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CONSTRUCTIVE AMBIGUITY: IP LICENSES AS A CASE STUDY

Michal Shur-Ofry* & Ofer Tur-Sinai**

Ambiguity in contracts is often perceived as undesirable. A certain level of ambiguity, however, can have significant virtues: reducing transaction costs associated with foreseeing and negotiating remote contingencies; facilitating the closing of efficient transactions that would not otherwise close; increasing the adaptability and “anti-fragility” of contracts in the face of unforeseen developments; and preserving trust between the parties.

Some contracts are more likely to benefit from a certain degree of ambiguity. Relying on multi-disciplinary literature, this Article systematically analyzes ambiguity’s merits and identifies three principal features of transactions that are positively correlated to the virtues of ambiguity: (1) long duration, (2) relational nature, and (3) complexity and uncertainty of the transaction and the relevant markets. As a case study, this Article considers intellectual property (IP) licenses negotiated between sophisticated parties. IP license agreements exhibit the above three transactional features, which are tightly linked to the unique attributes of intellectual property, including its non-rival nature, tacit knowledge surrounding formal IP rights, and significant uncertainty embedded in IP rights and markets. This Article thus concludes that IP licenses constitute paradigmatic candidates for “constructive ambiguity.”

This Article further demonstrates that within a specific transaction ambiguity may be more effective for certain types of provisions and topics and proposes new guidelines for addressing ambiguity in a given contract. This Article’s proposal is based on a distinction between core and periphery issues, which it measures using three parameters: (1) probability, (2) significance, and (3) timing. When, from an ex ante perspective, the relevant provision concerns the core aspects of the transaction, ambiguity is generally unwarranted, and courts’ ex post treatment of it should be less tolerant. Yet, when the provision is closer to the periphery of the transaction, ambiguity is often efficient, and courts reviewing the contract should treat it more liberally. While the proposed model addresses ambiguity in IP licenses as its case study, it can have broader implications for contract law in general.

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INTRODUCTION

The term “constructive ambiguity” is often credited to Henry Kissinger, who reportedly used ambiguity as a negotiating technique in international agreements.¹ This Article explores the role of “constructive ambiguity” in contractual settings and focuses on intellectual property (IP) licenses as a case study.

The legal system has long struggled with the best way to handle ambiguity in contracts. Should courts facing an ambiguous contract provision employ a contextual interpretation or confine themselves to the “four corners” of the agreement? Should they fill in the gaps in the parties’ agreement or declare the contract invalid due to indefiniteness? Contract law includes various doctrinal tools for courts to use in the face of ambiguous provisions.² Yet, the consequences of ambiguity—in particular, whether contract validity and interpretation doctrines should tolerate or “punish” it—are largely debated and continue to attract scholarly attention.³

While an incomplete contract may intuitively seem undesirable, maintaining a certain degree of ambiguity in negotiated contracts can be economically efficient in reality. Ambiguity decreases the *ex ante* transaction costs associated with contract negotiation and allows to conclude transactions that otherwise would not close. Ambiguity works particularly well in relational contracts, where reciprocity and mutual dependence often give rise to *ex post* cooperation mechanisms that may render detailed *ex ante* negotiations unnecessary. In addition, abstaining from explicit drafting may foster trust between the parties and positively impact their ability to resolve disputes during the lifetime of the contract. Furthermore, in an inherently unpredictable commercial reality, a certain level of ambiguity increases the contract’s adaptability and “anti-fragility,” which makes the transaction more robust in the face of post-contractual developments.

1. WALTER ISAACSON, *KISSINGER: A BIOGRAPHY* 556 (2d ed. 2005).

2. See *infra* Part I.B. This Article uses the term “ambiguity” in a broad sense, covering a wide range of scenarios. Some non-exhaustive examples include the use of vague or ambiguous language, the use of open standards rather than delineating the parties’ obligations in detail, internal inconsistencies, or a failure to address a contingency. For a detailed discussion, see *infra* Part I.A.

3. For recent works addressing different aspects of this issue, see generally, for example, Albert Choi & George Triantis, *Strategic Vagueness in Contract Design: The Case of Corporate Acquisitions*, 119 *YALE L.J.* 848 (2010); Jeffrey M. Lipshaw, *Metaphors, Models, and Meaning in Contract Law*, 116 *PENN ST. L. REV.* 987 (2012); Gregory M. Duhl, *Conscious Ambiguity: Slaying Cerberus in the Interpretation of Contractual Inconsistencies*, 71 *U. PITT. L. REV.* 71 (2009); Adam B. Badawi, *Interpretive Preferences and the Limits of the New Formalism*, 6 *BERKELEY BUS. L.J.* 1 (2009); Elizabeth C. Spencer, *Consequences of the Interaction of Standard Form and Relational Contracting in Franchising*, 29 *FRANCHISE L.J.* 31 (2009).

While economic and legal literature have examined some of these advantages of ambiguity, other benefits have hardly been explored. This Article offers a systematic analysis of the virtues of contractual ambiguity by building on existing scholarship, as well as on cutting-edge multi-disciplinary research in the social sciences and in the field of complex systems. This inquiry demonstrates that the virtues of ambiguity positively correlate to certain transaction traits. In other words, certain types of contracts are more likely than others to benefit from some degree of ambiguity. Based on this theoretical inquiry, this Article identifies three principal transaction characteristics that are positively related to constructive ambiguity: (1) long duration, (2) relational nature, and (3) complexity and uncertainty of the transaction and the relevant market.

As a case study, this Article looks closely at IP licenses negotiated between sophisticated parties, a category of contracts the prism of contract law has insufficiently explored. This Article argues that these licenses constitute paradigmatic cases for constructive ambiguity, due to the prevalence of the foregoing three transaction criteria. It further demonstrates that these transaction features are strongly linked to the unique nature of intellectual property, in particular IP's non-rival nature, the tacit knowledge surrounding formal IP rights, and the uncertainty embedded both in the rights themselves as well as in technology markets.

This Article argues that even within "ambiguity-friendly" transactions, ambiguity may be more efficient with respect to certain types of issues. Building on its analysis of the virtues of ambiguity it proposes new guidelines for identifying specific issues within transactions that may be more disposed to constructive ambiguity. The proposal is based on a distinction between core and periphery matters, a distinction based on weighing three parameters: (1) probability, (2) significance, and (3) timing. When the relevant provision in the agreement concerns matters that could be considered, *ex ante*, as core aspects of the transaction, ambiguity is generally unwarranted, and courts' *ex post* treatment should be less tolerant. If, on the other hand, the matter seems closer to the periphery of the agreement—for example, if it deals with events that could be considered, *ex ante*, as remote, unlikely, or insignificant—ambiguity is often efficient, and courts should display more tolerance toward it during *ex post* review. While the model addresses ambiguity in IP licenses as its case study, it has broader implications for contracts in general.

Although this Article's inquiry highlights the virtues of ambiguity, it does not advocate "the death of the contract," nor undermine

the value of clear drafting. It does argue, however, that within the universe of contracts, it is possible to delineate particular transactions, and specific provisions within such transactions, where the benefits of ambiguity are greater and its costs lower. This insight should influence the legal system's *ex post* treatment of ambiguity and provide the courts with normative directions when treating ambiguous provisions. The guidelines proposed in this Article can also be helpful for parties to transactions, and their attorneys, when drafting their agreements.

By exploring the interaction of contract and intellectual property law, this Article contributes to both branches of law. For contract law, this Article presents a systematic analysis of the virtues of contractual ambiguity, identifies transaction settings and types of issues where such virtues are more prominent, and proposes new normative guidelines for courts addressing ambiguous provisions. For intellectual property law, this Article offers a structured inquiry into the attributes of IP licenses and their link to the unique nature of intellectual property. Scholarship has largely overlooked these aspects of IP licenses, and exploring them may have normative consequences beyond the context of contractual ambiguity.

The Article proceeds as follows: Part I provides necessary background, explores various types of contractual ambiguity, and describes the current doctrinal treatment of ambiguity and the prevailing scholarly attitudes toward it. Part II systematically explores the virtues of ambiguity and demonstrates the positive relationship between these virtues and certain transaction characteristics. Part III applies the preceding analysis to IP licenses by exploring prominent characteristics of IP licenses and illustrating that these agreements constitute paradigmatic cases for constructive ambiguity. Finally, Part IV outlines the Article's proposed guidelines for *ex post* treatment of ambiguity.

I. CONTRACTUAL AMBIGUITY—BACKGROUND

Before commencing the inquiry of contractual ambiguity, one clarification is in order. This Article's discussion is confined to contracts between sophisticated parties of (approximately) equal bargaining power, which lawyers typically negotiate.⁴ Standard form

4. This Article generally does not distinguish between the parties and their representatives and assumes for the purposes of its analysis that their interests coincide. For a discussion of potential conflicts of interest between parties and their representatives, see, for example, Royce de R. Barondes, *The Business Lawyer as Terrorist Transaction Cost Engineer*, 69 *FORDHAM L. REV.* 31, 52–56 (2000). See also *infra* note 105.

contracts, including shrink-wrap, click-wrap, and browse-wrap licenses that are prevalent in technology transactions,⁵ are outside the scope of this Article's analysis.

A. Types of Ambiguity

The term "ambiguity" is used in this Article in a rather loose and elaborate manner to cover a wide range of scenarios, including, *inter alia*, vague, open-ended, inconsistent, or incomplete contractual provisions. In all such circumstances, the contract, as drafted, falls short of the (illusory) ideal of a "complete contract" that thoroughly addresses all possible contingencies.⁶ This Article's analysis neither necessitates a careful distinction between the various types of ambiguity nor does it aim to offer a complete list of such scenarios.⁷ The types of ambiguity and the examples discussed in the following paragraphs are non-exhaustive and merely illustrate typical circumstances to which this Article's analysis applies. Since this Article focuses on IP licenses, the illustrations for different types of ambiguity are all derived from a variety of IP license agreements.⁸

1. Vague or Ambiguous Language

One common type of ambiguity in contracts is vague or ambiguous language. A contract provision may include a term or a word

5. For a brief reference to "shrink-wrap," "click-wrap" and "browse-wrap" licenses, see *infra* note 121.

6. Cf. Mark P. Gergen, *The Use of Open Terms in Contract*, 92 COLUM. L. REV. 997, 999 (1992) (using the term "incomplete contract" to describe "any contract short of the ideal of a complete contingent contract, which has been drafted with all contingencies in mind and provides for optimal performance on every contingency."). Notably, as the analysis below demonstrates, the "ideal" of a perfect or complete contract is very much illusory: not only is it impossible to obtain, it is also unwarranted for various solid reasons. See *infra* Part II.

7. For various attempts to distinguish between different types of ambiguity, see, for example, Charles J. Goetz & Robert E. Scott, *The Limits of Expanded Choice: An Analysis of the Interactions Between Express and Implied Contract Terms*, 73 CALIF. L. REV. 261, 267-73 (1985) (listing the following types of "formulation errors": administrative error, ambiguity, incompleteness, inconsistency, interpretation error, and ill-fitting formulations); Duhl, *supra* note 3, at 78 (listing the following types of "interpretation and implication problems": open terms, incompleteness, vagueness, ambiguity, and inconsistent terms); Alan Schwartz, *Relational Contracts in the Courts: An Analysis of Incomplete Agreements and Judicial Strategies*, 21 J. LEGAL STUD. 271, 272 (1992) (referring to an additional type of incompleteness, where the contract "partitions future states or potential contracting partners 'too coarsely'").

8. The examples in this Part are derived from "real world" licenses: some appear in case law and others are on file with the authors (in which case the parties' identity and other identifying details are omitted).

that is “capable of more than one sensible and reasonable interpretation” or has “no definite significance.”⁹ This phenomenon is far from rare in IP licenses which often address cutting-edge technologies and use terminology that is still developing and not entirely universal.

For example, broadcasting rights agreements regularly limit the platforms on which a licensee may broadcast the licensed content. A contract may confine a licensee’s rights to “free TV,” “subscription TV,” “IPTV,” “PAY TV,” or other specific forms of broadcasting. Yet, many of these terms carry more than one meaning. Consider a broadcasting license that limits the grant of rights to “free TV.”¹⁰ While this term often refers to “over the air” terrestrial channels, it can also refer to basic-tier channels in subscription television (*e.g.*, cable or satellite). Likewise, the term “IPTV” (Internet Protocol Television) in a content transmission license¹¹ usually implies that the content is delivered over the licensee’s own internet infrastructure. Yet, in some cases, the term IPTV may refer to “over the top” broadcasting, namely to content that is transmitted over the public internet rather than on the licensee’s infrastructure.¹² As is obvious from these examples, such ambiguous language can cast significant doubt on the precise content of the rights granted under the license in various factual circumstances.¹³

2. Open Standards

Another type of ambiguity is an “open standard.” Parties to a contract often use open-ended standards for describing certain

9. *Ross Bros. Constr. Co. v. State ex rel Transp. Comm’n, Highway Div.*, 59 Or. App. 374, 650 P.2d 1080, 1082 (1982). For a distinction between “vague” and “ambiguous” terms, see, for example, Goetz & Scott, *supra* note 7, 268–69 n.13 (1985) (discussing the linguistic difference between the two but noting that courts often do not make such distinctions); Duhl, *supra* note 3, 83–84 (maintaining that a vague term is “one that has a range of meanings in a context,” while an ambiguous term is “one in which there are two different meanings in context, such that one meaning excludes the others”).

10. License on file with the authors.

11. IPTV is a system for delivering television services over the internet protocol instead of through traditional media such as cable, satellite, or terrestrial broadcasting. Examples include TV services offered by Verizon FiOS and AT&T U-verse.

12. See, *e.g.*, Harry Bouwman, Meng Zhengjia, Patrick van der Duin & Sander Limonard, *A Business Model for IPTV Service: a Dynamic Framework*, 10 INFO 3, 22–23 (2008) (discussing IPTV provided by telecom operators over their infrastructure yet noting that IPTV may also include web-based television delivered over the internet protocol). Prominent examples for “over the top” service providers are Netflix and Hulu.

13. *Cf.* Goetz & Scott, *supra* note 7, at 268 (“When a signal instruction has more than one possible meaning, the same set of factual conditions may generate alternate sets of prescribed consequences.”).

obligations rather than delineating such obligations and undertakings in detail.¹⁴ Familiar examples include “best efforts,” “industry standards,” or the various common uses of “reasonableness” (for example, “commercially reasonable manner” or “a consent not to be unreasonably withheld”). To illustrate, consider the following provisions, which appear in three different software license agreements and their appended Service Level Agreements (SLA)¹⁵:

If a solution for a Severity 2 Error is unavailable immediately, Licensor shall make its **best efforts** to provide an acceptable workaround within a **reasonable time**.

All Services performed under this Agreement shall be provided in a **professional** and **workmanlike** manner, using **due care, consistent with prevailing industry standards**.

Licensor shall continually improve its design and delivery of Services, and implement quality assurance processes and procedures necessary to perform the Services **in accordance with industry standards**.

By employing open terms, the parties refrain from explicitly addressing the level of effort, the anticipated manpower allocation, or the exact response times of the licensors in providing services to their licensees. These details are deferred to a later stage. Similarly, a license for the development and marketing of a pharmaceutical product maintains¹⁶:

LICENCEE shall launch the Product in the Territory at the **earliest commercially reasonable date**

The open language in this case is a substitute for setting a definitive launch date for the product. In the event of a dispute the question of whether the licensee did, in fact, launch the product at “the earliest commercially reasonable date” may need to be resolved by a court.

14. See Gergen, *supra* note 6, at 998–99 (describing “open terms” as “contractual provisions that expressly grant a party substantial, but not completely unfettered, discretion in performance”); cf. Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L. J. 557 (1992) (discussing the use of open standards in the design of legal norms).

15. A Service Level Agreement (SLA) typically defines and details the quality and availability of the services available to a provider’s customers. See, e.g., W. Kuan Hon, Christopher Millar & Ian Walden, *Negotiating Cloud Contracts: Looking at Clouds from Both Sides Now*, 16 STAN. TECH. L. REV. 81, 95 (2012) (defining SLAs as “commitments on availability levels and performance”). Licenses on file with the authors (emphases added).

16. License on file with the authors (emphasis added).

3. Internal Inconsistencies

In other instances, a contract may include two or more provisions that are *prima facie* inconsistent and contain conflicting instructions.¹⁷ While each provision, in itself, may make perfect sense, reconciling them within a single contract may not be simple. For example, the following sections from a broadcasting rights agreement address the issue of rights in the televised contents¹⁸:

(i) [LICENSOR] represents that it is and will be at all times . . . owner of all Intellectual Property Rights and other rights required in order to license the broadcasts of the Programs by Licensee in the Territory . . . including, without limitation, all necessary broadcasting, performance rights, copyright, and related rights . . . [LICENSOR] shall indemnify and hold [LICENSEE] harmless with respect to any breach of this warranty

(xvii) [LICENSEE] undertakes, at its own expense, to make suitable arrangements with the relevant collecting societies in relation to the rights for musical works included in the Programs . . . in the Territory.

While under section (i) of this agreement the licensor assumes full responsibility regarding the entire rights in the televised contents and indemnifies the licensee, section (xvii) imposes a separate, seemingly contradictory responsibility on the licensee for obtaining rights for the music used in the televised programming.

The following software license clauses, which address the issue of derivative works, provide another example of inconsistent provisions. Derivative works are sometimes developed by the licensee using the underlying code in the licensor's software. While one section of the license in question provides that the "[l]icensee has a right in all derivative works, other than Pre-Existing Materials," the "Pre-Existing Materials" definition appears inherently inconsistent because it includes "the Licensed Technology **and any and all modifications and/or enhancements thereof.**"¹⁹

17. See Goetz & Scott, *supra* note 7, at 271.

18. License on file with the authors.

19. License on file with the authors (emphasis added).

4. Failure to Address a Contingency

Lastly, a contract may simply avoid addressing a certain scenario or its consequences, despite their potential relevance to the transaction.²⁰ For example, a trademark license agreement that was the subject of recent litigation contained a limitation-of-liability clause that barred the recovery of lost profits and other consequential damages but failed to elaborate whether “lost profits” included lost future royalties.²¹

Likewise, a license to market, distribute, and sell a pharmaceutical product may provide that the license shall be valid for “ten (10) years after the first commercial sale of the Product in the Territory”²² but, at the same time, may refrain from clarifying whether “the first commercial sale” includes transfers of free product samples to third parties.

* * * *

Some of the ambiguous provisions addressed in this Part seem to result from the parties’ conscious decision. For example, “reasonableness,” “industry standards,” and other open-ended terms signal the parties’ intent to avoid detailed drafting and defer the specific contents of the “open” standard to a later stage, possibly to a court’s decision.²³ Other types of ambiguity discussed above may, at first sight, seem like the parties’ unintentional omissions or mistakes. Indeed, some commentators classify inconsistencies, lacunae, and

20. Cf. Goetz & Scott, *supra* note 7, at 270 (describing this scenario as an “incompleteness error” and further arguing that such errors typically occur when the parties inadvertently overlook a low probability contingency).

21. *Honeywell Int’l Inc. v. Northshore Power Sys., LLC*, No. 652163/10, 2011 WL 3198877 (N.Y. Sup. Ct. Jul. 25, 2011), *aff’d*, 96 A.D.3d 581 (N.Y. App. Div. 2012).

22. License on file with the authors.

23. One additional scenario of “open language” is the prevalent practice of “agree[ing] not to agree,” where parties explicitly defer a topic for future negotiations, indicating their intention to reach a separate agreement on that matter should it arise. Some commentators classify this technique as an additional type of ambiguity or incompleteness. See, e.g., Duhl, *supra* note 3, at 79 (referring to terms left to be fixed by later agreement as “open”); Ian Macneil, *Contracts: Adjustment of Long-Term Economic Relations under Classical, Neoclassical, and Relational Contract Law*, 72 Nw. U. L. REV. 854, 870 (1978) (arguing that there is not necessarily a substantial difference between “an agreement not to agree” and other types of contractual gaps). Yet, as opposed to the use of “open standards” that signal the parties’ intent to submit the specific contents of their agreement to the courts’ discretion should a dispute arise, the parties that “agree not to agree” generally send an opposite signal. Cf. Macneil, *supra* at 870 (indicating that courts commonly tend to hold that “an agreement not to agree is not a contract”). This Article, therefore, tends to exclude this type of contractual incompleteness from the scope of its analysis. See also *infra* notes 208–209 and accompanying text.

vague terms as contractual errors.²⁴ Yet, as the analysis in the following Parts demonstrates, this first impression is not necessarily true.²⁵ These types of ambiguity may also result from conscious drafting choices and significantly benefit the parties.

Often, these choices are not a product of the parties' explicit joint decision. Rather, the dynamics of sophisticated negotiations are such that one party may draft a provision to protect *its* interests, and the other party may amend that provision to protect *its own* interests by making the provision more ambiguous, or may add a separate provision that is not fully consistent with the original provision. Likewise, both parties may consciously choose to "remain silent" and refrain from addressing a possible contingency. The end result may be increased ambiguity that leaves each party with a sufficient basis to argue in its own favor should a dispute arise.²⁶ While ambiguity is not always a result of these dynamics,²⁷ the analysis below does not necessitate an inquiry into the exact sources and history of ambiguity in each particular case.

B. Ambiguity and Contract Law Doctrines

How should courts treat an ambiguous contractual provision? Contract law includes numerous doctrinal tools that can be employed in the face of ambiguity.²⁸ One prominent example is the doctrine of indefiniteness, which holds that a contract is unenforceable if its terms are too indefinite.²⁹ Additional examples include a variety of (sometimes conflicting) principles of construction, interpretation, and admissibility.

24. See, e.g., Goetz & Scott, *supra* note 7, at 268–72 (discussing various types of "formulation errors").

25. See *infra* Part II.

26. For similar observations, see Lipshaw, *supra* note 3, at 1009 (indicating that parties often use "negotiated ambiguities" in order to close their deal) and 1010–11 (arguing that the task of a contract drafter is to give "the best possible hand to play in the game of after-the-fact legal argumentation").

27. Among the other factors the literature identifies as potential causes for ambiguity are: sloppiness (see Duhl, *supra* note 3, at 76 n.29), inadvertence (see E. ALLAN FARNSWORTH, CONTRACTS 481 (4th ed. 2004); Schwartz, *supra* note 7, at 278–81), and a party's attempt to keep information about its preferences and strategic long-term plans private (see Eileen Y. Chou, Nir Halevy & J. Keith Murnighan, The Relational Costs of Complete Contracts 6 (unpublished manuscript) (June 25, 2011), available at <http://ssrn.com/abstract=1872569>).

28. Since state law governs contract law, there exists some diversity among the various States with regard to the scope and content of the relevant rules and doctrines. Regardless, this Article's analysis does not necessitate a detailed review of the contractual doctrines or the differences in their scope and application among various States.

29. See, e.g., FARNSWORTH, *supra* note 27, at 201.

Some of the interpretive rules confine the courts to the “four corners” of the agreement and hinder the introduction of extrinsic and contextual evidence in interpreting the contract’s provisions.³⁰ Among these is the parol evidence rule, which bars the introduction of external evidence to contradict the written terms of a contract that appears to be a final expression of the parties’ intent.³¹ Another is the plain meaning rule, under which a court must enforce a facially clear and unambiguous written agreement according to the plain meaning of its terms, without considering extrinsic evidence of the parties’ intent.³²

Yet, other rules permit wider use of contextual evidence and allow reference to a prior course of dealing, trade usage, or a subsequent course of performance between the parties to interpret, supplement, or qualify the contract.³³ Additional tools include a variety of state-supplied “implied terms” and default rules that courts may use to fill in gaps or lacunae in the parties’ agreement,³⁴ An additional example is the use of the good faith principle to supplement or interpret the written contract in various manners.³⁵

Notably, no consensus exists as to the appropriate usage of this toolbox of rules and doctrines in the face of ambiguous provisions, and ambiguity’s normative consequences are still largely debated. For over a century, both courts and scholars have drifted between a formalist approach, under which courts are generally expected to

30. See, e.g., Duhl, *supra* note 3, at 99–101 (describing the “four corners” principle).

31. See, e.g., FARNSWORTH, *supra* note 27, at 415–18 (4th ed. 2004); James B. Thayer, *The “Parol Evidence” Rule*, 6 HARV. L. REV. 417, 418 (1892–1893); Goetz & Scott, *supra* note 7, at 273.

32. Goetz & Scott, *supra* note 7, at 273; FARNSWORTH, *supra* note 27, at 462–66. There are, however, conflicting views regarding the question whether evidence of prior negotiation can be used to determine whether the disputed language is clear or ambiguous. See, e.g., FARNSWORTH, *supra* note 27, at 463–66.

33. See, e.g., FARNSWORTH, *supra* note 27, at 469–70; Goetz & Scott, *supra* note 7, at 274; U.C.C. § 1-303 (amended 2012) (explicitly acknowledging recourse to these sources in contract construction).

34. See, e.g., FARNSWORTH, *supra* note 27, at 484–85 (describing the process of “implication,” by which courts imply terms in the absence of relevant contract language).

35. The duty to perform contractual obligations in good faith is a foundational contract law principle. See, e.g., U.C.C. § 1-304 (amended 2012); see also Richard E. Speidel, *The Characteristics and Challenges of Relational Contracts*, 94 Nw. U. L. REV. 823, 838 (2000) (calling for “a more comprehensive, sophisticated development of the duty of good faith” under U.S. contract law). Additional tools that are less relevant to this Article’s analysis are doctrines that allow courts to adjust contracts *ex post* under certain circumstances. These include, for example, impossibility of performance, frustration of purpose, and common mistake. See MacNeil, *supra* note 23, at 875 (referring to the aforesaid doctrines and indicating that “[w]here the parties are unable to agree to adjustments to reflect changes in circumstances, neoclassical contract law provides a limited array of doctrines whereby one party may escape some or all the consequences of the change”). For reference to such doctrines under Article 2 of the Uniform Commercial Code, see U.C.C. §§ 2-614, 2-615, and 2-616 (amended 2012).

adhere to the express terms of the written agreement³⁶ and a more flexible, contextualist approach, under which courts are more encouraged to complete contractual gaps and interpret contract provisions contextually.³⁷ While the Uniform Commercial Code and the Second Restatement of Contracts generally reflect the contextualist school of thought,³⁸ numerous courts still employ various formalist rules of construction in adjudicating contract cases.³⁹ Moreover, contract scholarship in recent decades has witnessed a resurgence of formalism on various grounds.⁴⁰ This “new formalism” has been described as “pragmatic at its core,”⁴¹ and its supporters argue that courts are incompetent to complete gaps or

36. See, e.g., Macneil, *supra* note 23, at 863 (noting that classical contract law “limits strictly the sources to be considered in establishing the substantive content of the transaction”); Robert E. Scott, *The Case for Formalism in Relational Contract*, 94 NW. U. L. REV. 847, 851 (2000) (noting that under the formalist approach, courts are instructed “to enforce the (facially unambiguous) express terms of the contract literally or ‘as written.’”); Goetz & Scott, *supra* note 7, at 273 (describing the “traditional common law interpretive approach”).

37. See, e.g., Stewart Macaulay, *Relational Contracts Floating on the Sea of Custom? Thoughts about the Ideas of Ian Macneil and Lisa Bernstein*, 94 NW. U. L. REV. 775, 801 (2000) (indicating, in support of this approach, that “if we are concerned with real expectations, that is, with reasonable reliance and good faith, then we cannot be satisfied with only formal written documents”). For the use of “form” versus “substance” terminology in this context, see generally Avery Wiener Katz, *The Economics of Form and Substance in Contract Interpretation*, 104 COLUM. L. REV. 496 (2004). See also Eyal Zamir, *The Inverted Hierarchy of Contract Interpretation and Supplementation*, 97 COLUM. L. REV. 1710 (1997).

38. See, e.g., Speidel, *supra* note 35, at 825 (referring to “modern” contract law as employing a more contextualist approach); Goetz & Scott, *supra* note 7, at 274 (noting that under the “activist” approach reflected in the U.C.C. and the Second Restatement of Contracts, “[e]vidence derived from experience and practice can now trigger the incorporation of additional, implied terms”). For relevant U.C.C. provisions, see, for example, § 1-201(3) (defining “Agreement” as “the bargain of the parties in fact, as found in their language or inferred from other circumstances, including course of performance, course of dealing, or usage of trade”) and § 1-303 (defining and providing details regarding the potential use of “course of performance, course of dealing, or usage of trade”). For relevant Restatement provisions, see, for example, Restatement (Second) of Contracts § 204 (Supplying an Omitted Essential Term), § 221 (Usage Supplementing an agreement), § 222 (Usages of Trade), and § 223 (Course of Dealing) (1979).

39. Two examples that are far from exhaustive are *GMG Capital Investments, LLC v. Athenian Venture Partners I, L.P.*, 36 A.3d 776, 779 (Del. 2012) (“When interpreting a contract, the Court will give priority to the parties’ intentions as reflected in the four corners of the agreement.”), and *Hillside Metro Associates, LLC v. JPMorgan Chase Bank, Nat. Ass’n*, No. 10-CV-1772, 2011 WL 5008368, at *9 (E.D.N.Y. Oct. 20, 2011) (“[W]here the language . . . [of the contract] is unambiguous on its face, it must be enforced according to the plain meaning of its terms.”).

40. Prominent examples include the following: Lisa Bernstein, *The Questionable Empirical Basis of Article 2’s Incorporation Strategy: A Preliminary Study*, 66 U. CHI. L. REV. 710, 777 (1999); Scott, *supra* note 36, at 851; Schwartz, *supra* note 7, at 272; and Alan Schwartz & Robert E. Scott, *Contract Theory and the Limits of Contract Law*, 113 YALE L.J. 541, 583–84 (2003).

41. Scott, *supra* note 36, at 851 n.11.

adjust contract terms where the parties were unable to do so themselves.⁴²

Yet, from a normative perspective, it is difficult to generate clear guidelines for the legal system's treatment of ambiguous contracts without first exploring ambiguity's merits (and its shortcomings). A structured discussion of the virtues of ambiguity is thus a crucial step in this Article's attempt to identify circumstances where ambiguity should be treated with more leniency and to develop a more coherent framework for the treatment of ambiguous provisions. The next Part embarks upon this exploration.

II. THE VIRTUES OF AMBIGUITY AND THE TRAITS OF THE TRANSACTION

As indicated above, courts, scholars, and practitioners frequently perceive contractual ambiguity as undesirable.⁴³ The prominent argument maintains that ambiguous provisions raise litigation and enforcement costs.⁴⁴ Others contend that there is greater potential for judicial error in enforcement where the contract's language is more ambiguous.⁴⁵

Neither of these arguments is free of doubt. Several scholars have criticized the assumption that courts are ill-equipped to interpret and complete ambiguous contracts.⁴⁶ Some maintain that judges do have sufficient verifiable information concerning the transaction.⁴⁷

42. See, e.g., Alan Schwartz, *Incomplete Contracts*, 2 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 277 (Peter Newman ed., 1998) (expressing a pessimistic view of the ability of courts to complete contracts with efficient defaults); Speidel, *supra* note 35, at 844 (reviewing this argument); Gillian K. Hadfield, *Judicial Competence and the Interpretation of Incomplete Contracts*, 23 J. LEGAL STUD. 159, 162 (1994) (maintaining that courts lack competence to fill in contractual gaps); Schwartz, *supra* note 7, at 272–73 (doubting the ability of courts to supply efficient defaults). *But see infra* notes 46–51 and accompanying text.

43. See *supra* notes 39–42 and accompanying text. See also Goetz & Scott, *supra* note 7, at 267–71 (listing ambiguity, incompleteness, and inconsistencies as examples for “formulation errors”) and 311 (arguing that the law should provide incentives for the reduction of such errors); Duhl, *supra* note 3, at 76–77 (arguing that “courts should discourage lawyers from drafting intentionally ambiguous contracts”).

44. See, e.g., Gergen, *supra* note 6, at 1062; Karen Eggleston, Eric Posner & Richard Zeckhauser, *The Design and Interpretation of Contracts: Why Complexity Matters*, 95 NW. U. L. REV. 91, 119 (2000–2001). A related claim is that ambiguity increases the costs of *monitoring* the performance of the contract post-execution. See, e.g., Spencer, *supra* note 3, at 35.

45. See, e.g., Macneil, *supra* note 23, at 872 (presuming that the reluctance to enforce indefinite contracts stems from fear of judicial error in figuring out which exchange will enhance the parties' utility levels). See also *supra* note 42 and accompanying text.

46. See, e.g., Richard A. Posner, *The Law and Economics of Contract Interpretation*, 83 TEX. L. REV. 1581, 1588–89 (2005).

47. See, e.g., Elizabeth Mertz, *An Afterword: Tapping the Promise of Relational Contract Theory—“Real” Legal Language and a New Legal Realism*, 94 NW. U. L. REV. 909, 926 (2000)

Others highlight that contracting parties, like courts, suffer from bounded rationality and are susceptible to mistakes.⁴⁸ Still other scholars point out that the costs of enforcing seemingly complete contracts are not necessarily lower than for ambiguous ones.⁴⁹ Finally, recent scholarship argues that the risk of high litigation costs may actually have a positive impact on the contractual stage.⁵⁰

More important for this Article's purposes is that, even if ambiguous contracts entail higher costs when litigation actually takes place, no evidence supports a correlation between the level of ambiguity in a contract and the prospects of such litigation. In fact, the analysis in this Part demonstrates that a *certain* level of ambiguity can actually improve the contract's durability over time and increase the robustness of the transaction, which, in turn, may decrease the prospects of litigation.⁵¹

This last observation calls, again, for a structured examination of the virtues of ambiguity. Part II.A is dedicated to such inquiry. The analysis deviates from a "one size fits all" approach and identifies specific transaction attributes and circumstances where *ex ante* ambiguity may be particularly valuable. Part II.B highlights and summarizes the connection between particular transaction attributes and constructive ambiguity, based on the insights that emerge from Part II.A.⁵²

(observing that judges spend their days unraveling contractual disputes and have information from both parties, as well as knowledge about the contract relationship). *Cf.* Schwartz, *supra* note 7, at 281 (acknowledging that in many cases, courts will have verifiable information, based on which they can complete contracts with efficient terms).

48. *See, e.g.*, Eggleston et al., *supra* note 44, at 123 (doubting the assumptions of "smart parties" and "dumb courts" and observing that the parties themselves are susceptible to bounded rationality and are prone to error). *See also infra* note 58 and associated text.

49. Jean Tirole, *Incomplete Contracts: Where Do We Stand?*, 67 *ECONOMETRICA* 741, 743–44 (1999) (referring to enforcement costs, while arguing that "[c]ourts must understand the terms of the contract and verify the contracted upon contingencies and actions in order to enforce the contract"). *See also* Gergen, *supra* note 6, at 1006 (stating that "open terms are used because of the difficulty of writing *and enforcing* contracts that precisely specify performance subject to finely drawn conditions to deal with many known risks") (emphasis added). Likewise, the effort to avoid ambiguity may lead to drafting that is detailed and complex and result in increased costs on the part of courts enforcing the agreement. *Cf.* Eggleston et al., *supra* note 44, at 99 (highlighting that understanding contracts creates a "cognitive overload"). In addition, the costs of monitoring a detailed contingent contract may be higher than those associated with a more ambiguous contract that uses open terms and leaves more discretion to the parties.

50. Choi & Triantis, *supra* note 3, at 859 (maintaining that high litigation costs facilitate the signaling of private information at the time of contracting and re-negotiation, and operate as a screen on the seller's decision to sue).

51. *See infra* Parts II.A.4 and II.A.5.

52. For the insight that transaction attributes may affect interpretive preferences, see, Badawi, *supra* note 3, at 5 (arguing that the desirability of an interpretive regime depends on the attributes of the underlying transaction).

A. The Virtues of Ambiguity

The following analysis of ambiguity's virtues focuses on economic efficiency. It draws on existing legal and economic literature, as well as on new interdisciplinary research. The former generally regards ambiguity as "a necessary evil," required for reducing *ex ante* transaction costs. The latter, however, highlights ambiguity's intrinsic value and the positive impact it may have on contract quality and the parties' relationship throughout the transaction.

1. Reducing Transaction Costs

As a preface to any discussion of ambiguity's virtues, one must acknowledge that, to a certain degree, ambiguity is not a choice but a necessity. In other words, "all contracts are incomplete."⁵³ Social and economic environments are fraught with embedded unpredictability.⁵⁴ Parties to a contract simply cannot foresee all possible contingencies, nor can they predict each contingency's probability of occurrence or its full impact on their relationship.⁵⁵ Even if the parties could identify the contingencies in advance, they still might find it impossible to adequately predict and define *ex ante* the adequate responses.⁵⁶ Language's inherent limitations⁵⁷ and the concept of bounded rationality (*i.e.*, "the limits of human capacity

53. Robert E. Scott, *A Theory of Self-Enforcing Indefinite Agreements*, 103 COLUM. L. REV. 1641, 1641 (2003) (emphasis added) (further explaining that "[t]here are infinite states of the world and the capacities of contracting parties to condition their future performance on each possible state are finite"). See also Lipshaw, *supra* note 3, at 1010–11 (arguing that contract documentation is "an imperfect exercise at best").

54. NASSIM NICHOLAS TALEB, *ANTIFRAGILE—THINGS THAT GAIN FROM DISORDER* 137 (2012) (discussing the inherently limited predictability in social, economic and cultural life, and describing these systems as "[l]ying in the Black Swan domain").

55. See *supra* note 53. See also Melvin A. Eisenberg, *Why There is No Law of Relational Contract*, 94 NW. U. L. REV. 805, 815 (2000) ("[P]arties to a contract are *never* capable of reducing all of the important terms of their arrangement to well-defined obligations."); Charles J. Goetz & Robert E. Scott, *Principles of Relational Contracts*, 67 VA. L. REV. 1089, 1090 (1981) (noting that a complete contingent contract, which identifies all relevant risks and assigns them optimally, may not be a feasible option for parties that enter into a continuing, highly interactive contractual arrangement).

56. See Goetz & Scott, *supra* note 55, at 1091; Tirole, *supra* note 49, at 743 (observing that "[p]arties cannot define *ex ante* the contingencies that may occur (or actions that may be feasible) later on").

57. See, e.g., Schwartz, *supra* note 7, at 280 (referring to the "inevitable limitations of language" as one reason for contract incompleteness); Sanford Schane, *Ambiguity and Misunderstanding in the Law*, 25 T. JEFFERSON L. REV. 167, 192 (2002) (arguing that ambiguity and vagueness are "built into the very structure of language").

to respond optimally to the external conditions of uncertainty and complexity”⁵⁸ further support this insight.

A perfectly contingent contract, detailing each party’s obligations and responses in all possible scenarios, is, therefore, very much an illusion.⁵⁹ Even assuming that drafting a complete contract were feasible, the transaction costs would be extremely high.⁶⁰ This background clarifies ambiguity’s most frequently acknowledged advantage: its potential to reduce *ex ante* transaction costs during contract negotiations.⁶¹ Drafting an ambiguous provision is generally less expensive than drafting a set of perfectly contingent provisions. For example, referring to “industry standards” in a software license to describe a licensor’s expected level of service is less costly than negotiating and detailing the contents of all such industry standards in an unambiguous manner.⁶²

The level of unpredictability and the number of future contingencies increase the longer the contract is expected to endure. Thus, ambiguity is a particularly important tool for reducing transaction costs in long-term contracts.⁶³ Similarly, when transactions are executed in highly uncertain and complex environments, predicting and addressing all possible scenarios at the bargaining stage is improbable,⁶⁴ and parties may utilize ambiguous language as an

58. Goetz & Scott, *supra* note 55, at 1090 n.4 (discussing the concept of bounded rationality in the context of contract incompleteness). For a general account of bounded rationality, see, for example, Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 *SCIENCE* 1124 (1974); Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 *ECONOMETRICA* 263 (1979).

59. FARNSWORTH, *supra* note 27, at 480.

60. See, e.g., Tirole, *supra* note 49, at 743 (1999) (“Even if one could foresee all contingencies, they might be so numerous that it would be too costly to describe them in a contract.”).

61. See, e.g., *id.*; Gergen, *supra* note 6, at 1006 (noting that the use of “open terms” reduces the cost of contracting); Schwartz, *supra* note 7, at 278–79 (arguing that even when parties are aware of certain contingencies, they may decide to not address them in their contract, if such contingencies are sufficiently remote or the costs of addressing them are sufficiently great).

62. See, e.g., Hon et al., *supra* note 15, at 92–125 (for relevant examples from IP licenses).

63. 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) (observing that “long term events are so hard to predict, that parties will not be able to allocate future obligations and payments in a way that maximizes the value of their contract”); Kirsimarja Blomqvist, Pia Hurmelinna & Risto Sepänen, *Playing the Collaboration Game Right—Balancing Trust and Contracting*, 25 *TECHNOVATION* 497, 499 (2005) (citing IAN R. MACNEIL, *THE NEW SOCIAL CONTRACT* (1980)) (noting that “long-term contracts are usually incomplete because of the uncertainties that arise given the longer period of time during which there might be more changes”).

64. See Goetz & Scott, *supra* note 55, at 1090 n.4 (noting that under conditions of uncertainty and complexity it becomes extremely costly for the contracting parties to describe the complete decision tree).

efficient solution. This observation is particularly valid for provisions addressing low-probability occurrences, remote scenarios, or matters that are not considered *ex ante* high-risk.⁶⁵ In such circumstances, the expected costs of further negotiating such provisions may well outweigh the expected benefits.⁶⁶

2. “Getting the Deal Done”

A related point in the cost-benefit analysis maintains that, in many cases, closing the transaction may actually require a certain degree of ambiguity.⁶⁷ If the parties insist on addressing every potential contingency in a completely detailed fashion, then, naturally, more opportunities for disputes and bargaining failures will arise and the contract may not be executed at all. This is especially true when the negotiation is conducted in a competitive market environment where timing is often crucial, alternative deals are imminent, and “contract perfectionism” may be detrimental. If the parties fail to agree on a material provision, the costs of losing the deal are a necessary evil. Yet, where the relevant provision is peripheral in nature, a negotiation breakdown may not be an efficient result. To quote Richard Posner: “Deliberate ambiguity may be a necessary condition of making the contract; the parties may be unable to agree on certain points yet be content to take their chances on being able to resolve them, with or without judicial intervention, should the need arise.”⁶⁸

65. Cf. Schwartz, *supra* note 7, at 278–79 (explaining that some “contingencies may seem [to the parties] sufficiently remote or the costs of dealing with them sufficiently great as to make neglect the best response.”).

66. See Gergen, *supra* note 6, at 1062 (noting that the savings in transaction costs may outweigh expected enforcement costs). See also Schwartz, *supra* note 7, at 278 (observing that the “costs of solving the problem may exceed the parties’ private gain from a solution.”). In addition, imperfect monitoring of detailed and unambiguous contract provisions may decrease the expected benefits of having such provisions in place.

67. See Lipshaw, *supra* note 3, at 1009 (maintaining that parties often use open terms and “negotiated ambiguities” in order to have a contract that will close the deal); Duhl, *supra* note 3, at 78 (noting that drafting a contract with inconsistent provisions is sometimes a technique employed by lawyers so as to “get a deal done”). While Duhl focuses on lawyers, this practice may well reflect the instructions of sophisticated clients, who often guide their attorneys to compromise drafting and “close the deal,” unless there is a major disagreement over material terms.

68. Posner, *supra* note 46, at 1583.

3. Ambiguity and Relational Contracts

The foregoing cost-benefit efficiency analysis may apply with particular force to relational contracts, where parties are often able to resolve disputes without recourse to the legal system.⁶⁹ While there is no uniform definition of a “relational contract,”⁷⁰ certain characteristics are often associated with these agreements:⁷¹ a long contractual relationship extending over time, unlike a “spot” market deal;⁷² the parties’ difficulty in precisely defining their arrangement;⁷³ and the “interdependence of the parties to the exchange,” which extends “beyond the single discrete transaction to a range of social interrelationships”⁷⁴ so that such contracts involve “not merely an exchange, but also a relationship.”⁷⁵ Admittedly, every contract is, to some extent, a relational contract.⁷⁶ Yet, even if contracts cannot be classified in a binary manner as relational or non-relational, they are measurable across a continuum between the discrete and relational ends.⁷⁷

69. For the concept of relational contracts, see the seminal works of Stewart Macaulay, *Non-Contractual Relations in Business: A Preliminary Study*, 28 AM. SOC. REV. 55 (1963) (observing that parties engaged in business relations often abstain from complete planning of their exchange relationship and seldom use legal sanctions to settle disputes); Macneil, *supra* note 23, at 870 (referring to the perceptions of contracts as relations rather than as discrete transactions, while coining the term “relational contracts”).

70. See, e.g., Eisenberg, *supra* note 55, at 816 (referring to the numerous efforts to define relational contracts).

71. See, e.g., Speidel, *supra* note 35, 823–24 (arguing that relational contracts have at least three distinguishing characteristics: extended duration, incompleteness, and the existence of a “relationship” between the parties).

72. See, e.g., *id.*; see also Schwartz, *supra* note 7, at 271 n.1 (referring to relational contracts’ longevity); Goetz & Scott, *supra* note 55, at 1091 (discussing the tendency to equate “relational contracts” with long-term contractual involvements).

73. See, e.g., Goetz & Scott, *supra* note 55, at 1091 (arguing that “[a] contract is relational to the extent that the parties are incapable of reducing important terms of the arrangement to well-defined obligations”); Speidel, *supra* note 35, at 823 (noting that in relational contracts, “parts of the exchange cannot be easily measured or precisely defined at the time of contracting”).

74. See, e.g., Lewis Kornhauser, *Book Review: The Resurrection of Contract*, 82 COLUM. L. REV. 184, 190 (1982) (citing IAN R. MACNEIL, *THE NEW SOCIAL CONTRACT* (1980)); see also Speidel, *supra* note 35, at 825 (observing that in relational contracts, the transaction is embedded in a social or economic context); Gergen, *supra* note 6, at 999 (explaining that relational contracts are usually “long-term relationships that depend on the parties’ continued cooperation”); Jay M. Feinman, *Relational Contract Theory in Context*, 94 NW. U. L. REV. 737, 748 (2000) (noting that the term “emphasizes the interdependence of individuals in social and economic relationships”).

75. Eisenberg, *supra* note 55, at 816.

76. See, e.g., Ian R. Macneil, *Values in Contract: Internal and External*, 78 NW. U. L. REV. 340, 341–42 (1983) (admitting that “all contracts are relational”).

77. See, e.g., Macneil, *supra* note 23, at 865 (addressing the discrete-relational spectrum); Ian R. Macneil, *Relational Contract Theory: Challenges and Queries*, 94 NW. U. L. REV. 877, 894 (2000) (similarly discussing the discrete-relational spectrum); Eisenberg, *supra* note 55, at

Literature analyzing relational contracts has grappled with their various implications.⁷⁸ Most important for this Article are observations concerning parties' increased ability to resolve disputes without recourse to legal sanctions.⁷⁹ The factors that contribute to the parties' ability to "iron out" conflicts include the existence of non-legal sanctions resulting from widely accepted norms,⁸⁰ the evolution of personal and business relations across organizational boundaries,⁸¹ the parties' mutual dependence on the success of their ongoing relationship combined with enhanced costs of termination,⁸² and their desire to successfully continue in business and avoid conduct that might hurt their reputation.⁸³ All in all, the longer and more interdependent the parties' relations and the stronger and more cooperative their relationship becomes over time, the greater the chances that the parties can amicably resolve disputes arising in the contractual stage.⁸⁴

When complementary governance modes, cooperation, and self-enforcement mechanisms are available, the prospect of litigation decreases. Where this is the case, the importance of unambiguous

813 (citing IAN R. MACNEIL, *CONTRACTS: EXCHANGE TRANSACTIONS AND RELATIONS* 12–13 (2d ed. 1978)) (“[A] contract is characterized as lying at the discrete end of the spectrum if it has less of certain characteristics—for example, less duration, less personal interaction, less future cooperative burdens, less in the way of units of exchange that are difficult to measure—and as lying at the relational end of the spectrum if it has more of the relevant characteristics.”).

78. See, e.g., Posner, *supra* note 63, at 749 (indicating that according to the relational contracts strand of scholarship, contracts should be “analyzed as elements of relationships”); see also Ian R. Macneil, *Relational Contract: What We Do and Do Not Know*, 1985 WIS. L. REV. 483, 502 (1985) (arguing that “we cannot even understand a promise outside its relational context”).

79. See, most prominently, Macaulay, *supra* note 69, at 60–62.

80. *Id.* at 63 (discussing the norms that “[c]ommitments are to be honored” and that one should “stand behind” one’s product).

81. *Id.* (noting the effect of “personal relationships across the boundaries of the two organizations”). See also Blomqvist et al., *supra* note 63, at 499 (indicating that when complementary governance modes such as trust exist, contracts are less important).

82. See generally, Goetz & Scott, *supra* note 55, at 1092 (discussing the interdependency that characterizes relational contracts). See also Speidel, *supra* note 35, at 830 (referring to the costs of termination that are often enhanced in such contracts).

83. Macaulay, *supra* note 69, at 63. See also Gergen, *supra* note 6, at 1008 (referring to reputation as an important factor for self-enforcement of contracts). Cf. Thomas M. Palay, *Comparative Institutional Economics: The Governance of Freight Contracting*, 13 J. LEGAL STUD. 265, 275–76 (1984) (indicating that preserving the relationship and parties’ reputations are the most cited constraints on opportunism where contracts are not legally enforceable); TALEB, *supra* note 54, at 17 (observing that commerce is “the door to tolerance” as mistakes are “small and easily forgotten”).

84. See also *infra* Part II.A.5 for a discussion of the effect of ambiguity on trust. Cf. Macaulay, *supra* note 69, at 61–63 (indicating that when the relationship is ongoing, parties may not even refer to the written instrument in their attempt to settle a dispute); Blomqvist et al., *supra* note 63, at 498–99 (discussing the potential destructive effect that referring to the contract may have on the level of trust between the parties).

ex ante drafting of each and every contingency decreases. This is especially true where the relevant contingency refers to the *non-immediate future*, as the parties' relationship develops over time, which may enhance their problem-solving capacities.⁸⁵ In such circumstances, having a "perfect" contract in place is less important, and the potential costs of ambiguity may be much lower than initially apparent. Thus, a certain degree of ambiguity may be particularly efficient in relational contracts.

4. Ambiguity, Robustness, and Anti-Fragility

The discussion has so far presented ambiguity as a "necessary evil" that should be reluctantly tolerated as part of the cost-benefit tradeoff between *ex ante* negotiation costs and *ex post* enforcement costs. In the following paragraphs, the analysis goes a step further. It demonstrates that in some cases, a certain degree of ambiguity may actually enhance contract quality and transaction resilience and, hence, can have an intrinsic value in contract design.

Most notably, ambiguity may serve to maintain a certain degree of flexibility during the transaction's life. Given the volatility, uncertainty, and unpredictability inherent in commercial environments,⁸⁶ such flexibility may be crucial in allowing the transaction to endure unforeseen developments and future crises.⁸⁷ This may be particularly important for contracts of relatively long duration, especially when the market is highly dynamic and uncertain.⁸⁸

85. In addition, the distant future is more unpredictable, which increases the costs of detailed drafting. See *supra* note 63 and accompanying text.

86. TALEB, *supra* note 54, at 57 (discussing the unpredictability of complex systems and referring to uncertainty, variability, imperfect knowledge, chance, randomness, chaos, volatility, and various other disorder phenomena embedded in such systems).

87. While scholars have discussed the need to maintain flexibility in the post-contractual stage, the role of ambiguity in that context has not been sufficiently explored. For specific arguments in this context, see D. Douglas Bernheim & Michael D. Whinston, *Incomplete Contracts and Strategic Ambiguity*, 88 AM. ECON. REV. 902, 903 (1998) (arguing that if some aspects of performance in a dynamic contract must be incomplete due to transaction costs or limits on verifiability, then parties may desire to leave certain aspects of the other party's performance unspecified also, in order to leave room for the second party to influence the first party's choices); Chou et al., *supra* note 27, at 6 (noting that a complete contract imposes constraints that can reduce the parties' future action options).

88. Cf. Macneil, *supra* note 23, at 865-73, 900 (discussing a range of techniques parties use in long term contracts to enhance flexibility, including the use of external standards such as Consumer Price Index, third-party determination of performance, one-party control of terms, and an agreement to agree; and arguing that relational contracts, "being more complex and of greater duration than discrete transactions, become *dysfunctional if too rigid . . .*") (emphasis added).

Thus, for instance, a “best efforts” clause allows more flexibility and “breathing space” than a provision listing performance obligations in an unambiguous manner.⁸⁹ The latter may fail to serve its purpose should unpredictable changes in commercial circumstances or the relevant markets occur during the contractual term. In other words, explicit drafting may be too rigid in the face of unpredictable future developments. More ambiguous drafting, on the other hand, may continue to serve as the governing framework for the contractual relationship even in the face of changing circumstances.⁹⁰

By providing potentially plausible arguments for both parties if a certain contingency becomes relevant,⁹¹ ambiguity may encourage creative solutions to the challenges arising throughout the lifetime of the contract, which allow the parties to reach more specific consents as reality unfolds. To illustrate, parties to a license for the development and marketing of a new pharmaceutical product may be unable to accurately anticipate its future launch date (which may occur years after contract execution) due to uncertainties surrounding development, clinical trials, or regulatory approvals. Using ambiguous language, such as “the earliest commercially reasonable date,” may serve the transaction better than detailing the almost endless potential scenarios and setting a definitive and unambiguous date for each.⁹² Thus, provisions that are more ambiguous and less rigid increase the contract’s adaptability.

Nassim Taleb’s recent work on anti-fragility reinforces these observations and sheds further light on ambiguity’s contribution to commercial transactions.⁹³ Literature in the complexity field highlights the unpredictability and opacity inherent in complex

89. For the use of “best efforts” and other open terms, see *supra* notes 14–15 and accompanying text.

90. Cf. Schwartz, *supra* note 7, at 317 (noting that “when parties cannot create terms to govern all possible contingencies, they sometimes can create ‘structures’ that channel their responses to these contingencies in desirable ways”) (emphasis added).

91. See *supra* note 26 and accompanying text.

92. For the use of such language in an IP license, see *supra* note 16 and accompanying text.

93. TALEB, *supra* note 54, at 3–4, 137. Taleb coined the term “anti-fragility,” which refers to the ability to adapt and benefit from uncertainty, unpredictability and disorder.

economic and social systems.⁹⁴ Such properties make “perfect planning” epistemologically impossible.⁹⁵ Based on these observations, Taleb points out that, rather than trying to anticipate and regulate the unpredictable, players in complex systems should concentrate on increasing their capacity to adjust to and even benefit from unforeseen events.⁹⁶ To this end, simplicity and rules of thumb may be preferable to ultra-sophisticated and detailed planning.⁹⁷ Moreover, systems that are accustomed to handling a degree of volatility and even confusion are more adaptable and anti-fragile than those that try to avoid it at all costs.⁹⁸

Although Taleb’s work does not address contract drafting, his insights are very relevant to this Article’s argument. As the discussion above demonstrates, ambiguous contractual language can increase the players’ capacity to respond to uncertainty and volatility, which improves the contract’s resilience and anti-fragility. Thus, transactions governed by somewhat ambiguous provisions may survive where contracts that adhere to the ideal of perfect planning and “zero ambiguity” may fail.

5. Ambiguity and Inducing Trust

Finally, maintaining a level of ambiguity may foster trust between parties during negotiation, and, as a result, facilitate their cooperation in the contractual stage. The process of contract design and formation impacts the parties’ perceptions of one another and their future relationship, thus influencing their level of collaboration during the contract’s life. Throughout the negotiation stage, a party’s behavior “can signal the extent to which it trusts the other

94. Complexity is an interdisciplinary field dedicated to the research of complex systems that are comprised of multiple interacting components, including, for example, not only social and economic systems but also natural and biological systems. See generally MELANIE MITCHELL, COMPLEXITY—A GUIDED TOUR (2009). For the unpredictability of complex systems, see, for example, TALEB, *supra* note 54, at 57–58 (explaining that due to the interdependencies among the multiple components comprising complex systems, causal relations in such systems are nonlinear and cannot be isolated). See also MITCHELL, *supra*, at 20 (explaining that understanding chaos and complex systems’ dynamics laid to rest the hopes for perfect prediction); DUNCAN J. WATTS, EVERYTHING IS OBVIOUS* ONCE YOU KNOW THE ANSWER 148, 162, 171 (2011) (discussing the limits of accurate prediction of the behavior of complex systems).

95. TALEB, *supra* note 54, at 284 (referring to the “planning fallacy”).

96. *Id.* at 234–35.

97. *Id.* at 305 (discussing the advantages of “less-is-more”).

98. *Id.* at 101 (indicating that when players are unused to volatility, the slightest change will disturb the system, and that “injecting some confusion” has a stabilizing impact in the system).

party.”⁹⁹ Parties may construe insistence upon contract completeness as lack of trust, which in turn may negatively impact the dynamics of the negotiations.¹⁰⁰

A recent empirical study in the field of business management supports the notion that ambiguity preserves trust. The study documents how attempts to create more complete contracts—by adding more details or clauses—can “crowd out rapport and undermine trust and cooperation.”¹⁰¹ The findings indicate that contract completeness may signal distrust, convey a less personal view of the relationship, and reduce the parties’ relational expectations.¹⁰² Furthermore, the effect appears to carry over into the post-negotiation stage and negatively impact the parties’ cooperative behavior throughout the transaction.¹⁰³ These findings imply that the “trust effect” is more significant when ongoing interpersonal relations between the parties are vital for the success of the transaction. Researchers further suggest that revising this negative “first impression” during the contractual phase may be difficult.¹⁰⁴

Further research is needed to measure this impact in actual (as opposed to experimental) business settings.¹⁰⁵ Yet, assuming that a certain level of negative correlation exists between contract completeness and the level of trust between the parties, this effect can have significant implications. Trust is a key factor in many types of

99. Barondes, *supra* note 4, at 46.

100. *Cf.* Eggleston et al., *supra* note 44, at 117–18 (indicating that parties may elect to keep the terms of their contract simple in order to signal that they are trustworthy and that “adding language” may alert the other party to “bad outcomes”). For a more general argument regarding the potential negative effect of “legalizing” a commercial relationship, see Macaulay, *supra* note 69, at 64 (indicating that the use of contracts and contract law may have undesirable consequences and “carefully planned arrangements may create undesirable exchange relationships between business units”). *Cf.* Blomqvist et al., *supra* note 63, at 498 (noting that parties to a contract often avoid referring to the written instrument out of concern that it “may result in a breakdown of trust and thus put the success of the collaboration at risk”).

101. Chou et al., *supra* note 27, at 4–5. As a measurement of contract completeness, the study uses the specificity of the language and the number of clauses in the contract. *Id.*

102. *See id.* at 20–21.

103. *Id.* at 19 (finding that increasing the number of contract clauses reduces the actual cooperative behavior of the participants).

104. *Id.* at 6–7 (arguing that because people have difficulty ignoring information once they have acquired it, discounting or revising signals of mistrust at a later stage can be particularly difficult).

105. One may argue that in the context of a true business relationship, insistence on details should not have such a strong signaling effect as it merely reflects a reasonable desire to minimize risk at the initial stage of the relationship. Furthermore, parties to business transactions often have legal representation, and it is not clear to what extent exchanges between lawyers throughout the contracting process may serve as signals of distrust and undermine cooperation between the parties themselves.

business transactions,¹⁰⁶ and a minimum threshold of mutual trust is crucial for the cooperation their success often requires.¹⁰⁷ Beyond its general importance for ongoing transactions, trust also plays a particularly significant role in times of disagreement, where a baseline of mutual trust can facilitate dispute resolution.¹⁰⁸ Furthermore, empirical work in the business management field indicates that higher levels of trust in a contractual relationship increase the parties' willingness to continue their affiliation after a dispute arises.¹⁰⁹

In sum, insisting on contract completeness during the negotiation phase can undermine the trust and collaboration required for resolving disputes arising over the course of the contract term. Acquiescing to a certain degree of ambiguity, on the other hand, may foster trust and prove beneficial for the parties' transaction.

* * * *

This Article's analysis so far indicates that the ideal of a fully complete contract is not only unobtainable—it is also not socially optimal. Instead, a *certain* level of ambiguity in contracts can have various virtues: reducing transaction costs associated with foreseeing and negotiating remote contingencies, facilitating the closing of efficient transactions, increasing the adaptability and anti-fragility of contracts in the face of unforeseen developments, and preserving trust between the parties. Moreover, the costs of ambiguity may not be as great as first imagined, particularly in relational contracts where the parties' chances of resolving disputes without recourse to litigation are higher.

Of course, reality does not always follow parties' *ex ante* expectations and evaluations. Sometimes, remote scenarios materialize, disputes over low probability occurrences arise, trust breaks, and

106. See, e.g., Blomqvist et al., *supra* note 63, at 498 (noting the critical role of trust as a success factor in the context of asymmetric R&D partnerships); Macaulay, *supra* note 37, at 801 (referring to the role of trust in long-term continuing relations).

107. See, e.g., Blomqvist et al., *supra* note 63, at 502 (referring specifically to asymmetric R&D partnerships and suggesting that "successful collaboration is possible only if there is a cooperative threshold amount of trust between the parties").

108. See also *supra* Part II.A.3 (for a discussion of relational contracts). The effectiveness of self-enforcement mechanisms embedded in relational contracts seems to depend on the existence of a minimal level of trust between the parties.

109. See generally Deepak Malhotra & Fabrice Lumineau, *Trust and Collaboration in the Aftermath of Conflict: The Effects of Contract Structure*, 54 ACAD. MGMT. J. 981 (2011). Malhotra and Lumineau's findings distinguish between goodwill and competence dimensions of trust, *id.* at 986, but the bottom line is that both aspects of trust positively correlate with the willingness to continue a relationship after a dispute has arisen, *id.* at 990–91. The study also explores how contract structure affects trust, but it does not measure the effect of contract completeness and is, therefore, less relevant for the purposes of this Article.

parties to relational contracts end up in court. In such circumstances, the parties may wish that the suddenly-relevant, ambiguous provisions were drafted in a clear and unequivocal manner.

Yet, such hindsight is misleading. Even if ambiguity's *ex post* costs outweigh its benefits in a particular case, in many other instances low-probability occurrences will not materialize and ambiguous provisions will remain dormant. In still other cases, the parties may resolve their differences without resorting to litigation. Thus, even if a dispute arises *ex post*, the parties' decision to employ ambiguity when drafting their contract may still be rational.

Furthermore, from a general societal perspective, the aggregate balance between the benefits and costs of employing a certain degree of ambiguity in contracts could still be positive. To incentivize potential parties to behave in socially efficient and desirable ways as they draft their agreements, the legal system should focus on the negotiating stage. Therefore, the appropriate prism for any evaluation of ambiguity must be the parties' *ex ante* perspective at the time of contract formation. Thus, if ambiguity was warranted *ex ante*, then the judicial response should tolerate it *ex post*.

More importantly, the foregoing systematic inquiry into ambiguity's advantages and costs directs us away from a "one-size-fits-all" solution. Instead, the analysis distills certain transaction traits that positively correlate to ambiguity's virtues. In other words, the benefits of ambiguity may be more pronounced and its costs lower in agreements that possess certain properties. This insight has significant normative implications: if certain types of contracts that can benefit more from *ex ante* ambiguity are identifiable, then courts should treat ambiguous provisions in these transactions more liberally than in other types of transactions. The following Part highlights the principal transaction attributes that emerge from the above discussion.

B. Ambiguity and Particular Transaction Attributes

The analysis in Part II.A points towards three principal traits of a transaction that make it more disposed to constructive ambiguity:

1. A Longer Contract Term

Unpredictability increases with time.¹¹⁰ Therefore, the cost of drafting a “complete” contract increases when the contract term is longer and the parties must “see into the future” and address numerous contingencies.¹¹¹ Furthermore, when the transaction’s duration is longer, ambiguity is more significant for maintaining the flexibility and adaptability vital for the contract’s robustness and anti-fragility.¹¹² In addition, parties to a longer-term contract are more likely to form strong—and sometimes personal—relationships that might increase their ability to resolve disputes amicably.¹¹³ This, in turn, reduces the prospects of litigation and, with it, the potential costs of ambiguity.¹¹⁴

2. Relational Features

Ambiguity can be particularly beneficial in transactions that exhibit relational features, such as mutual dependence, ongoing cooperation, and the existence of personal relationships across organizational boundaries.¹¹⁵ As explained above, the costs of ambiguity in relational contracts are likely lower, due to parties’ increased ability to resolve disputes without litigation.¹¹⁶ Furthermore, the “trust effect”—*i.e.*, the possible effect of contract completeness on undermining trust between the parties (and *vice versa*)—is possibly greater when the relationship between the parties is more interpersonal.¹¹⁷

3. Uncertainty and Complexity of the Transaction and the Relevant Markets

The transaction costs of unambiguous drafting may be especially great in complex or highly dynamic business environments due to

110. See TALEB, *supra* note 54, at 13 (“more time, more events, more disorder”).

111. See, e.g., Blomqvist et al., *supra* note 63, at 499 (“long-term contracts are usually incomplete because of the uncertainties that arise given the longer period of time during which there might be more changes”). See also *supra* note 63 and accompanying text.

112. See *supra* notes 86–92 and accompanying text.

113. See *supra* notes 74, 84 and accompanying text.

114. See *supra* notes 74, 84 and accompanying text.

115. See *supra* notes 74–75 80–83 and accompanying text.

116. See generally *supra* Part II.A.3.

117. See generally *supra* Part II.A.5 and particularly the references *supra* notes 101–104.

lower predictability.¹¹⁸ Moreover, as indicated above, when parties operate in highly dynamic markets, flexibility and adaptability are particularly crucial, and ambiguity can be an important tool for maintaining the robustness and anti-fragility of their transaction.¹¹⁹

* * * *

Notably, even when all of the above features exist in a certain transaction, this Article's analysis does *not* imply that ambiguity should be completely embraced and clarity always rejected. Yet, altogether, the more dominant these three traits are in a transaction, it is more likely that the benefits of a certain degree of ambiguity will be greater and its costs lower.

Part III looks more closely at this proposition by examining IP license agreements. It highlights the prevalence of the three features identified above in IP license agreements and the beneficial role ambiguity can play in those transactions.

III. IP LICENSES AS A CASE STUDY

In many respects, the interaction of intellectual property licenses and contract theory has been under-studied. Academic examination of IP licenses usually scrutinizes these agreements through the prism of IP law and theory with occasional assistance from other branches such as antitrust law.¹²⁰ Although scholars have analyzed certain contractual aspects of license transactions—especially modern contractual arrangements like shrink-wrap, click-wrap, and

118. See generally *supra* Part II.A.1 and particularly *supra* note 64 and accompanying text.

119. See generally *supra* Part II.A.4 and particularly the references *supra* note 88. Cf. Eggleston et al., *supra* note 44, at 131 (maintaining that complexity of the environment may be a reason for liberal interpretation of contracts).

120. Examples of matters scholarship frequently discusses include: the enforceability of license terms that impose restrictions on the use of IP protected subject matter which are broader than those set out in IP law, see, e.g., Maureen A. O'Rourke, *Drawing the Boundary Between Copyright and Contract: Copyright Preemption of Software License Terms*, 45 DUKE L.J. 479 (1995) (exploring whether parties to a license can contract around copyright law's fair use exception); the evaluation of certain licensing practices under the copyright misuse or patent misuse doctrines or under antitrust law, see, e.g., Michael J. Meurer, *Vertical Restraints and Intellectual Property Law: Beyond Antitrust*, 87 MINN. L. REV. 1871 (2003) (comparing the effectiveness of IP law and antitrust law in regulating vertical restraints); and the prospects of concluding voluntary license transactions in various circumstances, see, e.g., Mark A. Lemley, *The Economics of Improvement in Intellectual Property Law*, 75 TEX. L. REV. 989 (1997) (exploring licensing negotiations in the context of cumulative innovation).

browse-wrap licenses¹²¹—the analysis of IP licenses from the perspective of contract law and theory has been largely overlooked. Yet, as contractual instruments, IP licenses are subject to contract law rules and doctrines, including those regarding ambiguity.¹²²

Part I established that various types of ambiguities exist in IP license agreements.¹²³ This Part examines the suitability of these agreements for “constructive ambiguity.” In a nutshell, the analysis indicates that IP license transactions commonly display the three features identified above as “ambiguity-friendly” characteristics. Moreover, these three characteristics are tightly related to the unique nature of IP rights and markets. Hence, IP licenses negotiated between sophisticated parties constitute paradigmatic cases for constructive ambiguity. The following Subparts explore this proposition and delve deeply into the relevant traits of IP licenses.

A. Long Duration

IP licenses regularly cover the licensee’s long-term, ongoing use of the licensed subject matter.¹²⁴ Unlike transactions to transfer or assign ownership in intellectual property rights, where the IP owner divests itself of rights in the subject matter, in a license transaction

121. These types of agreements are predominantly used in the software industry. The term “shrink-wrap” license describes a license placed inside the plastic wrapping of a software product, to which customers bind themselves when they open and use the software. In a “click-wrap” license, a notice of the terms and conditions is typically provided in a pop-up text box, which requires users to assent to the agreement by clicking on an icon. Finally, the term “browse-wrap” typically refers to terms and conditions posted on a website that does not even require the user to expressly manifest assent. *See, e.g.*, Tarra Zynda, Ticketmaster Corp. v. Tickets.com, Inc.: *Preserving Minimum Requirements of Contract on the Internet*, 19 BERKELEY TECH. L.J. 495, 500–04 (2004). Such contractual arrangements challenge traditional doctrines of contract law, and have been the subject of significant academic discussion. *See generally, e.g.*, Mark A. Lemley, *Terms of Use*, 91 MINN. L. REV. 459 (2006) (discussing the growing judicial willingness to enforce electronic contracts); Zynda, *supra* (proposing a validity analysis for online contracts); Nathan J. Davis, *Presumed Assent: The Judicial Acceptance of Clickwrap*, 22 BERKELEY TECH. L.J. 577 (2007) (maintaining that the current framework for adjudicating click-wrap licensing is effective).

122. *See generally* RAYMOND T. NIMMER, LICENSING OF INTELLECTUAL PROPERTY AND OTHER INFORMATION ASSETS 3 (2004) (stating that a “license is a contract”); HAROLD EINHORN & ERIC E. BENSON, PATENT LICENSING TRANSACTIONS 1–4 (updated through October 2013) (noting that “a license is merely a form of a contract”).

123. *See supra* Part I.A.

124. Commentators often describe the essence of an IP license as the licensor’s undertaking not to sue the licensee for a conduct that would otherwise constitute an infringement of intellectual property rights. *See, e.g.*, MARTIN J. ADELMAN ET AL., PATENT LAW, 1231 (1998); RAYMOND T. NIMMER & JEFF C. DODD, MODERN LICENSING LAW 74 (2007–08). *See also* G. GERVAISE DAVIS III, SOFTWARE PROTECTION 187 (1985) (defining a license as “the grant of a right by the ‘licensor’ to a ‘licensee’ to do something that the licensee could not do without the permission of the licensor”).

the IP owner generally retains ownership of the rights during the transaction's life.¹²⁵ Thus, the performance stage of a license transaction is normally continuous and the contractual relationship between the parties lasts over a period of time specified in the license.¹²⁶ The non-rival nature of intellectual property, which accounts for the licensor's power to simultaneously license the rights to multiple parties,¹²⁷ and the long duration of intellectual property rights make licensing a common business model for the commercial exploitation of IP assets.¹²⁸

In practice, licenses are often granted for lengthy periods. For example, software licenses in the business-to-business segment typically set out an initial term of one year, subject to optional or automatic renewals.¹²⁹ Frequently, the initial use of a software program creates a lock-in effect,¹³⁰ which results in multiple renewals and longer license duration. Broadcasting rights agreements are another example: their term depends on the nature of the licensed content and can vary from several months (as in the case of a single program) to several years (as in the case of a complete channel).¹³¹ Similarly, licenses for development and commercialization in the

125. See, e.g., NIMMER, *supra* note 122, at 3; DAVIS, *supra* note 124, at 196 (explaining that once a copyright assignment is made, the original rights holder no longer has any rights to the copyright).

126. See generally NIMMER, *supra* note 122, at 483–521 (discussing duration of licenses).

127. See, e.g., Dan L. Burk & Mark A. Lemley, *Policy Levers in Patent Law*, 89 VA. L. REV. 1575, 1580 (2003); Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1, 13–14 (2005); Wendy J. Gordon, *Fair Use as Market Failure: A Structural and Economic Analysis of the Betamax Case and Its Predecessors*, 83 COLUM. L. REV. 1600, 1610–11 (1982); Peter S. Menell, *Tailoring Legal Protection for Computer Software*, 39 STAN. L. REV. 1329, 1337 (1987) (discussing the non-rival nature of intellectual property assets).

128. See, e.g., NIMMER, *supra* note 122, at 3 (maintaining that “today, licensing is a significant aspect of virtually all areas of commerce that deal with information or information services”); DAVIS, *supra* note 124, at 194–95 (explaining why software is regularly licensed and not sold).

129. See, e.g., Hon et al., *supra* note 15, at 120 (presenting empirical research indicating that initial contract terms cloud service providers propose as a basis for negotiation “typically stipulate a one to three-year initial term, sometimes renewing automatically unless terminated”).

130. Indeed, the seminal work of Katz and Shapiro, which discussed network externalities and lock-in, focused on technology adoption. Michael Katz & Carl Shapiro, *Technology Adoption in the Presence of Network Externalities*, 94 J. POL. ECON. 822, 823–24 (1986). For literature discussing the lock-in effect in the software industry, see, for example, CARL SHAPIRO & HAL VARIAN, *INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY* 11–13, 160 (1999); Mark Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479, 506, 522 (1998); Aaron S. Edline & Robert G. Harris, *The Role of Switching Costs in Antitrust Analysis: A Comparison of Microsoft and Google*, 15 YALE J. L. & TECH. 169, 178–79 (2012).

131. See, e.g., César Mattos, *Broadcasting Football Rights in Brazil: The Case of Globo and “Club of 13” in the Antitrust Perspective*, 42(2) EST. ECON. 337, 343, 357 (2012) (discussing the various durations of sports broadcasting rights agreements).

pharmaceutical field must account for the extensive time and effort conducting clinical trials and acquiring regulatory approvals entails. The initial term of such licenses can easily exceed ten years.¹³² Likewise, trademark licenses are often part of franchising or other ventures that necessitate substantial and ongoing investment on part of the licensee.¹³³ Their term can reach ten or even twenty years.¹³⁴

As explained in Part II, such long contractual terms increase the costs of “predicting the future” and avoiding ambiguity. In addition, the prospects of amicable dispute resolution may be greater and the benefits to the transaction’s adaptability and anti-fragility more pronounced.¹³⁵

B. Relational Features

Beyond their typically long duration, IP licenses often exhibit strong relational features. Such features are also related to IP’s unique traits. Knowledge and information are the basis of most IP assets, and layers of knowhow, expertise, and tacit knowledge regularly surround formal IP rights.¹³⁶ For example, despite patent applicants’ duty to adequately disclose relevant technologies in patent applications,¹³⁷ the technologies disclosed are often

132. See Christian Bessy & Eric Brousseau, *Technology Licensing Contracts Features and Diversity*, 18 INT’L REV. L. & ECON. 451, 456 (1998) (presenting empirical evidence showing that approximately sixty-five percent of the technology licenses examined specified a term exceeding seven years); Philip Mendes, *Licensing and Technology Transfer in the Pharmaceutical Industry*, 20, available at http://www.wipo.int/export/sites/www/sme/en/documents/pdf/pharma_licensing.pdf (maintaining that the term of a pharmaceutical license is typically until the expiry of the last patent).

133. See, e.g., Gillian K. Hadfield, *Problematic Relations: Franchising and the Law of Incomplete Contracts*, 42 STAN. L. REV. 927–28 (1990) (noting that “franchisees often make very large sunk investments in their franchises”).

134. Cf. *id.* at 937 (presenting an empirical research that demonstrates the prevalence of long-term franchise agreements for specified terms of ten years, twenty years or even more).

135. See *supra* Part II.B.1.

136. For the concept of tacit knowledge, see generally MICHAEL POLANYI, *PERSONAL KNOWLEDGE: TOWARDS A POST-CRITICAL PHILOSOPHY* (1958). For literature discussing tacit knowledge in the context of IP rights, see, for example, Margareth Chon, *Sticky Knowledge and Copyright*, 2011 WIS. L. REV. 177 (2011) (maintaining that copyright often does not protect “tacit knowledge” surrounding the copyright subject matter); Eric von Hippel, “*Sticky Information*” and the Locus of Problem Solving: Implications for Innovation, 40 MGMT. SCI. 429 (1994) (maintaining that technological problem solving often involves “sticky information”).

137. Under the Patent Act, the inventor must adequately disclose three separate elements: (1) the invention (the “description” requirement), (2) the manner and process of making and using the invention (the “enablement” requirement), and (3) the best mode contemplated by the inventor of carrying out his invention (the “best mode” requirement). See 35 U.S.C. § 112 (2006); DONALD S. CHISUM, *CHISUM ON PATENTS* § 7–9 (2010).

accompanied by trade secrets that are not easily accessible without the IP owner's cooperation.¹³⁸ At times, only certain components of a system are patented, while other parts are maintained as trade secrets.¹³⁹ Sharing such knowhow with the licensee is often crucial in order for the licensee to utilize the relevant technology. At the same time, transferring tacit knowledge may be quite complicated.¹⁴⁰

Therefore, beyond formally licensing an intellectual property right, the parties often need to cooperate in order to allow the licensee to access the licensor's know-how, expertise, and tacit information.¹⁴¹ Indeed, IP licenses frequently provide ongoing obligations to cooperate. For example, in agreements for the development of pharmaceuticals or medical devices, the licensors of core technologies must typically assist their licensees in the development stage and in securing regulatory approvals.¹⁴² Likewise, licensors of television programs frequently assist their licensees in adapting the content of programs to suit local audiences.¹⁴³

138. See, e.g., Rebecca S. Eisenberg, *Patents and the Progress of Science: Exclusive Rights and Experimental Use*, 56 U. CHI. L. REV. 1017, 1029 n.52 (1989) (referring to patent applicants' practice of withholding information from patent specifications and protecting their know-how through trade secrecy); Pamela Samuelson & Suzanne Scotchmer, *The Law and Economics of Reverse Engineering*, 111 YALE L.J. 1575, 1584 (2002) (acknowledging that "a patent does not teach technologists everything they might want to know"). Patent law's disclosure requirements instruct the inventor to disclose information she might otherwise preserve as a trade secret. See, e.g., DONALD S. CHISUM, CHISUM ON PATENTS § 7-616 (2010). However, trade secrets may cover information that does not fall within the scope of such requirements. *R2 Med. Sys., Inc. v. Katecho, Inc.*, 931 F. Supp. 1397, 1420 (N.D. Ill. 1996).

139. See, e.g., Samuelson & Scotchmer, *supra* note 138, at 1620 (discussing the practice of platform developers to patent some components of their systems while maintaining Application Programming Interfaces (APIs) as trade secrets).

140. See *supra* note 136. See also Ashish Arora, *Contracting for Tacit Knowledge: The Provision of Technical Services in Technology Licensing Contracts*, 50 J. DEV. ECON. 233 (1996) (discussing the difficulties of transferring know-how in light of the prevalence of tacit knowledge).

141. See generally FRANÇOIS DESSEMONTET, *THE LEGAL PROTECTION OF KNOW-HOW IN THE UNITED STATES OF AMERICA* 55 (2d ed., 1976) (discussing the "auxiliary function" of know-how in connection with technology transfer agreements); EINHORN & BENSON, *supra* note 122, at 1-86.13 (noting that "[p]atent license agreements often include a license to trade secrets related to the patented technology and/or know-how related to the implementation of the patented technology").

142. See Hugh B. Wellons, Eileen Smith Ewing, Robert Copple, William Wofford & Erika Leitzan, *Biotechnology and the Law* 172 (1st ed. 2007) (emphasizing the importance of cooperation in licensing nascent technologies in the biotech field).

143. See ALBERT MORAN & JUSTIN MABON, *UNDERSTANDING THE GLOBAL TV FORMAT* 59 (2006) (discussing the need to receive producers' consultation when adapting television formats); Michael Keane, *East Asia, The Global Regional Dynamic, in CULTURES AND GLOBALIZATION: THE CULTURAL ECONOMY* 141, 144 (Helmut K. Anheier & Yudhishtir Raj Isar eds., 2008) (indicating that when television formats are licensed, consultancy and expertise are a valued commodity).

Software licensors, similarly, are regularly obliged to provide on-going support and maintenance services, as well as training, know-how, and other types of assistance to enable licensees to use the technology properly and capture its full benefits.¹⁴⁴

In such circumstances, parties to license transactions frequently need to share confidential information. This information may consist of the expertise and tacit knowledge related to the licensed technology or may pertain to the licensee's clientele, financial data, or business infrastructure.¹⁴⁵ In some cases, transferring knowledge and information requires granting the licensor access to the licensee's premises and infrastructure,¹⁴⁶ a measure that necessitates significant cooperation and a substantial level of trust between the parties.¹⁴⁷

Moreover, tacit knowledge and expertise are usually held by specific individuals within organizations.¹⁴⁸ Therefore, the personal identity of the individuals involved in the performance of the contract is often highly important and specified in IP licenses.¹⁴⁹ Agreements for the development of customized software solutions, for example, often specify, in appended statements of work (SOWs), the identity of the developer's project manager and personnel, and afford the customer certain input if the individuals need to be replaced.¹⁵⁰ Biotech and pharmaceutical licenses may contain similar provisions.¹⁵¹ Over time, such continuous personal involvement facilitates the formation of personal relationships between the parties.

144. See, e.g., Greg R. Vetter, *Exit and Voice in Free and Open Source Software Licensing: Moderating the Rein over Software Users*, 85 OR. L. REV. 183, 203–04 n.80 (2006) (noting that most software users purchase ongoing maintenance and support).

145. For example, in order to customize “off the shelf” technological products to the special needs of a particular licensee, licensees must disclose to the licensor information about licensee's business and technological infrastructure.

146. This may be required, for example, in order to install a technological product or provide maintenance and support services. See, e.g., Vetter, *supra* note 144, at 203 n.80 (2006) (noting that “[i]t is common for enterprise software suppliers to have personnel in the customer's facility or a remote presence on the customer's computers”).

147. Cf. Blomqvist et al., *supra* note 63, at 498 (describing research that identifies trust as one of the critical success factors for asymmetric R&D partnerships).

148. See *supra* note 136.

149. See, e.g., WELLONS ET AL., *supra* note 142, at 172 (indicating that in biotech transactions, sometimes “only one or a few people, including the inventor, truly understand how the invention works and how it can be improved or modified”).

150. Statement of Work (SOW) is a document that details and defines the work products, deliverables, and timeline for the performance of a project. SOWs are frequently appended to software development agreements. See, e.g., JAMES TAYLOR, *MANAGING INFORMATION TECHNOLOGY PROJECTS* 82 (2004) (describing the functions of SOWs).

151. WELLONS ET AL., *supra* note 142, at 172 (observing that when a biotech invention is licensed at an early stage it is often crucial for the licensee to “wrap up” the relevant people).

In addition, due to the non-rival nature of intellectual property,¹⁵² technologies are sometimes simultaneously licensed to multiple parties on a non-exclusive basis. In such cases, the licensor (*i.e.*, the IP owner) is generally permitted, motivated, and sometimes expected to continue its efforts to improve, update, and upgrade the licensed technology. Feedback from existing customers may be extremely valuable during this process. Some licensors may even request that their licensees test new or improved products, which can further strengthen the parties' collaboration.

The payment structure prevalent in IP licenses enhances the need for continuing collaboration and interaction during the term of license agreements. Payments to licensors are commonly derived from the licensee's revenues, often in the form of periodic royalties.¹⁵³ This payment structure serves as a risk-sharing mechanism in the face of the uncertain value of the licensed subject matter¹⁵⁴ and is common in various industries, including publishing,¹⁵⁵ music,¹⁵⁶ and pharmaceuticals.¹⁵⁷ This is also the case in the emerging IPTV field, where the number of subscribers to the IPTV platform may affect payment to content providers.¹⁵⁸ This payment structure further aligns the parties' interests in their transaction's success and motivates their cooperation.¹⁵⁹ At the same time, royalty-based agreements necessitate supervision and surveillance mechanisms, typically in the form of royalty accounting provisions that allow licensors access to certain portions of a licensee's confidential financial information.¹⁶⁰ The process of calculating and verifying

152. *See supra* note 127 and accompanying text.

153. *See Bessy & Brousseau, supra* note 132, at 464 (presenting empirical evidence attesting to the pervasiveness of this payment structure in technology license agreements); NIMMER, *supra* note 122, at 523 (discussing the prevalence of this payment structure where the licensee uses licensed information "for manufacturing, redistribution, or inclusion in other products").

154. *See, e.g., Bessy & Brousseau, supra* note 132, at 464.

155. *See, e.g., ALBERTO N. GRECO, JIM MILLIOT & ROBERT M. WHARTON, THE BOOK PUBLISHING INDUSTRY 196* (2013) (describing the typical contractual arrangements regarding royalty payments in publishing agreements).

156. *See, e.g., TODD BRABEC & JEFF BRABEC, AMERICAN SOCIETY OF AUTHORS, COMPOSERS, PUBLISHERS, Recording Artists Royalties, available at* <http://www.ascap.com/music-career/articles-advice/music-money/money-recording.aspx>.

157. WELLONS ET AL., *supra* note 142, at 178.

158. *See, e.g., Bouwman et al., supra* note 12, at 22 (discussing revenue-share arrangements in the IPTV field).

159. Notably, when the license is provided on an exclusive basis, the licensor may be "in a position of substantial reliance on the licensee to provide the licensor with a viable commercial return from its property." NIMMER, *supra* note 122, at 151.

160. *See, e.g., EINHORN & BENSEN, supra* note 122, at 1–5 (noting that "when a license is entered into with running royalties, the contract takes on some relational aspect since there is a continuing reporting and payment relationship").

payments under a royalty-based license increases the intensity of the parties' interactions.

Similar commercial dependence exists where a licensee receives the rights to resell and sublicense the products or services embodying the intellectual property. In that case, the parties may need to further cooperate to effectively and properly train the licensee's staff and to handle additional matters required for successful sublicensing. Altogether, the parties' ongoing involvement in the performance of their transaction and their constant interactions often compel a continuous and multi-faceted collaboration touching upon many facets of the transaction, including technological, marketing, commercial, and administrative aspects.

These factors illustrate another important relational feature of license transactions: the mutual dependence that often evolves between the parties to such agreements. Nobel Laureate Oliver Williamson observed decades ago that even where, initially, markets offer substitutes, many interactions oblige the parties to make relationship-specific investments so that, once the contract is formed, "the contracting parties are locked into a bilateral exchange."¹⁶¹ This astute observation seems particularly valid with respect to IP licenses. Licensees often depend on the licensor for tacit knowledge and specialized knowhow and may also be subject to the lock-in effect that is prevalent in technology markets due to high switching costs and network effects.¹⁶² Licensors, likewise, often depend on licensees' success to further develop or market their technology, particularly in exclusive license arrangements.¹⁶³ In some instances, licensees utilizing the IP-protected subject matter can affect licensors' commercial success and reputation and, hence, increase mutual dependence. Such is the case in trademark licenses, where the quality of the goods the licensee produces (to which licensor's trademark is attached) impacts consumers' perception of the mark.¹⁶⁴ All these factors increase the parties' incentive to adhere to the transaction and resolve their disputes outside litigation.

161. OLIVER WILLIAMSON, *THE MECHANISM OF GOVERNANCE* 26 (2000); Oliver Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 *AM. ECON. REV.* 112, 117 (1971). For reflections of these insights in legal literature, see, for example, Goetz & Scott, *supra* note 55, at 1101. See also Yuval Procaccia, *Revisiting the Efficiency Theory of Non-Contemplated Contingencies in Contract Law*, *CAN. J. L. & JURIS.* (forthcoming) (manuscript at 28), available at <http://ssrn.com/abstract=2274708> (noting that "[r]eliance causes a party to become 'invested' in the particular transaction, and willing to accept less favorable terms—to ensure that her investment does not go to waste").

162. See *supra* note 130 and accompanying text.

163. See *supra* note 159.

164. See, e.g., JEROME GILSON & ANNE GILSON LALONDE, 2–6 *GILSON ON TRADEMARKS* § 6.04 (LexisNexis 2013) (noting that "[c]ontrol over the nature and quality of the licensee's goods

The analysis above supports the general classification of IP license agreements as relational contracts.¹⁶⁵ The intricate relations that evolve between parties throughout the life of the license,¹⁶⁶ their mutual dependence,¹⁶⁷ and the typically long duration of the licenses¹⁶⁸ all place intellectual property licenses closer to the relational end of the discrete-relational continuum.¹⁶⁹

Notably, the relational nature of intellectual property licenses has been largely overlooked in academic literature,¹⁷⁰ and may have additional implications that justify further inquiry beyond the scope of this Article's analysis. For the purposes of this Article, the existence of relational features increases the likelihood the parties amicably resolve disputes and thus decreases the costs of ambiguity.¹⁷¹

Interestingly, a recent survey conducted by the World Intellectual Property Organization (WIPO) indicates that out of all technology-related agreements the respondents concluded, only two percent resulted in litigation or alternative dispute resolution.¹⁷² While the study is far from comprehensive,¹⁷³ its findings

or services is the touchstone of a valid trademark license); SIEGRUN D. KANE, TRADEMARK LAW—A PRACTITIONER'S GUIDE 335 (2d ed., 1991) (referring to the licensor's need to exercise control in order "to ensure that the licensee's products are of equal quality to the products previously associated with the licensor's mark"). Cf. Hadfield, *supra* note 133, at 949–51 (discussing "[t]he Franchisor's Problem: Quality Control").

165. See *supra* Part II.A.3 for a discussion of relational contracts.

166. See *supra* notes 74–75 and accompanying text for a discussion of the "relationship" aspect as a defining feature of relational contracts.

167. See *supra* notes 74, 82 and accompanying text for a discussion of mutual dependence in relational contracts.

168. See *supra* Part III.B for a discussion of the long duration of IP licenses. See *supra* note 72 and accompanying text for contract duration as an indication of its relational nature.

169. See *supra* note 77 and accompanying text for a discussion of the discrete-relational continuum.

170. A prominent exception is Bessy & Brousseau, *supra* note 132, at 460 (arguing that technological transactions tend to be governed by relational contracts). See also Vetter, *supra* note 144, at 203 n.80 (describing the relational aspects of software vendor-to-customer engagements); Hadfield, *supra* note 133, at 928; and Spencer, *supra* note 3 (both discussing the relational aspects of franchising arrangements).

171. See *supra* Part II.B.2.

172. WIPO ARBITRATION AND MEDIATION CENTER, INTERNATIONAL SURVEY ON DISPUTE RESOLUTION IN TECHNOLOGY TRANSACTIONS 17 (2013), available at <http://www.wipo.int/export/sites/www/amc/en/docs/surveyresults.pdf>.

173. Notably, respondents indicated that among technology-related agreements, licenses most frequently give rise to disputes, so that the number of litigated licenses may be greater than two percent. Yet, in light of the overall data, it seems that the percentage of licenses that reach litigation or ADR is still small. In addition, the survey was confined to technology-related licenses, did not address additional types of IP licenses or other contracts, did not examine the level of ambiguity in the surveyed contracts, and did not investigate the reasons for the low percentage of litigation and ADR. These matters certainly deserve further empirical investigation.

support this Article's analysis: for the vast majority of IP licenses, the potential costs of ambiguity remain dormant.

C. *Inherent Complexity and Uncertainty*

Finally, IP markets are often complex and dynamic, and they exhibit relatively high degrees of uncertainty. Although every commercial transaction is negotiated in the face of uncertainty, this trait seems especially common for IP licenses and, again, is closely related to the unique nature of intellectual property rights and technology markets.¹⁷⁴

In some cases, the licensed technology may not be fully developed at the time of contract formation.¹⁷⁵ At other times, a pharmaceutical, an agro-chemical product, or a medical device may still need to undergo clinical trials or receive the approval of regulatory agencies—a process that often entails significant complexity and uncertainty.¹⁷⁶ Uncertainty in such cases touches upon the very subject matter of the license transaction.¹⁷⁷

In other instances, uncertainty stems from the nature of intellectual property rights themselves. Registration is a pre-requisite for many IP rights, including, most importantly, patents. Yet, the patent registration process is often lengthy and may be incomplete at the time of licensing.¹⁷⁸ Eventually, such patents may not be granted. Even if IP rights are registered when the contract is executed, such

174. See, e.g., Bessy & Brousseau, *supra* note 132, at 456 (“in technology and innovation, decisions are made in a radically uncertain environment”); Badawi, *supra* note 3, at 44 (indicating that “[t]he high technology industry presents a highly uncertain contracting environment”). Cf. Blomqvist et al., *supra* note 63, at 499 (noting that uncertainty and risk “in terms of the final results and the resources needed” are very typical of research and development collaboration).

175. See, e.g., WELLONS ET. AL., *supra* note 142, at 172 (discussing license agreements *vis-à-vis* universities and emphasizing the “long way to market” which characterizes these transactions).

176. See, e.g., *id.* at 479–508, 661–76 (2007) (discussing FDA regulation of biomedical research and the complexity of retaining regulatory approvals for agro-chemical products).

177. Cf. Tirole, *supra* note 49, at 746 (1999) (referring to R&D contracts and noting that “the parties are unlikely to be able to describe precisely the specifics of an innovation in an *ex ante* contract, given that the research process is precisely concerned with finding out these specifics”).

178. See, e.g., HAROLD EINHORN & ERIC E. BENSON, PATENT LICENSING TRANSACTIONS 3–48 (2014) (noting that “[l]icensing negotiations involving new technical developments are often initiated when patents have not yet issued, but when applications for patent are either on file or will be filed soon”).

registration does not immunize the parties against future challenges to the licensed IP's validity¹⁷⁹ or against claims that the licensed technology infringes third parties' IP rights.¹⁸⁰

Lastly, markets for IP-protected subject matter tend to evolve quickly as new technologies enter, old technologies become obsolete, and technical standards rise and fall.¹⁸¹ Similarly, the digital age is witnessing the rapid growth of new content distribution methods. Predicting new advances during license formation is often impossible. For example, publishing agreements executed a few decades ago did not foresee the rise of e-books, while broadcasting rights agreements formed only a decade ago did not anticipate high-quality streaming of content over the internet or distribution of content via mobile systems.¹⁸² Furthermore, the specific licensed technology itself may evolve, as a result either of the licensor's own efforts or user innovation.¹⁸³

These inherent complexities and uncertainties make it even more difficult and costly for parties to foresee and address all relevant contingencies when the license is formed,¹⁸⁴ and warrant, again, a certain degree of *ex ante* ambiguity in IP license agreements.¹⁸⁵ In addition, ambiguity may provide flexibility that is

179. For example, the validity of registered patents may be challenged before the U.S. Patent and Trademark Office through various post-grant procedures and during the course of litigation. See *e.g.*, 35 U.S.C. §§ 282, 301–07, 321–29 (2006).

180. See, *e.g.*, Robert P. Merges, *One Hundred Years of Solicitude: Intellectual Property Law, 1900–2000*, 8 CALIF. L. REV. 2187, 2222 (2000); Donna M. Gitter, *International Conflicts over Patenting Human DNA Sequences in the United States and the European Union: An Argument for Compulsory Licensing and a Fair-Use Exemption*, 76 N.Y.U. L. REV. 1632, 1637 n.88 (2001).

181. See, *e.g.*, SHAPIRO & VARIAN, *supra* note 130, at 160 (discussing the rise and fall of standards in software and other network markets); SUZANNE SCOTCHMER, *INNOVATION AND INCENTIVES* 265 (2004) (noting that knowledge occasionally becomes obsolete, as it is replaced with knowledge or technology that is more advanced).

182. See, *e.g.*, *Rosetta Books LLC v. Random House, Inc.*, 150 F. Supp. 2d 613 (S.D.N.Y. 2001), *aff'd*, 283 F.3d 490 (2d Cir. 2002) (discussing whether publishing license agreements executed during the 1960s, which granted rights to publish manuscripts “in book form,” include the right to publish these manuscripts as e-books); *cf.* *Boosey & Hawkes Music Publishers v. The Walt Disney Co.*, 145 F.3d 481 (1998) (discussing whether a license executed in 1939 to distribute Stravinsky's music in a “motion picture” includes distribution in the subsequently-developed video format).

183. For the robustness of user innovation, see generally ERIC VON HIPPEL, *DEMOCRATIZING INNOVATION* (2005); Katherine J. Strandburg, *Users as Innovators: Implications for Patent Doctrine*, 79 U. COLO. L. REV. 467 (2008); William W. Fisher III, *The Implication for Law of User Innovation*, 94 MINN. L. REV. 1417 (2010).

184. With respect to the steep transaction costs of technology licensing, see generally Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 847 (1990); Lemley, *supra* note 120, 1053–54.

185. See *supra* Part II.B.3.

particularly important for parties operating in a highly dynamic environment, thereby increasing the robustness of license transactions.¹⁸⁶

* * * *

Part III's close look at intellectual property licenses reveals that these agreements constitute paradigmatic candidates for "constructive ambiguity," due to their long duration, relational nature, and inherent complexity and uncertainty. These attributes are tightly related to the unique properties of intellectual property, including its non-rival nature, the tacit knowledge surrounding formal rights, and the high uncertainty of both IP rights and IP markets.

Two clarifications are necessary: first, this Article's analysis does not apply only to IP licenses. Other types of agreements may exhibit the ambiguity-friendly traits identified in Part II. Identifying additional categories certainly calls for further research. Second, this Article's analysis does not necessarily apply with equal force to all IP license agreements. The examples above illustrate the vast array of intellectual property assets and the numerous different types of license arrangements. While the characteristics discussed herein are generally applicable to various types of IP licenses, certain IP licenses might not meet all of these criteria. Although the foregoing analysis identified IP licenses, in general, as a classic example for "constructive ambiguity," the Article's normative recommendations do not mandate a "blanket" tolerant approach toward ambiguity in all IP transactions. Rather, the proposed model calls for examining the prevalence and magnitude of the relevant attributes in each context.

Moreover, even in the paradigmatic cases of IP licenses, ambiguity is not efficient across the board. Part IV focuses on transactions that are suitable candidates for constructive ambiguity and proposes a set of distinctions that aim to identify issues or provisions where ambiguity is more warranted and *vice versa*.

IV. PROPOSED GUIDELINES: FROM CORE TO PERIPHERY

This Article's proposed model for handling contractual ambiguity is dynamic in two separate ways. First, it applies with different force to various types of contracts, depending on the prevalence of the attributes discussed in Parts II and III. Second, within a particular transaction, the model balances ambiguity's costs and benefits

186. *See id.*

by delineating circumstances where ambiguity's advantages are more pronounced and its costs are lower.

To that end, this Part proposes a distinction between *core* and *periphery* aspects of a transaction. In a nutshell, when the relevant contractual provision concerns the transaction's core aspects, ambiguity is generally unwarranted *ex ante*. On the other hand, if the provision is closer to the periphery of the transaction, a higher level of ambiguity is efficient.

Importantly, the distinction between core and periphery is not dichotomous. More accurately, like other notions discussed in this Article—such as relational features or ambiguity itself—the core or peripheral nature of a provision should be measured along a continuum. Based on the analysis in the previous Parts, this Article identifies three parameters that assist in positioning a provision along the core-periphery continuum: (1) the *probability* the relevant contingency will occur, (2) the *ex ante* estimated *significance* of the consequences of such an occurrence, and (3) the *timing*—meaning the stage during the contract's life—in which the relevant contingency may arise.

Issues are very close to the core of a transaction if there is a high probability that they will materialize and become relevant shortly after the contract is formed and if the consequences for the parties will be significant. Peripheral issues, on the other hand, include low probability occurrences that are not likely to occur in the immediate period following the execution of the agreement and that, *ex ante*, do not appear to entail very significant consequences for the parties. Admittedly, the classification may not always be clear-cut and is not infallible: various combinations of these three criteria may exist, and, at times, the three axes can point in different directions. Overall, however, these parameters provide helpful guidelines in situating contractual issues along the core-periphery continuum.

Two of the examples discussed in Part I briefly illustrate this. In a license for broadcasting rights, the exact platform on which the licensee may broadcast the licensed content is a core issue.¹⁸⁷ The question of where the licensee can broadcast the content would definitely arise immediately after the license commences and the licensee begins broadcasting. Its significance for both parties is obvious: the licensee needs to know that the rights granted cover the platform on which it intends to transmit the content. The licensor needs to ensure that the license fee is adequate given the nature of that platform. On the other hand, in a software license agreement,

187. See *supra* notes 10–13 and accompanying text.

the exact level of certain services the licensor will provide is often more peripheral.¹⁸⁸ While errors or events that require service and support may arise during the life of the license, their occurrence is not certain and will not necessarily take place immediately following contract formation. Moreover, the estimated significance of these issues (for example, whether the licensor will respond to calls from the licensee within two or four hours) is often relatively low.

When core matters are at stake, parties can generally be expected to negotiate and draft their arrangement in an unambiguous manner.¹⁸⁹ Since such matters constitute the essence of the bargain, the costs of clarifying them during negotiations are not wasteful but rather constitute a necessary step in the formation of the contract.¹⁹⁰ On the other hand, the potential *ex post* litigation and enforcement costs associated with a failure to clarify core matters are high: these issues *are* most likely to arise during the life of the contract. The parties' ability to resolve them after the contract execution is questionable, given the high stakes involved and the fact that such matters arise shortly after the relationship has formed, before "bottom-up" dispute resolution mechanisms have evolved.¹⁹¹ Thus, ambiguity in these contexts is generally unwarranted. As a result, when core provisions are the focus of the court's inquiry, applying a more formal doctrinal approach—for example, refusing to enforce the contract due to indefiniteness—may be more appropriate.

On the other hand, ambiguity's virtues are more apparent and its potential costs lower for matters reasonably viewed *ex ante* as peripheral. Where the issue at stake is reasonably perceived as an improbable or remote scenario, or as an insignificant, low-risk matter, the transaction costs associated with detailed and unambiguous drafting may outweigh the expected benefits.¹⁹² Lengthy and detailed negotiations over peripheral matters may alert the parties to

188. See *supra* note 15 and accompanying text.

189. Cf. Macaulay, *supra* note 69, at 62–63 (indicating that parties usually exercise care "to see that both understand the primary obligation on each side").

190. Losing a deal due to disagreement over core issues is not "inefficient." See generally *supra* notes 67–68 and accompanying text.

191. For the connection between the ability of the parties to resolve their disputes and the time elapsed since contract formation, see *supra* note 85 and accompanying text.

192. See *supra* notes 65–66 and accompanying text. For an example of such a scenario, see *MDS (Canada), Inc. v. RAD Source Techs., Inc.*, 822 F. Supp. 2d 1263 (S.D. Fla. 2011), concerning a license agreement for a medical device. During the negotiations, the parties discussed an additional unit that was not yet developed and whose potential was obscure, and licensor indicated: "We believe that it is important to try to reach agreement on a final deal as soon as possible and to not to add what could be several months to our discussions by including the new unit in our negotiations." *Id.* at 1304. The issue was eventually left ambiguous.

negative contingencies that are, in fact, improbable.¹⁹³ A negotiation breakdown over such issues is likely inefficient.¹⁹⁴ Moreover, when the relevant contingency might only occur in the relatively distant future, the parties would likely have established a cooperative and mutually dependent working relationship that may facilitate an amicable resolution.¹⁹⁵ In sum, when the provision in question is closer to the periphery of the transaction, ambiguity is often advantageous, while meticulous drafting and exhaustive negotiations are not. Such matters warrant that courts use a more flexible *ex post* approach when reviewing the agreement; an approach that tolerates ambiguity—for example, by completing contractual gaps—rather than punishes it.

Again, the examples in Part I are illustrative. As the analysis indicates, the broadcasting platform would usually be a core matter in a broadcasting rights agreement.¹⁹⁶ Therefore, the parties should accurately define the platform; referring to it in vague terms (such as IPTV or “free TV”), without clearly defining these terms, is undesirable.¹⁹⁷ Conversely, using open-standard terms like “best efforts,” “industry standards,” and “reasonable” in a software SLA is often efficient due to the relatively peripheral nature of these topics.¹⁹⁸

Consider, likewise, a software license that addresses the issue of derivative works the licensee created.¹⁹⁹ Assume that the transaction’s principal purpose is licensing an existing, off-the-shelf software product for the licensee’s internal use. In such circumstances, the prospect that the licensee will create derivative works is distant and remote from an *ex ante* perspective. In this Article’s proposed core-periphery continuum, this issue would be closer to the periphery of the transaction.²⁰⁰ An attempt to explicitly agree upon the proper way to handle the derivative works scenario could be costly and even futile. The parties would have almost no information on the nature and potential significance of hypothetical

193. For the possible negative effect of concentrating on “bad” immaterial scenarios, see *supra* note 100 and accompanying text. Cf. TALEB, *supra* note 54, at 127 (maintaining that in complex systems where “too much information becomes harmful,” people should concentrate on significant signals and ignore noise).

194. See *supra* note 68 and accompanying text.

195. See *supra* note 85 and accompanying text.

196. See *supra* note 187 and accompanying text.

197. See *supra* notes 10–13 and accompanying text.

198. See *supra* note 15 and accompanying text.

199. See *supra* note 19 and accompanying text.

200. Clearly, under different circumstances, a similar issue could be classified as a core matter. This may be the case, for example, if the software is provided as a development tool and the primary purpose of the license is the adaptation and customization of the code by the licensee.

derivative works which may never come to be. Therefore, the transaction costs of negotiating detailed arrangements concerning the works' commercialization may be prohibitive. In these circumstances, *ex ante* ambiguity may be preferable.²⁰¹ Once, if ever, the derivative works issue arises, the parties will have more concrete information and more established relations that could facilitate resolution.

Assume now that, eventually, derivative works *are* created, a dispute arises over the matter, and the case ends up in court. This Article's model suggests that a court reviewing the agreement *ex post* should adopt a tolerant approach towards the agreement's ambiguous provisions concerning derivative works. The court could, for example, refuse to invalidate the license on grounds of indefiniteness and instead fill the contractual gaps, making room for efficient ambiguity rather than punishing it. The case of *MDS v. RAD*,²⁰² which had similar circumstances, illustrates such a liberal attitude. The contested technology, which was peripheral to the transaction *ex ante* in this Article's core-periphery parlance, became very significant after several years, and the parties disputed whether the technology was included in their license. While addressing the provision's ambiguity, the court referred to the peripheral nature of the issue, describing it as "an unforeseen and unrealized future contingency at the time of contracting,"²⁰³ and refused to punish the parties for leaving the matter ambiguous.²⁰⁴

This Article's recommendations warrant a contextual approach to contractual disputes for the initial purpose of categorizing the transaction and the provisions at stake. In order to determine whether the relevant transaction would benefit from constructive ambiguity, courts may need to consider contextual evidence, such as the relevant markets' complexity and volatility. Similarly, recourse to contextual evidence may be necessary to position a particular provision along the core-periphery continuum. The results of this preliminary examination can then direct the courts

201. The arrangement in the license agreement inspected in this context was indeed ambiguous. License on file with the authors.

202. *MDS (Canada), Inc. v. RAD Source Techs., Inc.*, 822 F. Supp. 2d 1263 (S.D. Fla. 2011).

203. *See id.* at 1306.

204. *See id.* at 1306–07 (“[A]n unforeseen and unrealized future contingency at the time of contracting can be resolved by reasonable contracting parties when the contingency occurs without nullifying the contract.”) (citing *O.N. Jonas Co. v. Badische Corp.*, 706 F.2d 1161, 1165 (11th Cir. 1983)).

toward a more liberal or formalist approach, pursuant to the proposed guidelines, when addressing the ambiguous provisions in the subsequent stage.

This Article does not explore in detail the exact impact that its guidelines may have on the myriad contract law doctrines concerning contractual ambiguity or on the precise manner in which courts should use this toolbox of rules in particular cases.²⁰⁵ Such an exploration remains a subject for future research. Nevertheless, highlighting types of contracts and types of issues in which constructive ambiguity can be beneficial would supply the courts with normative direction in relevant cases. This Article's guidelines are also useful to transacting parties and their attorneys, directing them to concentrate their efforts and resources during negotiations on the clear drafting of provisions closer to the transaction's core.²⁰⁶

One potential criticism is autonomy-based. According to this line of argument, even if the proposed guidelines promote efficiency and social welfare, they do not confine courts to the four corners of the agreement but rather assign them a more active role. Arguably, this may be difficult to reconcile with the other values underlying contract law—those of consent and autonomy.²⁰⁷ Yet this Article's proposal does not necessarily run counter to consent and autonomy. Its analysis illustrates that parties who leave certain areas of their contract ambiguous may have perfectly valid reasons for doing so. The discussion of the dynamics of ambiguity further indicates that sometimes, the parties' consent to an agreement is only a "second-order" consent. The parties agree on the drafting of a provision, but the language does not reflect an agreement on the substance of the matter.

This is particularly true when the issue at stake is more peripheral. Parties in such cases may, in fact, implicitly invite the courts to intervene and formulate a first-order arrangement should the need arise.²⁰⁸ This insight may be reinforced when courts' intervention is

205. For discussion of the doctrinal treatment of ambiguity, see *supra* Part I.B.

206. *Cf.* Eggleston et al., *supra* note 44, at 126 (maintaining that more detail is not always good when drafting a contract).

207. See generally Randy E. Barnett, *A Consent Theory of Contract*, 86 COLUM. L. REV. 269 (1986).

208. See Goetz & Scott, *supra* note 7, at 319 (noting that ambiguity can sometimes be an implicit request for an "equitable adjustment" of the relationship). *Cf.* Richard E. Speidel, *Court-Imposed Price Adjustments Under Long-Term Supply Contracts*, 76 NW. U. L. REV. 369 (1981) (arguing that a court-imposed solution to the problem of changed circumstances would do little damage to contract law's consent requirement); Speidel, *supra* note 35, 846 (arguing that "[i]f the purpose of parties [sic] ex ante contract was to share risk and the technique chosen to accomplish that purpose fails, a court which seeks to implement that purpose by considering ex ante events is supporting rather than thwarting the expressed purposes of the party").

part of the legal climate and the parties can rely upon it—or, alternatively, opt out of it—when drafting their contract.²⁰⁹ Thus, encouraging courts to take context into account and fulfill an active and more liberal role regarding ambiguity-friendly transactions and particular provisions does not inevitably conflict with autonomy-based rationales of contract law.

Notably, this Article’s proposal does not call for a radical change in the way courts address ambiguity in contracts. In effect, the guidelines may largely correlate with what some courts are already doing in a more intuitive manner.²¹⁰ In such instances, the value of this Article’s thesis is mainly interpretive. Yet, providing a structured analysis of contractual ambiguity, while explicitly alerting courts and parties to relevant factors that so far are either ignored or only implicitly addressed, can increase consistency among courts and contribute to the coherence of contract law and doctrine.

CONCLUSION

This Article began with Henry Kissinger’s use of “constructive ambiguity” in international agreements.²¹¹ The journey through the realm of contractual ambiguity and IP licenses indicates that—despite intuitive reluctance on the part of the legal profession—ambiguity can be an efficient tool in certain commercial settings as well.

This Article’s systematic review of ambiguity’s virtues and drawbacks highlights several prominent properties that make a transaction more disposed to constructive ambiguity. The close look at IP licenses further demonstrates that such ambiguity-friendly traits commonly exist in these agreements. This is no coincidence: there is a tight connection between these characteristics and the unique nature of intellectual property, most prominently its non-rival nature, the tacit knowledge surrounding IP rights, and the complexity and volatility of IP rights and technology markets.

This Article also demonstrates that, within ambiguity-friendly transactions, it is possible to delineate certain issues and provisions

209. A prevalent technique for opting-out is an “agreement not to agree” clause which explicitly defers a certain issue to future agreement. Such a provision can signal the parties’ prior rejection of any type of court-made arrangement with respect to its subject matter, and allowing judicial intervention in such cases may indeed be problematic from an autonomy-based perspective. The Article, therefore, did not include such arrangements in its analysis. *See supra* note 23.

210. *See supra* notes 202–204 and accompanying text.

211. ISAACSON, *supra* note 1, at 556.

where ambiguity is particularly efficient. In this context, the Article proposes a distinction between core and periphery issues that can assist parties and courts in identifying these circumstances, and provides guidelines for the legal system's treatment of ambiguity. These proposals are designed to enhance the system's ability to more accurately capture contractual ambiguity's benefits while minimizing its costs. Although this Article focuses on IP licenses, its recommendations have broader implications for contract law in general.

More generally, beyond the issue of contractual ambiguity, this Article sheds light on the intersection of intellectual property and commercial contracts. Its findings indicate that this interface certainly deserves further attention, and its future exploration can benefit both intellectual property and contract law.