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DEAL STRUCTURE

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ABSTRACT—Modern commercial contracts—those governing mergers and acquisitions and financial derivatives, for instance—have become structurally complex and interconnected. Yet contract law largely ignores structural complexity. This Article develops a theory of "contractual structuralism" to explain the important role of structure in every aspect of contract law, from the design of a contract to courts' interpretation and enforcement.

For generations, scholars have debated whether a court should consider only the text of a contract or also consider broader context to determine parties' intent. More recently, scholars have shown that parties can choose between textual and contextual interpretation by drafting a contract provision as a rule or a standard. Rules signal that parties have fully thought through the issues and a court should interpret textually, and standards signal the need for further contextual exploration.

This Article builds upon that pioneering work to make two contributions to the literature. First, it provides the first comprehensive account of structural complexity in modern contracting, and explains how modern contract designers use structure to advance their goals. Second, it shows how the design of contract structure can influence interpretation. Contracts have grown—in scope, length, and complexity—and provisions are no longer strictly rules or strictly standards. Rather, they bleed into and interact with one another, complicating parties' ability to always pair textualist enforcement with a rule and contextualist enforcement with a standard. Tweaking deal structure provides contract designers with another way, beyond using a rule or standard, to nudge courts toward a particular interpretive mode. Specifically, structural isolation of provisions—a modular contract structure—is required for the kind of toggling between textualism and contextualism that other scholars have envisioned. Understanding how a contract's parts are put together—the structure of the contract—is important to understanding how to design contracts and can greatly influence how courts interpret contracts.

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INTRODUCTION

In 2013, Delaware courts halted a $2.5 billion merger when one party's failure to comply with a single section of the merger agreement led to "a cascade effect on other contractual provisions."[1] *Cooper Tire* and numerous recent cases like it show that modern contracts are increasingly complex.[2]

[1] Cooper Tire & Rubber Co. v. Apollo (Mauritius) Holdings Pvt. Ltd., No. 8980-VCG, 2014 WL 5654305, at *13 (Del. Ch. Oct. 31, 2014) (explaining that section 5.1(a) of the Merger Agreement imposes the requirement that Cooper shall conduct its business in the ordinary course of business and that requirement had a cascade effect on the material adverse effect and marketing period provisions).

[2] Steven L. Schwarcz, *Disclosure's Failure in the Subprime Mortgage Crisis*, 2008 UTAH L. REV. 1109 (noting that complexity is one of the main causes of the subprime mortgage crisis); Steven L. Schwarcz, *Rethinking the Disclosure Paradigm in a World of Complexity*, 2004 U. ILL. L. REV. 1 (noting that modern securities and derivatives deals are extremely complex); John C. Coates, IV, *Why Have M&A Contracts Grown? Evidence from Twenty Years of Deals* 14 (Harvard Law Sch. John M. Olin Ctr. for Law, Econ. & Bus., Working Paper No. 333, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2862019 [https://perma.cc/9R9A-D72Z] (describing the growth in length and complexity of M&A contracts—with length growing from approximately thirty-five to eighty-eight pages in twenty years, and complexity rising approximately ten grade levels); Albert Choi & George Triantis, Multi-Stage Contracting in Complex Transactions

From humble apartment leases to multibillion-dollar merger agreements, many contemporary contracts are now made up of complex webs of provisions. How contract drafters join together those provisions—the contract's structure—can fundamentally change every aspect of a contract, from design to performance to enforcement. Thus far, contracts scholarship has overlooked the exceptionally important role of structure. This Article investigates structure's role in contract theory, doctrine, and practice, and develops a theory of "contractual structuralism" to bring fresh insight to classic questions of contract interpretation and design.

Cooper Tire aptly illustrates the complications that arise in a world of structural complexity.[3] The case began when Apollo, a major tire company, agreed to buy another tire company, Cooper, for $2.5 billion. A series of labor disputes caused Apollo to delay closing the deal, and Cooper filed suit in Delaware to compel Apollo to close. In litigation, Cooper alleged that Apollo had not used its "reasonable best efforts" to resolve the labor disputes that had delayed closing. Because the parties had drafted a structurally integrated agreement—that is, one where provisions relied heavily on each other to work—the case called on the court to interpret a thickly interconnected web of contract provisions. The court considered not only Apollo's best efforts obligation, but also Cooper's, as well as numerous other provisions within the merger agreement.[4] In the end, the court found that Apollo was not obligated to close the deal.[5] That result, however, could have easily been different had the contract drafters linked provisions within the agreement differently, such as by isolating Apollo's best efforts provision from other parts of the agreement.[6]

Cases like *Cooper Tire* expose the dramatic practical importance of understanding contract structure in modern markets. But the sheer size of

2 (Jan. 2, 2014) (unpublished manuscript) (on file with *Northwestern University Law Review*) (noting that "some agreements are simply too complex or time-consuming to be completed in a single stage. . . . [T]he purpose of agreement in the first stage is to address complexity and set a distinct stage for expert agents, rather than to protect specific investments under an incomplete contract").

[3] For the judicial opinion, letter order, and transcript, see *Cooper Tire & Rubber Co.*, 2014 WL 5654305; Letter Order to Counsel, Cooper Tire & Rubber Co. v. Apollo (Mauritius) Holdings Pvt. Ltd., No. 8980-VCG, 2013 WL 5977140 (Del. Ch. Nov. 9, 2013); and Transcript of Post-Trial Oral Argument, Partial Post-Trial Bench Rulings of the Court, Oral Argument on Plaintiff/Counterclaim Defendant's Motion for Certification for Interlocutory Appeal, and Bench Rulings of the Court, Cooper Tire & Rubber Co. v. Apollo (Mauritius) Holdings Pvt. Ltd., No. 8980-VCG, 2013 WL 6735067 (Del. Ch. Nov. 8, 2013).

[4] *See* Peter Lyons et al., *Reasonable Best Efforts: Cold Comfort to Sellers*, M&A LAW., Jan. 2014, at 1, 5–6 (2014).

[5] *Cooper Tire & Rubber Co.*, 2014 WL 5654305, at *19.

[6] *See infra* notes 74–79 and accompanying text.

contemporary contractual disputes is not the only reason structure matters. The complexity of modern contract structure also highlights new questions in contract law. How do related provisions across multiple contracts interact with one another? How should they? How can contract designers and interpreters use contract structure to achieve their economic and adjudicative goals?

Contract scholars have completely overlooked these questions. Rather, they remain preoccupied with a classic, provision-by-provision analysis of contracts.[7] The famous contracts case *Frigaliment Importing Co. v. B.N.S. International Sales Corp.* is a classic example.[8] The parties asked the Southern District of New York to resolve the meaning of a single word—"chicken"—in their simple purchasing agreement.[9] The plaintiff argued that "chicken" meant only choice young frying chickens, while the defendant countered that it could also mean old stewing chickens.[10] In this case, as in many classic cases, the court's interpretive task was discrete: Should it use extrinsic evidence to interpret a single ambiguous word?[11]

Many important and central questions of contract law build on that tradition of provision-by-provision analysis. *Frigaliment* considered the parol evidence question, a question that has been long debated by contract scholars: Should courts look beyond the specific provision in question and consider extrinsic evidence in interpreting a contract? Most scholars have argued that courts must take one of two interpretive routes. Some have argued that courts must review only the plain meaning of a written term (a textual approach), while others have insisted that courts consult the broader, unwritten context of the transaction (a contextual approach).[12] Over time, textualism has become synonymous with a straightforward and relatively

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[7] *See infra* Part I.

[8] 190 F. Supp. 116 (S.D.N.Y. 1960).

[9] *Id.* at 117.

[10] *Id.*

[11] *Id.* at 118.

[12] *See, e.g.*, Ronald J. Gilson, Charles F. Sabel & Robert E. Scott, *Text* and *Context: Contract Interpretation as Contract Design*, 100 CORNELL L. REV. 23, 25–26 (2014) (noting that "[i]n a textualist regime, generalist courts cannot choose to consider context; in a contextualist regime, these courts must consider it. Thus, text or context"); Alan Schwartz & Robert E. Scott, *Contract Interpretation Redux*, 119 YALE L.J. 926, 931–32 (2010) [hereinafter Schwartz & Scott, *Contract Interpretation Redux*] (laying out some basic differences between textualist and contextualist interpretation regimes); Alan Schwartz & Robert E. Scott, *Contract Theory and the Limits of Contract Law*, 113 YALE L.J. 541, 544 (2003) [hereinafter Schwartz & Scott, *Limits of Contract Law*] (setting out a modern formalist/textualist theory of contract law and contractual interpretation).

low-cost approach to interpretation, whereas contextualism is seen as complicated and expensive.[13]

Recent work continues to focus on single provisions, although some scholars have made important strides in moving the old debates forward. Professors Robert Scott and George Triantis have argued, compellingly, that parties can design contracts in anticipation of later enforcement.[14] Their work implies that rule-like terms can tee up a textualist interpretive approach, while standard-like terms can nudge courts toward a contextualist approach.[15] But Scott and Triantis's work, too, frames contract designers' choice in binary terms: a drafter may use either a precise rule-like contract term or a vague standard-like term.

The assumption that contracts are comprised of independent terms fundamentally overlooks a sea change in transactional practice: parties now often memorialize their intentions in numerous provisions and, indeed, multiple contracts. As such, modern contracts are fundamentally different from the relatively simple contracts that motivated classic questions. A growing body of empirical scholarship has noted that modern contracts have grown substantially in complexity. They are longer,[16] tackle more difficult issues,[17] and are harder to read and understand.[18] Most importantly, modern

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[13] *See, e.g.*, Eric A. Posner, *A Theory of Contract Law Under Conditions of Radical Judicial Error*, 94 NW. U. L. REV. 749, 751 (2000); Eric A. Posner, *The Parol Evidence Rule, the Plain Meaning Rule, and the Principles of Contract Interpretation*, 146 U. PA. L. REV. 533 (1998) [hereinafter Posner, *The Parol Evidence Rule*]; Schwartz & Scott, *Limits of Contract Law*, *supra* note 12, at 598.

[14] *See generally, e.g.*, Robert E. Scott & George G. Triantis, *Anticipating Litigation in Contract Design*, 115 YALE L.J. 814 (2006) (noting that investment in ex ante contract design can reduce ex post contract enforcement costs, and that less investment in ex ante contract design can increase ex post contract enforcement costs); Steven Shavell, *On the Writing and the Interpretation of Contracts*, 22 J.L. ECON. & ORG. 289 (2006) (discussing the role of back-end contract interpretation in influencing how parties design contracts ex ante). For a discussion of the rules/standards debate in public law, see *infra* note 25 and accompanying text.

[15] Scott & Triantis, *supra* note 14.

[16] Coates, *supra* note 2, at 14 (noting that the length of mergers and acquisitions contracts has grown from approximately thirty-five to eighty-eight pages in twenty years).

[17] Choi & Triantis, *supra* note 2, at 1 (noting that "some agreements are simply too complex to be completed in a single stage" and that completing a contract in multiple stages allows parties to engage subject matter specialists and advisors).

[18] Coates, *supra* note 2, at 14 (noting an increase in contract length over twenty years, and also that, in the same time period, the reading level needed to understand mergers and acquisitions contracts has grown from post-graduate grade twenty to post-graduate grade thirty); Jeremy R. McClane, Boilerplate and the Impact of Disclosure in Securities Dealmaking 38 (Oct. 26, 2017) (unpublished manuscript) (on file with *Northwestern University Law Review*) (measuring the readability of securities disclosure and noting that "a Gunning Fog score of 8 is considered appropriate for most audiences, whereas a score above 18 is considered unreadable by most audiences. The average Gunning Fog score for entire prospectuses in the dataset is 21.6").

contracts are structurally complex[19]—a mergers and acquisitions (M&A) contract might use interlinked documents and provisions to express complicated earnout, indemnification, and escrow provisions. As a result, parties complete contracts in stages,[20] create deals that span multiple different related contracts,[21] or segregate complex issues into easier-to-digest modules[22] to make modern contracts work. Those developments in contracts' structural complexity mean that modern contracts have outgrown classic questions of interpretation and design.

Modern contracts demand macro-level, structural inquiry before those classic provision-by-provision, micro-level questions are addressed. This Article takes a fresh approach to studying contracts by tackling, for the first time, the questions of how contracts are structured on a macro, multi-provision level and why structure is important. This Article's analysis builds on literatures in contract design, modularity in both public and private law, and contract interpretation to develop a new theory of "contractual structuralism." Contractual structuralism is the simple (yet thus far unexplored) idea that how a contract is put together matters in every part of that contract's life cycle: design, performance, and enforcement.

This Article's argument unfolds as follows. Part I shows that, because contract structure is increasingly complex, the old rules/standards and text/context paradigms for understanding contract law are inadequate. It also draws on recent literature about contractual complexity to shed light on the design decisions that modern contract drafters face, and shows that understanding a contract's structure is now a necessary first step to tackling questions of design and interpretation.

Part II introduces the theory of contractual structuralism—a new way to think about contracts. It provides, for the first time, a comprehensive

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[19] Matthew Jennejohn, *The Private Order of Innovation Networks*, 68 STAN. L. REV. 281, 297 (2016) (describing the complex contractual arrangements that govern alliance relationships).

[20] Choi & Triantis, *supra* note 2 (describing the process by which parties complete complex commercial contracts in stages in order to manage complexity).

[21] *See generally* Cathy Hwang, *Unbundled Bargains: Multi-Agreement Dealmaking in Complex Mergers and Acquisitions*, 164 U. PA. L. REV. 1403 (2016) (describing deals that are memorialized in many interrelated contracts and agreements as "unbundled bargains," and arguing that unbundling a bargain has implications for deal design and contract interpretation).

[22] Margaret Jane Radin, *Boilerplate Today: The Rise of Modularity and the Waning of Consent*, 104 MICH. L. REV. 1223, 1224 (2006) (analyzing interaction between standardization and customization in contract drafting, and defining legal modularity as "the practice of creating a legal document by selecting and cobbling together terms from a source compendium or from different sources"); Henry E. Smith, *Modularity in Contracts: Boilerplate and Information Flow*, 104 MICH. L. REV. 1175, 1176 (2006) (discussing modularity within individual contracts); George G. Triantis, *Improving Contract Quality: Modularity, Technology, and Innovation in Contract Design*, 18 STAN. J.L. BUS. & FIN. 177, 204–06 (2013) (describing how modular contracts improve collaboration in creating standardized contract provisions).

theory of how contract drafters design different contractual systems as modular (provisions are separate from one another, and each isolated part can be manipulated without affecting the others), integrated (provisions are highly connected to each other, and rely on each other to work), or a combination of the two. Through examples, this Part shows how the theory of contractual structuralism adds a new dimension to understanding contract design.

Part III discusses implications for contract design and enforcement. Other scholars have shown that parties can toggle between textual or contextual interpretation of their contracts by using rule-like and standard-like terms.[23] This Part argues that this toggling ability depends, first and foremost, on how the contract is structured. Only when provisions are carefully cabined from one another in a modular structure can contract designers pair rules with textualism or standards with contextualism. This Part also discusses how courts can recognize contract structure, how contractual structuralism affects contract policy, and presents preliminary evidence on how parties are already harnessing contract structure to privately order dispute resolution.

I. CONTRACT DESIGN IN A COMPLEX WORLD

In legislation, treaties, private contracts, and many other dealmaking areas, drafters must make a decision between using a rule or a standard to express meaning. Rules—"deliver the goods on October 1, at 7 p.m. Eastern, unless it is already dark, in which case, deliver the next day"—are more time-consuming to negotiate and draft, but easier to enforce. Standards—"deliver the goods at a reasonable time"—are the opposite: they are easier to draft, but harder to enforce.

In both public and private law, the trade-off between rules and standards is widely understood to be the central decision that drafters must make.[24] But modern contract drafters face design decisions beyond the traditional rules and standards paradigm. While rules and standards remain relevant, contract drafters must also make a broader decision about the *overall* structure of the contract. That is, because almost all contracts are collections of provisions, drafters must also make decisions about how to put those provisions together into a cohesive working system. The connection between provisions is what this Article calls contract structure.

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[23] *See, e.g.*, Scott & Triantis, *supra* note 14, at 816–22 (discussing how rule-like and standard-like terms can each be efficient depending on whether the parties want to incur front-end or back-end costs).

[24] For a discussion of rules and standards in private law, see *id*. at 839–52, and *infra* note 28 and accompanying text. For a discussion of the same in public law, see *infra* notes 25–26 and accompanying text.

This Part shows how modern contracts have outgrown the classic questions of contract law. Section A begins with a brief overview of the rules and standards paradigm, which is an apt, if two-dimensional, way to understand contract drafting. In particular, the rules and standards paradigm is overly focused on the trade-off that contract drafters face on a micro-level, provision-by-provision basis. Section B briefly overviews the classic text/context debate and influential recent research by Scott and Triantis, which argues that parties can choose between textualism and contextualism by using either rule-like or standard-like terms. Section C shows that, in light of recent developments, contract drafters must continue to make important choices between rules and standards, but also think carefully about how to weave multiple provisions together.

A. The Classic Design Decision: Rules and Standards

In public law, the trade-off between using rules and standards is well-understood.[25] Professors Anthony Casey and Anthony Niblett recently provided a vivid example of how rules and standards play out in everyday traffic laws.[26] Lawmakers can choose between crafting a rule ("drive no faster than 45 miles per hour") or a standard ("drive reasonably"). Ex ante, a rule is harder to draft: it requires that lawmakers consider a variety of factors that might play a role in determining the correct speed limit. Should the speed limit be reduced when there is a curve in the road? Should it be reduced in a school zone? Ex post, however, a rule is quite easy is enforce: those who drive at 46 miles per hour have clearly violated the rule and can be ticketed. Moreover, rules require more granularity and more precision—a precise speed limit that makes sense for a rural interstate may not work well for a school zone.

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[25] *See, e.g.*, Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 561 (1992) (providing a law-and-economics account of when commands should be standards and when they should be rules); Eric A. Posner, *Standards, Rules, and Social Norms*, 21 HARV. J.L. & PUB. POL'Y 101 (1997) (discussing the interaction between using rules and standards to promulgate law, and using norms to support nonlegal conduct); Pierre Schlag, *Rules and Standards*, 33 UCLA L. REV. 379 (1985) (discussing the rules and standards in the context of interpreting constitutional law); Shavell, *supra* note 14 (discussing the role of contract interpretation on the back end, and how it adds value to contracts on the front end); Cass R. Sunstein, *Problems with Rules*, 83 CALIF. L. REV. 953 (1995) (providing an overview of the classic rules/standards framework and discussing the issues with rules); *see also* MARC A. FRANKLIN & ROBERT L. RABIN, CASES AND MATERIALS ON TORT LAW AND ALTERNATIVES 51–54 (3d ed. 1983) (discussing the classic dispute between Oliver Wendell Holmes and Benjamin Cardozo, in which the two disagree about the way to craft an obligation for a driver who comes to a railroad crossing. Holmes argues that drivers should stop and look—a rule. Cardozo argues that drivers should operate with reasonable caution—a standard).

[26] *See generally* Anthony J. Casey & Anthony Niblett, *The Death of Rules and Standards*, 92 IND. L.J. 1401 (2017) (arguing that "microdirectives"—tailored rules where tailoring is aided by artificial intelligence—will overtake both rules and standards as a drafting method).

A standard poses the opposite cost and benefit. It is easier to draft ex ante, because it requires little investigation on the part of the drafter. In the traffic context, it would be easy for a drafter to simply post signs everywhere that require drivers to "drive reasonably." But interpreting "reasonableness" is tricky—individual drivers likely have different determinations of what is "reasonable," which makes the standard harder to enforce. One might easily imagine the arguments to be had in traffic court over what is considered "reasonable" by police officers and by drivers, which make the enforcement of standards far more challenging.

The decision to use a rule or a standard not only affects precision and ease of enforcement, but also the overall costs of a given provision. In drafting traffic laws, for example, a rule takes longer to draft, and requires more investigation up front to get right. It is, however, easy to follow, so it imposes lower decision costs on individual drivers[27]—drivers need not make independent determinations of reasonableness and can instead simply follow the posted instructions. Rules are also easy to enforce, which translates into lower cost for enforcers and the judiciary. Standards, however, are cheap to write—but drafters are essentially pushing the burden of investigating and judging traffic conditions, and determining a "reasonable" speed, onto individual drivers, enforcers, and adjudicators. Thus, it is more expensive for drivers to comply with standards than with rules because they must each bear the cost of investigation and determination. The drawn-out arguments in traffic court, too, greatly increase the ex post costs of enforcing the standard.

Largely echoing the public law understanding, a rich literature in contract theory also examines how the rule/standard choice can affect the cost of drafting private contracts.[28] The overall cost of drafting a contract is understood to include both the ex ante cost of drafting and the ex post cost of enforcement (as well as judicial error costs).[29] Not surprisingly, using a

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[27] *Id.* at 1408 (noting that "[r]ules do, however, impose lower decision costs when behavior is frequent and homogenous").

[28] *See, e.g.*, Albert Choi & George Triantis, *Strategic Vagueness in Contract Design: The Case of Corporate Acquisitions*, 119 YALE L.J. 848, 852 (2010) ("[D]rawing on the line of scholarship that analyzes the rules-standards dichotomy in the design of legal rules, recent work frames the choice between vague and precise contract terms as a tradeoff in information costs: precise contract provisions raise contracting costs on the front end, but reduce enforcement costs at the back end."); Richard A. Posner, *The Law and Economics of Contract Interpretation*, 83 TEX. L. REV. 1581, 1583–84 (2005) (defining the cost of a contract as the ex ante negotiating and drafting costs, plus the probability of litigation multiplied by the sum of the parties' litigation costs, the judiciary's litigation costs, and judicial error costs).

[29] Judge Richard Posner formalizes this concept in a slightly more complicated formula, $C = x + p(x)[y + z + e(x, y, z)]$, where C is the transaction costs of a contract, x is the ex ante contracting costs, p is the probability of litigation, y is the parties' litigation costs, z is the judiciary's cost, and e is judicial error costs. Posner, *supra* note 28, at 1583–84.

rule—which costs more to draft up front—reduces enforcement costs down the line, because rules reduce the probability of misunderstanding, dispute, and the time spent on litigation when disputes do arise. In contrast, drafting a standard is relatively low-cost ex ante, but opens the door to misunderstanding and expensive litigation ex post.[30]

Standards also open the door to greater judicial error costs. While parties can disagree—and litigate—both rules and standards, standards are, by definition, open to broader interpretation. The issues surrounding judicial competence and bias have been well-documented by others.[31] It is worth noting that in the context of complex commercial contracts, parties are even more concerned about judicial error: sophisticated parties may fear, for example, that state judges outside of Delaware lack the specialized knowledge to understand and adjudicate complex business issues.[32] Thus, drafting a standard in a complex commercial setting not only introduces a larger risk of judicial error than drafting a rule, but the error introduced through adjudication may be larger (and higher stakes) than in other contracting settings.

B. The Classic Text/Context Divide

While the rules/standards debate has dominated discussions about contract design, the text/context debate has dominated discussions about contract interpretation. For decades, contract theorists and courts have been divided over whether to admit extrinsic evidence in interpreting disputed contracts—the parol evidence debate.[33] While textualists argue that

[30] *Id.* at 1597; *see also* Choi & Triantis, *supra* note 28 (discussing the use of standards as a rational cost-minimizing choice if the probability of back-end enforcement is low); Scott & Triantis, *supra* note 14 (identifying the trade-off between front-end drafting costs and back-end litigation costs); Shavell, *supra* note 14 (discussing how the possibility of back-end interpretation can affect front-end contract drafting).

[31] *See, e.g.*, Stephanie Plamondon Bair, *Malleable Rationality*, 79 OHIO ST. L.J. 17, 20–21 (2018) (noting that rationality is dynamic and endogenous, and that laws and policies shape humans' views of what is rational); Casey & Niblett, *supra* note 26, at 1408 & nn.19–21, 1409 (describing how "adjudicator competency and bias complicate [the] simple model of error costs" and noting that "[e]x post adjudication may suffer from hindsight bias and from biases based on the personal characteristics of particular individuals" (footnotes omitted) (citing Jeffrey J. Rachlinski, *A Positive Psychological Theory of Judging in Hindsight*, 65 U. CHI. L. REV. 571 (1998), and Jeffrey J. Rachlinski, Sheri Lynn Johnson, Andrew J. Wistrich & Chris Guthrie, *Does Unconscious Racial Bias Affect Trial Judges?*, 84 NOTRE DAME L. REV. 1195 (2009))).

[32] Cathy Hwang & Benjamin P. Edwards, *The Value of Uncertainty*, 110 NW. U. L. REV. 283, 291–92 (2015) (noting that corporate defendants prefer federal courts and believe that federal courts are better equipped to hear and decide complex issues of corporate and securities law).

[33] The parol evidence rule is a substantive rule of law that states that courts "will refuse to use evidence of the parties' prior negotiations in order to interpret a written contract unless the writing is (1) incomplete, (2) ambiguous, or (3) the product of fraud, mistake, or a similar bargaining defect." Posner, *The Parol Evidence Rule*, *supra* note 13, at 534. As Professor Posner notes, there are hard and soft

generalist courts should not use context to interpret a disputed contract, contextualists argue that courts should (and must).[34] Each method has its own benefits and shortcomings, overviewed briefly here.

Textualism begins with two fairly uncontroversial views. First, "although accurate judicial interpretations are desirable, . . . no interpretative theory can justify devoting infinite resources to achieve interpretive accuracy."[35] In other words, textualism has an efficiency argument: it suggests that there is a benefit to searching for the right answer, but a cost, too. Second, textualism recognizes that both ex ante contract design and ex post enforcement and interpretation are costly. Those ex ante and ex post costs are inexorably linked: more investment on the front end reduces back-end costs, and less investment (and less specificity) on the front end increases back-end litigation costs.[36] Textualists argue that when drafting contracts, sophisticated parties make a considered decision about whether to allocate more time and money to the front-end drafting costs, or whether to roll the dice on back-end litigation costs.[37] As a result, they have already "embed[ded] as much or as little of the contractual context as they wish in a written, integrated contract."[38] Because they have already made this trade-off, sophisticated parties prefer textualist interpretations of contracts: if they had wanted courts to examine more context when interpreting a contract, they would have added the context ex ante.

It should come as no surprise that textualists prefer that courts default to a plain meaning rule and use a hard parol evidence rule that "restricts courts to a narrow evidentiary base when identifying the contract's terms."[39]

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interpretations of the parol evidence rule, "each of which turns on the use of extrinsic evidence to determine whether any of the exceptions apply." *Id.*

[34] Gilson, Sabel & Scott, *supra* note 12, at 25–26 (setting out the basic differences between textualism and contextualism, and describing the two modes of interpretation as binary, with one excluding the other); Schwartz & Scott, *Contract Interpretation Redux*, *supra* note 12 (discussing differences between textualist and contextualist interpretation regimes); Schwartz & Scott, *Limits of Contract Law*, *supra* note 12 (arguing that textualism is the appropriate way to interpret commercial contracts between sophisticated parties).

[35] Schwartz & Scott, *Contract Interpretation Redux*, *supra* note 12, at 930.

[36] Posner, *supra* note 28, at 1583–84 (discussing contracting costs as a combination of front- and back-end costs); Scott & Triantis, *supra* note 14, at 836 (noting that the "resolution of this tradeoff [between front-end and back-end costs] in each contracting instance determines the parties' optimal choice between precise and vague terms").

[37] Choi & Triantis, *supra* note 28, at 852.

[38] Gilson, Sabel & Scott, *supra* note 12, at 26.

[39] *Id.*; *see also* Schwartz & Scott, *Contract Interpretation Redux*, *supra* note 12, at 932 (noting that a formalist or textualist interpretation "embodies a hard parol evidence rule, retains the plain meaning rule, gives presumptively conclusive effect to merger clauses[, also called integration clauses], and, in general, permits the resolution of many interpretation disputes by summary judgment").

The plain meaning rule "supposes the parties to be communicating in a standard language," rather than admitting extrinsic evidence to show that when parties said *X*, they actually meant *Y*, because in their private or technical language, *X* actually meant *Y*.[40] A plain meaning rule prescribes that *X* means *X*.

In contrast, contextualists argue that courts *need* to consider extrinsic evidence in contract interpretation in dealing with both unsophisticated and sophisticated contract parties.[41] When a contract party is unsophisticated—such as in mass-market clickwrap terms and conditions—context should be considered to protect those unsophisticated, passive parties from exploitation through take-it-or-leave-it contract terms. When parties are sophisticated, contextualists argue that they may be communicating in a private industry-standard language that is not plain on its face.[42] Thus, extrinsic evidence from the parties' course of dealing should be considered in a contract interpretation dispute so that the nuances of that private language can be ascertained. In fact, "willfully restricting a court's access to the trove of information bearing on the parties' real relationship degrades judicial interpretation and frustrates the parties' efforts to govern their transactions efficiently."[43]

Contextualists prefer a soft parol evidence rule, one that uses extrinsic evidence to determine whether the exceptions to the parol evidence rule apply.[44] One exception to the parol evidence rule is that when a contract is deemed incomplete, extrinsic evidence can be used to explain terms. Applying the hard parol evidence rule, if a contract is complete "on its face"—for example, if it is long and detailed, covers many contingencies, and contains an integration clause that states that the contract is complete—then courts will not admit extrinsic evidence.[45] In contrast, contextualists might not presumptively declare such a contract complete, and might look

[40] Schwartz & Scott, *Contract Interpretation Redux*, *supra* note 12, at 932; *see, e.g.*, Abramov v. Home Depot, Inc., No. 17-cv-1860, 2018 WL 1252105 (N.D. Ill. Mar. 12, 2018) (dismissing a complaint alleging that Home Depot breached an express warranty by using the term "4x4" to denote lumber that was actually of different dimensions on the grounds that in industry usage "4x4" was regularly used to refer to such sized wood).

[41] Gilson, Sabel & Scott, *supra* note 12, at 27.

[42] *Id.*

[43] *Id.*

[44] Posner, *The Parol Evidence Rule*, *supra* note 13, at 534–35.

[45] *Id.* (noting that "[t]he harder courts declare a writing complete if it looks complete 'on its face.' Writings generally look complete if they are long and detailed, or at least contain unconditional language, cover many contingencies, or at least the most important contingencies, and contain a clause, such as a merger clause, which says that the contract is complete" (citing E. ALLAN FARNSWORTH, CONTRACTS 474 (2d ed. 1990))).

instead for extrinsic evidence that suggests that the contract is incomplete.[46] Professor Eric Posner notes that "[i]n practice . . . courts adopting this soft version of the completeness exception generally admit all relevant extrinsic evidence, because any inconsistent extrinsic evidence suggests . . . that the contract is incomplete."[47]

In recent years, a rich literature has arisen around textualist and contextualist interpretations of contracts.[48] Commentators have also argued that jurisdictions have adopted different methods of approaching contract interpretation—New York courts (and many others) take a textualist approach, while California courts veer contextualist.[49]

One question that perennially haunts the textualism/contextualism debate is what to define as "text" and what to define as "context." This question is complicated by recent developments in how parties draft modern contracts. For example, gone are the days when courts could simply point to a single set of stapled-together papers, signed and dated at the bottom, and be certain that this was "the contract." Rather, courts might reasonably determine that the parties' deal was comprehensively memorialized in a set of related agreements, as Hwang describes in a recent article.[50] Without being able to determine what is and is not part of the deal, it becomes increasingly impossible to have a productive discussion about whether to use text or context to interpret deal disputes.

Section C brings in recent literature on contractual complexity and shows that modern contracts—beginning with the commercial ones this Article examines—are structurally complex. Understanding contractual structure and its complexity is necessary to understand what is and is not part of the deal. In turn, this enables scholars, courts, and contract designers to

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[46] *Id.*

[47] *Id.*

[48] Professors Gilson, Sabel, and Scott do a particularly good job of summing up the two sides' arguments. *See* Gilson, Sabel & Scott, *supra* note 12 (describing the major points of textualist and contextualist views of contract interpretation).

[49] Geoffrey P. Miller, *Bargains Bicoastal: New Light on Contract Theory*, 31 CARDOZO L. REV. 1475, 1478 (2010) (noting that New York courts appear to be more textualist in their interpretive approach, while California courts appear to take principles of fairness, equality, morality, or public policy into account in interpretation); Schwartz & Scott, *Contract Interpretation Redux*, *supra* note 12, at 928 (noting that "states holding the [textualist] view are led by New York, while California is the most significant contextualist jurisdiction"); *see also* Bionghi v. Metro. Water Dist. of S. Cal., 83 Cal. Rptr. 2d 388, 393 (Ct. App. 1999) (noting that in California, as a default, extrinsic evidence is admissible when "the language of the contract is reasonably susceptible to the meanings urged by the parties," in light of "any evidence offered to show that the parties' understanding of words used differed from the common understanding").

[50] Hwang, *supra* note 21, at 1410 (describing deals that span a set of contracts and agreements as "unbundled bargains"). This Section draws heavily from the discussion in Part III of Hwang's *Unbundled Bargains*. *Id.* at 1442–51.

have a better grasp of when and how to use text and context in interpreting contracts gone awry.

C. Complexity in Modern Contracting

In recent years, some scholars have begun to expand on the classic rules/standards and text/context research. Building on the logic that the decision to use a rule or a standard essentially means trading off between front- and back-end costs, Professors Albert Choi and George Triantis have argued compellingly that parties might rationally *not* use a rule, even when drafting a provision that is very important to the overall contract. They begin by noting that some contract provisions are very important—such as the material adverse change clause in an acquisition agreement. The material adverse change clause is a heavily negotiated, highly complex provision of an acquisition agreement that, if triggered, can scuttle an entire deal.[51] In other words, if litigated to an adverse judgment, the ex post cost of a material adverse change clause is extremely high. Nonetheless, Choi and Triantis observe that material adverse change clauses are "remarkably vague."[52] Drafting vague, but important, contract provisions appears counterintuitive. Choi and Triantis then show, however, that the probability of parties litigating a material adverse change clause is very low; thus, while the cost of an adverse outcome is extremely high, the probability that there will be an adverse outcome is very low. This means that parties can rationally choose to minimize ex ante drafting costs by choosing to draft the material adverse change clause as a standard, because the overall ex post cost of enforcing it is quite low.[53]

Choi and Triantis limit their analysis to several individual provisions of complex commercial contracts: material adverse change clauses, representations and warranties, and a handful of others. Other work, too, has focused on individual provisions. In an earlier work, Scott and Triantis discuss more broadly how anticipation of later litigation affects how parties design contracts ex ante.[54] In a more general sense than Choi and Triantis, Scott and Triantis identify the trade-off between front-end and back-end

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[51] Choi & Triantis, *supra* note 28, at 865 (noting that "[m]ost large acquisitions include a condition that allows the buyer to avoid closing upon the occurrence of a material adverse event or change (a MAC)").

[52] *Id.* at 854 (noting that "the typical MAC provision is not quantitative and remains remarkably vague").

[53] *Id.* at 896 (noting that "ex post renegotiation relying on a vague MAC condition does create some inefficiency").

[54] Scott & Triantis, *supra* note 14, at 836 (noting that their project "examin[es] the important but neglected tradeoff between front-end and back-end costs. The resolution of this tradeoff in each contracting instance determines the parties' optimal choice between precise and vague terms").

costs, and how using rules or standards shifts costs between the front and back ends.[55]

While the rules/standards paradigm is a useful way to think about individual contract provisions, and while recent scholarship has added meaningful nuance to that study, contracts are more than just individual provisions. At the least, most contracts contain many provisions—a fact to which others have alluded, but have not explored in detail. Both Scott and Triantis and Choi and Triantis, for instance, discuss the coexistence of a variety of provisions in the same contract—precise ones and vague ones.[56] But that analysis, too, is limited to thinking about contract *provisions*—contracts at the micro level—rather than entire contracts as holistic agreements.

Recent research has shown that contracts, with their many provisions, have grown over time, in both length and complexity. In recent work that examines twenty years' worth of data, Professor John Coates shows that acquisition agreements have more than doubled in size—from thirty-five pages to eighty-eight pages.[57] Coates also finds that acquisition agreements have become linguistically more complex—increasing approximately ten grade levels between 1994 and the 2010s, from approximately grade twenty to over grade thirty.[58]

In other corporate contexts, documentation has also grown. Consider the rise in bulk and complexity of initial public offering prospectuses. The purpose of the prospectus—a document that serves as a private company's introduction to the public markets when it is making its initial public offering of stock—is to provide new public investors with information about a company. Although the offering is technically governed by separate legal contracts, the prospectus—a securities disclosure document required by the Securities and Exchange Commission (SEC)[59]—essentially functions as the contractual centerpiece of the deal: it tells investors what is on offer, and

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[55] *Id.*

[56] Choi & Triantis, *supra* note 28 (discussing, throughout the paper, how parties use vague and precise provisions to advance different expressive and cost-saving goals); *see also* Scott & Triantis, *supra* note 14 (identifying the trade-off between front-end drafting costs and back-end litigation costs).

[57] Coates, *supra* note 2, at 14 (noting that "[t]he average M&A contract in 1994 for the relatively simple types of M&A transactions in this sample were roughly 17,000 words in length—about 35 single-spaced pages . . . . By 2014, they had grown to more than 44,000 words per contract, on average—about 88 single-spaced pages. This reflects an average compound growth rate . . . of just under 5%").

[58] *Id.* ("In linguistic complexity, as measured by the Flesch-Kincaid grade level measure, the same contracts increased from an average of ~20 in 1994 to ~30+ in the 2010s.").

[59] *See* 15 U.S.C. § 77j (2012).

investors decide whether to buy into the company based on the information presented.

A prospectus, however, is not just a contract between the issuer (who is selling the stock) and the investor. Rather, there is a regulator at the table: the SEC, which regulates the disclosure, including what it contains and how it is presented.[60] The involvement of a regulator might suggest that prospectuses' bulk and complexity would grow less over time than the bulk and complexity of acquisition agreements, which are privately negotiated and which can therefore grow and change quickly and organically. Despite being subject to slower moving regulation, however, prospectuses also grow quickly. In a recent paper, Professor Jeremy McClane found that between 2000 and 2015, prospectuses filed for initial public offerings more than doubled in size, from approximately 40,000 words to over 100,000 words.[61] McClane also noted that the increasing complexity of prospectuses prompted the SEC to promulgate its Plain English Rule in 1998 with the goal of making securities disclosures more readable.[62]

Recent research also suggests that complexity is not only increasing within the boundaries of individual, self-contained contracts. Rather, scholars have begun to recognize that complexity has caused commercial relationships to burst out of neat contractual seams and into multiple agreements and contracts. In more recent work, Choi and Triantis have argued that complexity in modern contracts accounts for why parties complete commercial deals in stages.[63] In many commercial deals—mergers and acquisitions (M&A), debt financing, venture financing, and others—parties first enter into a preliminary agreement that outlines basic deal terms. After a time gap, parties follow up with a definitive contract. Choi and Triantis note that using this two-step process may help parties deal with the cognitive load of parsing many complex issues at once.[64] On a practical level, contracting in stages also gives parties time to engage subject matter experts to weigh in on particularly complex or technical parts of the deal; for

[60] *See* 17 C.F.R. §§ 230.430–33 (2011).

[61] McClane, *supra* note 18, at 28 ("Between 1996 and 2010, the average size of IPO prospectuses rose from just under 40,000 words to just over 100,000.").

[62] *Id.* at 13 (noting that the "'[P]lain English [R]ule' . . . mandated that certain parts of the prospectus—in particular the summary and risk factors—employ short sentences, concrete language, active voice, and avoid jargon and legalese").

[63] Choi & Triantis, *supra* note 2, at 1.

[64] *Id.* at 2 ("As Howard Raiffa framed it, there is a tradeoff between maximizing gains from trade by allowing log-rolling across a large number of issues, and the cognitive load of dealing with all at the same time.").

example, parties may use this time to engage accountants or architects.[65] Hwang has also noted that deal complexity drives M&A parties to design deals that span multiple agreements and contracts. In particular, modularizing technically complex parts of a deal into separate documents for specialist review helps make contracting more efficient and dealmaking more streamlined.[66]

In a world where contracting is complex, the classic rules/standards framework is an inadequate lens through which to understand contract design and interpretation. Difficulties arise in determining whether a provision is a rule or a standard, and contractual provisions do not always operate independent of one another. Recent deals between Pfizer and Wyeth, and between Cooper Tire and Apollo, illustrate this complexity and provide helpful insight into why evaluating the structure of a contract is necessary to understanding contract design, interpretation, and enforcement.

As a starting point, it is increasingly difficult to sort particular provisions into the tidy categories of rules or standards. Consider the material adverse change clause in a deal between Pfizer and Wyeth—one of the clauses that Choi and Triantis examine in their 2010 paper. In that clause, parties used vague terms, including one that allowed Pfizer to terminate the agreement if Wyeth had not "performed or complied in all material respects with all material agreements and covenants required under this Agreement at or prior to the Closing Date."[67] Choi and Triantis use this language to show that there is "persistent use of vague language."[68] In that passage, the terms "material agreements" and "all material respects," which are both common in acquisition agreements, are vague and open the door to significant differences in interpretation over what is considered "material." But even this clause—one of Choi and Triantis's paradigmatic examples of a vague,

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[65] *Id.* (noting that "[i]n many cases, the deferred issues are turned over to experts, such as architects, engineers, accountants, and, in particular, lawyers. While the motivation may be either the cognitive load or the need for experts, we will call this second category as being multi-stage contracting motivated by *complexity*").

[66] Hwang, *supra* note 21, at 1418–20 (noting that "[i]n complex M&A deals, specialist input is often needed when deals interact with regulation. In practice, firms that advise in these deals often employ attorneys who specialize in regulatory areas, and M&A lawyers regularly assign regulatory pieces to specialist attorneys . . . . Assigning pieces of a deal to specialists . . . increase[s] dealmaking efficiency: . . . Because a specialist lawyer does not need to spend time learning a complex area of regulation, the client receives expert advice on a technical issue without needing to pay the M&A lawyer to become an expert in that area").

[67] Choi & Triantis, *supra* note 28, at 864 (quoting a portion of the material adverse change clause from the Agreement and Plan of Merger Among Pfizer, Inc., Wagner Acquisition Corp., and Wyeth (Jan. 25, 2009), http://www.sec.gov/Archives/edgar/data/5187/000119312509014288/dex21.htm [https://perma.cc/DBW8-HXB4] [hereinafter Pfizer–Wyeth Agreement]).

[68] *Id.*

standard-like provision—has certain rule-like elements. For example, the term "Closing Date" is relatively rule-like—the parties define it in section 1.2 of the agreement as a date before July 31, 2009 at which the closing conditions have been met.[69] And the Closing Date definition makes reference to even more rule-like provisions, such as an exact time of day when closing occurs (10 a.m. New York City time).[70] In other words, while the material adverse change clause in the Pfizer–Wyeth Agreement appears, at first blush, to be a vague, standard-like provision, even that categorization is not entirely clear or accurate. Rather, in agreements where there are multiple and at least partially interdependent provisions, a provision that appears vague may, upon further investigation, also have rule-like elements.

Moreover, analyzing individual provisions—a study of contracts at the micro level—is insufficient to understanding the contract as a whole, on a macro level. In modern contracts, the core parts of a deal are increasingly expressed through multiple interrelated provisions. The Pfizer–Wyeth Agreement is a good example. The agreement's closing conditions—which parties must satisfy before the deal can close—require that certain representations and warranties true at the time of signing are also true at the time of closing. Those representations and warranties require the companies to vouch that they have not breached the representations in a way such that it causes a material adverse change. The material adverse change clause is carefully defined elsewhere and depends upon a series of additional subsidiary definitions.[71] When contract provisions are interconnected in this way, it is no longer sufficient to say that a particular provision—such as a material adverse change clause—is a "standard." Even if it was easy to classify a particular provision as a rule or a standard (which it is increasingly not), classifying a single provision without reference to interconnected ones provides limited, superficial information about what parties aimed to achieve through that drafting choice. In other words, as the core parts of the deal are increasingly memorialized in multiple related contract provisions, or even in multiple related documents, moving beyond a provision-by-provision study, and into a macro-level study of contract structure, is increasingly important.

Complications also arise when rules and standards are combined in complex agreements, as the recent *Cooper Tire* litigation in the Delaware Court of Chancery illustrates.[72] *Cooper Tire* required the court to interpret a buyer's best efforts obligation in light of other provisions within a merger

[69] Pfizer–Wyeth Agreement, *supra* note 67, at 1.

[70] *Id.*

[71] *Id.* at 76–77.

[72] *See supra* note 3 and accompanying text.

agreement, including a material adverse effect clause.[73] That interplay between the relevant provisions of the agreement makes the decision an insightful example for our purposes.

In 2013, two tire companies, Cooper and Apollo, signed an agreement under which Apollo would buy Cooper for $2.5 billion.[74] The transaction went awry when the labor union of one of Cooper's key Chinese subsidiaries went on strike,[75] effectively cutting off communications between Cooper and its Chinese subsidiary. At the same time, one of Cooper's U.S. labor unions obtained an arbitral order that "prevented Cooper from selling its plants prior to a renegotiation of the collective bargaining agreements."[76] Cooper negotiated a new agreement with the union, but Apollo refused to consent to Cooper's new union agreement.[77]

Cooper needed Apollo to agree to the new union agreement so that the parties could close the deal. If the deal was delayed, Cooper would need to deliver another round of quarterly financial statements to Apollo, as required by the merger agreement—and Cooper could not do so, because its Chinese subsidiary was withholding financial information.[78] Failure to deliver the financial statements would cause Cooper to breach the merger agreement. Cooper therefore filed an expedited complaint in the Delaware Court of Chancery seeking an injunction requiring Apollo to consent to the renegotiated collective bargaining agreement and to consummate the merger.[79]

That brief recitation of the facts leading up to the dispute already suggests the complexity of the contract at issue. It only grows more complicated from there. Unlike the classic *Frigaliment* case, *Cooper Tire* did not turn on the interpretation of a single word. Rather, *Cooper Tire* implicated a thickly interconnected web of contract provisions. Cooper argued that one section of the merger agreement obligated Apollo to use its reasonable best efforts to enter into a new collective bargaining agreement

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[73] *See, e.g.*, Lyons et al., *supra* note 4.

[74] Cooper Tire & Rubber Co. v. Apollo (Mauritius) Holdings Pvt. Ltd., No. 8980-VCG, 2014 WL 5654305, at *3 (Del. Ch. Oct. 31, 2014); *see also* David Gelles, *Cooper Tire Abandons Merger*, N.Y. TIMES (Dec. 30, 2013, 8:07 AM), https://dealbook.nytimes.com/2013/12/30/cooper-tire-abandons-merger [https://perma.cc/UU8S-WRU9].

[75] *Cooper Tire & Rubber Co.*, 2014 WL 5654305, at *5 (discussing Apollo's contentions that the Chairman of the Chinese subsidiary was the true root of the strike and that he threatened to fire anyone who did not participate in the strike).

[76] *Id.* at *6.

[77] *Id.* at *7.

[78] *Id.*

[79] *Id.*

in the most expeditious manner possible.[80] Apollo countered that a different section was the relevant provision, and required only reasonable best efforts to "obtain any consents," and that the collective bargaining agreement was not a consent. Apollo further argued that the provision did not require them to move in an expeditious manner.[81]

Apollo also counterclaimed that Cooper failed to satisfy some of the merger agreement's closing conditions. First, Apollo argued that Cooper had failed to operate in the ordinary course of business, which violated a closing condition.[82] Second, Apollo argued that another condition was unsatisfied: the twenty-day marketing period—during which investment banks can market the debt by which Apollo would finance the merger—had never commenced because Cooper had never provided Apollo with the information required for the marketing period to begin.[83] Third, Apollo alleged that a material adverse effect had occurred, relieving Apollo of its obligations to close the transaction.[84] As the court noted in its opinion, Apollo essentially argued that Cooper's failure to comply with a single section of the merger agreement would have "a cascade effect on other contractual provisions."[85] In the end, the court ruled that Apollo was not obligated to close the transaction.[86]

Cooper Tire shows how interconnected provisions in a complex contract make it difficult for deal parties to toggle easily between ex ante and ex post deal costs, as other scholars have described. The Apollo–Cooper agreement contained a number of rule-like provisions. The provision requiring a twenty-day marketing period for deal financing and the covenant detailing how Cooper would continue operating its business in the ordinary course of business are examples of rule-like provisions. The same agreement also had a number of standard-like terms. Other scholars have noted that "best efforts" and material adverse effect provisions are paradigmatic standard-like provisions, and the Apollo–Cooper agreement is riddled with them.

If the Apollo–Cooper agreement had a clean separation between provisions, such that each provision only addressed a single hazard, then parties could deploy rule-like and standard-like provisions to shift

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[80] *Id.* at *7–8.

[81] *Id.* at *7.

[82] *Id.* at *14.

[83] *Id.* at *10.

[84] *Id.* at *11.

[85] *Id.* at *13, *19 (explaining that section 5.1(a) imposes the requirement that Cooper shall conduct its business in the ordinary course of business and that requirement had a cascade effect on the material adverse effect and marketing period provisions).

[86] *Id.* at *20.

transaction costs. That is, the parties could use a rule-like provision to front-load contracting costs, or a standard-like provision to defer costs. But the Apollo–Cooper agreement lacked such a clean separation between provisions. Rather, rule-like terms were linked inextricably with standard-like terms, and the court had to interpret them collectively. That process of collective interpretation, which requires the court to ascertain the structure of the deal, is overlooked by existing scholarship.

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In summary, current scholarship lacks a framework for understanding how parties design complex contract structures. In particular, on a micro, single-provision level, the literature does a good job of explaining why parties choose to draft provisions the way they do—as rules or standards. But on a macro, whole-contract level, there is no similarly coherent explanation for how parties put contracts together. There is even less understanding of how and why parties piece together rules and standards to form a coherent contract or contractual system. Our theory—contractual structuralism—aims to shed light on these macro-level issues of contract drafting, and to suggest that the structural components of contract drafting are relevant to how contracts should be designed and interpreted.

II. CONTRACTUAL STRUCTURALISM

For decades, contracts scholars have made important progress answering two sets of questions: the ex ante, design-phase, rules/standards question, and the ex post, interpretation-phase, text/context question. But contract scholars have, thus far, overlooked the increasingly important fact that rules and standards are not used in isolation, but rather are combined in complex agreements. This raises the critical question: How do rules and standards behave when many of them are combined in a single contract or deal?

This Part develops a theory that answers that question. It explains how contract provisions interact with one another, and how the deal lawyers designing complex agreements use contractual structure to manage those interconnections. The collection of multiple rules and standards that parties combine into an agreement can be treated as a *system*—just like the systems that are found in other types of modern technology. On that basis, this Article uses concepts from design and engineering to study how combinations of terms in a contractual system interact with one another, and why it matters that they do.

The remainder of this Part proceeds as follows. Section A develops the theory of contractual structuralism. The theory is deceptively simple, yet surprisingly powerful. One way to understand its contribution is as a natural extension of the rules and standards scholarship. A central tenet of that research is that, when it comes to contract drafting, it is not just what you say, but how you say it: whether an idea is expressed as a rule or a standard affects how courts interpret and enforce that idea when a dispute arises. Contractual structuralism takes that argument one important step further: whether parties organize a contractual arrangement as a modular system or an integrated system is *also* important—parties can harness contract structure to draft better contracts, and courts can use structure to interpret contracts more accurately. Section B presents a few paradigmatic examples of modular, integrated, and hybrid structures in action. Deal designers use modular design, for example, in complex financial products, modern supply chains, securities offerings, and outsourcing relationships. Integrated design is also common: "relational contracting," a combination of formal and informal sanctions used in many innovation-driven markets, uses an integrated contractual structure. Of course, these paradigmatic models are just that: stylized forms used to illustrate concepts. Some transactions may use a hybrid of modular and integrated design, and M&A deals are such instances.

A. The Theory of Contractual Structuralism

The study of complex systems, although fairly new to the law, is in its seventh decade. In an early work, Nobel Laureate Herbert Simon argued that many natural and social systems are "nearly decomposable" systems[87]—i.e., they are complex systems comprised of subsystems that have "weak, but not negligible," interactions with each other.[88] Simon's conception of the nearly decomposable complex system raises the question of what exactly is the mechanism that holds subsystems together and makes them work as a coherent unit.

In design and engineering, there are, in essence, two approaches to managing the complexity that Professor Simon identified. The first is to reduce interdependence and rely on standardized procedures to achieve

[87] Such systems have two characteristics with respect to their evolution over time: first, in the short run, the "behavior of each of the component subsystems is approximately independent of the . . . behavior of the other components"; and second, in the long run, the "behavior of any one of the components depends in only an aggregate way on the behavior of the other components." Herbert A. Simon, *The Architecture of Complexity*, 106 PROC. AM. PHIL. SOC'Y 467, 474 (1962). The idea of modularity also arose separately in the architecture literature around this time.

[88] *Id.* at 474.

coordination. This approach, which is often referred to as modular system design, has begun attracting significant attention in legal scholarship.[89] Car tires, for example, can be considered part of a modular system. There are many different types of tires—all-weather tires, snow tires, or high-performance tires favored by the characters of the *Fast and Furious* franchise, just to name a few. While these tires are different in look and function, for the most part they can each be connected to any car through a standard connector, or "interface." Modularity is often attractive because it can reduce the costs of change within a complex system. If modules are cleanly separated from other parts of the system, system designers can make adjustments within a module without disturbing the rest of the system. A car tire, for example, can be patched or inflated without affecting the rest of the car. Modularity also means that designers can swap entire modules in and out, using the standard interface. The main cost of designing a modular system is ensuring that the interface between modules works well.

The second approach is integrated design, which maintains thick connections between different parts of the system. Of course, that thick integration is the very problem that modularity is designed to solve, so there must be an alternative approach. Integrated subsystems are only feasible if there are opportunities for extensive communication among the personnel managing the different subsystems, so that they can swiftly translate changes to one subsystem across the others.[90] A cookie recipe, for example, is integrated—ingredients depend on each other to taste right, and even the sequence by which they are introduced can matter. And, once mixed, the recipe cannot easily be undone without considerable skill—failing to properly chill the butter to be used in a cookie recipe, for example, will require careful adjustments to other parts of the recipe to achieve the desired outcome. Integrated design does not require investment in a standard interface. It does, however, require investment in the people who run the integrated system, who must understand not only their parts of the system, but also how changes to their parts will affect the rest of the system. This Part refers to the routines established to foster such communication as "flexible specialization," a term coined by Professors Michael Piore and Charles Sabel, and which has remained largely unexplored in the literature on contract design.[91]

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[89] In particular, Henry Smith's pioneering research in the field of property is often credited with bringing modularity theory to the law. Smith, *supra* note 22.

[90] *See generally* Kannan Srikanth & Phanish Puranam, *Integrating Distributed Work: Comparing Task Design, Communication, and Tacit Coordination Mechanisms*, 32 STRATEGIC MGMT. J. 849 (2011).

[91] *See* JAMES G. MARCH & HERBERT A. SIMON, ORGANIZATIONS (2d ed. 1993); MICHAEL J. PIORE & CHARLES F. SABEL, THE SECOND INDUSTRIAL DIVIDE: POSSIBILITIES FOR PROSPERITY 28–35 (1984).

In summary, modular design and integrated design sit on opposite ends of a continuum. A particular contract's structure can exist at one end or the other, or be situated somewhere along that continuum.

1. Modular System Design

One way to think of modular design is as a "divide and conquer" approach to managing a complex system. As a system becomes larger and increasingly complicated, altering one subsystem can lead to a cascade of changes across all of the other subsystems.[92] One solution is to "modularize" the structure of the system.[93] This strategy has three steps. First, the system is subdivided into many separate, self-contained modules. Second, somewhat counterintuitively, the system "hides" particular types of information within each module, so that other modules do not have direct access to that information. Finally, the system connects the modules back together into a larger system using a standard interface.[94]

Consider a classic example of modularity: the Lego system of interlocking blocks. Lego uses a standardized interface—the same type of "studs" on every block—to allow a dizzying array of plastic blocks to be connected to one another. All blocks, regardless of their type, can be connected and disconnected from one another, which allows them to be recombined in an equally large variety of arrangements. Modularity can also play a role as the complexity of a Lego system increases. For instance, complicated building sets, which in some cases can include over four

[92] Mid-twentieth century software programming provides what has become a canonical example. As software programs increased in size, the number of engineers included on the design team would grow in turn. This made the traditional method of ensuring interoperability between the code each engineer created—which involved, at the start of the day, each member of the team reviewing the code the other members produced the day before—unwieldy: the amount of code being produced led to the engineers spending a large amount of time every day digesting the entire team's output. Unless an organizational solution was devised, eventually the complexity of the software system would completely overwhelm the team's resources. *See* CARLISS Y. BALDWIN & KIM B. CLARK, DESIGN RULES: THE POWER OF MODULARITY 149–68 (2000).

[93] Modularity is the subject of a now vast interdisciplinary literature spanning the social and natural sciences. For overviews of the former, see *id.* For overviews of modularity in the natural sciences, see Werner Callebaut, *The Ubiquity of Modularity*, *in* MODULARITY: UNDERSTANDING THE DEVELOPMENT OF NATURAL COMPLEX SYSTEMS 3 (Werner Callebaut & Diego Rasskin-Gutman eds., 2005). Both Professors Simon and Alexander struck upon the basic idea in their independent explorations of complex systems. *See* CHRISTOPHER ALEXANDER, NOTES ON THE SYNTHESIS OF FORM (1964); Simon, *supra* note 87. Pivotal contributions since then include Eric von Hippel, *Task Partitioning: An Innovation Process Variable*, 19 RES. POL'Y 407 (1990); Ron Sanchez & Joseph T. Mahoney, *Modularity, Flexibility, and Knowledge Management in Product and Organizational Design*, 17 STRATEGIC MGMT. J. 63 (1996); and BALDWIN & CLARK, *supra* note 92.

[94] BALDWIN & CLARK, *supra* note 92, at 63–64. Professors Baldwin and Clark define an "interface" as a "preestablished way to resolve potential conflicts between interacting parts of a design. It is like a treaty between two or more subelements." *Id.* at 73.

thousand individual pieces,[95] are often built in modules, which are then combined.

In complex, real-world engineering projects, the logic works the same way: modularity allows designers to break up complex systems into smaller chunks and join the systems together later. Because the modules are separated from each other, designers can change a single module without disturbing the rest of the system. Moreover, so long as all of the individual modules feed into a common interface, modularity also means that work can proceed on each module concurrently.[96]

All of these attributes mean that modularity can successfully manage complexity that may otherwise overwhelm a system.[97] Examples of modularity strategies solving complexity problems include a variety of areas, from software to electronics to flat-packed furniture.[98] Subsequent research has extended modularity to organizational design[99] and to the structure of property law.[100]

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[95] *10188 Death Star*, BRICKIPEDIA, http://lego.wikia.com/wiki/10188_Death_Star [https://perma.cc/6U8X-CT6Y] (describing Lego's Death Star model, released in 2008, which consists of approximately 3800 Lego pieces); *75159 The Death Star*, BRICKIPEDIA, http://lego.wikia.com/wiki/75159_The_Death_Star [https://perma.cc/YJ3D-2LR3] (describing Lego's new Death Star model, released in 2016, which consists of 4016 Lego pieces).

[96] BALDWIN & CLARK, *supra* note 92, at 89–91.

[97] *Id.* at 90–91.

[98] A well-known example of modular product architecture is second-generation computer technology, such as IBM's System/360 family, which was developed in the 1960s. *See id.* at 194 (discussing the development of IBM's System/360 computers). The preceding computer systems IBM developed in the 1950s had precise instructions for executing desired calculations hard-wired into the computers' control units, leading to a high degree of interdependence between subsystems. That interdependence led to entirely different systems being designed for particular market niches. Customer complaints mounted, as they struggled with the lack of compatibility between the various computers offered. IBM responded with an innovation that, at the time, was unprecedented: requiring all of its next generation of computer processors to use the same set of instructions in a common control system. That standard interface allowed the development of the separate processors in the System/360 family to proceed in parallel, and resulted in a suite of different yet interoperable computers. As Baldwin and Clark note, modularity was a challenge to achieve because, while IBM successfully modulated hardware design, operating system software remained highly integrated. *Id.* at 169–94. For more detail on IBM's design process for System/360, see FREDRICK P. BROOKS, JR., THE MYTHICAL MAN-MONTH: ESSAYS ON SOFTWARE ENGINEERING (1975).

[99] *See generally* Richard N. Langlois, *Modularity in Technology and Organization*, 49 J. ECON. BEHAV. & ORG. 19 (2002) (applying modularity to the theory of the firm); Sanchez & Mahoney, *supra* note 93 (same); Timothy J. Sturgeon, *Modular Production Networks: A New American Model of Industrial Organization*, 11 INDUS. & CORP. CHANGE 451 (2002) (applying modularity to the structure of production networks).

[100] *See* Thomas W. Merrill & Henry E. Smith, *Optimal Standardization in the Law of Property: The* Numerus Clausus *Principle*, 110 YALE L.J. 1 (2000); Henry E. Smith, *Exclusion Versus Governance: Two Strategies for Delineating Property Rights*, 31 J. LEGAL STUD. S453 (2002).

Section B below discusses examples of modular design in contract law. It is worth noting here that this Article's contribution is not merely to describe modularity in contract law but to develop a holistic theory for understanding contractual *structure*. Modularity—which is on one extreme of the contract structure continuum—is one way to structure contracts, and just one piece of the theory of contractual structure.

In fact, prior research has already made some headway in identifying aspects of modularity in contract design. Professor Smith's extension of modularity theory from property law to the design of boilerplate provisions is the earliest articulation of the theory.[101] In a 2012 paper, Triantis built upon Smith's work, arguing that complex agreements exhibit a modular structure that document assembly software can exploit.[102] Machine learning can start with modules, and then tailor contracts by "adding, adjusting, swapping, and removing modules" according to clients' needs.[103] That argument echoed the 2011 empirical analysis of Professors Blair et al., who found evidence of modular design in outsourcing agreements.[104] Hwang's recent analysis of the structure of M&A deals provides additional support, suggesting that one of the benefits of modular contracting is that it allows specialists to work on separate, technical sections of the contract.[105]

Segmenting a complex system to allow for greater specialization within each module is another way that modularity can make system creation more efficient—but specialization also sows the seeds of modularity's limits. Modularity only works where there is a stable standardized connector. Moreover, once a system has committed to a particular connector, the costs of changing that interface increase as the size of the system increases.[106] That is, although modularity lowers the cost of changing within individual modules, changing the system's architecture may be costly.[107]

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[101] *See* Radin, *supra* note 22; Smith, *supra* note 22.

[102] Triantis, *supra* note 22.

[103] *Id.* at 191.

[104] Margaret M. Blair, Erin O'Hara O'Connor & Gregg Kirchhoefer, *Outsourcing, Modularity, and the Theory of the Firm*, 2011 BYU L. REV. 263.

[105] Hwang, *supra* note 21, at 1418–20 (describing the process by which M&A lawyers put complex, technical areas of the contract into "complex modules" so that specialist attorneys, such as employment attorneys or intellectual property attorneys, can work on those sections).

[106] BALDWIN & CLARK, *supra* note 92, at 205.

[107] Charles F. Sabel & Jonathan Zeitlin, *Neither Modularity nor Relational Contracting: Inter-Firm Collaboration in the New Economy*, 5 ENTERPRISE & SOC'Y 388, 398–99 (2004). Tellingly, Baldwin and Clark's description of IBM's modular System/360 design includes a recitation of the costly multi-year undertaking that was required to design the system's architecture. BALDWIN & CLARK, *supra* note 92.

Imagine, for instance, if Lego changed the sizes of their blocks' classic studs, which have been the same size since 1958.[108] A person who currently has a small Lego collection may not be bothered by the change. However, a person with a large Lego collection—who intends to continue buying Legos and mixing new pieces with old—might find the stud change enormously expensive and detrimental to their continued enjoyment of their Legos.

Because changing a modular system's interface is so expensive, modular systems are particularly susceptible to path dependency. A poorly designed modular system might very well stay that way, simply because it costs too much to fix the dysfunctional product architecture.[109] Modularity therefore presents a trade-off. On one hand, it is easier and cheaper to make incremental, intramodular changes within a modular system. On the other hand, broader, structural changes are challenging and expensive.[110]

2. Integrated System Design

Another way to design a complex system is to make it integrated.[111] Integration can be understood as the opposite of modularity—an integrated system has direct connections between the various constituent units.[112] Most often, separate components are purpose-built to work together, and a change in one part causes changes in another.

As one might suspect, when components are highly interconnected, the cascading effect of change can be hard to manage. To address that issue, integrated systems often rely upon a rich reservoir of system-specific information. Often, this is an individual or a team who understands the

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[108] *The LEGO Group History*, LEGO (Oct. 17, 2017), https://www.lego.com/en-us/aboutus/lego-group/the_lego_history [https://perma.cc/VV23-WFKK].

[109] Sabel & Zeitlin, *supra* note 107.

[110] *See* MARCH & SIMON, *supra* note 91, at 47–48.

[111] This strategy has long been recognized in business literature, but is overlooked in legal scholarship. *See* MARCH & SIMON, *supra* note 91; J. Douglas Orton & Karl E. Weick, *Loosely Coupled Systems: A Reconceptualization*, 15 ACAD. MGMT. REV. 203 (1990); Srikanth & Puranam, *supra* note 90. Professor Sabel provides perhaps the richest theory of this collaborative form of production. That theory was originally outlined in PIORE & SABEL, *supra* note 91. It was further developed in Charles F. Sabel, *Learning by Monitoring: The Institutions of Economic Development*, *in* THE HANDBOOK OF ECONOMIC SOCIOLOGY (Neil J. Smelser & Richard Swedberg eds., 1994); WORLD OF POSSIBILITIES: FLEXIBILITY AND MASS PRODUCTION IN WESTERN INDUSTRIALIZATION (Charles F. Sabel & Jonathan Zeitlin eds., 1997); Susan Helper, John Paul MacDuffie & Charles Sabel, *Pragmatic Collaborations: Advancing Knowledge While Controlling Opportunism*, 9 INDUS. & CORP. CHANGE 443 (2000); and Sabel & Zeitlin, *supra* note 107. Organizational routines have also been identified as a source of competitive advantage and have become the subject of a vast literature in corporate strategy. *See, e.g.*, RICHARD R. NELSON & SIDNEY G. WINTER, AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE (1982); David J. Teece, Gary Pisano & Amy Shuen, *Dynamic Capabilities and Strategic Management*, 18 STRATEGIC MGMT. J. 509 (1997); Sidney G. Winter, *The Satisficing Principle in Capability Learning*, 10 STRATEGIC MGMT. J. 981 (2000).

[112] *See* Srikanth & Puranam, *supra* note 90, at 850.

system's nooks and crannies, and who can rapidly shepherd and troubleshoot a change as it makes its way through the entire system.[113] Routines for sharing information and expertise among members of the team are often crucial for success.[114] With the costs of customization reduced, what is called "flexible specialization"—where designers can build specific expertise but also remain flexible as they are required to efficiently reconfigure assets—is possible.[115]

Examples of flexible specialization are found historically and in contemporary economic organization. Classic examples include nineteenth-century industrial districts, such as in Western Europe and the eastern United States, which produced a wide array of customized products using expert craftspeople and universal machinery.[116] A paradigmatic contemporary example is Apple's approach to the design of its electronics products. The iPhone, iPad, MacBook, and Mac desktop are integrated systems, where functions are thickly interconnected and discrete modular boundaries are

[113] Those routines are substantively simple in that they establish processes for identifying, investigating, and addressing dysfunction within a complex system, and those processes combine into an elegant framework for continuous improvement. As engineers trace errors to their root causes across the system and interact with other teams, the relentless search for improvement transforms otherwise tacit knowledge of the system's inner working into explicit information that is more easily communicated across the organization. Sabel & Zeitlin, *supra* note 107, at 398.

[114] *Id.*

[115] "Flexible specialization" is Professors Piore and Sabel's original term for the phenomenon. PIORE & SABEL, *supra* note 91.

[116] The concept of an industrial district finds its origins in Professor Marshall's work, well over 100 years ago. ALFRED MARSHALL, PRINCIPLES OF ECONOMICS 332–38 (8th ed. 1890). For more recent scholarship on the topic, see, for example, PIORE & SABEL, *supra* note 91; JOSH WHITFORD, THE NEW OLD ECONOMY: NETWORKS, INSTITUTIONS, AND THE ORGANIZATIONAL TRANSFORMATION OF AMERICAN MANUFACTURING 2–4 (2005) [hereinafter WHITFORD, THE NEW OLD ECONOMY]; Håkon With Andersen, *Producing Producers: Shippers, Shipyards and the Cooperative Infrastructure of the Norwegian Maritime Complex Since 1850*, *in* WORLD OF POSSIBILITIES, *supra* note 111, at 461; Rudolf Boch, *The Rise and Decline of Flexible Production: The Cutlery Industry in Solingen Since the Eighteenth Century*, *in* WORLD OF POSSIBILITIES, *supra* note 111, at 153; Bennett Harrison, *Industrial Districts: Old Wine in New Bottles?*, 26 REGIONAL STUD. 469 (1992); Carlo Poni, *Fashion as Flexible Production: The Strategies of the Lyons Silk Merchants in the Eighteenth Century*, *in* WORLD OF POSSIBILITIES, *supra* note 111, at 37 (Patrick Leech trans.); Charles F. Sabel, *Flexible Specialization and the Re-emergence of Regional Economies*, *in* REVERSING INDUSTRIAL DECLINE? INDUSTRIAL STRUCTURE AND POLICY IN BRITAIN AND HER COMPETITORS 17 (Paul Hirst & Jonathan Zeitlin eds., 1989); Béatrice Veyrassat, *Manufacturing Flexibility in Nineteenth-Century Switzerland: Social and Institutional Foundations of Decline and Revival in Calico-Printing and Watchmaking*, *in* WORLD OF POSSIBILITIES, *supra* note 111, at 188; Josh Whitford, *The Decline of a Model? Challenge and Response in the Italian Industrial Districts*, 30 ECON. & SOC'Y 38, 38–39 (2001); and Josh Whitford & Jonathan Zeitlin, *Governing Decentralized Production: Institutions, Public Policy, and the Prospects for Inter-Firm Cooperation in US Manufacturing*, 11 INDUSTRY & INNOVATION 11, 12 (2004).

rarely established.[117] This results in devices offering a material, although not inexhaustible, amount of customization, while also achieving a highly intuitive level of operation. Apple famously uses a vertically integrated design and production process to develop those products—a strategy that helps foster the expertise and organizational routines necessary for flexible specialization to thrive.[118]

Of course, flexible specialization comes with its own costs. It may not rely upon a standardized interface that is susceptible to path dependency, but flexible specialization does require a significant investment in human capital. That investment typically requires a strong coordinating institution, such as a dominant company or a trade association capable of subsidizing the regular outlays.[119] The historical record of withered industrial districts attests to the difficulty of maintaining those coordinating institutions, which are inherently prone to collective action problems.[120]

B. Contractual Structuralism in Complex Contracting

Interestingly, evidence shows that neither modular nor integrated design is a dominant model in the modern economy, and evidence of markets using both types abounds. This Section provides examples illustrating modular design, integrated design, and hybrid modular-integrated design. The breadth of the examples—from financial derivatives to manufacturing supply chains, from research and development collaborations to M&A agreements—are suggestive of contractual structuralism's sweep.

1. Modular Design: Derivatives, Debt, and Harley-Davidson's Supply Chain

Modularized contracts appear in a wide variety of contexts, including the derivatives market, long-term supply relationships, and the disclosures filed with the SEC in preparation for a securities offering. The modular nature of the contract can streamline the deal-making process and ensure a stable set of foundational expectations.

One of the most dramatic examples of a modular contract system is found in the market for over-the-counter (OTC) derivatives—a rather exotic species of contract that banks and companies use to hedge against a variety

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[117] CLAYTON M. CHRISTENSEN & MICHAEL E. RAYNOR, THE INNOVATOR'S SOLUTION 145 n.15 (2003) (discussing Apple's integrated products as a key element of its successful strategy for market disruption).

[118] *Vertical Integration Works for Apple—But It Won't for Everyone*, KNOWLEDGE @ WHARTON (Mar. 14, 2012), http://knowledge.wharton.upenn.edu/article/vertical-integration-works-for-apple-but-it-wont-for-everyone [https://perma.cc/UBM7-VN72].

[119] PIORE & SABEL, *supra* note 91, at 265.

[120] *Id.* at 286–95.

of financial risks.[121] For example, an interest rate swap is a contract by which the parties exchange one stream of interest payments, usually at a fixed rate, for another, usually at a variable rate.[122] Transactions in that market rely upon a standard master agreement designed by the International Swaps and Derivatives Association (ISDA).[123] The highly standardized Master Agreement acts as the interface for a variety of subsidiary agreements, which are modules. Through those subsidiary agreement modules, parties can and do customize their deal.[124]

Subsidiary agreement modules in the OTC context come in two varieties. Some modules allow the parties to tailor the contract to the specifics of their relationship by opting into predetermined terms. This is similar to selecting different packages of features when buying a car. For instance, a Schedule, which is an ancillary document that is attached to a contract, typically follows the ISDA Master Agreement. The Schedule outlines a few preset packages of terms. Parties can choose from those preset packages in the Schedule to modify the ISDA Master Agreement, by changing the governing law, for example.[125] In addition to the Schedule, parties may also adopt one of ISDA's other standard add-on agreements to amend or supplement the ISDA Master Agreement.[126]

These modules allow parties to tailor the ISDA Master Agreement on the margins without extensive bilateral negotiation costs and with the added benefit of complying with standard industry expectations.[127] In each of those

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[121] *Interest Rate Swaps*, PAC. INV. MGMT. CO. (2016), https://global.pimco.com/en-gbl/resources/education/understanding-interest-rate-swaps [https://perma.cc/BXC2-NKB8].

[122] *Id.*

[123] GuyLaine Charles, *The ISDA Master Agreement—Part I: Architecture, Risks and Compliance*, PRACTICAL COMPLIANCE & RISK MANAGEMENT FOR THE SECURITIES INDUSTRY, 2012, at 25–26. The ISDA Master Agreement was originally published in 1987 and subsequently revised in 1992 and 2002. Both the 1992 and 2002 versions of the Master Agreement are regularly used in the market. *Id.* at 26.

[124] Anna Gelpern, *The Importance of Being Standard*, *in* EUROPEAN CENT. BANK 2016 ANN. LEGAL DEP'T CONF. PROC. 23, 40 (2017), https://www.ecb.europa.eu/pub/pdf/other/escblegalconference2016_201702.en.pdf [https://perma.cc/8NRD-CDL7] ("[T]he parties are free to customize, so long as they do so in designated places—schedules and confirmations—which makes departures from the standard easier to spot and analyse . . . .").

[125] Charles, *supra* note 123, at 26.

[126] ISDA has a number of "tailoring" modules that are common. For example, parties may use a Credit Support Annex to provide and receive collateral. ISDA has also developed a number of Definitional Booklets containing terms standard to specific types of transactions, and a number of standardized confirmations for various transaction types. *Id.* at 27.

[127] *See Protocols Overview*, INT'L SWAPS & DERIVATIVES ASS'N (2018), http://www2.isda.org/functional-areas/protocol-management/about-isda-protocols [https://perma.cc/7VVT-2WE7]; Gelpern, *supra* note 124, at 40.

instances, the ISDA Master Agreement serves as the central interface, and parties can swap standardized terms in and out by adding modules.

A second form of modularity in the OTC context allows the parties to tailor the terms of specific transactions within their broader trading relationship. In this form of modularity, the ISDA Master Agreement is still the central hub of activity—but it is a hub that simply sets the ground rules of the relationship. The specifics of the relationship—such as price, notional amount, underlying asset, and payment dates of the derivatives being traded—are agreed to in a module: a "confirmation."[128] Separating those economic terms from the Master Agreement allows parties to adjust their exchanges in response to day-to-day market fluctuations without renegotiating all of the ground rules governing their relationship.

Modular contract systems are also common outside of the OTC derivatives market.[129] In many commercial relationships, the OTC market's hub-and-spoke structure is very common.

Harley-Davidson's arrangement with its suppliers is paradigmatic of many manufacturing relationships. Harley uses a standardized set of general terms and conditions, which apply to all purchases by Harley.[130] Those general terms and conditions specify core aspects of the exchange relationship, including offer and acceptance, inspections, pricing, warranties, and termination.[131] The general terms and conditions, however, are not the complete agreement between the parties. Instead, both parties plan to periodically enter into purchase orders that specify economic and delivery terms, such as delivery, performance, and price terms for each shipment.[132] In that respect, the general terms and conditions act as a standardized interface, and purchase order modules adjust the exchange relationship periodically.

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[128] Gelpern, *supra* note 124, at 27.

[129] There are additional examples to those discussed in the text. For instance, information technology outsourcing transactions also follow modular design principles, particularly if they are dealing with routine items. STUART D. LEVI, OUTSOURCING: A PRACTICAL GUIDE TO LAW AND BUSINESS 5–9 (2011). Typically, a party outsourcing certain functions to a vendor will negotiate a master outsourcing agreement, which acts as a standard interface similar to the ISDA Master Agreement, a shelf registration statement, or the Harley Terms and Conditions explored here. Pursuant to that master agreement, the parties will then execute separate "Statements of Work" for specific deliverables over the course of the relationship. *Id.* Statements of Work act like the Confirmations in the OTC derivatives market or purchase orders in the Harley example—they give the parties an opportunity to customize the terms of a specific transaction without renegotiating all of the terms governing the relationship. *Id.*

[130] *Purchase Order Terms and Conditions*, HARLEY-DAVIDSON SUPPLIER NETWORK, https://www.h-dsn.com/genbus/po_tracking.jsp [https://perma.cc/Y8Q5-38XA].

[131] *Id.*

[132] *Id.*

The securities offering context provides another ripe example. In general, when a company issues debt or equity, it must file detailed disclosures with the Securities and Exchange Commission, disclosing information about the company itself, and about the security being offered.[133] Because the disclosure process is both complex and technical, the process of preparing a disclosure can delay an offering by weeks or months.

Certain seasoned issuers, however, can speed up the process by modularizing their filings. In particular, seasoned issuers can file a shelf registration statement well before they plan to issue securities.[134] A shelf registration statement serves as the system's hub—in it, the issuer discloses information that it expects to file in any future securities offerings. For example, in almost any securities offering filing, an issuer with substantial international businesses might disclose that its business is subject to exchange rate risk.[135]

After the issuer has created a shelf registration statement, the issuer can file abbreviated disclosures for future securities offerings. In future securities offerings, the issuer can simply refer to and incorporate information from the shelf registration statement, without repeating that information. For example, in future filings, the issuer simply refers readers back to the shelf registration's disclosures about exchange rate risk. By putting a substantial amount of generic information into a standardized shelf registration statement, an issuer can substantially abbreviate the disclosure process for securities filed after the shelf registration.[136]

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[133] Joseph K. Leahy, *What Due Diligence Dilemma? Re-envisioning Underwriters' Continuous Due Diligence After* Worldcom, 30 CARDOZO L. REV. 2001, 2014–16 (2009) (describing the deregulation that led to the creation of the shelf registration process, and how the shelf registration process works).

[134] *Id.* at 2015–16 (describing the process by which seasoned issuers can shorten filing times "by filing the basic offering documents in advance").

[135] Coca-Cola's 2015 shelf registration statement is a particularly interesting example of modularity in securities offerings. Coca-Cola's shelf registration statement on Form S-3 notes only very basic information—for example, that the Form S-3 is a shelf registration statement, and that it may use information from the form in conjunction with future offerings of debt or equity. Instead of disclosing risk factors and other information, however, Coca-Cola's shelf registration statement simply refers readers back to its recent annual and periodic disclosures. *See* Coca Cola Co., Registration Statement (Form S-3) (Oct. 27, 2016), https://www.sec.gov/Archives/edgar/data/21344/000104746916016337/a2230045zs-3asr.htm#bg10501_table_of_contents [https://perma.cc/9YHD-2M3E].

[136] Leahy, *supra* note 133, at 2015–16 (describing how information is separated between a shelf registration statement and later "shelf takedown" offering).

2. Integrated Design: Innovation Networks and Original Equipment Manufacturing

Integrated design is on the opposite end of the spectrum from modular design. While modular systems have self-contained parts with weak connections between them, integrated systems have deeply interconnected subsystems. Relational contracting, which appears in many contexts, is a paradigmatic example of integrated contract design.[137] Relational contracts blend formal contract terms, which are enforceable in court, with informal constraints, such as reputational sanctions, to create strong relationships between parties. A prenuptial agreement, for example, blends formal terms (the prenuptial contract) with informal constraints (the informal norms partners develop when living together) to form a relationship that blends formal and informal elements. Informal constraints operate as an unquantifiable overlay to formal contracts, and are, by nature, difficult to cabin into discrete modules.[138]

In 1963, Professor Stewart Macauley observed that parties do not always govern their relationships by litigating disputes in court.[139] Rather, they govern their relationships to a significant extent through informal means: for example, through the threat of refusing to deal with an opportunistic party in the future, or the threat of harming the party's reputation in the industry.[140] Macauley's work served as the foundation from which the theory of relational contracting grew. In later work, other scholars found that many relationships that appear contractual actually rely on a

[137] The number of industries studied is vast with representative studies including AVNER GREIF, INSTITUTIONS AND THE PATH TO THE MODERN ECONOMY: LESSONS FROM MEDIEVAL TRADE (2006) (studying medieval Jewish trading networks); JANET TAI LANDA, ECONOMIC SUCCESS OF CHINESE MERCHANTS IN SOUTHEAST ASIA: IDENTITY, ETHNIC COOPERATION AND CONFLICT (2016) (analyzing Chinese merchant networks in southeast Asia); BARAK D. RICHMAN, STATELESS COMMERCE: THE DIAMOND NETWORK AND THE PERSISTENCE OF RELATIONAL EXCHANGE (2017) (analyzing wholesale diamond merchants); Lisa Bernstein, *Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry*, 21 J. LEGAL STUD. 115, 116 (1992) (studying wholesale diamond merchants); Lisa Bernstein, *Private Commercial Law in the Cotton Industry: Creating Cooperation Through Rules, Norms, and Institutions*, 99 MICH. L. REV. 1724, 1725 (2001) (analyzing the cotton industry); and Janet T. Landa, *A Theory of the Ethnically Homogenous Middleman Group: An Institutional Alternative to Contract Law*, 10 J. LEGAL STUD. 349, 350 (1981) (analyzing Chinese merchant networks in southeast Asia).

[138] *See* Jennejohn, *supra* note 19.

[139] Stewart Macaulay, *Non-Contractual Relations in Business: A Preliminary Study*, 28 AM. SOC. REV. 55, 55 (1963) (noting that businesspeople often do not use legal means to settle disputes).

[140] *Id.* at 61–62.

broader social context to inform and enforce the parties' contractual performance obligations.[141]

Consider employment relationships. Although employment is a contractual relationship, law student Jane might relinquish other job offers once she has orally agreed to work for a particular law firm. The firm, too, might turn down other applicants once Jane orally accepts the job—even though the firm and Jane have not yet signed an employment contract. In those cases, Jane and the law firm are relying on promises that are not yet enforceable. Why would they do that? Although employment relationships are typically contracts, the strength of the relationship between the firm and Jane relies on social context. If the firm reneges on its offer, Jane might tell her classmates or her school's career office, thereby harming the firm's reputation. If Jane reneges, the firm can do the same. And, of course, the reason that the parties feel comfortable taking the actions that they do—Jane turning down other offers, and the firm turning down other candidates—is that they are operating within a social context where these kinds of informal but binding arrangements are common.

From the perspective of relational contracting, formal contract law is not the only way to create relationship infrastructure. Rather, social norms that define informal sanctions, such as a refusal to deal or a reputational hit, also play an important role in creating infrastructure.[142]

Superficially, the interactions between formal and informal contracts appear quite simple. Early research took the position that formal and informal agreements were substitutes for one another.[143] That research argued that contracts can become self-enforcing by virtue of informal constraints—in other words, simply writing down a contract, even if there is no threat of enforcement by a third party, makes parties perform the contract.[144] A natural extension, then, was that creating a formal contract may crowd out those efficient social norms. That is, entering into formal agreements may signal distrust of one's partner—and an informal, trust-

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[141] *See* Ian R. Macneil, *Contracts: Adjustment of Long-Term Economic Relations Under Classical, Neoclassical, and Relational Contract Law*, 72 NW. U. L. REV. 854, 865–80 (1978); Ian R. Macneil, *Relational Contract: What We Do and Do Not Know*, 1985 WIS. L. REV. 483, 484.

[142] For useful overviews of how informal governance operates and its role in modern and pre-modern economies, see generally CUSTOMARY LAW AND ECONOMICS (Lisa Bernstein & Francesco Parisi, eds., 2014), and ERIC A. POSNER, LAW & SOCIAL NORMS (2002).

[143] *See, e.g.*, Uri Gneezy & Aldo Rustichini, *A Fine Is a Price*, 29 J. LEGAL STUD. 1, 4 (2000); Rachel E. Kranton & Anand V. Swamy, *The Hazards of Piecemeal Reform: British Civil Courts and the Credit Market in Colonial India*, 58 J. DEV. ECON. 1, 1 (1999); Michael Trebilcock & Jing Leng, *The Role of Formal Contract Law and Enforcement in Economic Development*, 92 VA. L. REV. 1517, 1518 (2006).

[144] *See* Trebilcock & Leng, *supra* note 143, at 1539.

based relationship may actually be the best way to ensure performance at low cost.[145]

Formal enforcement may also interfere with (better) informal governance because some interpretive frameworks insist on considering context, but do a poor job of understanding it. The Uniform Commercial Code and Restatement (Second) of Contracts are prime examples. Both have adopted contextualist views, and encourage courts to consider extrinsic evidence, such as trade usage, course of dealing, and course of performance.[146] At the same time, both are prone to misread informal commercial practice.[147] As a result, some courts are poor context interpreters—but do it anyway. This result has led some commentators to argue that textualism is more appropriate for resolving disputes arising from relational contracts—it at least stays out of trying to interpret informal practices that it does not understand.[148]

When formal and informal contracts substitute for one another, they are implicitly modular. That is, they act like two branches of a flow chart: each is a valid way to proceed, but they cannot exist at the same time, and they cannot interact well together. Critiques of the Uniform Commercial Code's

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[145] Jeffrey H. Dyer & Harbir Singh, *The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage*, 23 ACAD. MGMT. REV. 660, 671 (1998); Ranjay Gulati, *Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances*, 38 ACAD. MGMT. J. 85, 105–07 (1995).

[146] *See* U.C.C. § 1-303 (AM. LAW INST. & UNIF. LAW COMM'N 2017–2018); RESTATEMENT (SECOND) OF CONTRACTS §§ 221–23 (AM. LAW INST. 1981).

[147] Lisa Bernstein, *Merchant Law in a Merchant Court: Rethinking the Code's Search for Immanent Business Norms*, 144 U. PA. L. REV. 1765, 1783–87 (1996).

[148] Schwartz & Scott, *Limits of Contract Law*, *supra* note 12. Professor Benjamin Klein notes, however, that self-enforcement does not necessarily mean that formal contract terms are irrelevant. Klein argues that transacting parties use formal contracts in tandem with informal constraints to police hold-up problems. According to Klein, transacting parties write their formal contracts to address only hold-up problems of such magnitude that they fall outside of a "self-enforcing range" policed via informal constraints. The parties' respective amounts of social capital determine that "self-enforcement range" in an exchange. Formal contract terms then expressly set the bounds of that range, and they are used sparingly because formal obligations, which are unavoidably incomplete, present opportunities themselves for hold-up—i.e., via litigation of ambiguous terms. Informal enforcement is understood to not present such opportunities for holdup through litigation, and so, if social norms are sufficiently potent, Klein presumes that parties will opt for informal governance instead of formal. In that respect, formal and informal contracts are used in tandem, but they are ultimately substitutes for one another—one does not deploy formal governance where informal will suffice. Benjamin Klein, *Why Hold-Ups Occur: The Self-Enforcing Range of Contractual Relationships*, 34 ECON. INQUIRY 444, 455–60 (1996). Empirical studies have found evidence of parties eschewing formal agreements in favor of informal governance, providing support for the substitutionary thesis. *See* David T. Robinson & Toby E. Stuart, *Financial Contracting in Biotech Strategic Alliances*, 50 J.L. & ECON. 559, 561 (2007); David T. Robinson & Toby E. Stuart, *Network Effects in the Governance of Strategic Alliances*, 23 J.L. ECON. & ORG. 242, 270 (2006).

and Second Restatement's brand of contextualism[149] can then be understood as an effort to maintain separation between the two distinct modules of formality and informality. If there is a problem in the binary system of contract enforcement, it is that the boundary between the two modules is not rigorously enough policed, and muddling the two creates odd results.

In recent years, researchers have moved away from this superficial understanding of the relationship between formal and informal contracts and have begun articulating an alternative theory: that formal and informal contracts are complements to, rather than substitutes for, one another.[150] Although theories of complementarity in relational contracting differ in their particulars, they all argue that formal agreements play a role in fostering the information exchanges upon which informal governance relies.[151] The starting point for these theories is a high uncertainty exchange environment, such as research and development collaborations in technology.[152] In those markets, it is difficult for parties to foresee future events and set their performance obligations accordingly.[153] It is also often difficult, however, for parties to rely upon stable social norms in these dynamic and heterogeneous

[149] *See* Bernstein, *supra* note 147; Schwartz & Scott, *Limits of Contract Law*, *supra* note 12.

[150] This argument has its roots in early work by Professors Goetz and Scott, who envision certain key formal contract terms, such as best efforts provisions, as being tools for relational contracting. *See generally* Charles J. Goetz & Robert E. Scott, *Principles of Relational Contracts*, 67 VA. L. REV. 1089 (1981). It is also founded on theoretical work by Professors Baker, Gibbons, and Murphy, which demonstrates that, in certain situations, an optimal incentive contract includes (1) an objective performance measure (which is necessarily imperfect), and (2) an informal understanding regarding how that objective performance measure is rewarded, which serves to moderate the distortions arising from the imperfections in the formal agreement. *See generally* George Baker, Robert Gibbons & Kevin J. Murphy, *Subjective Performance Measures in Optimal Incentive Contracts*, 109 Q.J. ECON. 1125 (1994). Subsequent empirical studies have found preliminary evidence supporting the complementarity thesis. *See generally* Laura Poppo & Todd Zenger, *Do Formal Contracts and Relational Governance Function as Substitutes or Complements?*, 23 STRATEGIC MGMT. J. 707 (2002).

[151] *See, e.g.*, Lisa Bernstein, *Beyond Relational Contracts: Social Capital and Network Governance in Procurement Contracts*, 7 J. LEGAL ANALYSIS 561, 562 (2015) (discussing how midwestern original equipment manufacturers use a combination of formal contracts, intra-firm hierarchy, and relational contracting to create long-term relationships); Ronald J. Gilson, Charles F. Sabel & Robert E. Scott, *Braiding: The Interaction of Formal and Informal Contracting in Theory, Practice, and Doctrine*, 110 COLUM. L. REV. 1377 (2010) [hereinafter Gilson, Sabel & Scott, *Braiding*]; Gilson, Sabel & Scott, *supra* note 12; Gillian K. Hadfield & Iva Bozovic, *Scaffolding: Using Formal Contracts to Build Informal Relations in Support of Innovation*, 2016 WIS. L. REV. 981, 981 (describing the process by which companies used formal contracts, combined with relational tools, to motivate performance with external contracting parties); Jennejohn, *supra* note 19.

[152] *See generally, e.g.*, Hadfield & Bozovic, *supra* note 151; Gilson, Sabel & Scott, *supra* note 12; Gilson, Sabel & Scott, *Braiding*, *supra* note 151; Matthew C. Jennejohn, *Collaboration, Innovation, and Contract Design*, 14 STAN. J.L. BUS. & FIN. 83 (2008).

[153] *See* Jennejohn, *supra* note 152.

markets.[154] Instead of choosing formal or informal contracts exclusively, then, parties design ingenious formal contracts that essentially artificially manufacture the conditions for informal governance to work. Professors Ronald Gilson, Charles Sabel, and Robert Scott's theory of contractual braiding is one leading theory.[155] In high-uncertainty environments, parties sometimes do not make investments in their relationship together, for fear that the other party will not do the same. Informal contracts usually help motivate parties to make investments. Braiding theory argues that specialized contract terms can help do some of the work usually done through informal contracts by requiring parties to invest in relationship-specific information.[156] Specialized terms also create a "referee" mechanism that ensures both parties make symmetric investments in information over the course of the relationship.[157] As a consequence, thick and inseparable connections—the "braid," to use Gilson et al.'s metaphor—between formal and informal contracts arise.[158]

Professor Lisa Bernstein's recent study of supply chains contracts is an example of the integrated nature of relational contracts. Using original data collected by Professor Josh Whitford for his impressive analysis of collaborative production relationships in the industrial Midwest,[159] Bernstein carefully traces how original equipment manufacturers use formal and informal contracts with their suppliers.[160] The parties use a rich collection of formal agreements, including master agreements and purchase orders, for

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[154] Gilson, Sabel & Scott, *supra* note 12; Gilson, Sabel & Scott, *Braiding*, *supra* note 151. *But see* Bernstein, *supra* note 151 (presenting a different interpretation of the governance mechanisms at work in the case studies Gilson, Sabel, and Scott discuss).

[155] Gilson, Sabel & Scott, *Braiding*, *supra* note 151, at 1377 (setting forth the theory of braiding, in which contracts "intertwine formal and informal mechanisms" to allow both to respond cooperatively).

[156] *Id.* at 1388.

[157] *Id.* at 1403; *see also* Hadfield & Bozovic, *supra* note 151, at 988 (arguing that formal contracts provide the "scaffolding" for informal governance by defining breach in situations where social norms are indeterminate); Bernstein, *supra* note 151, at 599–603 (arguing that formal agreements play a role in fostering bilateral reputational constraints).

[158] Gilson, Sabel & Scott, *Braiding*, *supra* note 151, at 1377. The depth of the interconnections can be extensive when one considers that many high-technology collaborations face multiple exchange hazards. In an environment of multidimensional exchange hazards, formal and informal governance mechanisms can become "multivalent," in the sense that they interact simultaneously with more than one type of hazard. Jennejohn, *supra* note 19. By design, that braid extends to all areas of the contractual relationship. Professor Bernstein makes this point in her study of network governance in supply chain relationships, where she notes that informal governance's "disciplining effect can extend to all of the commitments made in a contracting relationship, not just those whose violation would give the breached-against party a credible threat to sue." Bernstein, *supra* note 151, at 603.

[159] WHITFORD, *supra* note 116.

[160] Bernstein, *supra* note 151.

commodity pieces.[161] However, when suppliers are producing customized components, the parties use additional formal mechanisms. For example, the original equipment manufacturers provide regular formal training programs for suppliers and implement quality control systems and assessments to monitor improvement.[162] Those additional mechanisms transform what might otherwise be a modular arrangement into an integrated contractual system, where the parties use formal contracts, informal training, and assessment to promote innovation and quality improvements. These tools affect all aspects of the production relationship, from research and development to manufacturing and marketing, and in turn intertwine with the master agreement and individual purchase orders.

Bernstein found that relational contracts are also integrated in another way: formal agreements help clarify the differences between innocent mistakes and opportunistic behavior.[163] This clarification, in turn, helps parties develop bilateral reputational constraints—trust, in other words—with each other. The dynamic Bernstein identifies is similar in spirit to braiding. However, Bernstein adds an additional layer of complexity by observing that the parties' position with the network of suppliers provides an additional source of constraint that complements bilateral informal constraints.[164] In other words, the extent of integration in relational contracting becomes even deeper in Bernstein's analysis. In other examples of relational contracting, parties combine formal contracts and informal sanctions. Bernstein expands those interactions to three institutions: formal contracts, informal sanctions, and what she refers to as "network governance."[165] Bernstein notes that informal governance's effect can "extend to all of the commitments made in a contracting relationship, not just [certain major ones]."[166] In other words, the interaction between formal and informal mechanisms in relational contracting is holistic, and dividing one from the other is difficult, if not impossible.

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[161] *Id.* at 566 (describing the supplier relationships, which are governed by a combination of master supply agreements and purchase orders. Master supply agreements "omit a quantity provision. They are, therefore, legally unenforceable until a purchase order specifying a quantity is sent and accepted").

[162] *Id.* at 574 (noting that original equipment manufacturers "seek to exercise control and oversight over their suppliers' labor force in many ways. For example, they require particular supplier employees to participate in buyer- (or in some instances supplier-) run training programs").

[163] *Id.* at 578.

[164] *Id.* at 609 (noting that "the network structure of a market, the firms' places in that structure, and the local network around each firm all affect the self-enforcing range of the parties' contractual commitments—potentially broadening it well beyond the bilaterally generated self-enforcing range as traditionally defined").

[165] *Id.* at 599.

[166] *Id.* at 603.

The picture emerging from the research on complementarity in relational contracting is of highly integrated contractual systems. Whereas the substitutionary thesis sees a clean separation between formal and informal contracting, the complementarity thesis advanced in recent research argues that formal and informal governance are densely interwoven.

3. Hybrid Design: The Modern M&A Deal

Modern M&A deals blend aspects of modularity and integration to create a fascinating hybrid. Consider the central contract of an M&A deal: the acquisition agreement. An acquisition agreement is, in many ways, highly integrated—many individual provisions are highly connected to each other. The Pfizer–Wyeth material adverse change clause, for example, is dense with connections to other provisions in the contract, and to defined terms within the contract. Those other provisions and defined terms are, in turn, also highly connected to other provisions and defined terms.[167]

Other provisions within the acquisition agreement are also highly integrated—even those provisions that *appear* modular are often integrated. Representations and warranties are drafted using a modular process but are actually highly integrated with the rest of the agreement. In an M&A agreement, each party makes representations and warranties about themselves—for example, that it has right and title to all intellectual property relevant to the deal.[168] In terms of the workflow and the drafting process, representations and warranties appear modular. Because representations and warranties usually pertain to some technical subject matter, such as intellectual property, tax, or antitrust, M&A attorneys most often ask specialist attorneys to draft them, after which the M&A attorney adds them back into the acquisition agreement.[169] However, despite this modular workflow—cutting out a piece of the contract, working on it in isolation from the rest of the contract, then reintegrating it into the contract—representations and warranties are not modular provisions. Specialists do not draft their sections without consulting the rest of the contract—rather, they ensure that the provisions conform with the rest of the contract's defined terms, cross-references, and style. Representations and warranties are, thus, drafted using a modular workflow style, but the end result is one that is highly integrated with other parts of the agreement.[170]

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[167] *See* discussion of Pfizer–Wyeth deal, *supra* Section I.C.

[168] Hwang, *supra* note 21, at 1418–19 (describing the intellectual property representation and warranty in a recent acquisition agreement).

[169] *Id.*

[170] *Id.* (describing the process by which specialist-driven representations and warranties are drafted, and how they interact with other parts of the agreement).

While many provisions within a particular agreement are highly integrated, the M&A *deal* as a whole is often modular. In most modern M&A deals, parties use multiple agreements to document the deal.[171] At the center is the central acquisition agreement.[172] A variety of related and necessary ancillary agreements support and supplement the central acquisition agreement. Those ancillary agreements might include employment agreements for key employees,[173] leases that make tax-advantageous real estate investment trust separations operationally seamless,[174] and escrow agreements that involve relevant parties to lubricate the deal process.[175] Like in the OTC derivatives context, the Harley manufacturing context, or the securities shelf registration statement context, it is easiest to think of the central acquisition agreement as a hub and ancillary agreement as nodes.

These nodes are, in many ways, self-contained and stand-alone in both substance and structure. Consider a key employee agreement that is executed in conjunction with an M&A deal. The purpose of the agreement is to ensure that a particular employee who is central to the target company's business agrees to work for the acquiring company for some time, at a certain compensation.[176] The key employee agreement is a contract, separate and apart from the acquisition agreement: it has offer, acceptance, and consideration. It pertains to a particular subject matter—the employment of employee Jane, a key employee of Target Corp., by acquiring company Buyer Corp. Although the employment agreement only exists because Target Corp. is being purchased by Buyer Corp., the parties signing the employment agreement are different from those signing the acquisition agreement: Target Corp. is unlikely to be involved in Jane's employment agreement with Buyer Corp. This difference in parties further differentiates the employment agreement from the acquisition agreement.

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[171] *Id.* at 1410 (noting that many bargains are "unbundled bargains [that] cohere around a central agreement, but are also governed by many side agreements that, together with the central agreement, form a whole deal," and describing M&A deals as ones where "sophisticated commercial parties represented by competent advisors choose how to allocate deal provisions between an acquisition agreement and ancillary agreements").

[172] *Id.*

[173] *Id.* at 1415 (describing the use of key employee agreements in certain M&A deals); *see also* John F. Coyle & Gregg D. Polsky, *Acqui-Hiring*, 63 DUKE L.J. 281, 293–301 (2013) (describing the process by which Silicon Valley technology companies acquired talented key employees by purchasing the entire company).

[174] Hwang, *supra* note 21, at 1415–16 (describing the sale-leaseback process for real estate investment trust separations).

[175] *Id.* at 1414–15 (describing the use of an escrow agreement to hold part of the purchase price in escrow).

[176] *Id.* at 1419.

Moreover, even as a workflow matter, different attorneys work on the employment agreement and the acquisition agreement. An employment lawyer will draft and negotiate the employment agreement, while an M&A lawyer will likely take the lead on the acquisition agreement.[177] This is true of many ancillary agreements involving technical, specialized areas of law: tax agreements will likely be stand-alone and drafted by tax counsel (and involve a subset of the acquisition agreement's parties), and intellectual property assignment agreements will likely be the purview of intellectual property counsel (and relevant parties). Perhaps unintuitively, these simple agreements are also susceptible to being modularized.[178] In particular, in large M&A teams, the senior attorney in charge of the deal often assigns simpler, more boilerplate agreements, such as the escrow agreement, to junior associates. This assignment system reduces costs for the client, because junior associates' work is billed at a lower rate.[179]

Although ancillary agreements are very self-contained, they have enough connection to other parts of the main deal that they are modules of the main M&A deal, rather than entirely different deals of their own. Ancillary agreements often share definitions with the acquisition agreement, or otherwise refer to the acquisition agreement as a place to look for particular provision clarifications.[180] It is this small degree of cross-referencing to the acquisition agreement (or other deal contracts) that makes M&A ancillary agreements hybrid agreements that fall along the modular–integrated spectrum.[181]

Many ancillary agreements are fundamentally connected with acquisition agreements, even if, as a drafting matter, there are few cross-references. Many of these agreements simply would not exist but for the acquisition agreement. A transition services agreement is a good example: a buyer may decide that it needs transaction support from the seller to make the deal worthwhile—and the nature of those transition services is memorialized in a transition services agreement.[182] Although the transition

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[177] *Id.*

[178] *Id.* at 1423–26 (discussing simple modules of the deal that contain boilerplate or that are simple to draft).

[179] *See id.* at 1417–26 (distinguishing between "complex modules," which are separated so they can be drafted by specialist attorneys with expertise in technical areas of the law, and "simple modules," which are simple, boilerplates parts of the deal that are often assigned to junior associates in order to economize on lawyer time and fees).

[180] *Id.* at 1419 ("[E]mployment agreements may refer to the acquisition agreement . . . ." (emphasis omitted)).

[181] Triantis notes that "[c]ontracts are modular to the degree that their parts can be drafted and read without adjustment or reference to other parts of the contract." Triantis, *supra* note 22, at 191.

[182] Hwang, *supra* note 21, at 1415.

services agreement is a stand-alone agreement that can (largely) be the M&A deal, parties would not enter into it without also executing a related acquisition agreement that makes the transition services necessary. Another pertinent example of this dynamic between ancillary and acquisition agreements is the lease that parties sign in conjunction with a real estate investment trust separation deal. In these separations, a company with substantial real estate assets—a hotel chain, for example—cleaves itself in two: an operations company and a property holding company. The hotel chain then sells the property holding company to a real estate investment trust—a type of tax-advantageous entity.[183] The real estate investment trust then leases the same exact property back to the hotel chain's operating company. The lease is absolutely essential to the deal—without it, the hotel chain would end up owning an operations company, but not own any real estate in which to have those operations. But the lease also would not exist without the underlying deal. Thus, the lease is self-contained as a module, but also has important, essential connections to the rest of the deal.[184]

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While this Part has discussed the paradigmatic examples of modular, integrated, and hybrid contract design, it takes no normative position on which of these designs is best. Scholars in the rules/standards space have argued compellingly that there is a place for rules and there is a place for standards—they serve different purposes, and contract drafters can rationally use either, or even both.[185] This Article takes that approach to understanding modular, integrated, or hybrid contract design: there is a place for each, they serve different purposes, and parties can rationally choose different designs (even within the same document) depending on their needs. While plenty of work remains to be done to parse the pros and cons of contract structures[186] and to figure out when to use each, this Article sets that question aside for future study. Instead, it has a rather more modest goal: to suggest that, in

[183] *Id.*

[184] It is worth noting that in these separation agreements, the parties actually enter into a *master* lease agreement that sets forth the majority of the deal terms—but those deal terms are modified over time with a series of amendments in which they might change, for instance, the price of the rental. In that way, the master lease agreement itself, along with its amendments, is a good example of modular design. Structurally, master lease agreements (and their amendments) bear strong similarity to master supply agreements (and their purchase orders). *See supra* Section II.B.1.

[185] *See* Choi & Triantis, *supra* note 28, at 852 (discussing the rules–standards dichotomy with regard to the timing of contracting costs); Scott & Triantis, *supra* note 14, at 839–48 (noting that parties can use rules or standards to lower contracting costs).

[186] Other scholars have discussed, to some extent, the benefits of modularity and integration. *See* Hwang, *supra* note 21; Triantis, *supra* note 22.

addition to diving into a provision-by-provision analysis of whether a particular provision is a rule or a standard, it is also important to understand, on a systemic level, whether a contract is modular, integrated, or a hybrid. That understanding will help to inform interpretation (and design)—the importance of which is discussed in Part III.

III. IMPLICATIONS FOR CONTRACT THEORY AND DEAL DESIGN

Deal structure has important implications for how complex agreements are interpreted. The most important, and perhaps longest-debated, issue in contract interpretation is the parol evidence debate: whether courts should use extrinsic evidence to interpret ambiguous contracts. Recent work has argued that courts should toggle between textualist and contextualist interpretive approaches depending on whether parties use rule-like or standard-like terms. That research, however, overlooks the important role deal structure plays in interpretation. Parties can use rules and standards to shift transaction costs between the ex ante design stage and the ex post enforcement stage, but their ability to do so depends on how a complex contract is structured. In complex contractual systems, it is more difficult to shift transaction costs between the front and back ends because rules and standards are deeply intertwined. Invocation of a rule often necessarily implicates a related standard, and vice versa.

This Part discusses the implications of recognizing that contractual systems are complex and often interconnected. Section A shows how three key doctrines—interpretive consistency, indefiniteness, and the law of severability—provide courts with the tools they need to analyze contractual structure. Section B shows how sophisticated parties are already using contract structure to meet their needs. Rather than relying entirely upon a court's ability to apply the default doctrines discussed in Section A, sophisticated parties often privately order dispute resolution in a way that reflects the underlying structure of the agreement. This Section uses examples from M&A and biotechnology collaborations to show how parties design dispute resolution provisions in their agreements that modularize the enforcement process. Those provisions provide that a specialist arbitrator will deal with more technical disputes arising from a discrete module within the agreement, while generalist courts will deal with disputes involving integrated collections of provisions that require analyzing a wider range of legal issues. This privately ordered modularization of dispute resolution lends support to the argument that deal structure is a key element of contract enforcement.

A. Amending the Traditional Canon of Contract Interpretation

Contractual structure is an integral component of contract interpretation and should play an important role in any interpretive analysis. Recognizing the role structure plays in interpretation helps reinvigorate the debate over text versus context, because a contract's structure can dictate the extent to which a court considers extrinsic evidence of the parties' intent. Courts already employ a variety of doctrines that rely on analyzing a contract's structure, and a more systematic and purposeful inquiry into the structure of a contract can help perfect judicial interpretation of contractual provisions.

The principal starting point in contract interpretation is to ascertain the intent of the parties.[187] The debate between textualist and contextualist modes of contract interpretation centers on what evidence a court considers to ascertain intent. Textualists argue that courts should look only at evidence within the four corners of the contract.[188] Contextualists argue that courts should look to extrinsic evidence, such as course of performance, course of dealing, or trade usage, to determine meaning.[189] Another way to think about textualism and contextualism is that textualism restricts the information courts consider, while contextualism does just the opposite.[190]

Much of the debate between textualists and contextualists turns on how well one believes courts can actually read commercial agreements. Arguments in this debate tend to be unwavering in nature—each side makes absolute claims about judges' ability to understand contractual language.[191]

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[187] Greenfield v. Philles Records, Inc., 780 N.E.2d 166, 170 (N.Y. 2002) (noting that "[t]he fundamental, neutral precept of contract interpretation is that agreements are construed in accord with the parties' intent").

[188] *See supra* Section I.B.

[189] *See supra* Section I.B.

[190] Although pure versions of either side of the debate have been advanced and, at times, pursued in judicial opinions, the primary approach in the United States is a blended two-step interpretive process, by which courts first determine whether the written agreement at issue is ambiguous. If no ambiguity exists, then the court does not consult contractual context and relies only upon a reading of the agreement's text. If, however, an ambiguity is found in the written agreement, then the court proceeds to the second step, which is to consult contextual evidence of the parties' intentions. *See, e.g.*, Klein v. Empire Blue Cross & Blue Shield, 569 N.Y.S.2d 838, 842 (App. Div. 1991) ("If [contract language] is found to be ambiguous, then extrinsic evidence is admissible to resolve the ambiguity."); W.W.W. Assocs., Inc. v. Giancontieri, 566 N.E.2d 639, 642 (N.Y. 1990) (holding that the court will not look at extrinsic evidence because the provision in the contract is unambiguous); Hartford Acc. & Indem. Co. v. Wesolowski, 305 N.E.2d 907, 909 (N.Y. 1973) (stating that, if there is ambiguity, the court will look to extrinsic evidence).

[191] *See, e.g.*, *supra* note 13 and accompanying text.

As such, the debate has largely stagnated, and leading commentators have begun calling for a paradigm shift.[192]

Recognizing contractual complexity helps chart a course beyond the increasingly stale text-versus-context debate. Modern research by Professors Scott and Triantis, and others, has taken an important step toward dislodging the stalemate, and shows there may be room for both approaches.[193] In fact, parties can *choose* between textualism and contextualism based on how they design their contracts.[194] Rules signal that parties have included all relevant information in a contract, and that courts should use textualism. Standards indicate the opposite.[195]

Scott and Triantis's elegant argument is important because it identifies contract drafters, ex ante, as the ones who decide whether to subject themselves to textualism or contextualism. This is a significant departure from previous scholarship, which focused on whether courts (and the market of contract dispute parties, more generally) would benefit more from textualism or contextualism.[196] In a sense, Scott and Triantis's view causes the classic text/context debate to recede into the background. Rather than debating the relative merits of each, the new normative question becomes how to facilitate the case-by-case optimization of interpretive rules according to the design choices of the parties to a given deal.

Scott and Triantis's theory depends upon an important condition, however. Because deals have complex structures, provisions are intertwined—some rules are closely tied to standards, and vice versa. The combination of rules and standards complicates parties' ability to carefully shift between front-end and back-end transaction costs. Scott and Triantis proceed largely on the assumption that each rule and standard operates in isolation, so that each rule or standard does not interact with other parts of the contract. However, in *Cooper Tire* and other modern cases, isolation of contract provisions cannot be taken for granted.[197] When provisions are intertwined, shifting costs between the ex ante design stage and the ex post

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[192] *See, e.g.*, Robert E. Scott, *Text Versus Context: The Failure of the Unitary Law of Contract Interpretation*, *in* THE AMERICAN ILLNESS: ESSAYS ON THE RULE OF LAW 312 (F.H. Buckley ed., 2013).

[193] *See supra* Section I.A.

[194] Adam B. Badawi, *Interpretive Preferences and the Limits of the New Formalism*, 6 BERKELEY BUS. L.J. 1, 11, 28, 33 (2009); Choi & Triantis, *supra* note 28; Scott & Triantis, *supra* note 14.

[195] Scott & Triantis, *supra* note 14, at 827–31 (discussing how parties, ex ante, design contracts while keeping in mind ex post litigation costs); *see also* Choi & Triantis, *supra* note 28, at 852 (noting that if the probability of ex post litigation is low, then parties might reasonably defer contracting costs to the back end by drafting vague provisions ex ante).

[196] *See supra* Part I.

[197] *See supra* Section I.C.

enforcement stage is more challenging. Often, connections between a rule-like term and a standard-like term will blur the distinction between the two types of provisions, effectively making cost-shifting a murkier process.

One of contractual structuralism's main contributions is that it provides a framework for analyzing the internal structure of a contract system, thereby alleviating some of that murkiness. Analyzing a contract's structure allows courts to understand the interactions between provisions. When a court understands whether a contractual system is modular or integrated, it can also better determine the scope of the interpretive exercise: whether it should interpret a single module on a stand-alone basis or a more integrated collection of terms that are meant to be read together.

Existing doctrinal tools may already help courts undertake structural analysis. Although contract scholarship routinely overlooks structure, in practice, courts already regularly look for contract structure in at least three ways. First, courts interpreting complex agreements invoke the doctrine that provisions within the same contract or collection of contracts must be interpreted consistently.[198] In order to interpret a provision consistently over several documents, judges must already assess the structure of a contractual system and understand how the various obligations fit together.

The doctrine of indefiniteness, too, provides another opportunity to consider structure. For instance, under the Uniform Commercial Code, when a contract is too indefinite—that is, it leaves too many terms unspecified—the court may find that the parties have not formed a contract.[199] There is no predetermined threshold at which a court knows that an alleged contract is too indefinite; rather, the judge must assess the entire collection of promises in an analysis that essentially asks whether the contractual system is sufficiently complete.[200] In determining whether a contract is indefinite, then, a court must also review contract structure.

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[198] *See, e.g.*, GMG Cap. Invs., LLC v. Athenian Venture Partners I, L.P., 36 A.3d 776, 779 (2012) (holding that the meaning inferred from a particular contract provision cannot control the meaning of the entire agreement if such an inference conflicts with the agreement's overall scheme or plan); *see also* Westminster Secs. Corp. v. Petrocom Energy Ltd., No. 11-607-cv, 2012 WL 147917, at *1 (2d Cir. Jan. 19, 2012) ("The rules of contract construction require us to adopt an interpretation which gives meaning to every provision of the contract" (quoting Paneccasio v. Unisource Worldwide, Inc., 532 F.3d 101, 111 (2d Cir. 2008))).

[199] *See* U.C.C. § 2-204(3) (AM. LAW INST. & UNIF. LAW COMM'N 2017–2018) ("Even though one or more terms are left open a contract for sale does not fail for indefiniteness if the parties have intended to make a contract and there is a reasonably certain basis for giving an appropriate remedy.").

[200] ATA Airlines, Inc. v. Fed. Express Corp., 665 F.3d 882, 887 (7th Cir. 2011) (conducting a highly case-specific analysis and finding that the omission of crucial terms rendered a contract unenforceable under the doctrine of indefiniteness).

Finally, courts' frequent enforcement of severability provisions implicitly acknowledges that some contracts have a modular structure.[201] A severability provision specifies that should one provision of the contract be found unenforceable, other parts can still be enforced. But severability provisions only work—that is, provisions can only physically be separated—if they are distinct modules. If a provision is too integrated with the rest of the contract, it simply cannot be separated, even if a severability provision (which would usually allow a part of the contract to be excised) exists and is found enforceable.

When applying each of these doctrines, judges are asked—implicitly—to analyze contract structure. Judges have done so competently, which suggests that they are already well familiar with contractual structure, at least in a tacit sense. What judges have been lacking, and what contract theory has thus far failed to supply, is a coherent and comprehensive theory of how contractual structure *should* shape their assessments. A more cohesive theory of contractual structuralism provides a way to fill that gap.

Doctrines such as the consistency maxim, indefiniteness, and the enforceability of severability provisions do not work in a vacuum, of course. They precede the core interpretive doctrines—such as the parol evidence rule, assessing course of performance and dealing, and considering trade usage—in a threshold fashion. Doctrines for assessing deal structure provide a secondary throttle for controlling the amount of information analyzed when interpreting an agreement. For instance, suppose that parties dispute a particular contract, and the judge determines that the issue implicates a single or limited number of provisions. That determination—that the dispute can be resolved by considering only a few modules—circumscribes the scope of the court's interpretive inquiry by limiting the provisions at issue and, perhaps, making textual interpretation more feasible. On the other hand, finding that a complex agreement is an integrated system opens up a more wide-ranging analysis, likely compounding the costs arising from interpreting the agreement. In those respects, the structural analysis sets the boundaries for a subsequent textual or contextual analysis of the provisions at issue.

Contract structure's effect on interpretation is subtle. Consider the famous *Hexion Specialty Chemicals, Inc. v. Huntsman Corp.* decision.[202] There, a central issue was how to interpret the standard-like material adverse effect provision in the merger agreement. In its decision, the court rejected Hexion's interpretation because such interpretation would, in the words of

[201] RESTATEMENT (SECOND) OF CONTRACTS § 184 (AM. LAW INST. 1981); *see, e.g.*, Gannon v. Circuit City Stores, Inc., 262 F.3d 677, 683 (8th Cir. 2001) (severing an arbitration provision from an otherwise enforceable agreement).

[202] 965 A.2d 715 (Del. Ch. 2008).

the court, "eviscerate, if not render altogether void," the meaning of a tenuously connected rule-like provision in another part of the agreement.[203] In other words, the merger agreement's highly integrated structure limited the court's ability to adopt Hexion's interpretation of a particular integrated provision.

Contract structure can also amplify the court's interpretive scope, however. This was the case in *CA, Inc. v. Ingres Corp.*, a recent Delaware Court of Chancery case.[204] There, the court considered conflicting provisions in a collection of agreements governing Ingres's spinoff from CA.[205] The parties had entered into at least two spinoff-related agreements. The earlier agreement provided that CA could receive new releases of Ingres's database software for free.[206] A later contract required CA to pay for new releases. The parties disputed whether the later contract was sufficiently broad such that it effectively renegotiated the terms of the earlier one.[207] If each of these contracts had been more modular and self-contained, they might have each invited the court to take only a textualist approach to interpretation. Because the contracts had provisions that directly competed with each other, however, the court was forced to consider context. In this case, the court eventually concluded that extrinsic evidence suggested that the later agreement controlled.[208] The effect was a broad refashioning of the exchange relationship—a refashioning that would not have occurred if the parties had made the two contracts more modular.

By introducing a second way to calibrate the amount of information a court can analyze, this Article introduces an important and wide avenue for future research. As the *Hexion v. Huntsman* and *CA v. Ingres* examples suggest, the interactions between the structural and substantive interpretive throttles are complicated. Much work remains to be done before scholars, courts, and practitioners can fully understand those interactions and how they

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[203] *Id.* at 741.

[204] No. 4300-VCS, 2009 WL 4575009 (Del. Ch. 2009).

[205] *Id.* Notably, one of the contract interpretation issues, whether Ingres was obligated to provide a recently released version of its database software as an "update" under the original divestiture agreements, provides another example of the consistency maxim constraining the scope of judicial intervention, because the court referenced the definition of "update" in one contract and the definition of "enhancement" in a contemporaneous agreement. *Id.* at *26–29.

[206] *Id.* at *1–4.

[207] *Id.* at *29–33.

[208] *Id.* at *33. The court noted that, under California contract law, which controlled the subsequent contract, a contextual analysis was required, but that the outcome would have been the same under New York law, which controlled the earlier divestiture agreements, because of the ambiguity arising from the conflict between the plain language of the contracts in question. *Id.* at *29–30.

may affect parties' incentives both at the ex ante drafting stage and in ex post enforcement.

In the meantime, however, one path forward is clear: contract structure should be a first-step inquiry for courts interpreting contracts. In modern contracting, where structure—not just substance—helps document parties' intent, ignoring structure is tantamount to ignoring evidence of parties' intent. Without an understanding of structure, it is impossible to appropriately focus upon either text or context—and without solving that first-order line-drawing problem, there is no true text/context debate to be had.

B. Privately Ordered Modularity in Dispute Resolution

Some deal parties, too, have begun to design contract structure to affect enforcement. The design of dispute resolution provisions provides a particularly interesting glimpse into this practice.

Complex agreements, such as alliance contracts and M&A agreements, frequently modularize and delegate disputes between multiple courts or arbitrators.[209] That is, parties separate contract provisions, and then indicate that certain courts and arbitrators are assigned to resolve different provisions.

The complex dispute resolution system adopted in an alliance between GlaxoSmithKline (GSK) and Anacor provides an intriguing example. Ex ante, the parties' contract established an intricate collection of committees to oversee the collaboration.[210] First, they created a general Joint Research Committee—the collaboration's governing body. In addition, they organized two subcommittees: a Joint Project Team to oversee day-to-day project progress, and a Joint Patent Subcommittee for patent matters.[211] In addition to the modularized committees, the parties appointed managers to liaise between the parties.[212]

The parties' alliance agreement established an equally complex dispute resolution process atop that committee structure. Disputes are resolved either internally or through an external tribunal, depending on the subject matter. Patent disputes are first reviewed by the Joint Patent Subcommittee. If the Subcommittee is unable to resolve the issue, the matter is escalated to the

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[209] Jennejohn, *supra* note 19, at 359; *see also* Christopher R. Drahozal & Erin O'Hara O'Connor, *Unbundling Procedure: Carve-outs from Arbitration Clauses*, 66 FLA. L. REV. 1945, 1966–69 (2014) (analyzing the use of bifurcated dispute resolution provisions in a variety of agreement types).

[210] Research and Development Collaboration, Option and License Agreement between SmithKline Beecham Corp. d/b/a GlaxoSmithKline and Anacor Pharm., Inc. §§ 3.1–3.3.

[211] *Id.* §§ 3.2, 3.3. The Joint Research Committee was also authorized to create additional subcommittees as necessary. *Id.* § 3.1.7.

[212] *Id.* § 3.4.

Joint Research Committee, and then to a federal patent court. Project disputes follow a similar path, but terminate with a single external arbitrator, rather than with a federal court. Contract disputes have no initial Subcommittee review. Instead, they skip directly to the Joint Research Committee, then to the companies' two chief operating officers, and then to a three-person panel of arbitrators.

Intriguingly, the agreement trifurcates the final-review institutions: depending on subject matter, the final reviewers could be a federal court, three-expert arbitration, or single-expert arbitration. When designing this dispute resolution system, GSK and Anacor did not make the traditional either/or choice between arbitration or public courts. Rather, they cobbled together a collection of enforcement institutions and tailored their respective remits according to the type of issue in dispute. Separating adjudication was likely an attempt to maximize chances for injunctive relief and to leverage court and arbitrator expertise. Federal courts, for example, have specialized experience in patent law—so it makes sense to send the most challenging patent disputes to federal court.

A similar phenomenon occurs in M&A. Parties often modularize their dispute resolution by specifying that the forum of dispute resolution depends on which portion of the contract is at issue. For example, it is common in private M&A deals to send pre-closing disputes to Delaware's specialized business law courts, where injunctive relief is readily available. Pre-closing disputes might include contract disagreements between the parties or suits from shareholders alleging misconduct on the part of the parties or their boards of directors.[213] Pre-closing disputes, by definition, stand in the way of closing; thus, parties welcome swift resolution through injunction so that they can move on closing the deal.

Post-closing disputes, which commonly involve monetary damages that are easily arbitrable, are often sent to a private tribunal or even to an accounting firm. Frequently, separation occurs in private M&A deals involving contingent consideration—such as a purchase price adjustment or

[213] M&A parties have long found shareholder suits filed in between an M&A deal's signing and closing to be a nuisance. These suits usually allege that the M&A parties have not disclosed enough information about the M&A deal, and the parties and the shareholder settle for lawyers' fees and additional securities disclosure. By funneling all such disputes to company-friendly courts of equity, such as the Delaware Chancery Court, M&A parties can swiftly settle these suits and move on to closing the deal—which is what both the parties want. Since 2016's *Trulia* decision in Delaware, however, the number of M&A disclosure-only settlement suits has dramatically decreased. *See In re* Trulia, Inc. Stockholder Litig., 129 A.3d 884, 894 (Del. Ch. 2016) (containing a discussion of disclosure-only settlement suits).

an earnout.[214] In those cases, parties often note that consideration disputes will be sent to an expert arbitrator, while other disputes arising out of the contract will be heard in a state or federal court.[215]

The Viacom–Harmonix M&A deal was a typical example of enforcement bifurcation. In 2006, Viacom acquired Harmonix Music Systems, which produced then-popular video games, such as Guitar Hero and Rock Band, for $175 million in cash.[216] The consideration was subject to an initial purchase price adjustment, and Viacom could pay Harmonix additional future payments—an earnout payment—contingent upon the target's post-acquisition financial performance.[217]

The agreement carefully identified, on a granular, provision-by-provision level, which adjudicators would resolve which types of disputes. Disputes related to the purchase price adjustment and earnout were specifically separated from the rest of the contract: they would be resolved by accounting firm Deloitte & Touche.[218] All other disputes were to be

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[214] Purchase price adjustments and earnouts are tools that parties commonly use in private M&A deals to adjust the purchase price. In both cases, the seller receives more or less consideration depending on whether certain conditions are met. *See generally* Ronald J. Gilson, *Value Creation by Business Lawyers in the 21st Century*, 15 U.C. DAVIS BUS. L.J. 5 (2014).

[215] Richard Hall & Matthias M. Pitkowitz, *Tailor-Made—Unique Dispute Resolution Clauses in M&A Agreements*, 5 N.Y. DISP. RESOL. L. 29, 31 (2012); Robert B. Little & Greg Odegaard, *Drafting Dispute Resolution Provisions in Purchase Price Adjustment Clauses*, GIBSON DUNN M&A REPORT 5 (2014), https://www.gibsondunn.com/wp-content/uploads/documents/publications/MAReport-Winter2014.pdf [https://perma.cc/JR69-H3KA] ("The vast majority of M&A contracts contain [purchase price adjustment provisions] calling for purchase price disputes to be resolved using a single accountant."); *see also* Wolfgang Peter, *Arbitration of Mergers and Acquisitions: Purchase Price Adjustment Disputes*, 19 ARB. INT'L 491, 501 (2003). For an analysis of purchase price adjustment clauses, dispute resolution through expert accountants, and issues arising relating to arbitrability, see New York City Bar Committee on International Commercial Disputes, *Purchase Price Adjustment Clauses and Expert Determinations: Legal Issues, Practical Problems and Suggested Improvements* (2013), https://www2.nycbar.org/pdf/report/uploads/20072551-PurchasePriceAdjustmentClausesExpertDeterminations--LegalIssuesPracticalProblemsSuggestedImprovements.pdf [https://perma.cc/W87S-AVQP].

[216] Viacom Int'l, Inc. v. Winshall, No. 7149-CS, 2012 WL 3249620 (Del. Ch. Aug. 9, 2012).

[217] *Id.* at *2.

[218] Exhibit A to Verified Amended Complaint: Agreement and Plan of Merger §§ 2.3–2.4, Viacom Int'l, Inc. v. Winshall, 55 A.3d 629 (Del. Ch. 2011) (No. 6074-VCS) (noting that "[i]n connection with any dispute resolution regarding the [purchase price adjustment, either party] will be entitled to submit such unresolved disagreements (the 'Disagreements') to Deloitte & Touche, LLP or, if such firm is unable or unwilling to resolve any such Disagreements, such other nationally recognized firm of independent certified public accountants mutually acceptable to [the parties] (the 'Resolution Accountants')"). The agreement carefully limited Deloitte's remit, however. It noted that "[t]he scope of [Deloitte's] engagement (which shall not be an audit) shall be limited to the resolution of the [consideration-related disagreements], and the recalculation of the [purchase price adjustment] in light of such resolution . . . ." *Id.* § 2.3(b). The scope of Deloitte's review in the event of an earnout dispute was identical. *See id.* § 2.4 ("The scope of the Resolution Accountants engagement (which shall not be an audit) shall be limited to the resolution of the Earn-Out

adjudicated in either state or federal courts in Delaware subject to Delaware law.[219]

Separating pre- and post-closing disputes into two different adjudicative bodies is important for M&A parties. In particular, this modularizing means that M&A parties can organize their disputes so that adjudicators can meet the parties' timing and specialization needs. For pre-closing disputes, parties need swift resolution from an adjudicator who is familiar with contract disputes—so they turn to courts, which can give quick injunctive relief and specialist knowledge about legal disputes involving contracts. In contrast, for consideration-related disputes, parties do not need such swift resolution. Rather, because consideration-related disputes are often premised on the technical nitty-gritty of how accounting statements have been prepared, parties prefer to seek the assistance of subject matter experts—accountants. In a way, by modularizing dispute resolution, parties are better able to resolve disputes while maximizing for more granular preferences.

CONCLUSION

Existing contract scholarship tries to understand contracts by using a provision-by-provision analysis when modern commercial agreements are complex collections of provisions. The classic rules/standards and text/context frameworks overlook the fundamental role of structure in complex contracts.

This Article develops a new theory of contractual structuralism to bring contract theory up to date with modern practice. It shows how parties weave provisions and agreements in modern exchange relationships. How the provisions in a complex agreement are organized—that is, how they are structured—has important implications for theory, doctrine, and practice. In particular, understanding a contract's structure as modular, integrated, or a hybrid mixture can help courts more accurately ascertain parties' intent, and also help parties better design contracts to mitigate risk and tailor enforcement. While this Article focuses on complex commercial deals, the theory of contractual structuralism has broad applicability and aims to align contract law, both commercial and not, with modern practice.

Disagreements, and the recalculation of the 2007 Earn-Out Payment or 2008 Earn-Out Payment, as the case may be, in light of such resolution . . . .").

[219] *Id.* § 10.10.