, an alliance agreement between Cisco and KPMG provided for a series of metrics, dubbed “dashboard indicators,” for the parties to use as benchmarks with which to assess the collaboration’s performance—disputes over whether these benchmarks were met were channeled into the escalation procedure.¹⁰² Second, the escalation procedure fosters a process of collaborative problem solving when benchmarks are not met. For example, if a problem arises, disputes are first referred to an oversight committee:

5.3 Dispute Resolution/Escalation. In the event that a dispute arises between Cisco and KPMG pertaining to any matters which are the subject matter of the Alliance (a “Dispute”), and either Party so requests in writing, prior to the initiation of any formal legal action, the following dispute resolution process shall apply:

5.3.2 Technical Issues - Responsible Executives. If the Dispute involves a technical issue or any other non-sales related issue, the matter may, at the option of either Party, be submitted for discussion and resolution to the Responsible Executives of KPMG and Cisco (“Responsible Executives”), as identified in Exhibit C. The Responsible Executives shall be responsible for including any other relevant senior managers from their Party, such as any affected business unit general managers. The Responsible Executives shall use their good faith efforts to resolve the Dispute within ten (10) days. If the Responsible Executives are unable to resolve the Dispute in such period, the

employment contracts as well as the voluntary system employed by e-Bay for resolution of thousands of buyer/seller disputes—begin with informal negotiation and, if necessary, proceed to mediation; arbitration or litigation remains a last resort. Anecdotal evidence suggests that it is a rare dispute that survives the initial steps of such programs.”) (internal citations omitted). For a European perspective, see Luc Demeyere, *About Dispute Resolution and Conflict Management*, 19 *ARBITRATION INTERNATIONAL* 313 (2003).

102. Cisco-KPMG Contract, dated 1 Dec 2000, § 4.9(b), available at <http://contracts.onecle.com/bearingpoint/cisco.collab.1999.12.29.shtml> (on file with the Virginia Law & Business Review Association).

matter shall be referred to the Executive Sponsors for resolution.

¹⁰³

Third, if the oversight committee is unable to broker an acceptable resolution, more senior executives from the collaborating firms are brought into the process:

5.3.3 Executive Sponsors. For all Disputes referred to the Executive Sponsors, the Executive Sponsors shall use their good faith efforts to resolve the Dispute within twenty (20) days after such referral. If the Executive Sponsors are unable to resolve the Dispute in such period, the Dispute shall be referred to the respective Chief Executive Officers of Cisco and KPMG for resolution.

5.3.4 Chief Executive Officers. For all Disputes referred to the Chief Executive Officers from the Executive Sponsors, the Chief Executive Officers shall use their good faith efforts to resolve the Dispute within twenty (20) days after such referral.¹⁰⁴

Each layer of the escalation process forces parties to release additional information: because disputes are costly (many collaborations move forward on a basis of unanimity), including senior executives requires subordinates to release information, if only to show that they are not being uncooperative or unduly sharp partners. Finally, if a mutually agreeable solution has not been found after the inclusion of the executives in the process, recourse to ADR is then sought:

5.3.5 Mediation and Legal Action. In the event that the Chief Executive Officers are unable to resolve the Dispute within the period allowed, then either Party shall have the right to submit the Dispute to mediation in accordance with the terms of Section 10.1, unless the Chief Executive Officer of a Party notifies the other Party's Chief Executive Officer in writing that mediation is not desired and would not be effective. In the event that the parties are unable to resolve the Dispute under such mediation (or either Party receives the notice declining mediation as set

103. *Id.* at § 5.3.

104. *Id.*

forth in this Section 5.3.5), then either Party shall have the right to pursue any remedies available to it relating to the Dispute under the terms of this Alliance Agreement or otherwise available to it under law or equity.”¹⁰⁵

In short, this process is designed to create as many opportunities for crafting a collaborative solution as possible.¹⁰⁶

2. *Why Do Generative Contracts Include Arbitration Clauses More Frequently Than Other Commercial Agreements?*

Arbitration clauses are frequently included in generative contracts. When a sample of collaboration agreements¹⁰⁷ is compared against the results of Eisenberg and Miller’s recent study of the incidence of arbitration clauses in commercial contracts, it becomes apparent that collaborators resort to arbitration far more often than commercial parties resolving disputes relating to more traditional types of commercial contracts. This chart from Eisenberg and Miller’s analysis indicates that the inclusion of arbitration clauses in various types of commercial agreements is surprisingly low:

105. Cisco–KPMG Contract, *supra* note 102, at § 5.3.

106. See Robert N. Dobbins, *The Layered Dispute Resolution Clause: From Boilerplate to Business Opportunity*, 1 HASTINGS BUS. L.J., 159, 163 (2005) (“The goal of the Layered Clause is to maximize the opportunities to continue party-controlled and party-determinative resolution processes. It sets out distinct, time-triggered phases, with regular reminders that the contracting parties truly want to maintain their business relationship. The parties approach the precipice of the adjudicatory side of the dispute resolution continuum only after exhausting all other efforts to find their own solution; they cross the divide into quasi-judicial process only as a last resort.”). For a general discussion of ADR in the context of outsourcing contracts, which places mediation in a preliminary place to arbitration and/or litigation, see George Kimball, *Governance and Dispute Resolution: Making it Work*, in OUTSOURCING REVOLUTION 2005: PROTECTING CRITICAL BUSINESS FUNCTIONS 490–91 (John F. Delaney & William A. Tanenbaum eds., 2005).

107. Collaboration agreements, a type of contract that often incorporates the pragmatic governance mechanisms described above, provide a proxy for the wider population of generative contracts, which often go by idiosyncratic names.

Contract Type	Percentage Without Arbitration Clause	Percentage With Arbitration Clause
Mergers	81.02%	18.98%
Bond Indentures	99.35%	0.65%
Settlements	83.33%	16.67%
Securities Purchase	88.26%	11.74%
Employment Contracts	63.06%	36.94%
Licensing	66.67%	33.33%
Asset Sale Purchase	80.57%	19.43%
Credit Commitments	97.69%	2.31%
Underwriting	99.72%	2.18%
Pooling & Servicing	100%	0%
Security Agreements	94.59%	5.41%
Trust Agreements	100%	0%
Other	92.86%	7.14%
Total	89.36%	10.64%

Table One: Eisenberg & Miller's Results¹⁰⁸

Thus, only 10.64% of the contracts Eisenberg and Miller studied incorporate an arbitration clause. Even those contract types that used arbitration most often—employment and licensing agreements—only included arbitration clauses 36.94% and 33.33% of the time respectively. Indeed, arbitration clauses were never or only nominally found in a number of agreement types: bond indentures, underwriting agreements, pooling and servicing agreements, and trust agreements.

By contrast, collaboration agreements use arbitration clauses at a significantly higher rate. My analysis of 8,705 collaboration agreements found that, overall from 1/1/1995 to 12/31/2005, parties included arbitration clauses in their contracts 49.73% of the time:

108. Eisenberg & Miller, *Flight from Arbitration*, *supra* note 10, at 357.

Time Period	Sample Size	Number With Arbitration Clause	Percentage
1/1/1991-12/31/1991	0	0	0%
1/1/1992-12/31/1992	0	0	0%
1/1/1993-12/31/1993	6	6	100%
1/1/1994-12/31/1994	26	12	46.15%
1/1/1995-12/31/1995	79	37	46.84%
1/1/1996-12/31/1996	506	230	45.45%
1/1/1997-12/31/1997	737	411	55.77%
1/1/1998-12/31/1998	746	406	54.42%
1/1/1999-12/31/1999	708	326	46.05%
1/1/2000-12/31-2000	1348	694	51.48%
1/1/2001-12/31/2001	476	229	48.11%
1/1/2002-12/31/2002	619	298	48.14%
1/1/2003-12/31/2003	813	385	47.36%
1/1/2004-12/31/2004	1189	668	56.18%
1/1/2005-12/31/2005	1452	627	43.18%
1/1/1991-12/31/2005	8705	4329	49.73%

Table Two: Incidence of Arbitration Clauses in Generative Contracts¹⁰⁹

109. Note that the sudden jump in the number of agreements from 1992 to 1994 is due to the SEC introducing its electronic database in 1994.

An additional sample from the www.onecle.com database¹¹⁰ corroborates these results: the www.onecle.com sample includes arbitration clauses at a higher rate than the 8,705 contracts I analyzed from LexisNexis' EDGARPlus database: of 188 collaboration agreements, 127 included arbitration clauses (67.55%). Furthermore, the high incidence of arbitration observed here parallels the frequent use of escalation clauses: of the 188 collaboration agreements I analyzed in the www.onecle.com database, 96 included escalation clauses (51.06%). The number of those agreements with escalation clauses that also included arbitration clauses provides a rough measure of interdependence between the two dispute resolution mechanisms: of the 127 agreements with arbitration clauses, 82 also had escalation procedures (64.56%). These results raise the obvious question: why do collaboration agreements include arbitration clauses more often than other commercial contracts?

E. Summary

Before exploring the reasons behind the use of escalation clauses and the higher incidence of arbitration clauses in collaboration agreements, it is useful to review the ground that has been covered so far. In Part I, we have seen that, since the late 1970s, production has occurred increasingly in interfirm networks, as companies have collaborated in order to achieve competitive advantage through the leveraging of rapid innovation. In order to govern this widespread deverticalization of production, parties have created novel contract terms that pragmatically guide the parties' performances. This new type of contract, by instituting a joint learning system, establishes rolling rules that determine, and in turn are determined by, party behavior. Finally, in addition to these pragmatic governance mechanisms, generative contracts include escalation procedures and arbitration clauses at a far higher rate than comparable commercial agreements. Collaborators avoid litigating their disputes. In short, new developments in contractual governance and dispute resolution parallel the last quarter-century's transformation in economic organization.

110. The www.onecle.com database includes several types of commercial contracts, taken from companies' SEC filings. For the collaboration agreement collection, see <http://contracts.onecle.com/type/90.shtml>.

II. WHY COLLABORATORS ABANDON CONVENTIONAL COURT ENFORCEMENT

The escalation and arbitration statistics above raise the obvious question: why do parties to generative contracts resolve their disputes through private institutions rather than through the public courts? In this Part, I argue that collaborators shun litigation because contemporary contract adjudication is fundamentally inappropriate for fixing dysfunctional learning systems. Contemporary contract enforcement, which I identify with the contextualist principles of the UCC and the 2d Restatement,¹¹¹ is inappropriate because it engages the courts in a search for commercial customs that, in the new economy, often do not exist. First, courts' search for the customs of the immediate parties to the contract—i.e., the examination of parties' course of performance or course of dealing to interpret the agreement's meaning—undermines collaborations because it creates the risk that collaborators' experimentation will be interpreted as a modification of the contract. Second, courts' search for the customs of the parties' industry through doctrines such as trade usage, which use wider industry norms to interpret the meaning of a contract, will likely lead the court astray since collaborators are often actively trying to abandon industry conventions as they innovate. In short, contextualism's deficiencies can be summarized as the results of the theory's benighted conception of contractual intent.

111. While associating the U.C.C. and the 2d Restatement of Contracts with contextualism is uncontroversial, it is overbroad to consider *all* of contemporary contract law as entirely synonymous with contextualism for two reasons. First, there is some evidence that formalist doctrines are routinely applied in modern common law contract adjudication. See Robert Scott, *A Theory of Self-Enforcing Indefinite Agreements*, 103 COLUM. L. REV. 1641, 1651–60 (2003) [hereinafter Scott, *Self-Enforcing Indefinite Agreements*]. Second, the division between formalism and contextualism is somewhat artificial—courts may often apply both types of doctrines simultaneously. Richard Posner, *The Law and Economics of Contract Interpretation*, 83 TEX. L. REV. 1581 (2005) (arguing that the choice to interpret contracts formally or contextually depends upon a case-by-case analysis of the trade-offs involved). Nonetheless, where, as here, broad theoretical arguments are made, the stylized formalist/contextualist dichotomy is useful in that it allows for ready distinctions between competing ideas.

A. Contextualist Theory

As convenient shorthand, this article conceptualizes contextualism as a set of contract doctrines that, in order to discern the meaning of an agreement, look not only to the written terms of the contract but also to the parties' unwritten bargaining behavior and wider customs of the industry in which the parties operate. This approach originates in Llewellyn's original thesis that the courts should look to immanent business norms when interpreting agreements.¹¹² The idea is that this additional information will refine the court's understanding of the agreement's purpose.¹¹³ Over the course of the 20th century, contextualism was adopted not only in the United States, as exemplified by the UCC and 2d Restatement, but also in Europe.¹¹⁴

There are at least three common justifications for this approach: first, customs or practices might indicate those intentions that the parties were unable to articulate in the written agreement; second, customs or practices might define the vector of dynamic intentions, which evolve as time passes; and third, customs or practices might be the appropriate measure of commitment if parties relied upon such.¹¹⁵ While more detailed conceptions are certainly available,¹¹⁶ contextualism can be summarized in Scott's succinct description of the contextualist court as one that attempts to identify *ex post* the most efficient outcome to the disputed contract.¹¹⁷

112. For discussion, see Lisa Bernstein, *Merchant Law in a Merchant Court: Rethinking the Code's Search for Immanent Business Norms*, 144 U. PA. L. REV. 1765, 1767–68 (1996) [hereinafter Bernstein, *Merchant Law*]. See generally KARL LLEWELLYN, *THE COMMON LAW TRADITION: DECIDING APPEALS* 122 (1960) (arguing that legal rules should reflect common experience).

113. See, e.g., *Reardon Smith Line Ltd. v. Yngvar Hansen-Tangen*, 3 All E.R. 570, 574 (1976) (Wilberforce, L.) (“In a commercial contract it is certainly right that the court should know the commercial purpose of the contract and this in turn presupposes knowledge of the genesis of the transaction, the background, the context, the market in which the parties are operating.”).

114. See generally CATHERINE MITCHELL, *INTERPRETATION OF CONTRACTS: CURRENT CONTROVERSIES IN LAW* 57–60 (2007).

115. Omri Ben-Shahar, *Formalism in Contract Law: The Tentative Case against Flexibility in Commercial Law*, 66 U. CHI. L. REV. 781, 787–89 (1999).

116. See, e.g., Melvin Eisenberg, *Why There Is No Law of Relational Contracts*, 94 NW. U. L. REV. 805, 806–13 (2000); David Charny, *The New Formalism in Contract*, 66 U. CHI. L. REV. 842, 842 (1999).

117. Scott, *Case for Formalism*, *supra* note 5, at 850 (“Rather than attempt to specify default rules that fill the gaps *ex ante*, the courts can seek to direct the *ex post efficient* result. That is, they can fill in the ‘right’ result or the ‘right relational’ result by imposing an equitable adjustment that takes all of the relational and contextual factors into account as they appear at the time of adjudication.”).

B. Contextualism As Applied To Collaborative Disputes

Two primary critiques of contextualism have arisen over the last three decades. The first critique argues that the customs that contextualism attempts to reference when identifying the parties' obligations may well be inefficient. Within this critique, two arguments are particularly noteworthy. First, Goetz and Scott argue that contextualism undermines innovation: "parties who develop innovative [contracts] bear significant, exogenous, legal risks"¹¹⁸ because they do not know whether their unique forms of obligation will be recognized by a contextualist court.¹¹⁹ Second, contextualism's flexibility provisions may also discourage temporarily efficient departures from the original agreement. Bernstein has argued that "[t]here are certain types of adjustments a transactor might be willing to make at many discrete points in an ongoing contractual relationship that she would nonetheless be unwilling to promise to make."¹²⁰ Because the UCC construes such flexibility to indicate adjustments to the contract, parties will be less likely to choose such beneficial adjustments.¹²¹ There is reason to believe that Bernstein's argument is especially compelling in an innovative situation. This is because, in situations of high uncertainty, parties cannot immediately identify bad departures from good ones. Some passage of time is necessary for consequences to come to light. However, if parties do not object to non-conformity at the time it occurs, the courts, following the Code's course of performance doctrine, will likely interpret that as tacit acceptance of a modification.¹²² There is a strong incentive for parties to object whenever there is a possibility that their collaborator's activity might amount to non-conforming behavior because they do not want to shut the door on later

118. Charles Goetz & Robert Scott, *The Limits of Expanded Choice: An Analysis of the Interaction Between Express and Implied Contract Terms*, 73 CAL. L. REV. 261, 278 (1985).

119. *Id.* at 320 ("Unfortunately, current [contextualist] rules of interpretation provide few effective mechanisms for distinguishing between apparent inconsistency and deliberate indeterminacy. For relational contractors, therefore, interpretive disputes will essentially be a lottery until the state provides the requisite instruments for more accurate signaling."). See also Scott, *Case for Formalism*, *supra* note 5, at 854–55.

120. Bernstein, *Merchant Law*, *supra* note 112, at 1808.

121. For a refinement of Bernstein's original argument, see Ben-Shahar, *supra* note 115, at 792–96 (1999).

122. U.C.C. § 2-208(1) (inferring course of performance where it is "acquiesced in without objection").

court enforcement. This paradoxical “rigidity effect”¹²³ undercuts the convention-spurning creativity that is innovation’s *sine qua non*. The more collaborators’ activities are circumscribed and generic, the less innovative these relationships become.

The second critique argues that local customs and industry practices are either unidentifiable by a court or non-existent altogether.¹²⁴ First, Eric Posner has argued that courts are often “radically incompetent” when tasked with the interpretation of an incomplete contract.¹²⁵ This is not due to any lack of intelligence on the judiciary’s part; rather, radical incompetence arises because “parties lack the clairvoyance needed to give courts the proper guidance if a dispute arises, and courts lack the genius that would be needed to enforce contracts properly in the absence of such guidance.”¹²⁶ In other words, due to the costs of verifying information, the courts are unable to parse behavior, either of the parties themselves or of the greater trade community in which they operate, that is not explicitly captured in the contract. Second, Lisa Bernstein’s work suggests the possibility that generalized and potent commercial norms simply do not exist. Looking at attempts to codify commercial customs in the hay, grain and feed, textiles, and silk industries, Bernstein found:

The debates surrounding these codification efforts suggest that there was not widespread agreement among merchants as to either the meaning of common terms of trade or the content of many basic commercial practices. Rules committee debates sometimes went on for years, customs relating to important aspects of transactions were left uncoded because consensus could not be achieved, and in most industries drafting committees eventually engaged in only selective codification. In addition, over time, many associations came to explicitly concede

123. “Rigidity effect” is Ben-Shahar’s term for Bernstein’s original insight. Ben-Shahar, *supra* note 115, at 795.

124. Goetz & Scott, *Limits of Expanded Choice*, *supra* note 118, at 275–76.

125. Eric Posner, *A Theory of Contract Law Under Conditions of Radical Judicial Error*, 94 Nw. U. L. REV. 749, 754 (2000). See also Schwartz & Scott, *Limits of Contract Law*, *supra* note 2, at 577 (“The textualist . . . claims that variance [in courts’ interpretation of contract terms] does not shrink materially with a broader evidentiary base because contracts often have plain meanings. Hence, permitting parties to introduce additional evidence as to intent would generate costs in excess of gains.”).

126. Posner, *supra* note 125, at 754.

that they were attempting to change rather than merely incorporate existing practices.¹²⁷

Thus, Bernstein argues that “‘usages of trade’ and ‘commercial standards,’ as those terms are used by the Code, may not consistently exist, even in relatively close-knit merchant communities.”¹²⁸

What force do these arguments have when disputes between collaborators are considered? This section explores this question by examining three contextualist exceptions to the plain meaning rule: trade usage, course of dealing, and course of performance. My conclusion is that the two sets of anti-contextualist arguments outlined above have particular force when these doctrines are applied to situations of generative contracting.

1. Trade Usage

Reference to trade usage is available where the meaning of a technical term is common enough that there can be a justified expectation that the usage will be observed with respect to a given contract.¹²⁹ This rule applies not only where the contract term in question is vague¹³⁰ but also where the commonly understood meaning of the language is unambiguous.¹³¹ Indeed, UCC § 2-202 provides that the court must admit trade usage not only to aid in the interpretation of the contract but even to “supplement” the agreement’s written terms (in contradistinction to the parol evidence rule).¹³² At first glance, the trade usage rule appears appropriate for generative contracts in that it allows the courts to supply a supplemental term that fills a gap left in an incomplete contract.¹³³

However, the trade usage doctrine, when used to interpret a generative contract, is at best a blunt instrument. Following trade usage is problematic where parties are engaging in unique behavior directed towards innovating

127. Lisa Bernstein, *The Questionable Empirical Basis of Article 2’s Incorporation Strategy: A Preliminary Study*, 66 U. CHI. L. REV. 710, 715 (1999) [hereinafter Bernstein, *Questionable Empirical Basis*].

128. *Id.*

129. RESTATEMENT (SECOND) OF CONTRACTS § 222 (1981).

130. *See, e.g.*, W.G. Cornell Co. v. United States, 179 Ct. Cl. 651, 671 (1967).

131. *See, e.g.*, Gholson, Byars & Holmes Constr. Co. v. United States, 173 Ct. Cl. 374, 395 (1965).

132. U.C.C. § 2-202 cmt. 2 (2009) (explaining that trade usages are admissible to interpret or supplement unless trade meanings are carefully negated in the written agreement); *see also Margolin v. Franklin*, 270 N.E.2d 140, 142–43 (1971).

133. *See, e.g.*, Thomas v. Gusto Records, Inc., 939 F.2d 395, 398 (6th Cir. 1991).

and investing in highly relationship-specific activities. There simply are no relevant norms for the court to reference.¹³⁴ If relatively insular and established communities such as hay, grain and feed, textiles, and silk producers cannot agree on industry-wide norms,¹³⁵ it is highly unlikely that volatile new economy industries are going to have identifiable usages. A practitioner suggested as much in the context of describing how parties set the terms of their strategic alliances: “the nature of each alliance is so sui generis that there can be a seemingly infinite variety of combinations from which parties may select provisions for their alliance.”¹³⁶ Thus, it is unlikely that courts will find commonly held trade usages that apply to a dispute between collaborative innovators. The dynamic and heterogeneous markets in which new economy collaborators operate hamstringing the court’s attempt to not only “put itself into the shoes of the parties” but also to “adopt their vernacular.”¹³⁷ There is no common language to adopt. In the event that courts do think they can apply trade usage, they will only be able to clumsily interpret parties’ intentions through the dim lens of general experience.¹³⁸

2. *Course of Dealing/Performance*

If trade usage is too general a doctrine, then perhaps the doctrines of course of dealing and course of performance, which examine the parties’ own historical behavior, would provide a more accurate lens through which to scrutinize parties’ intent. Under the prior course of dealing doctrine, the meaning that the parties have attributed to the same terms in other similar agreements will be presumed to reflect the parties’ intentions in the current disputed contract.¹³⁹ According to the course of performance doctrine, the parties’ behavior in executing the terms of a contract is understood to reveal

134. See Bernstein, *Questionable Empirical Basis*, *supra* note 127, at 715 (arguing that industry norms “may not consistently exist, even in relatively close-knit merchant communities”).

135. Bernstein failed to find coalesced norms in these four industries. *Id.* at 715.

136. Ruthanne Kurtyka, *The Way Out: Exiting the Strategic Alliance* in STRUCTURING, NEGOTIATING & IMPLEMENTING STRATEGIC ALLIANCES 2000 285 (James Ashe-Taylor and Kenneth A. Clarke, eds., 2000).

137. *Hurst v. W.J. Lake & Co.*, 16 P.2d 627, 629 (Or. 1932).

138. See Bernstein, *Merchant Law*, *supra* note 112, at 1805 (“In addition, when courts look to unwritten usages to decide cases, the risk that their interpretation of the content of the usage will differ from the transactors’ interpretation is likely to be greater than it is when the court is interpreting an explicit contractual provision.”).

139. 5 ARTHUR LINTON CORBIN ET AL., CORBIN ON CONTRACTS, § 24.17 (2010). See also Ben-Shahar, *supra* note 115, at 790–792.

the parties' original intentions.¹⁴⁰ Thus, if parties consistently act in a manner that reveals a particular interpretation, the court will adopt that interpretation over the written terms, even if the written terms are directly contradicted.¹⁴¹

While course of dealing/performance promises a more detailed analysis of the parties' motivations than trade usage, there are three interrelated problems with the application of these doctrines to generative contracts. The first problem with relying on parties' course of performance or dealing to interpret parties' intent is that much of this information is unverifiable. That is, courts have insufficient information from which to glean patterns in the disputants' behavior.¹⁴² Although collaboration makes much information observable between the parties, information verifiable by a court is available only where the pragmatic governance mechanisms are functioning properly. By the time the parties have resorted to the court, the information flows have long gone dry. Secondly, even if an abundance of information were available, the court will have to work that much harder to analyze it all; where judicial resources are scarce, it is quite possible that an analysis of large amounts of data will not be thorough, probing, or accurate.¹⁴³ The constant experimentation that generative contracts institutionalize makes the process of aggregating observed behavior into common themes extremely, perhaps hopelessly, complex for the enforcement court. This is especially the case when one considers that many experimental activities result in "dead-ends."

140. U.C.C. § 2-208 (repealed 2001); RESTATEMENT (SECOND) OF CONTRACTS § 202(4) (1981).

141. See U.C.C. § 2-202 (2009) (allowing for supplementation of the written terms through course of performance extrinsic evidence); *Lancaster Glass Corp. v. Philips ECG, Inc.*, 835 F.2d 652, 653, 659–61 (6th Cir. 1987) (allowing course of performance evidence where the contract did not address the issue and expressly forbade course of dealing evidence).

142. Goetz & Scott, *Limits of Expanded Choice*, *supra* note 118, at 275–76 ("The process of implying terms from more narrowly focused experiences places a significant stress on the state's interpretive process. Whereas the court generally infers alleged industry-wide trade practices from a considerable mass of behavioral data, the alleged patterns in the behavior of particular parties may be derived from a quite limited number of occurrences. The number of observations may be so small that an observer would have difficulty distinguishing valid inferences from spurious ones. Courts experience grave difficulty determining the degree of repetition necessary to establish a 'course' of conduct. Similarly, it may be difficult to determine whether a particular act sheds light on the ex ante meaning of the agreement or merely represents an ex post waiver of a term of the agreement. The finder of fact must engage in an error-prone inquiry whether the acts were ambiguous and, if not, whether they constitute a course of performance or waivers—unpatterned instances from which no inferences can be drawn.").

143. Gillian K. Hadfield, *Judicial Competence and the Interpretation of Incomplete Contracts*, 23 J. LEGAL STUD. 159, 162 (1994) ("The reality of generalist courts, however, is that they possess only limited competence in any one area.").

Should all of these experiments, both successful and unsuccessful, be included when interpreting the parties' intentions? If not, how should the court decide which ones should be considered and which should not? Thirdly, even if the parties' activities are verifiable, the court will have to rely on generalized experience to understand the very facts upon which it is supposed to render its decision. The high levels of uncertainty resulting from "purposive experimentation"¹⁴⁴ render the applicability of general experience suspect because the innovators are trying to transcend that general experience. The "grave difficulty" courts have in "determining the degree of repetition necessary to establish a 'course' of conduct" only becomes more pronounced.¹⁴⁵ In terms of promoting innovation, the very doctrines that courts consider tools are actually stumbling-blocks. Once again, the possibility of misinterpretation creates incentives for parties to avoid litigation.¹⁴⁶

C. *Lockheed v. galaxis USA*

While a complete analysis of recent contract disputes in the federal and state reporters is outside the scope of this paper, it is useful to consider an example of contextualist doctrines' impact on collaborations. Contextualism's inimical effect on collaborations is suggested in *Lockheed v. galaxis USA*, a dispute between two collaborators trying to design and manufacture a marketable satellite TV receiver for recreational watercraft.¹⁴⁷ With an eye towards potential litigation, Lockheed, concluding that there was "considerable risk" because of a "lack of a sufficient drawing package" at the start of the project, entered the collaboration "not want[ing] a considerable design effort required on their part, to ensure that they present[ed] back to [galaxis] the right kind of product, so that [galaxis could not] fault the manufacturing effort."¹⁴⁸ In other words, it appears that Lockheed was worried that its involvement in the design process would be interpreted as tacit concurrence with design decisions, thus exposing Lockheed to potential liability. Therefore, the parties included a rigid formal division between design and manufacturing functions in the contract. Such a division was

144. See *infra* Part IV.A.

145. Goetz & Scott, *Limits of Expanded Choice*, *supra* note 118, at 276.

146. Bernstein, *Merchant Law*, *supra* note 112, at 1790.

147. *Lockheed Martin Corp. v. galaxis USA, Ltd.*, 222 F. Supp. 2d 1315, 1320–21 (M.D. Fla. 2002).

148. Memorandum Opinion and Order at 40, *Lockheed Martin Corp. v. galaxis USA*, No. 6:99-cv-1452-Orl-28JGG (M.D. Fl. 2002) (quoting defendant's testimony).

unnatural, however, considering that the circumstances of the collaboration nevertheless required Lockheed to participate directly and extensively in the collaborative design process: first, Lockheed repeatedly initiated design changes;¹⁴⁹ second, Lockheed became involved in software design issues with one of galaxis' German subsidiaries involved in the collaboration;¹⁵⁰ and, third, the galaxis representative who oversaw design was a former Lockheed engineer that had been hired from the Lockheed team working on the project.¹⁵¹ Nevertheless, the contract required the parties to maintain the strict division between design and manufacturing responsibility. This undermined the very dynamics that make collaborations productive: first, galaxis management frequently had to "stop all the changes unless they [were] officially approved and set out in drawings which [were] handed over to Lockheed;"¹⁵² and, second, galaxis management frequently admonished its employees to cease unofficial "cross-talk" between themselves and Lockheed and to instead direct their feedback through the centralized approval process.¹⁵³ In other words, galaxis had to short-circuit the error detection/correction and simultaneous engineering routines that support disciplined innovation. Thus, parties' attempts to circumvent potential misinterpretation by the courts hobbled the collaboration from the start. Even more unfortunate, these attempts were vain since a dispute arose when galaxis attempted to formally amend the contract *ex post* to make Lockheed responsible for design changes.¹⁵⁴

D. Conclusion

Why do the contracts that govern the networked economy avoid litigation? In this section, I have argued that one reason that collaborators have abandoned the courts is that traditional litigation cannot efficiently cope with innovative relationships. Although contextualist doctrines are designed to provide flexibility for the bargainers, these doctrines ironically undermine innovative activity. Because conventional contract law is inappropriate, parties have fled litigation. In perspective, this means that the courts are decoupling from the economy as the organization of production evolves.

149. *See id.* at 41 (discussing how galaxis reviewed and accepted Lockheed's suggested design alterations).

150. *Id.* at 42.

151. *Id.* at 37, 42.

152. *Id.* at 43.

153. *Id.* at 15.

154. *Id.* at 52 (discussing galaxis trying to force Lockheed to accept design responsibility).

III. A RETURN TO FORMALISM?

There is reason to pause before concluding that collaborators' avoidance of contextualist doctrines means they prefer formalist interpretation. This is because the usual arguments for formalist interpretation struggle to explain why formalism complements parties' choice to use escalation and arbitration. In their traditional formulations, the standard arguments for formalism—that formalism creates incentives for parties to draft clearer agreements (standardization theory) and that formalism allows informal governance to flourish (self-enforcement theory)—appear insufficient. Standardization theory fails because the endemic uncertainty that attends innovative activity precludes parties from creating standardized contractual terms that a court can readily recognize. Traditional self-enforcement theory fails because reputational information does not circulate easily: first, contrary to conventional wisdom, interfirm collaborations are often neither lengthy nor repeated; second, global industry networks, through which reputational information flows, are both heterogeneous and dynamic.

That said, there is a possibility that self-enforcement theory may be refashioned to explain collaborators' preference for arbitration: self-enforcement theory may explain parties' behavior if generative contracts are viewed as formal attempts to approximate informal governance mechanisms. In other words, where parties cannot rely on informal trust and reputation to control unforeseeable contingencies, they attempt to recreate such mechanisms through formal contracts. Thinking of contracts between collaborators as akin to the "formalization of informal governance" may ring true; however, it raises a theoretical problem that likely requires a reconsideration of self-enforcement theory's sociological foundations. Namely, this "formalization of the informal" view, by collapsing the dichotomy between formal and informal governance, obfuscates self-enforcement theory's core assumption that the tension between parties' need for predictable planning and their need for long-term flexibility both necessitates informal governance and explains whatever mix of formal and informal mechanisms a given contract employs. Without this foundation, the grounds on which self-enforcement theory can proceed are, at best, unclear.

A. The Standard Theories: Faith in Bargainers' Foresight and in Informal Norms

Formalism's more austere approach to interpretation inevitably leads to under-enforcement.¹⁵⁵ Indeed, application of formalist principles such as the plain meaning,¹⁵⁶ parol evidence,¹⁵⁷ and indefiniteness¹⁵⁸ rules to generative contracting shows why formalism will result in under-enforcement. These doctrines result in under-enforcement, not because generative contracts are drafted poorly, but because the processual language used to establish pragmatic governance mechanisms requires a court to search the context of the agreement. For example, how is the court to interpret the meaning of a clause establishing a root cause analysis mechanism? Such a clause generally asks the parties to search the production process for errors and then to trace the causes of those errors back to their origins.¹⁵⁹ What such a clause actually requires of a party in a given situation, however, is contingent upon the errors that actually arise. Intentions do not direct root cause analysis—problems do. Of course, should a dispute arise over the performance of the root cause analysis, the litigants will argue over the issue of whether the allegedly breaching party was focusing on the “right” error to analyze. Note, however, that there is no readily discernible underlying intent for the formalist court to use as a guide for understanding what the “right” outcome for this root cause analysis was actually to be. Therefore, standing on its own, a clause requiring

155. Scott, *Case for Formalism*, *supra* note 5, at 860 (“A return to a formalist conception of contract law (even one that is grounded in an instrumental pragmatism) will increase the number of disputed contracts in which enforcement is denied because the contract is found to be fatally incomplete and/or ambiguous.”).

156. Largely a semantic theory of interpretation in contemporary application, the plain meaning rule requires that the court give language an interpretation that reflects the common meaning of the terms at issue. *See, e.g., Lee v. Flintkote Co.*, 593 F.2d 1275, 1281 (D.C. Cir. 1979). That is, specially intended meanings are not entertained, except perhaps in the extreme case where the common understanding of a term appears entirely out of place. *First Nat'l Bank v. Mid-States Eng'g & Sales, Inc.*, 431 N.E.2d 1052, 1053 (Ill. App. Ct. 1981).

157. The parol evidence rule precludes the court from considering evidence of the parties' prior negotiations where the substance of those negotiations contradicts the terms of a written, integrated agreement. *United States v. Triple A Mach. Shop, Inc.*, 857 F.2d 579, 585 (9th Cir. 1988); RESTATEMENT (SECOND) OF CONTRACTS § 215 (1981).

158. The indefiniteness doctrine requires the court to find that the essential terms of the contract were so vague as to prevent the creation of a legally enforceable agreement. *See Soar v. Nat'l Football League Players' Ass'n*, 550 F.2d 1287 (1st Cir. 1977); *Varney v. Ditmars*, 111 N.E. 822, 824 (N.Y. 1916); *Cia. Naviera Somelga, S.A. v. M. Golodetz & Co.*, 189 F. Supp 90, 97 (D. Md. 1960).

159. *See, e.g., MacDuffie*, *supra* note 64, at 494.

root cause analysis does not clearly indicate what the parties committed to perform. Without recourse to prior course of dealing, course of performance, or negotiation evidence, it is possible that a court will not feel comfortable enforcing either party's interpretation of the language. The contract will be deemed un-enforceable due to indefiniteness.

Thus, after all of the arguments against Williston's theory over the years, the only argument for formalism is that formalism's limits are its very virtues. Less is more. In this vein, formalists have advanced two general arguments. First, formalism is more effective in governing incomplete contracts because minimalistic court intervention creates an incentive for parties to standardize clear contract terms that are readily recognized by the courts.¹⁶⁰ Second, by taking as their starting point the fact that exchange is embedded in society, formalists have argued in the alternative that shortcomings in formal enforcement are offset by informal governance mechanisms, most often reputational constraints.¹⁶¹ In other words, if the parties are unable to articulate clear intentions, social norms compensate. While these creative arguments have produced numerous insights into common contracting behavior, neither theory is entirely convincing when applied to collaborations.

1. *Formalism and the Codification of Industry Standards*

The first argument—that formalism will facilitate the private development of general precedents and standards that are appropriate for generative contracts—is not convincing. The standardization theory posits that, by refusing to fill a gap in an incomplete contract, the court forces parties to calculate *ex ante* how to clearly define obligations in a manner that the court will be able to readily interpret. These optimal standards develop because formalism requires parties to develop “standard-form prototypes for expressly allocating common risks that contract law might otherwise have assigned by default.”¹⁶²

The problem with this argument in the case of generative contracts is that “common risks” are rare. Innovative collaborations are fraught with uncertainties to be sure; however, risks are usually unique rather than

160. Scott, *Case for Formalism*, *supra* note 5, at 848 (claiming that formalism leads to “the evolutionary production of standardized and appropriately tailored contract terms”).

161. Scott, *Self-Enforcing Indefinite Agreements*, *supra* note 111, at 1643–45.

162. Scott, *Case for Formalism*, *supra* note 5, at 860.

recurring.¹⁶³ Indeed, the primary reason that collaborators draft generative contracts is to establish joint learning processes designed to overcome the endemic and fundamental uncertainty that attends innovation. Often the contracts that result are “so sui generis” that one is not like the other.¹⁶⁴ This means that parties will only infrequently have sufficient incentives to spend the resources necessary to craft clear and generalized standards.¹⁶⁵ Furthermore, as Charny points out, standardization of terms across an industry typically requires some sort of institutional intervention—either from a specialist court or a trade association—to assist in the articulation of general terms.¹⁶⁶

It is possible to conduct a simple test of this argument that collaboration agreements defy standardization by adapting an element of Eisenberg and Miller’s study on arbitration clauses in commercial agreements. Eisenberg and Miller hypothesized that parties to highly standardized contracts may choose not to arbitrate since highly standardized contracts are perceived to have a low risk of litigation because the terms of the contracts are so familiar to the enforcing courts.¹⁶⁷ To test this hypothesis, they measured the level of contract standardization according to the agreements’ choice of law terms: highly standardized contracts are those that regularly choose the same jurisdiction’s law. Eisenberg and Miller found that highly standardized contracts almost never use arbitration (only 0.9%), while low standardization is correlated with high use of arbitration (29.9%).¹⁶⁸ A simple coding of 188 collaboration agreements from the www.onecle.com database using Eisenberg and Miller’s methodology indicates that generative contracts are not standardized:

163. See, e.g., Keith Pavitt, *Innovation Processes*, in OXFORD HANDBOOK OF INNOVATION 87 (Jan Fagerber et al. eds., Oxford Univ. Press 2005) (describing innovation processes as “contingent”).

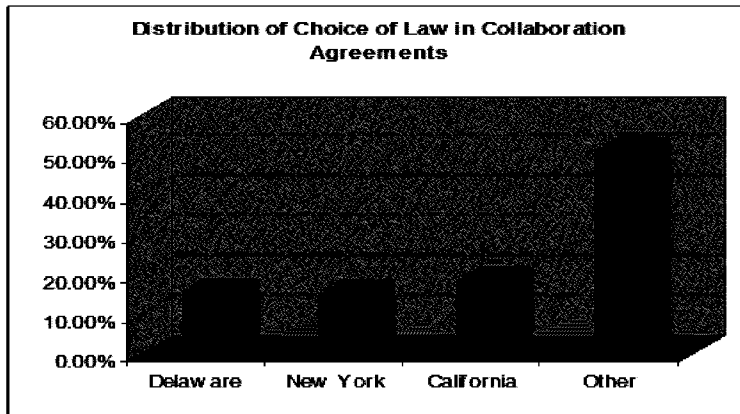
164. Kurtyka, *supra* note 136.

165. Eric Posner, *The Parol Evidence Rule, the Plain Meaning Rule, and the Principles of Contractual Interpretation*, 146 U. PA. L. REV. 533, 545 (1998) (discussing that rigorous application of the parol evidence rule is a disadvantage if the transaction costs involved in creating a standardized meaning are greater than the value of the un-enforced promise).

166. Charny, *supra* note 116, at 848–49.

167. Eisenberg & Miller, *Flight from Arbitration*, *supra* note 10, at 353–54.

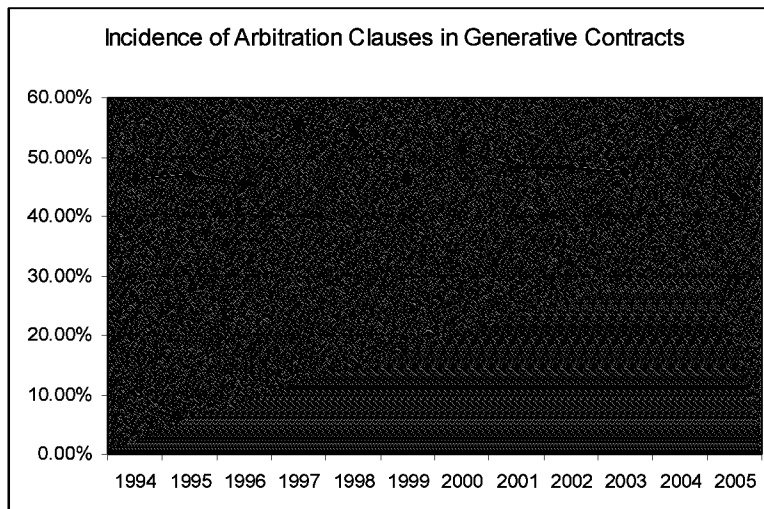
168. *Id.* at 353–56.



Graph One: Distribution of Choice of Law Among Three Primary Jurisdictions

This histogram reveals a relatively uniform distribution across the three major jurisdictions, with the majority of jurisdictions chosen falling within the “other” category. The single most frequently chosen jurisdiction, California, is only selected 19% of the time. In other words, parties differ widely in their choice of law decisions, leading to the conclusion that collaboration agreements are highly un-standardized.

Interestingly, this lack of standardization holds over time. One would expect that, over the years, arbitration would become progressively disfavored as the meanings of terms become standardized. However, as a simple analysis of over 8,000 collaboration agreements from the SEC’s Edgar database indicates, the use of arbitration clauses has held steady:



Graph Two: Reproduction of the Results in Table Two¹⁶⁹

Note that the eleven years of data presented above reflects only the time during which these contracts have been made available electronically through the SEC's Edgar system. Although it is difficult to pinpoint the precise time that practitioners began drafting the contracts that now fall within the generative category, it is safe to say that they began to become commonplace in the early to mid-1980s when outsourcing agreements, strategic alliances, collaboration agreements etc. entered the mainstream.¹⁷⁰ Thus, lawyers and the courts have had over twenty years to render these contracts more standardized. One would think some common meanings would have emerged by now.¹⁷¹ Indeed, the Practicing Law Institute has been covering

169. Results for years 1991, 1992, and 1993 were excluded as outliers on account of the low number of observations during these years.

170. See, e.g., Thurston R. Moore, *Corporate Partnering: Product Driven Structures*, in CORPORATE PARTNERING 1989: ADVANTAGES FOR EMERGING AND ESTABLISHED COMPANIES 269 (Practicing Law Institute 1989) (discussing a case study of a collaboration beginning in 1985); see also Thomas Jorde, *Acceptable Cooperation Among Competitors in the Face of Growing International Competition*, 58 ANTITRUST L.J. 529 (1989).

171. Note, by contrast, that Scott has identified the emergence of a "rich menu of legally recognized, standardized terms and conventions" in particular service industries over a comparable period. Scott, *Case for Formalism*, *supra* note 5, at 869.

these types of contracts for years.¹⁷² Yet low standardization persists, and the preference for arbitration is resilient.

Why do these contracts not become standardized? A contract that is explicitly designed to facilitate innovation—to institutionalize a joint experimentation process that allows the parties to learn what production decisions are possible—is one that routinely undermines the development of standardized meaning. Generative contracts are non-standard by definition. For parties to adopt standard practices pursuant to a generative contract is to empty the contract of its purpose: the parties are supposed to behave in an unexpected manner under the contract. The parties enter into the contract with only a roughly-conceived, inchoate intention toward what they want to realize from the collaboration. They do not simply intend to accomplish another iteration of the same outcome that they have reached before. This is why generative contracts are designed to institutionalize a process of bilateral experimentation. A dense community of meaning does not coalesce around this type of contract.

From this perspective, formalism's minimalist approach, originally pitched as a less costly alternative¹⁷³ to contextualism, begins to appear rather dear. The standardization that is supposed to economize on judicial resources will not materialize. If general standards will not typically be forthcoming, another justification for formalism must be found.

2. Formalism and Self-Enforcing Incomplete Contracts

The second argument is that formalism's limited judicial intervention will be offset by informal social constraints. Given empirical weight through the work of Lisa Bernstein and others,¹⁷⁴ the argument is that formalism is, first, possible because informal governance mechanisms police parties' behavior and, second, preferable because minimal judicial interference allows informal governance sufficient space to flourish.¹⁷⁵ In this regard, formalist theorists build upon the pioneering relational contracting work of Stewart Macauley

172. See, e.g., PLI's Corporate Partnering series, which began in the 1980s; PLI's Strategic Alliances series, which began in the mid 1990s; and PLI's Outsourcing Revolution series, which began in the late 1990s.

173. Scott, *Case for Formalism*, *supra* note 5, at 861 n.36.

174. See, e.g., Bernstein, *supra* note 17; Lisa Bernstein, *Private Commercial Law in the Cotton Industry: Creating Cooperation Through Rules, Norms, and Institutions*, 99 MICH. L. REV. 1724 (2001); Barak Richman, *How Communities Create Economic Advantage: Jewish Diamond Merchants in New York*, 31 LAW & SOC. INQUIRY 383 (2006).

175. Scott, *Case for Formalism*, *supra* note 5, at 860–61.

and Ian Macneil. Informal governance finds its origin in Macauley's argument that the personal ties that develop over an extended relationship "exert pressures for conformity to expectations."¹⁷⁶ In Ian Macneil's terminology, formal contractual promise is only one type of "exchange-projector"—or enforcement mechanism—among many.¹⁷⁷ Informal enforcement mechanisms typically occur in two types, both closely-related: first, failing to conform to unwritten social norms results in damage to one's reputation in the marketplace (reputational damage is important to actors intending to be repeat players);¹⁷⁸ and second, properly conforming to these social norms builds trust between parties¹⁷⁹—an incentive to conform because "[t]rust counteracts fear of opportunistic behavior and as a result, is likely to limit the transaction costs associated with an exchange."¹⁸⁰ That is, minimal court intervention does not result in un-enforced agreements because the prospect of ruining one's reputation in the market or of undermining a partner's trust constrains a party from breaching.¹⁸¹

The interconnection between promissory and nonpromissory exchange mechanisms arises inevitably due to the limits of human rationality:

[P]romissory projectors are *always* accompanied by nonpromissory projectors. This emanates from the interplay of the always present social matrix with the nature of promises themselves. Promises are inherently fragmentary. The human mind can focus on only a limited number of things at the same time, and, for reasons of efficiency in fact focuses on even fewer than it can. Thus, promises can never encompass more than a fragment of the total situation (citation omitted). At least as fundamental, the amount of information available about the future is always only partial, and promises, however sweeping,

176. Stewart Macauley, *Non-Contractual Relations in Business: A Preliminary Study*, 28 AM. SOC. REV. 55, 63 (1963).

177. IAN MACNEIL, THE RELATIONAL THEORY OF CONTRACT 131–32 (David Campbell ed., 2001).

178. Ranjay Gulati, *Does Familiarity Breed Trust? The Implications of Repeated Ties on Contractual Choices in Alliances*, 38 ACAD. OF MGMT. J. 85, 93 (1995) ("[R]eputational considerations . . . play an important role in each firm's potential for future alliances.").

179. *Id.* at 92 ("At the organizational level, observers point to numerous examples of 'preferential, stable, obligated, bilateral trading relationships' to illustrate that firms develop close bonds with other firms through recurrent interactions.") (citation omitted).

180. *Id.* at 93.

181. For the pioneering formal work of this theory, see Benjamin Klein & Keith Leffler, *The Role of Market Forces in Assuring Contractual Performance*, 89 J. OF POL. ECON. 615 (1981).

can be understood only against the background. All this is part of what Herbert Simon (citation omitted) calls bounded rationality. . . . Once promises are viewed as less than absolute, other exchange-projectors inevitably must come into play.¹⁸²

Thus, informal norms govern where contracts are not complete because exchange is unavoidably embedded in wider social relationships: that is, formal governance is available where parties can foresee outcomes and, as such, meets economic agents' need for planning future activity. Where outcomes cannot be foreseen, and flexibility in the transactional relationship is necessary, informal governance fills in the gaps.¹⁸³ Building on this foundation, the self-enforcement theory for formalism argues that where flexibility is important, informal self-enforcement is often more efficient than court enforcement—therefore, formalism is not only possible but preferable, since it does not interfere with the more socially optimal allocation of resources.¹⁸⁴

For reputation effects to sufficiently constrain potential defection, there must be a sense of duration to the players' participation: either they must repeat games or, if games do not repeat between a dyad, they must at least consistently operate within the same market network.¹⁸⁵ Neither of these conditions is likely to be met, however, where collaboration is involved. First, it is not safe to assume that games repeat between collaborators. There appears to be little systematic empirical work available on whether games actually repeat between collaborators in high-tech industries; however, Baker, Gibbons, and Murphy note that, of 12,500 strategic alliance agreements between biotech companies analyzed, 9,462 pairs of firms never consummated more than one deal, and only fifty-seven pairs did more than

182. MACNEIL, *supra* note 177, at 132–33.

183. Ian Macneil, *Contracts: Adjustment of Long-Term Economic Relations under Classical, Neoclassical, and Relational Contract Law*, 72 NW. U. L. REV. 854, 865 (1978); *see also* Klein, *supra* note 48, at 455–56.

184. Scott, *Self-Enforcing Indefinite Agreements*, *supra* note 111, at 1645.

185. Schwartz & Scott, *Limits of Contract Law*, *supra* note 2, at 557 (“For reputation to work, however, potential future contracting parties must be able conveniently to learn why the original parties’ deal broke down. Reputations, therefore, are difficult to establish in large economies in which particular contracting parties often are anonymous. Rather, reputations work best in small trading communities, especially those with ethnically homogenous members, where everything that happens soon becomes common knowledge, and boycotts of bad actors are easy to enforce.”).

five together.¹⁸⁶ It is possible that the *prospect* of continuing interactions—not actual repeated games—is what creates trust between the parties.¹⁸⁷ However, this seems a rather weak constraint. During the opening stages of a collaboration where relational ties are weak,¹⁸⁸ it is questionable whether the prospect of continuing interactions is enough to govern. Modern firms often require an intimate level of collaboration immediately: parties who have never before collaborated agree to exchange personnel, openly share proprietary information, rely upon just-in-time supplying, etc. Is the hope for continuing interactions enough to see parties through this period?

Furthermore, even if games do repeat and these relationships are indeed long-term, trust may not necessarily build over time. Whether Firm A trusts Firm B depends upon an ongoing judgment of whether B's activity conforms to particular behavioral norms. A must interpret B's decisions. As jurisprudence scholarship has taught us, interpretations are bound to be controversial.¹⁸⁹ For example, those of us who are considered untrustworthy rarely acquiesce to the negative judgment of our behavior; rather, we seek to justify our actions. Therefore, a relationship can be both functional and yet plagued by controversy and thus, progress without the accumulation of trust: over time, some behavior might be considered appropriate, some inappropriate, and some falling within a perpetually contentious "gray area." All that may accumulate is argument, not trust. Indeed, research in the auto industry reveals that US auto suppliers who have sold for many years to a primary customer have less trust in that customer than in customers to whom they have sold for shorter time periods.¹⁹⁰ Indeed, researchers have described the dynamics between collaborating firms as "close but adversarial."¹⁹¹ This is because modern interfirm cooperation, which involves the constant disruption of routines, destabilizes relationships as much as it builds them.

186. George Baker, Robert Gibbons & Kevin Murphy, *Strategic Alliances: Bridges Between "Islands of Conscious Power"* 22 J. JAPANESE & INT'L ECONOMIES 146, 162 (2008).

187. *Id.* (reasoning that the *possibility* of a long-term relationship is the source of reputational constraint).

188. Christine Beckman, Pamela Haunschild & Damon Phillips, *Friends or Strangers? Firm-Specific Uncertainty, Market Uncertainty, and Network Partner Selection*, 15 ORG. SCI. 259, 261 (2004) ("New relationships, on average, are typically weaker . . . than existing relationships.").

189. *See generally* RONALD DWORKIN, *LAW'S EMPIRE* (1986).

190. Mari Sako & Susan Helper, *Determinants of Trust in Supplier Relations: Evidence from the Automotive Industry in Japan and the United States*, 34 J. OF ECON. BEHAV. AND ORG. 387, 400 (1998) (presenting data that indicated a "weak, yet significant, finding that the longer the contract length . . . the higher the level of distrust").

191. Ram Mudambi & Susan Helper, *The 'Close but Adversarial' Model of Supplier Relations in the U.S. Auto Industry*, 19 STRAT. MGMT. J. 775, 776 (1998).

Collaborators walk the fine line between a manufacturer's "legitimate (and effective) efforts to push suppliers to ferret out cost reductions" and an "inflexible application of a hard and nonnegotiable target."¹⁹² Relations between customers and suppliers are "conflictual partnership[s]."¹⁹³

Second, although dense networks may appear a more convincing ground for a concern for reputation, there is even here cause for doubt. The argument regarding network density is that other market players, once they learn of the defecting party's behavior, will be reluctant to transact with that party and, thus, will be able to extract a premium from that party in future dealings.¹⁹⁴ For firms located at the center of the network, information about their dealings can probably flow easily between companies. For these core firms, who are repeat players in the entire market, the reputational costs of renegeing may be high indeed. It is important to note, however, that these core firms also enjoy the status of industry heavyweights: i.e., they have bargaining leverage that allows them to overlook reputational considerations.¹⁹⁵ Furthermore, if an industry network has a hub-and-spoke structure,¹⁹⁶ it seems far less likely that information about second- or third-tier firms will flow readily through the network.¹⁹⁷ Finally, the fact that firms are constantly entering and exiting large and expanding global markets further complicates reputational constraints: such size and growth not only hamstrings information transfer about particular companies' behavior¹⁹⁸ but

192. WHITFORD, *supra* note 12, at 102.

193. *Id.* at 92 (citing Gary Herrigel & Volker Wittke, *Varieties of Vertical Disintegration: The Global Trend Towards Heterogeneous Supply Relations and the Reproduction of Difference in US and German Manufacturing*, in CHANGING CAPITALISMS? INTERNATIONALIZATION, INSTITUTIONAL CHANGE, AND SYSTEMS OF ECONOMIC ORGANIZATION (Glenn Morgan, Richard Whitley & Eli Moen eds., 2005)).

194. Klein, *supra* note 48, at 449 ("If the violation of the contractual understanding is taken account of by other transactors . . . the transactor engaging in the hold-up will face increased costs of doing business in the future.").

195. *See, e.g.*, WHITFORD, *supra* note 12, at 65 (quoting an interviewee who described the major automakers' leverage within collaborative relationships as "the big economic hammer").

196. *See, e.g.*, George Baker, Robert Gibbons & Kevin Murphy, *Strategic Alliances: Bridges Between "Islands of Conscious Power"* 3 (Aug. 16, 2004) (unpublished manuscript, available at <http://web.mit.edu/rgibbons/www/Strategic%20Alliances.pdf>) (showing a hub-and-spoke network in the biotechnology industry centered upon 32 core firms) (on file with the Virginia Law & Business Review Association).

197. W. Bentley MacLeod, *Reputations, Relationships, and the Enforcement of Incomplete Contracts* 34 (Ctr. for Econ. Studies & Ifo Inst. for Econ. Research (CESifo) Working Paper Series, Working Paper No. 1730, 2006), available at <http://ssrn.com/abstract=885347> (on file with the Virginia Law & Business Review Association).

198. One is reminded of Alfred Marshall's quip that "[m]oney is more portable than a good reputation." Ronald Coase, *The Nature of the Firm: Meaning*, in THE NATURE OF THE FIRM:

also introduces new (and diminishes existing) norms against which reputation is measured. In other words, the behavior against which social norms are supposed to act might displace those very norms if enough members of the community adopt the activity. It is noteworthy in this regard that the most illuminating work on private ordering has focused primarily upon relatively static and insular industries: Southern cotton growers,¹⁹⁹ ultra-orthodox Jewish diamond merchants,²⁰⁰ Maghribi traders,²⁰¹ etc. Undoubtedly, social norms are a ready currency in the confines of Shasta County.²⁰² Relational governance's efficacy is more doubtful, however, in volatile global markets.²⁰³ Thus, there is reason to doubt the efficacy of reputation's constraining effect for the vast majority of firms in all but concentrated, static industries.

My point here is not that the idea of reputation is an analytical dead-end or that collaborators operate in an appalling world bereft of trust. Rather, my argument is that the role of informal constraints is more nuanced than self-enforcement theory assumes. Theories that rely upon informal norms overlook a well-established argument, which can be traced at least to Karl Polanyi, that capitalism *disembeds* exchange from its wider social context.²⁰⁴ While this argument also is inaccurate if taken to the extreme, it leads one to conclude, when balanced against the work of Ellickson, Bernstein, and others, that the interconnection between formal legal governance and informal rules

ORIGINS, EVOLUTION, AND DEVELOPMENT 58 (Oliver Williamson & Sidney G. Winter eds., 1991).

199. Bernstein, *supra* note 174.

200. Richman, *supra* note 174.

201. Greif, Avner, *Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition*, 83 AM. ECON. REV. 525 (1993).

202. See ELICKSON, *supra* note 17.

203. Bernstein seems to reference this in a footnote: "Over the past ten years, however, technological advancements and other market changes have occurred that may, over the long run, undermine the ability of [cotton] industry institutions to promote cooperation." Bernstein, *supra* note 174, at 1786 n.233. See also Scott, *Self-Enforcing Indefinite Agreements*, *supra* note 111, at 1644 ("Reputations work best in markets for homogeneous goods or in ethnically homogeneous communities . . .").

204. KARL POLANYI, *THE GREAT TRANSFORMATION* 71 (1944) ("A self-regulating market demands nothing less than the institutional separation of society into an economic and political sphere."). For an historical perspective on the relationship between dispute resolution and the strength of social ties, see BRUCE MANN, *NEIGHBORS AND STRANGERS: LAW AND COMMUNITY IN EARLY CONNECTICUT* 101 (1987) ("Unlike litigation, arbitration was inexpensive, expeditious, and private. Above all, it was . . . 'neighbourly'—uniquely tied to and shaped by the communities in which it existed. The community ties were an essential part of arbitration. Without them, arbitration would not have been the popular and effective alternative to formal legal process that it was. As the bonds of community weakened, the legal system appropriated arbitration to itself and turned it into a formal process that differed little from legal adjudication.").

is best understood as contingent, asymmetric, and dynamic.²⁰⁵ Thus, I do not reject out-of-hand attempts to apply self-enforcement theories to the governance of collaborations; however, I find theories that simply assume the efficacy of self-enforcement mechanisms to be problematic.

B. Generative Contracts As Self-Enforcing Agreements

Despite the shortcomings of the standard reputation-effects argument for informal governance, there is a possibility that an amended version of the self-enforcement theory may apply. Such an amendment would recast pragmatic governance, escalation, and arbitration mechanisms as a new *formal* system that approximates informal self-enforcement. That is, one can think of generative contracts' governance mechanisms as the explicit codification of heretofore-implicit contractual relations, or as an institution that allows arms-length bargainers to build mutual trust that they otherwise would not obtain through informal means. In other words, pragmatic governance is an institutionalized process for creating a relationship *ex nihilo*—where trust and reputation effects are too weak, collaborators use formal contract mechanisms in an attempt to approximate informal governance.²⁰⁶ From this perspective, generative contracting appears as another version of the traditional private-ordering story—private economic organization supported through private adjudication.

While there may be merit to this argument, it is important to notice the stress it places on the foundation of self-enforcement theory. The lynchpin to self-enforcement theory is the tension between parties' need for planning and their need for flexibility. This tension creates a realm for unwritten and unarticulated constraints on parties' behavior: where parties foresee a need for flexibility, they leave gaps in the written contract that are to be governed informally. Indeed, gaps are attractive since explicit contract terms themselves present opportunistic parties with another avenue to hold up the relationship: a party may use a written contract term to extort additional

205. See Mark Granovetter, *Economic Action and Social Structure: The Problem of Embeddedness*, 91 AM. J. OF SOC. 481, 491 (1985) (“[N]etworks of social relations penetrate irregularly and in differing degrees in different sectors of economic life, thus allowing for what we already know: distrust, opportunism, and disorder are by no means absent.”).

206. For example, a consortium of major multi-nationals—such as IBM, SAP, and Microsoft—and European research universities developing the “TrustCoM” framework for supporting interfirm collaborations casts its goals in these terms. See ALVARO ARENAS ET AL., THE TRUSTCOM FRAMEWORK v5.0 5–8 (2006) (outlining an approach for formally managing collaborators' emerging reputations) (on file with the Virginia Law & Business Review Association).

concessions from its partner through the threat of costly litigation.²⁰⁷ This tension leads to a complementarity between court and informal enforcement:

[T]ransactors use written contract terms to define optimally the self-enforcing range of their contractual understanding. The goal of contractual specification is to economize on the amount of private enforcement capital necessary to make a contractual relationship self-enforcing by merely ‘getting close’ to desired performance in a wide variety of circumstances (without creating undue rigidity) and to let the threat of private enforcement move performance the remainder of the way to the desired level.²⁰⁸

To argue that written contract mechanisms take the place of informal constraints is to eliminate the complementarity between public and private enforcement. Without this complementarity, it is unclear why formalism is advantageous. Under self-enforcement theory, formalism’s primary justification is to preserve informal enforcement mechanisms; however, if informal enforcement is now replaced by the written contract, then why interpret that contract formalistically? Any systematic answer to this question must cope with the fact that conceiving of the written contract as the device for not only planning but also for achieving flexibility is to question parties’ need for flexibility, to imply that there is no longer (or never was) a place for informal governance mechanisms, or to cast doubt upon opportunism’s central role as the organizing logic of incomplete contract theory. In summary, the difficult questions generative contracts pose to self-enforcement theory’s fundamentals lead to the uncomfortable conclusion that self-enforcement theory may need to go back to the drawing board.

IV. THE EXPERIMENTALIST ALTERNATIVE

If neither contextualism nor formalism provides entirely convincing means for enforcing generative contracts, then perhaps there is cause to consider an alternative theory. In this section, I explore the possibility that an alternative approach to enforcement might be found in an “experimentalist” model of adjudication. An experimentalist model of dispute resolution would require the court to co-opt the very pragmatic governance mechanisms that parties have included in their generative contracts to direct the dispute

207. Klein, *supra* note 48, at 448–49.

208. *Id.* at 455–56.

resolution process: that is, the court would simultaneously engineer a resolution by setting performance benchmarks with the parties and detecting and correcting errors in real-time. By casting the court's task as collaborating with the parties in discovering a workable solution to the dispute, the experimentalist approach incorporates contextualism and formalism's best insights: it embraces contextualism's ambition to promote flexibility while also reflecting the formalist conviction that a court's single-handed ability to accurately fill gaps is circumscribed.

A. Summarizing the Shortcomings of Contextualist and Formalist Contract Enforcement

Contextualism and formalism are inappropriate because they are responses to the wrong problem. Neither approach envisions a dispute other than in terms of guarding expectations from *ex post* opportunism. Other coordination problems, such as those that arise from learning dysfunction, have no purchase.

Contextualism and formalism are inappropriate for enforcing generative contracts because of their similar assumptions regarding the role of intention in contract adjudication. Intention is the touchstone of contract enforcement.²⁰⁹ Over the years, the approach to interpreting intention has changed, from the 19th century's subjective approach, which parsed the parties' "meeting of the minds,"²¹⁰ to the twentieth century's objective approach.²¹¹ If contextualism at times strays from the traditional concern over original intent in order to promote contractual flexibility,²¹² discerning the parties' intentions still plays a central role.²¹³ Thus, under either formalist

209. See Christopher Staughton, *How Do the Courts Interpret Commercial Contracts?*, 58 CAMBRIDGE L.J. 303, 304 (1999); Jody Kraus & Robert Scott, *Contract Design and the Structure of Contractual Intent*, 84 N.Y.U. L. REV. 1023, 1046–47 (2009); KIM LEWISON, *THE INTERPRETATION OF CONTRACTS* § 2.05 (1997).

210. For a thorough history of the rise of the consensus theory of contract, see Philip Hamburger, *The Development of the Nineteenth-Century Consensus Theory of Contract*, 7 LAW & HIST. REV. 241, 274–92 (1989).

211. Joseph Perillo, *The Origins of the Objective Theory of Contract Formation and Interpretation*, 69 FORDHAM L. REV. 427, 476 (2000).

212. See, e.g., RESTATEMENT (SECOND) OF CONTRACTS § 266 (1979).

213. See Macneil, *supra* note 183, at 885 (“But neoclassical contract law can free itself only partially from the limitations posed by obeisance to the twin classical goals of discreteness and presentation. This obeisance is imposed by adherence to an overall structure founded on full consent at the time of initial contracting. As long as such adherence continues, *i.e.*, as long as it remains a neoclassical system, there are limits to the ignoring of discreteness and presentation”); Arthur Corbin, *The Interpretation of Words and the Parol*

or contextualist contract law, the court's *ex post* analysis is explicitly framed by its view of the parties' intent at the *ex ante* bargaining stage.

The disjunct arises from the fact that collaborators' intentions are typically not so well-defined. Parties do not begin their collaboration with a blueprint established *ex ante*. Rather, the "final product begins as a more or less inchoate and only partially defined idea."²¹⁴ Innovation involves what has been called "purposive experimentation."²¹⁵ Because it takes place between a number of firms and involves process and not just product change, this experimentation is an affair that lasts the duration of the collaboration (i.e., experimentation is not simply a brief ramp-up period to define "specs"). The result is that "relationships define products," not the other way around.²¹⁶ Furthermore, this experimentation means that innovation processes are contingent²¹⁷—every innovative endeavor is a foray into the unknown. Such novelty makes the meaning of innovators' own activities uncertain; firms "cannot accurately predict the technical and commercial outcomes of their own innovative activities, nor those of other firms" and "rarely are capable of defining the full array of possible uses that may emerge for their innovations, especially radical ones."²¹⁸ Decision-making becomes unsettled because the advent of new potentialities reconfigures the list of possible actions and outcomes the agents use to order their calculations.²¹⁹ In summary, traditional contract law's presumption that an agreement represents parties' original intentions does not readily extend to collaborative innovation.

Evidence Rule, 50 CORNELL L. Q. 161, 162 (1965) (arguing that the court must consider the transaction's context when attempting to put itself "in the shoes" of the parties). *Pacific Gas & Elec. Co. v. G.W. Thomas Drayage & Rigging Co.* provides a good example: there, Justice Traynor conceived of the court's task as to identify the "intention of the parties" and to do so by considering "all credible evidence" relevant to what the parties meant. 69 Cal. 2d 33, 44, 442 P.2d 641 (1968) ("Accordingly, rational interpretation requires at least a preliminary consideration of all credible evidence offered to prove the intention of the parties. Such evidence includes testimony as to the 'circumstances surrounding the making of the agreement . . . including the object, nature and subject matter of the writing . . . ' so that the court can 'place itself in the same situation in which the parties found themselves at the time of contracting.'" (internal citations omitted).

214. WHITFORD, *supra* note 12, at 93.

215. Pavitt, *supra* note 163, at 88 (emphasis omitted).

216. WHITFORD, *supra* note 12, at 93 (emphasis omitted).

217. Pavitt, *supra* note 163, at 87.

218. *Id.* at 100.

219. See, e.g., Josh Whitford, *Pragmatism and the Untenable Dualism of Means and Ends: Why Rational Choice Theory does not Deserve Paradigmatic Privilege*, 31 THEORY & SOC'Y 325, 337 (2002) ("The oft-cited dualism between means and ends is not tenable. An end, or effect, soon becomes a means, or cause, for what follows.") (internal citations omitted).

B. A Tentative Theory of Experimentalist Contract Adjudication

An approach to contract adjudication that can accommodate inchoate intentions is needed. Dorf and Sabel's theory of experimentalist adjudication, cast as a re-interpretation of Ian Macneil's relational theory of contract, may provide a model capable of both explaining collaborators' preferences and prescribing appropriate judicial reaction. Experimentalism may be capable of achieving these ambitions because it does not require the court to search for party intent or to reference general social norms in order to interpret the parties' respective commitments. Rather, acknowledging that the parties' intentions are impressionistic, the court reinvigorates the pragmatic coordination disciplines outlined above. From this perspective, contract enforcement is not about vindicating rights—instead, enforcement is about repairing and redirecting the dysfunctional joint learning process. In this respect, experimentalism can provide recourse where contemporary contract adjudication cannot.

This Section proceeds as follows. First, I argue that ambiguities in Macneil's writings suggest an opportunity for re-interpreting his work as a foundation for an experimentalist theory of contract adjudication. Second, I discuss experimentalism's characteristics and provide a stylized description of how experimentalism would be applied to enforce a generative contract. Third, and finally, I explore whether anecdotal evidence reflects the experimentalist model.

1. *Macneil's Theory As Precursor*

As discussed briefly in Part III above, Macneil and self-enforcement theorists both argue that explicit contractual relationships were unavoidably embedded in a wider social milieu. However, while formalism counsels courts to minimize their intervention, Macneil argues for the expansion of the court's review to include a searching analysis of all of a given exchange's norms.²²⁰ The question arises, however, of what referencing these norms really means. The typical interpretation is that Macneil simply advocates for a robust form of contextualism: "Macneil's theory places great confidence in the courts. He assumes not only that they will be able to understand the

220. See, e.g., Ian Macneil, *Relational Contract Theory: Challenges and Queries*, 94 NW. U. L. REV. 877, 881 (2000) ("[E]ffective analysis of any transaction requires recognition and consideration of all essential elements of its enveloping relations that might affect the transaction significantly.").

nature of the dispute, but also that they will be able to do a kind of sociological analysis of the parties' relationship."²²¹ According to this interpretation, Macneil's theory simply calls for more contextualism.

However, Macneil's invocation of Chayes' theory of public law litigation²²² as the form which norms-based adjudication should take suggests an alternative interpretation. Whereas traditional contract adjudication is characterized by bipolar, retrospective, party-controlled disputes over defined rights and duties,²²³ Macneil's proposed model has the following characteristics:

1. The scope of the dispute is not exogenously given by contract terms but is shaped by both the parties and the resolver of the dispute—e.g., the arbitrator—and by the entire relation as it has developed and is developing.
2. The party structure is not rigidly bilateral but sprawling and amorphous.
3. The fact inquiry is not only historical and adjudicative but also predictive and legislative.
4. Relief is not conceived primarily (or sometimes at all) as compensation for past wrong in a form logically derived from the substantive liability and confined in its impact to the immediate parties; instead, it is in great (or even entire) measure forward-looking, fashioned ad hoc on flexible and broadly remedial lines, often having important consequences for many persons, including absentees.
5. The remedy is not imposed but negotiated and mediated.
6. The award does not terminate the dispute-resolver's role in the relation; instead, the award will require continuing administration by this or other similarly situated dispute-resolvers.
7. The dispute-resolver is not passive, that is, his function is not limited to analysis and statement of governing rules; he is active, with responsibility not only for credible fact evaluation but also for organizing and shaping the dispute processes to ensure a just and viable outcome.

221. Posner, *supra* note 125, at 753.

222. See generally Abram Chayes, *The Role of the Judge in Public Law Litigation*, 89 HARV. L. REV. 1281 (1976).

223. Macneil, *supra* note 183, at 891.

8. The subject matter of the dispute is not between private individuals about private rights but is a grievance about the operation of policies of the overall contractual relation.²²⁴

Such a model grapples with contractual incompleteness not simply by referencing an agreement's context, but by injecting the court directly into the foundering relationship. In this respect, Macneil's vision of contract enforcement bears more similarities to public law litigation than to the classical understanding of a private dispute between parties to an agreement. Macneil's most basic insight is not that a bygone era's (rather unsuccessful) model of public law litigation should be transplanted outright into the contracting context but that interpreting and enforcing an incomplete contract requires a fundamental change in the underlying adjudicatory apparatus, not simply an expansion of doctrine. The discussion that follows builds upon this insight to sketch an outline of an alternative model of contract adjudication.

2. *Experimentalist Public Rights Adjudication*

Perhaps the institution to enforce generative contracts is pragmatic itself: the problem-solving court. Arising in areas where social problems have appeared particularly intractable,²²⁵ these courts are broadly described as "courts of first impression that take their objective to be solving the social problems that underlie the tip of the various icebergs that appear for adjudication."²²⁶ "Always a work in progress,"²²⁷ the problem-solving trial court is theorized to roughly follow the pragmatic governance principles outlined above: first, they set achievement milestones with the client; second,

224. *Id.* at 892 (citing Chayes, *supra* note 222, at 1302).

225. See, e.g., Dorf & Sabel, *Drug Treatment Courts*, *supra* note 23 (discussing the application of experimentalism to problems of drug addiction); James S. Liebman & Charles F. Sabel, *A Public Laboratory Dewey Barely Imagined: The Emerging Model of School Governance and Legal Reform*, 28 N.Y.U. REV. L. & SOC. CHANGE 183 (2003) (discussing the application of experimentalism to public school reform). For examples of nonjudicial experimentalism in areas where social problems have appeared particularly intractable, see Bradley C. Karkkainen, *Environmental Lawyering in the Age of Collaboration*, 2002 WIS. L. REV. 555 (2002) (discussing the application of experimentalism to environmental regulation); Stacy Laira Lozner, *Diffusion of Local Regulatory Innovations: The San Francisco CEDAW Ordinance and the New York City Human Rights Initiative*, 104 COLUM. L. REV. 768 (2004) (discussing the application of experimentalism to human rights problems).

226. Michael C. Dorf, *Legal Indeterminacy and Institutional Design*, 78 N.Y.U. L. REV. 875, 936 (2003).

227. *Id.* at 940.

they actively participate in the execution of the remediation plan; and third, they closely monitor the client's progress and troubleshoot emerging problems.²²⁸ In other words, they benchmark, simultaneously engineer, and error detect and correct. The hallmark of this "experimentalist" adjudication is that it is participatory: these courts do not simply vindicate pre-existing rights—they collaboratively craft solutions with the disputants.²²⁹ This does not mean that the problem-solving judge abandons all the traditional vestiges of her office and simply assumes the role of a mediator. Rather, the problem-solving judge, through the disciplines of pragmatic governance, directs the resolution process by focusing the parties on the gathering crisis and by judging their efforts to craft a solution. The judge is not relegated to the role of a passive neutral: if the parties prove uncooperative, the court applies a penalty default.²³⁰ In this sense, the court is both a participant in and a guardian of the problem-solving process.²³¹

The drug treatment court provides the classic example of experimentalist adjudication. Designed to remediate chronic substance abuse, the problem-solving court's first step is to set the treatment regimen that the addict will follow: "[i]n consultation with the client, her attorney, the prosecutor, and the judge, treatment court personnel make an initial assessment and each client is placed in one of seven 'treatment bands' that determine the frequency of urine testing, program attendance, court appearances, and case management meetings."²³² This sets the initial benchmarks. Because the client is accompanied by his/her treatment professional when making court appearances, the collaborative effort that establishes the initial regimen continues throughout the treatment process.²³³ The court's second step is to monitor the client's progress towards sobriety and to determine consequences if the client relapses.²³⁴ Such consequences might include more urine tests,

228. Dorf & Sabel, *Drug Treatment Courts*, *supra* note 23, at 841–52.

229. Dorf & Sabel, *Democratic Experimentalism*, *supra* note 23, at 287–88.

230. See Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87 (1989). Dorf defines a penalty default in general terms as "a state of affairs so unpalatable to all parties that they have no choice but to hammer out some solution that is, from the perspective of the default, a Pareto improvement." Dorf, *supra* note 226, at 946. In the case of contract enforcement, the penalty default could be either an onerous court order or, even simpler, a decision to revert back to traditional contextualist contract adjudication. The latter avoids any concerns that this form of adjudication forces unwilling parties to remain in relationships.

231. Dorf & Sabel, *Drug Treatment Courts*, *supra* note 23, at 852.

232. *Id.* at 847.

233. *Id.*

234. *Id.*

additional jail time, more court appearances, etc.²³⁵ Note also, however, that the court has the ability to reward the client for making progress through the treatment program—in this manner, the judge enjoys a significant level of discretion.²³⁶ The drug court actively monitors and facilitates the client through a process of continuous improvement.²³⁷ Depending upon the client's performance, the court will either adjust the treatment regimen until the client has either successfully “graduated” or has been terminated from the program (and returned to the traditional criminal justice system) for recidivism.²³⁸

3. *A Stylized Portrait of Experimentalism Applied to Contract Enforcement*

Experimentalist adjudication applied to contract disputes between collaborators would unfold as follows: where pragmatic disciplines have become dysfunctional, the court will intervene, not to determine a winner, but to organize a solution with the parties. To do so, the court in conjunction with the parties would set benchmarks for the collaborators to achieve in regards to progressing their dispute. Benchmark setting would occur by reference to the parties' aspirations, competitors' behavior, and general legal norms. These benchmarks, first, would not only be processual (e.g., resolve the dispute by a certain date) but also substantive (e.g., achieve a particular level of performance) and, second, would change, or “roll,” as initial hurdles were overcome. Throughout the process, the court would actively monitor the parties' progress through situation-specific metrics and assist the parties in troubleshooting errors. This monitoring would be achieved by the consistent sharing of information, through regular meetings and reporting mechanisms, between the parties and the court. If the error detection and correction process begins to malfunction, the court can correct missteps through the threat of an information-forcing penalty default. Note, however, that the court is not “activist”—it does not fill gaps in the contract. Rather, the court simply focuses the parties on the problems to which they must find solutions in order to meet their collaboration's potential. This iterative adjudicatory process will end when the relationship has successfully achieved a consistent succession of benchmarked milestones, not in a conclusive judgment.

235. *Id.* at 847–48.

236. *Id.* at 848–49.

237. *Id.* at 847.

238. *Id.* at 847–48.

The key point for our purposes is that experimentalist adjudication is capable of “enforcing”—providing a source of institutional support that allows parties to organize future economic activity—generative contracts because it is not rigidly tied to the traditional idea of protecting the parties’ original intent. In this sense, it differs fundamentally from contextualism. Rather than embarking on contextualism’s Quixotic search for parties’ intentions, experimentalism accepts that contractual intentions are indeterminate. Rather than coping with indeterminacy by attempting to shoe-horn parties’ diverse motivations into the fiction of original intent, experimentalism creates an institutional structure that allows the parties, with the assistance of the neutral court, to further develop their unfolding expectations.²³⁹ By doing so, experimentalism provides an actual institutional support to the collaborative process, unlike formalism, which simply places the burden either on parties to clarify their intentions before coming into the courthouse or on informal norms to police what the law cannot. Note also that experimentalism is not simply a fancy word for mediation: the court’s role is not simply to referee the process of renegotiation. Rather, experimentalism fights fire with fire: the contract “enforcement” process itself becomes innovative and collaborative, as parties and the court use the conflict as an opportunity to craft new potentialities for the partnership.

C. Whether the Evidence Reflects Experimentalist Theory

While additional research is necessary, it appears that collaborators’ mixture of escalation procedures and arbitration clauses roughly approximate the experimentalist model outlined above. First, escalation procedures reflect an adjudicatory apparatus that institutes a collaborative problem-solving process between the immediate disputants. Each layer of the escalation process forces parties to release additional information: because disputes are costly, senior executives naturally demand that subordinates prove that they are not simply being uncooperative or unduly sharp partners. This leads subordinates to reveal additional information in order to show that the problem is genuine, not just opportunistic posturing. Thus, the escalation process serves both an adjudicatory function (forcing information) and a collaborative function (senior management both referees and participates in

239. See Dorf, *supra* note 226, at 960 (“[L]awmakers increasingly address social problems by creating open-ended problem-solving institutions, rather than by directing solutions through authoritative but ultimately indeterminate instructions, the domain of the indeterminacy problem will correspondingly shrink.”).

resolution). Furthermore, the logic of problem-solving, rather than the logic of appeal, animates the procedure: because many collaborations are based on unanimous decision-making, disputes are escalated so long as a collective solution remains elusive.

Second, arbitration at the summit of the escalation process performs two experimentalist functions. First, and foremost, it serves as a powerful penalty default. The fact that arbitration awards are generally difficult to appeal—under the Federal Arbitration Act and corresponding state laws, judicial review of arbitration awards is limited,²⁴⁰ and awards are therefore vacated only in relatively rare circumstances²⁴¹—creates the penalty default. That is, because parties cannot readily seek recourse beyond the arbitration itself, they have an incentive to disclose information and cooperate in fashioning a mutually acceptable solution. Second, the arbitrator can participate directly in the creation of a solution. This participation allows (1) the parties to educate the arbitrator and (2) the arbitrator to not only search but also request further development of the factual record.²⁴² Although arbitration is typically seen as the most adversarial form of ADR,²⁴³ it does have a certain amount of flexibility, since precedent does not bind the arbitrator.²⁴⁴ Furthermore, arbitration's procedure is typically more participatory than what we find in conventional public courts. By retaining some control of the process, parties

240. See Stephen K. Huber, *State Regulation of Arbitration Proceedings: Judicial Review of Arbitration Awards by State Courts*, 10 CARDOZO J. CONFLICT RESOL. 509, 513 (2009).

241. Indeed, the Supreme Court's recent decision in *Hall Street* suggests that vacatur of awards will be more limited in the future. *Hall St. Assocs. L.L.C. v. Mattel, Inc.*, 552 U.S. 576, 583–84 (2008) (limiting the grounds for confirming, vacating, or modifying arbitration awards to the express provisions provided in the Federal Arbitration Act).

242. See Lon L. Fuller, *Collective Bargaining and the Arbitrator*, 1963 WIS. L. REV. 3, 11–12 (1963) (“[T]here are open to the arbitrator, even the novice, quick methods of education not available to courts. An arbitrator will frequently interrupt the examination of witnesses with a request that the parties educate him to the point where he can understand the testimony being received. This education can proceed informally, with frequent interruptions by the arbitrator, and by informed persons on either side, when a point needs clarification.”); see also OLIVER E. WILLIAMSON, *MARKETS AND HIERARCHIES: ANALYSIS AND ANTITRUST IMPLICATIONS* 76 (1975) (“[T]he creation of . . . a special arbitration apparatus serves to overcome information impactedness because the arbitrator is able to explore the facts in greater depth and with greater sensitivity to idiosyncratic attributes of the enterprise than could normal judicial proceedings.”).

243. See Frank E. A. Sander & Lukasz Rozdeiczer, *Matching Cases and Dispute Resolution Procedures: Detailed Analysis Leading to a Mediation-Centered Approach*, 11 HARV. NEGOT. L. REV. 1, 21 (2006).

244. See, e.g., Susan D. Franck, *The Legitimacy Crisis in Investment Treaty Arbitration: Privatizing Public International Law Through Inconsistent Decisions*, 73 FORDHAM L. REV. 1521 (2005) (discussing lack of precedential constraint in arbitration of investment treaties).

can better shape the scope, speed, and scale of the arbitration.²⁴⁵ Finally, arbitration is participatory in that the parties choose their adjudicator, especially in tripartite arbitration, where each side gets to choose unilaterally one arbitrator of a three-member panel. In summary, arbitration, which displays some characteristics of flexibility itself, primarily provides the penalty default that makes the experimentalist escalation procedure efficacious.

An intriguing line of recent research supports this preliminary analysis. Although identifying general trends in the richly varied ADR landscape is perilous, practitioners and commentators have begun to identify a new variety of resolution mechanism focused upon “dispute avoidance” or “dispute management.”²⁴⁶ These mechanisms approach dispute resolution in holistic fashion, as Craig McEwen describes:

[M]anagement of disputing [is] a systematic assessment of the ways that a corporation produces, prevents, and processes disputes; coordinated efforts to achieve clear goals related to dispute prevention and processing; and careful monitoring of the achievement of those goals. Such management means that disputes are not viewed as exceptional events to be handled on a case-by-case basis, but rather are seen as regular occurrences that can and should be managed to achieve wider organizational objectives.²⁴⁷

This systematization embraces the collaborative ideal to the point that conflict resolution now explicitly resembles the pragmatic disciplines outlined above.²⁴⁸ For instance, the following description of one Dispute Avoidance

245. *Id.* at 1536–45, 1598–99 & nn.378–80.

246. *See, e.g.*, Jeff Weis, Danny Ertel & Sara Keen, *Managing the Alliance Relationship*, in 1 PARTNERSHIPS, JOINT VENTURES, & STRATEGIC ALLIANCES § 10 (Stephen I. Glover & Craig M. Wasserman, eds., 2007).

247. Craig A. McEwen, *Managing Corporate Disputing: Overcoming Barriers to the Effective Use of Mediation for Reducing the Cost and Time of Litigation*, 14 OHIO ST. J. ON DISP. RESOL. 1, 5 (1998).

248. The connection between this new form of dispute resolution and pragmatic disciplines of benchmarking, simultaneous engineering, and error detection/correction is not simply incidental—in some cases at least, the new approach to resolving disputes is part of a larger company-wide effort to reform its operations. *See, e.g., id.* at 16 (“In a company that was reorganizing itself around notions of Total Quality Management and increased efficiency and quality in production, the legal division was challenged to see how it could define in measurable ways its own efficiency and quality management.”).

program sounds strikingly similar to the simultaneous engineering, benchmarking, and error detection/correction steps described above:

Competent [dispute system design] involves each of these four strategic organizational design steps . . . :

- [1.] Investigation of the existing (or "as-is") condition
- [2.] Design of recommended improvement, a change implementation plan, and methods for monitoring and measuring results on an ongoing basis;
- [3.] Execution of the planned change, often through an initial pilot project; and
- [4.] Assessment over time, and continual improvement.²⁴⁹

Thus, early error detection was encouraged, as was the use of benchmarked performance standards and collaborative forms of resolution. As such, the mechanisms were designed to not only resolve disputes but to allow the parties the chance to create new opportunities for the partnership.²⁵⁰

D. Summary

Dispute avoidance mechanisms, such as the escalation and arbitration clauses that are frequently included in generative contracts, mirror the principles of experimentalist adjudication outlined above. In this system, enforcing performance is a matter of peer review: hierarchical judging is replaced with problem-solving.²⁵¹ This is especially exemplified in the non-adversarial approach counsel recommend for resolving disputes between collaborators.²⁵² The logic of appeal in this system is not to remedy an

249. Ann L. MacNaughton & Gary A. Munneke, *Practicing Law Across Geographic and Professional Borders: What Does the Future Hold?*, 47 LOY. L. REV. 665, 703 (2001). *See also* Weis et al., *supra* note 246; Thomas J. Stipanowich, *ADR and the "Vanishing Trial": The Growth and Impact of "Alternative Dispute Resolution,"* 1 J. EMPIRICAL LEGAL STUD. 843, 884 (2004) (discussing another program of problem-solving dispute resolution developed by corporate entity).

250. *See id.* at 884 (discussing the use of conflict management as a tool for achieving broader corporate goals).

251. Dobbins, *supra* note 106, at 160 ("The philosophical foundation behind the Layered Clause is to preserve business relationships while pursuing appropriate conflict resolution.").

252. *See* Salacuse, *supra* note 22.

arguably erroneous judgment; rather, the matter is “appealed” simply on the grounds that consensus has not been reached. The entire idea behind the system is to keep the collaboration progressing towards its potential, not to vindicate personal rights.

V. CONCLUSION

A. Summary: A New Theory of Contract Adjudication?

The evolution of productive organization over the last quarter century raises the possibility that the debate between contextualism and formalism is anachronistic. Rather than litigating their disputes, collaborators are establishing complex dispute resolution mechanisms that correspond with the novel governance mechanisms they include in their contracts. Litigation is avoided because contemporary contract enforcement poorly interprets the meaning of collaborative activity. With formalist arguments found wanting, the emerging solution to this lack of institutional support may perhaps be best explained by an experimentalist model of adjudication. Experimentalism may best complement generative contracting since its problem-solving approach mirrors the new contractual mechanisms parties use to govern their collaborations. The model of contract enforcement emerging from this alternative approach views the court not simply as a mechanism by which future commitments are made credible but also as a crucible for economic innovation.²⁵³

B. Policy Prescriptions: Should the State Become Involved?

Despite its accomplishments, generative contracting still requires support from external institutions. Whatever its strengths, pragmatic governance is not automatically a self-sustaining virtuous cycle.²⁵⁴ As *Lockheed* suggests, innovative collaborations are still susceptible to instability. The economic

253. This argument is reminiscent of the recent work by Katharina Pistor and colleagues regarding the relationship between a legal system's ability to innovate new laws and economic development. See, e.g., Katharina Pistor, Yoram Keinan, Jan Kleinheisterkamp & Mark D. West, *Innovation in Corporate Law*, 31 J. COMP. ECON. 676 (2003); Katharina Pistor, Yoram Keinan, Jan Kleinheisterkamp & Mark D. West, *The Evolution of Corporate Law: A Cross-Country Comparison*, 23 U. PA. J. INT'L ECON. L. 791 (2003); Katharina Pistor & Chenggang Xu, *Incomplete Law*, 35 N.Y.U. J. INT'L L. & POL. 931 (2003). The difference between my theory and Pistor's work is that I envision the court as an innovator not simply in the creation of new general legal standards but also in actual market processes.

254. WHITFORD, *supra* note 12, at 100–16.

pressures that have led firms to compete along the dimension of product innovation do not stop once the generative contract has been signed: escaping commodity pricing is a constant struggle. Rather, the dwindling margins characteristic of the current global economy create a powerful centripetal force on any collaborative production arrangement.²⁵⁵ Of course, well-drafted pragmatic governance mechanisms contain elaborate exit terms in order to anticipate a failed joint endeavor.²⁵⁶ Governance failures, however, create considerable externalities: a collaboration's unraveling can impact communities as workers are laid off, plants move, etc. Such a collapse also ripples through the local networks that often arise around collaborative producers and that facilitate intra-industry learning.²⁵⁷ Thus, there are compelling public policy arguments for institutional support for pragmatic governance.

Whitford's cataloging of collaborative dysfunction has led him to argue for public intervention in the network economy.²⁵⁸ While reform at the policy level is necessary,²⁵⁹ proper contract enforcement is a fundamental ingredient in stabilizing interfirm collaboration. Appropriate contract enforcement can play a prophylactic role—parties will be more willing to draft pragmatic governance mechanisms knowing there is a responsive enforcement system—and a corrective role—sensitive enforcement can resolve disputes and, thus, repair broken relationships.

To make adjudication entirely the responsibility of the private sector may be unduly burdensome. First, since disputes between collaborators usually encompass myriad claims arising from antitrust, intellectual property, and tort

255. See, e.g., *id.* at 95 (“In spite of very real efforts by OEMs to reformulate organizational structures and to build collaborative relationships with suppliers, these relationships are nevertheless frequently characterized by ‘bad waltzing’ that differs fundamentally from the simple use of hard bargaining tactics backed up with the threat of exit power. Simple hard bargaining is widely understood by suppliers to be well within the norms of everyday business and predictable enough that it need not undermine collaboration. But interviews with OEMs and suppliers . . . show that relationships are also systematically plagued by ambiguous signaling and rife with no-holds-barred tactics used by OEMs exploiting vulnerabilities opened up by the new relationships for short term gain.”).

256. See, e.g., Neil S. Hirshman, *Control Provisions*, in *THE OUTSOURCING REVOLUTION 2003: PROTECTING CRITICAL BUSINESS FUNCTIONS* 345, 348–49 (John F. Delaney & William A. Tanenbaum, eds., 2003).

257. See, e.g., ANNALIE SAXENIAN, *REGIONAL ADVANTAGE: CULTURE AND COMPETITION IN SILICON VALLEY AND ROUTE 128* (1996); Michael E. Porter, *Clusters and the New Economics of Competition*, HARV. BUS. REV. 77 (Nov. 1998).

258. WHITFORD, *supra* note 12, at 129–53.

259. See Josh Whitford & Jonathan Zeitlin, *Governing Decentralized Production: Institutions, Public Policy, and the Prospects for Inter-Firm Collaboration in US Manufacturing*, 11 *INDUSTRY & INNOVATION* 11, 42 (Mar. 2004).

laws in addition to contract claims, the state will typically be involved in the dispute in some respect. As it will be adjudicating these related claims, a government court is in a position, unlike a private tribunal, to oversee the entire resolution of the dispute. Such oversight would not only rationalize the process but also provide the enforcing court additional information. Second, courts have what has been termed “convening power,” which is “a polite way of saying that judicial decrees are backed by the threat of force.”²⁶⁰ This means they have the ability, unparalleled by a private arbitrator, to compel all parties necessary to come together to work out a resolution. And third, courts have a “disentrenching capacity”—i.e., “the ability to declare some course of conduct unlawful, even where a court does not have a solution ready at hand, [which] enables courts to force other actors to address their problems immediately.”²⁶¹ While arbitration of itself can serve as a general penalty default creating an incentive for parties to innovate a resolution through the escalation process, it may be difficult for arbitrators attempting to adopt the experimentalist model to employ penalty defaults within a collaborative dispute resolution process: if private tribunals proactively penalize uncooperative parties for not pursuing an experimentalist resolution to the dispute, the parties may well go elsewhere for their next dispute (an easy option considering that there is an open market for arbitrators). Courts, however, are forums of last resort, a status that gives them leverage vis-à-vis disputants. This, then, may be a job not only for the private sector but also for the state.

260. Dorf, *supra* note 226, at 945.

261. *Id.* at 946.

