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**Scaffolding: Using Formal Contracts to Build
Informal Relations in Support of Innovation**

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1 Introduction

When close to 45 years ago Stewart Macaulay (1963) asked, “What good is contract law?” his research suggested that it mattered a lot less than expected. In fact, the study found that businesses often fail to plan transactions carefully by providing for future contingencies, and seldom use legal sanctions to address problems during exchange. Written contracts, he found, were often highly standardized documents that were largely confined to the drawer once drafted by the legal department and then rarely consulted to resolve disputes. His results are still among the most highly cited in the literatures of law and social science.

In the half century since Macaulay conducted his interview there have been considerable changes in the way businesses are organized and commercial relationships are structured. Macaulay’s manufacturers were prototypical of the Chandlerian enterprise: large organizations exploiting economies of scale to produce highly standardized products for a mass market, with a clearly mapped internal hierarchical structure, and several important upstream and downstream external relationships. Today’s economy is still well-populated by such firms. But in many cases, the boundaries of the modern firm are much less visible to an outside observer. Rather than consisting of a vertically-integrated multi-unit Chandlerian structure, the prototypical modern firm is embedded in an eco-system of relationships between diverse units that contribute to the production process. While external relationships played an important role in the profitability of the firm in the past as they do now, it is well recognized that the maze of external relationships contributes to the modern firm’s innovative capacity and is essential for sustaining its competitive advantage in a high velocity and global environment (Jones, Hesterly, and Borgatti 1997; Powell 1990; Pittaway, Roberston, Munir, Denyer, and Neely 2004; Gilson, Sabel, and Scott 2009).



In light of the changes in the organization of work and the firm to meet an increasingly dynamic, innovative, and networked environment, is it still the case, as Macaulay suggested, that formal contracts are largely remote from the day-to-day management of transactional relationships? On the one hand, the sheer number and complexity of boundary-crossing relationships is much higher in a networked environment (Hadfield 2011). We might expect fewer of these relationships to be built on a solid foundation of trust and repeat interaction, able to rely on the informal means of ensuring compliance and adaptation that Macaulay's work (and later Macneil's) emphasized.¹ At the same time, a dynamic and innovative context would seem to make the prospect of formal contracting even more unlikely than it was in the relatively stable and standardized setting occupied by Macaulay's respondents. As Gilson, Sabel and Scott (2009) have emphasized, the challenges of writing complete contracts that can be adequately enforced by a third-party court are significant in such a setting.

To investigate the question of whether formal contracting is still largely remote from day-to-day management of transactional relationships, we conducted a preliminary series of 30 interviews with businesses in California. We found evidence suggesting that Macaulay's result still holds in traditional largely standardized industries: there is little attention to detailed contracting and formal contract documents play little role in the day-to-day management of the transactional relationship; failures to perform as expected and adaptation to unexpected contingencies are mostly handled through informal means and with reference to informal norms rather than formal contract language.

We also, however, found evidence of an important new twist in the Macaulay finding in industries associated with high rates of technological or organizational innovation. On the one hand, it seems to be still the case that contracting partners rely heavily on informal means of enforcing their contractual rights. Most of our respondents expected that formal enforcement of contracts in court was a remote possibility at best. But this reliance on informal enforcement mechanisms was not paired, as it was in Macaulay's sample, with a minimal role for formal contract negotiation, documents and legal advice. Instead, we saw evidence of robust reliance on formal documents and legal advice about contractual issues. Unlike Macaulay's respondents, our respondents did not simply execute standardized contracts and

¹See Macneil (1978).

then leave them in the drawer when transactional issues arose; they customized their contracts upfront and then took them out, studied them, got legal advice about them, and often amended them in the course of a relationship. Our small sample (like Macaulay's original self-styled "preliminary findings") make these findings suggestive only but they clearly call for a larger scale empirical study of how Macaulay's findings about the role of contracting may have changed over the past several decades.

Like Macaulay's original findings, these preliminary findings raise a theoretical puzzle. If informal mechanisms such as reputation and repeat play are the primary means of enforcing contractual obligations, why do parties bother with formal contracts at all? In Macaulay's result, the puzzle was relatively mild, since there appeared to be low investment in the formal dimension: contracts were largely boilerplate standard forms drafted by the legal department and few resources were devoted to reading, consulting or interpreting them in the ordinary course of events. Our findings, however, suggest a deeper puzzle. It is one thing to waste a small amount of effort on largely irrelevant documents; it is another to devote substantial effort and attention to the creation and interpretation of them. This suggests they are not at all irrelevant. But if they are not being used as the basis of formal enforcement efforts—which clearly they largely are not—then what good are they?

Devoting resources to the creation and interpretation of formal contract documents but not using them to enforce contractual commitments in courts presents a deep challenge to the literature spawned by Macaulay's seminal work. The vast majority of this literature, like the vast majority of work in the law and economics of contracting more generally, assumes that formal contracts are of use *only* to obtain formal contract enforcement. This was Macaulay's operating assumption: either an obligation is enforced with a threat of litigation and court-awarded damages or it is enforced by threat of informal penalty such as termination of a valuable relationship or reputational harm. The transaction cost literature takes this approach, identifying the parameters that shift the costs and benefits of enforcing obligations with court-awarded damages relative to the costs and benefits of relying on informal tools such as reputation or termination of a relationship. Work in both behavioral economics and contract theory (e.g. Hermalin, Li and Naughton (2011) and others) suggests that substitutability can cause crowding out: using formal enforcement can diminish the efficacy of informal enforcement mechanisms, either by destroying the basis for informal enforcement such as

trust (Macaulay himself makes this argument, p. 64) or by diminishing the penalty for breach when a weak formally enforceable contract is substituted for a more robust relational contract. Other work suggests that formal and informal enforcement mechanisms can work together as complements: when contracts are incomplete and breach involves the failure of both formally enforceable obligations and obligations that are enforceable only with informal means, formal enforcement can reduce the gains to breach and so make the reliance on informal enforcement mechanisms more effective where it is needed (Lazzarini, Miller, and Zenger 2004; Hermalin, Li, and Naughton 2011). Even in this “complements” literature, however, the focus is on choosing between informal and formal enforcement mechanisms for particular obligations.

We take a different approach. We begin by distinguishing between the use of formal *contracting*—using specialized legal advice, norms and rules to create and interpret contractual obligations on the basis of a distinctive body of contract law—and the use of formal *contract enforcement*—using litigation to secure court-awarded damages. (Most of the literature speaks of “formal contracting” but means, in our terminology, “formal contract enforcement.”) We then build on a model developed by Hadfield and Weingast (2011) to argue that parties can, in some settings, derive value from using formal contracting even without using formal contract enforcement. We argue that formal contracting can help to coordinate and improve the efficacy of informal contract enforcement mechanisms such as the threat to terminate a valuable relationship or damage commercial reputation. Specifically, we propose that formal contract reasoning and interpretation—based on a distinctive body of contract law and practice—coordinates the interpretation of ambiguous and multi-dimensional events by the parties to a contractual relationship and, in particular, allows those events to be classified in a binary manner as “breach” or “not breach.” Relatedly, formal legal doctrine with norms and rules of contract analysis reduce the variance associated with estimates of the likelihood that contracting events will be classified as breach or not, and can serve to identify cases in which there are reasonable arguments on both sides. We show that by coordinating beliefs and classification in this way, a formal contract supports the efficacy of informal enforcement mechanisms – such as terminating a relationship or generating negative reputation – by motivating the kind of belief systems that underlie the game theoretic structures at work in these mechanisms.²

²Hart and Moore (2008) examine a different way in which a formal contract can in

Our model predicts a relationship between formal contracting and informal enforcement mechanisms in settings with high degrees of uncertainty and ambiguity—the setting that we suggest exists in businesses involved in high degrees of technological and organizational innovation. In these settings, formal contracts may be best thought of not as specifying, *ex ante*, what actions will count as performance or breach in particular contingencies but rather as specifying a mechanism by which, as the relationship evolves, classification of actions as breach or not can be reached. In our framework, however, the classification of conduct is not done by a court for purposes of awarding contract damages. Nor is it done by the parties for purposes of settling in the shadow of expected court-awarded damages (Mnookin and Kornhauser 1979). Rather, the formal reasoning of contract law provides a shared and knowable procedure by which the parties can, independently, arrive at common knowledge classifications of conduct. With this common classification scheme, the parties can then use a simple set of strategies and a simple belief system to support an equilibrium in which breach is deterred by the threat of termination of the contract. This equilibrium, we argue, is less likely to emerge in relationships in settings of high innovation and uncertainty in the absence of a formal contract because of the difficulty of predicting how the contracting partner (and possibly others) will interpret complex behavior and circumstances.

Our focus on the role of formal contracting in coordinating the interpretation of complex and ambiguous events brings out a key point in Macaulay's original work. In the manufacturing setting of the 1960s that he considers, what constitutes "performance" is largely unambiguous and what gaps exist are frequently dealt with by widely shared industry norms:

Most problems are avoided without resort to detailed planning or legal sanctions because usually there is little room for honest misunderstandings or good faith differences of opinion about

effect coordinate beliefs about what is required by a relational contract. In their model, a formal contract is formally enforceable; but the performance that is formally enforceable does not generate first best efforts by both parties to the contract. That is, an element of performance remains beyond the reach of formal enforcement. In Hart and Moore's model, agents possess non-standard preferences: they prefer to impose losses on their contracting partner if they perceive that their partner has chosen an action within the range permitted formally that falls short of "consummate" performance. The "aggrievement" contracting partners feel is anchored by the terms in the formal contract and so formal contract terms can be used to modify contract behavior by controlling the potential for aggrievement.

the nature and quality of a seller's performance...Either products are standardized with an accepted description or specifications are written calling for production to certain tolerances or results. Those who write and read specifications are experienced professionals who will know the customs of their industry and those of the industries with which they deal. Consequently, these customs can fill gaps in the express agreements of the parties. Finally, most products can be tested to see if they are what was ordered; typically in manufacturing industry we are not dealing with questions of taste or judgment where people can differ in good faith (Macaulay 1963, p.62-63).

Our model identifies a role for formal contracting in settings where, by contrast, ambiguity about what constitutes performance is high: informal enforcement mechanisms are likely to falter in the many gaps that exist in the assessment of whether someone has breached and thus whether they should be subject to informal penalty. With these gaps come disagreements and hence the diminished efficacy of informal enforcement threats. (I'm more likely to avoid an action I know you will interpret as breach than one that you only may interpret as breach; you will be less likely to punish an action you consider to be breach if you are not sure I, or others, will agree that it is breach.) In some settings the weakness of informal enforcement structures can be expected to cause the parties to resort to the use of formal enforcement based on detailed and specified contractual provisions. But in other settings, formal enforcement based on detailed contract terms will be unavailing; this is what we find in highly innovative settings, where the nature of technology, firm, and industry organization is subject to significant and frequently unpredictable change. In these settings, parties will continue to rely on informal enforcement mechanisms. The role for formal contracting in these settings, we argue, is to support the reliance on informal enforcement mechanisms by reducing collective ambiguity about what constitutes breach.

We use the term *scaffolding* to capture this role for formal contracting. We intend by this term to invoke the imagery of a supportive structure that bridges gaps and flaws in an underlying structure. Scaffolding allows the parties to do building and repair work on their informal relationship and to make use of the informal structure even when it is incomplete. The scaffolded structure, however, does not itself perform the function of the relationship it supports and bridges. It has its own many weaknesses.



In a recent pair of important papers, Gilson, Sabel and Scott (2009, 2010) (“GSS”) have also proposed that formal contracting and informal relations may play complementary roles in supporting commercial relationships in innovative settings. They use the visual imagery of braiding: contracting partners braid formal and informal contracts together to support commitment during innovation stages in a relationship. During those stages, uncertainty about the nature of a joint venture makes it impossible to specify an ordinary contingent contract secured by court-awarded expectation damages. By using formal (but low-powered³) enforcement of an agreement to participate in an information exchange regime, they argue, a successfully braided contract endogenously generates a level of trust (and practical information about the value of a joint project) sufficient to support the non-contractible commitments that make for successful collaboration in an environment of high uncertainty. Our approach complements GSS in that we too are considering how informal and formal contracting tools may interlace to support commitment in settings of high uncertainty where conventional complete contracting and court-awarded damages are unavailable as a practical matter. But, unlike their approach, we do not associate the role of formal contracting with the use of formal contract enforcement. Thus the formal contracting we envision ranges, potentially, over the full domain of the contractual relationship and is not limited only to what the literature has defined as “contractible” (meaning verifiable and court-enforceable) terms. In the GSS setup, formal contracts are written only over formally enforceable commitments to share information and participate in designated dispute resolution procedures, such as presenting disagreements to a jointly-constituted committee or to the executives of the contracting partners

Like GSS, we also propose that the formal elements of the contractual relationship can help endogenously to build trust, and thus to strengthen the informal enforcement mechanisms on which the relationship depends. In GSS, the building of trust occurs through the information regime that is formally enforceable in court. In our model, trust is built by the accumulation of observations of a party’s conduct along the contract path; using the formal contract, the parties are able to reach common knowledge classifications of this conduct on a simple binary scale: breach or not. Because we do not propose formal court-awarded penalties for breach, however, we do not en-

³By “low-powered” GSS mean reliance damages for breach, as opposed to expectation damages.

counter the potential for crowding-out of the inference that can be drawn from performance: performance conveys information about the party's assessment of the value of the contractual relationship relative to alternatives, and so is a good signal.⁴

In the next section we quickly recap Macaulay's findings from 1963, and then present an overview of what we learned from conducting a similar study, interviewing businesses about how they used contracts in creating and managing their external relationships. We draw on these interview data to demonstrate our key findings—which, like Macaulay's self-styled “tentative findings”—must be taken as suggestive only in light of our small sample. Those findings are:

1. In industries that businesses identified as relatively standardized and similar to the manufacturing settings Macaulay investigated, Macaulay's findings still largely hold: business partners pay little attention to formal contracts and rely on informal means to create and adjust their relationships and resolve disputes.
2. In industries that businesses identified as relatively innovative and heavily dependent on external relationships for successful innovation and thus competitive success, businesses engage in substantial formal contracting. They turn to legal documents and legal advice to create relationships and they revisit those documents to determine their own actions and to evaluate the actions of their contracting partner. Where substantial disagreements about contract performance arise, they engage in legally-informed problem-solving that can result in formal amendment or modification of contract documents.
3. Innovative businesses use formal contracting, however, with little expectation of turning to the courts to enforce their formal contracts; instead, they expect their contracting partners to perform either because of an alignment of interests or, when alignment fails, because of informal enforcement threats such as the threat of terminating or limiting a relationship or the threat of harm to reputation.

Following the discussion of key findings we present an overview of the literature that highlights the characteristics of businesses operating in the

⁴Boot, Greenbaum and Thakor (1993) provide a formal model of how formal enforcement can destroy the signaling power of contractual agreements.



“new” economy and paints the picture of contracting within the group of businesses where Macaulay’s findings do not hold. In section 3 we present a simple coordination model to illustrate the role of formal contracts in innovative relationships where partners do not expect to rely on formal contract enforcement. We then discuss in section 4 the findings from our interviews that offer support for the model’s implications. This discussion also pays attention to the contract doctrines that emerge to support contract compliance even in the absence of formal contract enforcement. The last section concludes.

2 Replicating Macaulay

Macaulay’s seminal 1963 study and the socio-legal and economics scholarship his work helped pioneer demonstrated the critical importance of informal relationships in business. Based on interviews with businessmen and lawyers from 43 companies in Wisconsin, most of which were manufacturing corporations such as American business giants S. C. Johnson, General Electric and Harley-Davidson, Macaulay generated rich stories about the ways in which contracts were, and were not, used to create exchange relationships, to adjust existing relationships, or settle disputes. What Macaulay uncovered by interviewing businessmen and lawyers in this small subset of manufacturing companies was profoundly informative. His research showed that when it came to setting up exchange relationships, businesses often planned very little, especially as it related to legal sanctions and consequences for defective performance. Rather than relying on detailed formal documents to carefully plan out exchange, they preferred to rely on “a man’s word” or a handshake to cement the terms of the agreement. If contracts – detailed formal agreements that explicitly and carefully defined terms of performance, effects of contingencies, effects of defective performance, and legal sanctions – were used, they were boiler plate agreements with standardized terms and conditions. Obligations of the parties in an exchange were often adjusted without reference to the terms of the original contract and breaches were resolved without the threat of litigation. When problems arose, parties would find a solution “as if there has never been any original contract” (Macaulay 1963, p.61). Lawsuits for breach of contract, as well as explicit or implicit threats

to sue unless parties came to a mutually agreed upon solution, were rare.⁵

We conducted informal, semi-structured interviews with businesses in California in order to replicate Macaulay's approach. Participants were recruited both by cold-call of businesses in the San Francisco and Los Angeles areas, drawing from the National Establishment Time-Series (NETS) database, and through personal contacts of the investigators. Approximately half of our 30 business final sample were identified using each of these techniques. We attempted to identify a balanced sample of both innovative and standardized businesses. The combined sample includes a wide variety of businesses in terms of size, activity, number of employees, and years in operation. The small size of the resulting sample is its key limitation. Our goal, however, was not to engage in formal statistical analysis but to pursue a similar exploratory strategy to Macaulay's in search of rich accounts of the nature of contracting in today's economy and the types of challenges encountered by modern businesses in their day-to-day activities. To obtain such narrative data, interviews of 45 minutes to 2.5 hours interviews were conducted. The collected information we believe is suggestive of important new trends that warrant further systematic research.

At the beginning of each interview, the subject was asked whether the business they are part of can be classified as innovative or whether other businesses in the industry would consider them to be innovative or not. Interviewees were asked to think beyond product innovation and to consider innovative practices in terms of production processes or organizational structure as well. We largely relied on these responses for the classifications reported below. Interviewees were asked to answer a series of questions describing the importance of external relationships for the success of the company or innovation in particular. These questions explored the nature of relationships, their history, risks involved, and any mechanisms used to manage them. A particularly illustrative set of questions allowing us to learn more about external relationships dealt with dispute resolution. Interviewees were asked to identify an example of a recent dispute, what it entailed, and how it was resolved. This was helpful in learning about businesses' strategies for problem solving and their expectations for what role contracts could play in this process. Together, these questions allowed us to peer into businesses' own

⁵Galanter (2001) presents a picture of the ups and downs in contract litigation in the U.S. Contract cases boomed in the 1970s and 80s, as business-to-business litigation did in general. Galanter sees a drop-off beginning in the 1990s. Contract cases showed a sharp increase in 2002 data (Kessler and Rubinfeld 2007).

interpretation of what contract can accomplish and how important they are for managing risks. Most importantly, they allowed us to gauge the degree to which they rely on formal contracting and formal enforcement to maintain external relationships crucial to their day-to-day business activities.

Of the 30 businesses we spoke to, we classified 14 respondents as stable or standardized industries based on self-reported characteristics. This subset includes a large number of manufacturers – candy, brakes, wheels, clothing, undergarments, plastic bags, noodles – although a few standardized businesses were focused on services and other types of economic activities such as production oversight in the entertainment industry, independent film production, project management, wireless services retailing, and production of movie advertising materials. The respondent businesses that characterize themselves as innovative are a much more diverse group. They include manufacturers (optical systems, pharmaceutical technologies, screening equipment, space technology) and service and technology providers (advertising, online business services, consulting services for mergers and acquisitions, logistics, information technology, object-oriented programming, web productivity platform provision, and web knowledge sourcing). In almost 90 percent of the cases, individuals we spoke to were high level executives who had access to information about the firm’s critical outside relationships and any challenges encountered by companies in maintaining those relationships. In approximately 5 percent of the companies the individual we spoke to was either legal counsel at the firm in question or was an executive with significant legal training. The remaining 5 percent of businesses include those where we did not secure access to the highest level executives but spoke to lead engineers who were still able to speak about the firm’s interaction with interested parties.

2.1 Where Macaulay’s results still hold

For a significant share of the businesses we spoke to, predictions stemming from Macaulay’s work continue to hold. This group of respondent businesses tend largely to ignore formal contract law, ignore formal contracts in resolving transactional issues, and rely instead on informal contract enforcement mechanisms to ensure compliance and achieve joint-optimizing outcomes.

2.1.1 Little use of formal contracting

While they may have a formal written contract for a lease or for protection of intellectual property, most of the respondents in this group spoke of relying on verbal agreements or emails for initiating exchange. They often spoke of sending out and receiving orders as opposed to contracts.

I have very little interest in going forward with any sort of contract with anybody that I remotely trust, because I would rather just agree to a one-pager that broadly outlines the deal. (independent film company)

Really, we have no written contracts that obligate us to purchases or anything like that. We call up a place and order over the phone aluminum and steel wire like all other customers...we have never really written out contracts or that sort of thing. We have hooked up suppliers and gotten other stuff done with people coming in and not demanding that they sign a contract from our end. We won't produce those. (motorcycle assembler)

Most of our customers we do not have contracts with. They just place orders with us and we ship the order...We have general terms and conditions placed in order forms. Suppliers is the same - they typically work without contracts. . . . What I had found with contracts, it's a little like computer problems. You can never think of all the possibilities in a contract. A contract can quickly become obsolete because now you are dealing with all this kind of stuff that you weren't thinking of when you wrote the contract in the first place. And so I think a contract works best when it's kept broad enough instead of being so precise that it becomes an impediment to business. (brake manufacturer)

While they appreciated that these written formal documents include standardized terms “on the backs of the forms,” they did not consider them to be formal written contracts that create an opportunity for formal enforcement. Most of the companies were unaware of the terms stated by their partners’ purchase orders. The one aspect most frequently mentioned by respondents was the payment term while the rest were described as “pretty basic” or “standardized” or “what everyone else has.” In situations in which

both the respondent firm and their partners signed forms in the same exchange, there was a complete lack of understanding as to whose terms are governing the exchange or whether any issues of conflict or overlap exist in the forms signed by all parties. Like Macaulay's respondents, regardless of the terms and conditions expressed in formal purchase or sale documents, this group of businesses spoke of placing or canceling orders, not forming or breaching contracts.

Most of the respondents in this group indicated that they would prefer to design their agreements without the assistance of lawyers. Lawyers are perceived as untrustworthy and uneducated in terms of how their businesses work. In addition, relying closely on lawyers to design contracts signals distrust of the other party - the party that has agreed to enter into a business venture prior to the lawyers' involvement. The focus on legal liability can be an impediment to business because the lawyer's involvement stands in the way of reaching agreements. From the perspective of these firms, formal legal advice does not create value; it destroys value.

Lawyers are usually overreaching. You ask them to review this and just make sure that legally the bases are covered. They don't understand those instructions. They don't. Well, some of them do, but they are the good ones. Most lawyers feel that their job is to protect you from yourself...It's not just that they want to present the right legal framework. They are actually changing the terms. I can agree on the deal with [a partner's] marketing people but then it goes to their legal and they change the deal to something that I can't accept. . . (brake manufacturer)

But I just don't trust the lawyers, I feel when they write anything, it's somewhat generic and they don't really understand what I'm trying to do. And so I end up going through the whole thing. I am paying them to send me something so I can re-write it and pay them to read what I wrote and fix it, and send it back to me so that I can tell them that they did not understand what I was writing in the first place...I should be doing it but I don't trust the lawyers to do it properly, and they are going to bill me \$10000 for a stupid piece of paper that is going to sit in their drawer. So we know what the deal is and they either do it or they don't. They either trust me or they don't. (candy manufacturer)



As a general rule, I will avoid legal involvement at all cost, because it is not helping resolve things. It's only there, really, for contracts that are necessary to engage in a job or a business situation or a bank loan, that are essentially unavoidable steps in a business deal - where paper trails need to exist. (independent film company)

2.1.2 Little reference to formal contract terms to resolve transactional issues

Just as Macaulay found in the early 1960s, in this first group of respondents we found that businesses paid little attention to formal contract terms when resolving problems in the relationship. Instead, these businesses looked to industry and relational norms to adapt to contingencies and respond to the behavior of their contracting partners.

[Distributors] have pretty extensive contracts that we sign with them for exclusivity. Those are the only really negotiated things and it's such bullshit. No one ever looks at the things... You spend all this time, energy, effort, money, moving one comma to one side, and the other to the other side. And then you throw the thing in the drawer....(candy manufacturer)

A clothing manufacturer, for example, told us that their order forms played little role in determining what would happen if the customer changed its mind and wanted to cancel an order. According to the formal terms, the customer was obligated to take and pay for the order the company signed for, with no opportunity to cancel. But in fact the relationship between the manufacturer and its customers allowed for significant accommodation to circumstances in which the customer no longer wanted the ordered goods. If production was still in the early phases, such that cancellation would not cause the manufacturer to incur significant losses, the customer would be allowed to cancel. If manufacturing of an order had progressed significantly, the customer would be asked to take the partially completed merchandise at discount or to find alternative use for the clothing already produced, even if it required additional processing. This same clothing manufacturer's order forms stated that when the customer received the order it was required to issue payment within 30 or 60 days. In practice, however, if the customer's customers (major retailers) refused the clothing because they decided to go



with a different style, the clothing manufacturer reported that he and his customer informally would agree to absorb the cost of the lost sale. The clothing would either be re-styled and sold to other retailers or the two companies would split the loss. None of these arrangements are specified in the order forms—even with vague terms about best efforts or reasonable accommodation.

As this manufacturer explained to us, the ability to ignore the contract and “go off-script” is tremendously important in his line of business because the company needs to be able to respond to negative market shocks faced by them and their partners in order to ensure the viability of their long-term business relationships. Not only is going off-script important for dealing with problems after the orders are completed but not following the terms and conditions set in the order forms allows the business to respond more quickly to the needs of their customers. This quick response time allows their customers to compete more effectively to secure business from major clothing retailers. A customer will often indicate that they will need a particular order fulfilled, and they will share as many details as they have available at the time from the retailers, so that the clothing manufacturer can start ordering the right materials. This occurs before any work is formally ordered but it allows the clothing manufacturer to shorten the delivery time for his customer’s clothing to the major retailer.

If we did everything by contract it would basically slow us down; it just won't work in our business. We would not be able to call, pick up the phone and say: hey, I have this order coming in, please get the materials ready (clothing manufacturer).

Such problems in exchange are not uncommon and businesses in this group of respondents, like Macaulay’s respondents, also told us that they were often guided not by formal contract terms but by well-understood prevailing practices or informal business norms in deciding how to resolve them. A shopping bag manufacturer told us that in this industry when an order is correctly fulfilled but the customer made a mistake in the order, the prevailing norms specify that the customer is obligated to accept the product. The manufacturer could choose to offer a discount on the merchandise but was obligated to do so. In the clothing manufacturing industry, in contrast, if the customer has made a mistake in ordering, but the manufacturer has failed to double-check with the customer, the manufacturer absorbs all the losses. In



the spoke manufacturing and wheel assembly industry, we were told that the prevailing norms suggest that it is the manufacturer's obligation to verify the quality standards of the materials received for manufacturing and it is the seller's obligation to replace any defective materials. However, the seller is not obligated to pay for the cost of any products manufactured with defective materials. It is accepted that the manufacturer is at fault for using materials whose quality was not verified prior to use.

None of these practices are reflected in a formal contract, according to the respondents. The formal contracts—the purchase or sale order form(s)—sit dormant and the parties rely on prevailing norms or common understanding to address any problems in exchange. Past practices and norms, and not the contract, are the reference point for judging the quality of partner's effort and direct, open communication is key to problem solving.

We talk to everybody, it's all...it's mostly conversation. I got a problem I call somebody; I call somebody on the phone and we deal with it...It's all trust. (undergarments manufacturer)

An independent film company executive jokes that he was known as a “page 15 guy” because his contracting partners would send him only the signing page which he would return and the partners would attach it to whatever contracts they had drafted. The executive explained why he ignored the contract terms he was ostensibly “agreeing” to in formal documents:

I don't care because I know that if I had a dispute about the deal, I'd go to [the partner] and say: you know the spirit of our understanding, so I don't care what's in the contract; I care about what you and I agreed to, like in the old mafia, with a handshake. (independent film company)

2.1.3 Reliance on informal enforcement mechanisms

Respondents in this group clearly did not see courts as a significant means of enforcing contractual obligation. They avoid litigation. Only 3 of the 14 businesses in this group of respondents had ever engaged in litigation. In two of those cases, the contested relationship was with employees and not with outside partners. In the remaining case, the company ended up in litigation to protect intellectual property claims raised by someone other than a contracting partner. When asked, our respondents said that they avoided



litigation because of its high cost and uncertainty about whether the cases would be resolved in their favor; they perceived this as a substantial risk even if they were clearly in the right. Even if cases were resolved in their favor, our respondents said they expected the cost of legal fees to far outweigh the benefit of damages obtained through a court award or settlement. Litigation is largely seen by these respondents as an unrealistic means of enforcement.

These respondents instead turned to the types of informal enforcement mechanisms that Macaulay found. They sought out partners they trusted and relied on a tendency for people to follow industry norms and to take care to avoid earning a bad reputation or losing a valuable business relationship.

It's really the good old-fashioned way—I have to make a judgment call on how reliable the person is. (brake manufacturer, asked how he ensures his partners in China do not use his technology and training to supply his competitors)

All in all, [our choice of a contracting partner] was based solely on our take of them and we thought they were reputable and extremely skilled. And that's what we needed but I just can't see how you would write a contract on that. (wheel assembler)

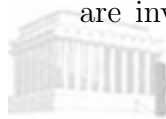
There is no formal contract. All I have is an agreement [for partners] not to make certain formulas that are proprietary....I mean, they are "proprietary" in the sense that [our partners] aren't gonna jeopardize their business with us [by making] a similar tasting [candy]. (candy manufacturer)

We will be stronger if we treat them well, pay them on time, and they will follow us too. There's other people like us. And look, we don't like the way we're being treated, we'll go somewhere else. So we have choices also.(clothing manufacturer)

I am, for better or for worse, gravitating to the people that I trust so that I don't have to get into these convoluted legal relationships that are so unenforceable and fraught with misinterpretation. (independent film company)

2.1.4 Characteristics of the standardized sub-sample

All of the businesses we interviewed that matched Macaulay's predictions are involved in the sale or manufacturing of relatively standardized prod-



ucts. Candies, brake systems, motorcycle wheels, plastic bags, undergarments: these are products that have characteristics that are relatively easy to define and characteristics that are relatively easy to assess. The success of a transaction involving these products is easy to verify: Was the right candy formula delivered; was the right bag color produced; was the clothing done with the correct design and material?⁶ Moreover, these manufacturers operate in industries with many players—on both the buyer and the seller side. This means that the threat of terminating a relationship and going to someone else is often relatively credible. Perhaps more importantly, however, it means that there is wide experience with repeat transactions of the same type, facing the same types of potential problems. In such a setting, industry-wide norms and practices can emerge which are capable of serving as reference points for judging performance.

None of the businesses in this group believed that their products, production processes or organizational structures had any innovative features.⁷ While the businesses in this group do create value added, there is very little innovation in the product and production processes. Low innovation keeps uncertainty about what is expected and what kinds of issues the relationship might encounter to a minimum.

These characteristics explain why standardized forms are appropriate contracting tools for governing transactions in these industries. These standardized agreements are sufficiently complex to define the characteristics of the product to be manufactured and the payment structure for its delivery. Very little time is devoted to discussing contingencies and recourse for bad performance. When performance disputes do arise, established industry norms and reputational mechanisms are the most efficient and cost-effective enforcement tools available for ensuring cooperation. Very little room exists for alternative interpretations of what the parties' obligations are and thus informal mechanisms are all that is necessary to secure compliance. As Macaulay

⁶Films produced by the independent filmmaker are difficult to classify as a standardized product like undergarments and plastic bags. However, as the filmmaker explained to us, the relationships with investors and his single distributor are based on relatively standardized agreements because the characteristics of the presumed work are specified ahead of time as well as the deadlines for all deliverables. Thus, it is easy to determine whether the work once completed satisfies those criteria.

⁷The candy manufacturer is a sole exception. The executive expressed the view that while their product or packaging is not innovative, their sales and marketing approach was somewhat different from their competitors.

predicted, for these types of industries, contract law plays only a limited role.

2.2 Where Macaulay's results do not hold

In talking to businesses in California, we were able to identify a significant share that did not conform to the predictions stemming from Macaulay's 1963 work. For this subset of businesses, formal contracting is an important component of setting up relationships and formal contracts inform the process for dealing with any problems in exchange. But formal contract enforcement is not.

2.2.1 Significant reliance on formal contracting

Contrary to the practice of businesses that Macaulay spoke to, many of the businesses in our sample did not turn away from contractual mechanisms. These businesses told us they invested significant time and resources to explicitly and carefully plan and generate formal contracts dealing with obligations and contingencies. Lawyers, many said, were always consulted in the course of preparing and designing written agreements.

Yeah, we definitely have a formal contract in place...The contract was signed after we had negotiated all of the business terms...before we started, for sure. Before we did anything to get the business relationship in the works, we signed the contract. So we negotiated everything, all the business terms, all the legal terms, and then we got started. We have made amendments to it mostly for pricing, and some expansion of services. (online knowledge sourcing)

We have partnerships, relationships with distributors and we have important economic relationships with other service providers whose services are included in our [...] products...they have an extremely high legal content. (information technology)

A lot of contracts basically just leave [the definition of] working capital as current assets minus the current liabilities using the historical practice of the company. I say attach a balance sheet and just say "as done in this particular balance sheet." Or go and put [in] the company's chart of accounts and say current assets is



this line plus this line. It's the precision of the contract; it's the imprecision that leads to the controversies....it comes down to the same thing: clarity and definition (M&A consulting services)

I don't want to do business without a contract...If you're going to invest in something, even if we are putting our time into it, I have to understand who is going to own what and how it's going to be...how the future rights are going to be handled. (optical systems)

We give our client a contract to sign. We have an investigation period where we find out and go through all the discovery of what we are going to be doing, and how they want us to do it. Then base the contract on all of that information...I think because it's just the comfort of knowing that both parties are protected by a contract. And if there's going to be a dispute, there is something to fall back on other than an e-mail...being more formal in a lot cases still is better in the thoughts of people doing business with us. (logistics services)

For these businesses, contracts are not simply static tools that set up exchange but then have little role in day-to-day relationship management. In fact, these respondents report relying on various mechanisms to continually update the formal contract to track as much as possible their changing relationships. To add “fluidity” to contractual mechanisms, the ad agency executive relies on a communication system with his clients that carefully records client’s feedback and references any changes to the workload as an addendum to the original contract. To secure and monitor commitment in dynamic relationships involving IT services, a production company relies on service level agreements that reference the original contract but allow for much more refined definition of performance benchmarks and mechanisms for ensuring compliance with the overall service obligations. To protect specific assets while exploring possibilities for collaboration, information technology firms, optics systems manufacturers, and online business service providers rely on non-disclosure agreements and written memoranda of understanding in which any communicated information and ideas are referenced in explicit written form.



2.2.2 Formal contracts frequently referenced in solving problems

The formal contracts that the businesses in this sub-sample spend significant resources creating and amending are not documents that lie dormant in a drawer once they have been drafted. Instead, we heard, they are frequently consulted by these businesses to understand their own obligations and those of their partners. They are expressly brought out to help settle disputes that arise during the course of the relationship.

...I just refer to the contract first because that was our guiding principle basically. Especially when we get a little bit more customized, because that's what we agreed upon. And you know...hey, we both signed off on this and that's what we are supposed to do. ...The whole reason I am putting emphasis and the time and effort into that contract in the first place, is that I can rely on that if I have to. (screening equipment manufacturer)

It's not infrequent that we have to do something; we have to change something as time goes by; we change a term or something...But we would say...we would reference the contract. I mean you won't just write a letter in vacuum; you are going to reference it... "per our discussion regarding our agreement that we are going to change the royalty rate from 2% to 2.25%. Please sign and send me back a copy. This copy is evidence in our change in royalty rate." (optical systems)

[Contracts] are frequently revisited to understand your own obligations and the other party's obligations...I would frequently analyze the contract if something we are considering doing complies with our relationship...(information technology)

Contract is effective because it shows direct consequences of inaction. When I have a problem, first thing I look at is damages, what am I responsible for here. Contract is an operational document that lets everyone know how they can proceed...it is the basis for business reviews and performance assessment. (analytic database systems)

Every time someone comes and says to me, I think we need to terminate this relationship, or revisit this relationship, or assess this relationship, the first thing I do is look and see, what is the



relationship? Not just what someone says it is. I want to read what we agreed to, whether it was two months ago or twenty years ago. That's what's really important - you pull out the contract, so you would refresh your memory. (online service provider)

Well, the contract tells me simply the documentation of what we agreed to, and we'll remember what we discussed and agreed to, and if anybody forgets, well this is what we put on paper, right, it becomes a reference document . . .you forget the exceptions. What did we say about: if we sell the deal here, but it goes to Europe, or something, you know, it would be: did we agree how to...? . . .I would use it as a reference document. It wouldn't be [that] I never go back to these things, [that] they're in a file drawer. I dig them out when I have to, when there's some reason: what did we do? I can't remember, what did we agree to? Oh, that's what we agreed to. All right, well that's the deal. Get on with it. (online productivity platform)

The contract gets dusted off frequently. (logistics services)

2.2.3 Reliance on informal enforcement

Despite the significant attention paid to drafting, amending and consulting formal contracts, businesses in this sub-sample clearly did not expect to use them to obtain formal contract enforcement. This was not merely a prediction that they would be able to resolve their differences successfully in the shadow of a litigation threat. Rather, they viewed litigation as simply not presenting a credible option for enforcement. Litigation, they told us, is prohibitively costly and associated with reputational harm that is not compensated by potential court-awarded remedies. The legal process takes too long, particularly relative to the speed with which their business moves. Court-awarded damages, they said, are unlikely to adequately capture the value of joint technology and projected profits. Even if awarded damages, damages, they told us, are next to impossible to collect and very likely to be surpassed by legal costs.

[Theoretically, going to court] is always an option, but I think that everybody knows that if it happens, both parties lose. There will be a winner and a loser, but at that point, it's bad for everyone. (online service provider)



[N]othing would cost enough to make me go sue somebody. (screening equipment)

...okay [suppose] I have an individual, an employee, who signed an NDA [non-disclosure agreement], right? So we start a legal process. Now I am running lawyers, and they say, well, what are your damages? Well, I say: I don't know, the damages are all going to show up a few years from now, and they are going to go to the competitors, then they got to make it, get it out to the market...so that gets very murky. And on a practical level, let's say it costs me three hundred thousand dollars. Well, my ability to get these thousands of dollars is for me tenuous, so very quickly, you do the first few, and you realize it's way too much...(online business service provider)

The fundamental problem [with litigation], and again, this is very much a Silicon Valley perspective, is: the things that delay you are as bad as the things that don't happen. They're kind of equivalent. So, the minute you open litigation, you've put in this time delay. [Moreover] if [your customers see you involved in all kinds of legal problems, they start to wonder] 'what's going on?' ... then they [decide] "I'm not going to do business with them." If somebody views you as high-risk- it's absolutely deadly for small companies to start up in anything to do with litigation...(online productivity platform)

Well certainly not taking legal action - it's not the best way. It takes a lot of money and usually nobody is happy. Seriously, almost all issues of conflict need face-to-face discussion. I find that by far the best and to make sure I never like to get there in the first place. I feel it's necessary to open discussion: here is my intent, and you got to tailor everyone with that supplier because it's important enough; I'll do that. But then I have a feeling we won't ever have to use that contract because we agreed, we understood, and that was something we both agreed to and they are our supplier. (screening equipment manufacturer)

Our respondents did indicate that they might end up in court over major bet-the-company problems. But even then, litigation was seen as of limited value and hence not perceived as a credible threat. The screening equip-



ment manufacturer explained to us, for example, that even if his customers or competitors obtain and copy his technology, he is unwilling to consider litigation as a recourse because of exorbitant legal fees and the inability to prove damages in terms of lost profits to the competitor. Instead of relying on legally enforceable patents, the executive uses less formally structured confidentiality agreements and has no intention to enforce these in court. Some of our respondents in fact spoke of using formal legal documents, such as memoranda of understanding and non-disclosure agreements, knowing that they would not or probably could not use them in court.

[You find yourself] calling these lawyers [for advice in the context of a dispute] who say these are non-enforceable contracts...I always hear lawyers say: don't do MOUs - memoranda of understanding - they are worthless; they are not legally enforceable by law. Well they're right. They are not. But that's not why we're doing it. This memorandum of understanding - it's a memo that says what we've been talking about, what we agreed to, and we want to be clear with each other. So it's all about clarity...and so those types of things become useful instruments for communication clarity. [Even if they] become a contract; well, I'd argue they are still for communication clarity. (online productivity platform)

We signed thousands of NDAs over the years, we've had people breach them, and it's usually not worth following it...it's just part of the process.(online business service provider)

Instead of relying on formal enforcement of their formal contracts, the businesses in this sub-sample turned to extra-legal enforcement mechanisms much like the ones Macaulay identified: contract breach is penalized by the loss of a valuable relationship or reputational harm. An online productivity platform executive, for example, told us that the best mechanism for ensuring contract compliance is the “mutual dependency” which serves as the “real deterrent” against malfeasance. When both parties depend on each other to achieve joint-profit maximizing outcome, the self-interest of the contracting partners is aligned with the goals of the cooperation. In such relationships, the threat of termination can be sufficient to ensure performance. The fact that many respondents are aware that regardless of their business size, others in their line of businesses will know about their interactions with partners



was important to make sense of businesses' significant concern about their reputation. Respondents found it important to mention that they, and their business partners, operate in small communities where "everyone knows everyone else." Performing on their obligations, whether written or informal, is important for maintaining reputation in one's network of industry contacts. Maintaining friendly ties with businesses across industry boundaries is important to capitalize on critical market information or ideas. Businessmen often spoke of "going beyond the contract" or "beyond what we need to do to get the job done." Doing so promotes the value of their relationship and their reputation. It also allows those with preferences for honest, trustworthy and cooperative behavior to satisfy those preferences. The fact that these businesses, as much as those in the Macaulay sub-sample, pay so much attention to reputation and qualities such as honesty and trustworthiness in choosing their contracting partners in the first place speaks to the role of these informal mechanisms in securing contract compliance.

If either side were to do that [breach confidentiality terms], it would look real bad for them. So it would have ramifications then. You'd very quickly develop a reputation of someone not to do business with. So if this business went south, or it got to where you didn't do it, it's the same reason why even when you, in the end agree to disagree. You don't make a big deal about it, because you know that particularly in business, there's a very good chance that somewhere down the road, you're going to see that company or that person again under different circumstances, so don't burn your bridges, it'll come back to you.(online productivity platform)

We don't need a contract to have the relationship, to do what we do. We could agree on the terms. What makes these things work is the alignment of interest. [Company A] wants to promote their [...] product to as many users as possible. [Company B's product] gives them a way to do that. [Company B] wants to offer users choice for different [...] products. [Company A] provides a way to do that. Put the two together so we are both interested in being in a relationship. It's like being married. Are you married only if you have a justice of the piece or a priest sanctify your relationship? There is a commitment that goes beyond the anointing and then allocation of risk in case something goes wrong. (information technology)



[We write a formal contract] because it memorializes in one place, instead of looking through a hundred emails or whatever, what the essential terms of the deal turned out to be, and how the parties expect each other to act. So people think basically that if you act according to expectations and the agreement, then you're a good company, and if you breach it, you're not a good company. It doesn't matter if you end up going to court or not, I mean, it just matters that you didn't keep your promise. (online knowledge services provider)

But maybe we go over and above what we need to do to get the job done, even if it is more than what we were contracted to do. We just do it knowing that we really want to serve the client and we want the end the way the campaign or the project ends up is very important to us, so we want it to be the best it can be. So we might go over and above what we contracted to do just so that things end.. have a great conclusion. (advertising services)

I think choosing the right partner is the most important thing. it's just like interviewing a job candidate - I mean, you can put anything in the contract about how they have to give you this level of service and that - but if you just hired someone who's not that smart, but tried their hardest or something, nothing you put in the contract is going to help that...so to me the most important thing is picking the right partner, doing the due diligence to figure out who performs well, who's trustworthy, who's going to stay around, and then it has to work for your business, and then everything after that is just figuring out what the optimal terms might be, and then looking towards the worst case scenario.(online services provider)

2.2.4 Characteristics of the innovator sub-sample

The set of businesses we spoke to for whom Macaulay's predictions do not hold is very diverse and common characteristics are hard to establish in this preliminary study. What seems to be true for all of them is that external relationships play a much more critical role in the success of the company and their innovative efforts. Instead of listing customers and suppliers as their critical relationships, the companies in question would also name consultants,



collaborators, customer focus groups, contributors, competitors, venture capitalists, investors, partners for outsourcing, and joint venture partners.

Virtually all of them believe that either their products, process of production, or organizational structures are innovative or have innovative approaches. By nature, these companies also tend to be working in very dynamic environments because they constantly have to adapt their production processes, products, or services to new technologies; they need to continuously develop new perspectives on how to increase efficiency in their production process or service delivery; or they need to be a step ahead of ever-changing customer needs.

External relationships, which are so integral to businesses in this subset, seem to be much more fluid than in the subset for which Macaulay's results held. The nature of a partnership could easily morph over time, as the parties discovered new ways in which collaboration could pay off or ran into dead-ends in their experiments. This is in sharp contrast to the nature of ongoing relationships in the Macaulay sub-sample. In the case of the plastic bag manufacturer we interviewed, for example, the supplier of dyes is unlikely to play any additional roles for the manufacturer over the course of the relationship. However, in the case of the database systems vendor we spoke to, it is possible that the software development partner, as a result of their work, also develops proprietary software or hardware which can optimize the speed for any third-party application systems querying the database, thus dramatically altering the nature and the potential of the company's product. As a result, it is difficult to estimate the value of external relationships and contract over products or services that can significantly change over time or alter the scope of the initial relationship. In some cases, businesses spoke to us about contracting with partners to develop services or products whose exact characteristics were unknown to all involved parties.

Businesses in this innovator sub-sample also often spoke in terms of being involved in small communities of like-minded innovators, entrepreneurs, or colleagues. This is in contrast to the communities consisting of many alternative buyers and sellers in which businesses in our Macaulay sub-sample operate. In addition, the uniqueness of assets and technologies offered by these companies also means that there is little experience with repeat transactions with similar types of exchange problems. In this environment, these businesses have little recourse to specific business practices or norms to guide them in judging performance and solving exchange problems. Rather than speaking about the norms for how clothing manufacturers adjust to last-

minute changes in demand, as distinct from how shopping bag manufacturers respond, we heard about reputations in communities of engineers, venture capitalists, technology companies or in Silicon Valley.

2.2.5 Contracting in the new economy

As a broad generalization, the respondents in our second group can be identified as businesses that are part of the “new economy.” Although the term can rankle many economists, it captures key changes in some sectors of the economy. (Obviously there are still plenty of ‘old economy’ businesses in the ‘new economy’—such as the manufacturers we interviewed who, by and large, dealt with their contractual relationships in largely the same way that Macaulay’s manufacturers did fifty years ago.) To deepen the picture of contracting in this group, then, we briefly review in this section what the literature tells us in general about the characteristics of businesses and business practices that are prototypical of the new economy.

The new economy is one in which information technology “has changed and continues to change how individuals and businesses . . . work, consume, communicate, and transact” (Jorgenson and Wessner 2007). Firms in the new economy rely heavily on external relationships—in the form of global supply chains that “slice up the value chain” (Krugman 1995) and networked forms of collaboration that seek to increase the reach and rate of innovation (Benkler 2006). This is evidenced by the widespread deverticalization of production (Langlois 2003; Langlois 2004; Lamoreaux, Raff, and Temin 2003): whereas the stages of production in the prototypical “old” economy multi-unit firm took place within the boundaries of a single vertically-integrated firm, production in the new economy is characterized by greater contractual coordination across more specialized firms. External collaborative relationships are becoming more common in research and technology development, production, marketing, financing and product development stages. If the archetype of the old economy was (the old) IBM, purchasing raw materials and turning out finished computers, the archetype of the new economy is Dell, which operates as the coordinating center of a network of global suppliers that specialize in individual stages in the production process.

The new economy “is fundamentally contractual, in a way that large Chandlerian multi-unit enterprises are not” (Langlois 2004). Moreover, not only has there been a sheer increase in the number of contractual relationships between firms, as GSS (2009) emphasize new economy relationships are char-

acterized by “a new form of contracting [that] supports iterative collaboration between firms by interweaving explicit and implicit terms that respond to the uncertainty inherent in the innovation process.” That is, the demand for contractual tools to support inter-firm relationships has clearly increased in the new economy at the same time as the complexity of what contracts must accomplish has increased: a contract for the supply of raw materials or finished products—or even for standardized “modules” that can be inserted in intermediate production—is a less complex contract than one that must manage the process of collaboration when the form and output of collaboration is subject to high degrees of uncertainty (Sabel and Zeitlin 2004). The fact that deverticalization is occurring despite the increased cost of complex contracting is evidence that the production benefits of networked collaboration and specialization substantially outweigh the transaction costs. This puts a new economy twist on the prediction from transaction cost economics that greater uncertainty and asset specificity will drive firms from markets into hierarchies. Williamson (1991) expected that with greater uncertainty (more frequent or more consequential disturbances in transactions), the efficacy of all governance modes would decline but the hybrid form (“long-term contracting, reciprocal trading, regulation, franchising, and the like”) would be especially susceptible because adaptations would depend on time-consuming mutual consent of parties involved [p. 291]. As a result, Williamson expected that at high levels of asset specificity and uncertainty parties would navigate towards hierarchical forms of governance (where adaptations can be handled by fiat). Instead, businesses are revealing a preference for complex hybrid forms, over vertical firm structures despite the increased costs of transacting.

A wide variety of factors make contracting in the new economy and specifically in innovative settings a challenge. The very things that drive reliance on networks of external relationships—the need for access to specialized experience, diverse perspectives, and readily adaptable production units—make specification of the classic complete contract effectively impossible. The nature of the contractual obligations might be simply impossible to anticipate, for example, precisely because the goal of the relationship is to invent something new. This is the prototypical case considered by GSS: collaboration to develop a new drug or medical device. Or it may be that the “product” is a fundamentally emergent one, intended to take on constantly evolving attributes generated from complex interactions among a large set of individuals and entities. Products and services based on social networks have this characteristic. The dimension of uncertainty and exposure to shocks may be



of enormous magnitude due to a complex web of interdependent relationships that span the globe, as in global supply chains that link attributes such as delivery time and product quality for North American consumers to political, social, and economic events in unstable or unfamiliar environments such as a remote Chinese province or an African village. Constant adjustment and modification of relationships in this environment is the norm (Sabel and Zeitlin 2004; Gilson, Sabel, and Scott 2009). Uncertainty, heterogeneity, and rapid rates of change all contribute to a formidable contracting challenge for firms that cannot simply opt out of networks and into a vertically-integrated solution.

Even if parties can write contracts, formal legal enforcement will be both expensive and highly unpredictable in this environment, making the threat of formal enforcement rarely credible. Given a high degree of contractual incompleteness, it will often be the case that the cost of providing adequate proof of breach or performance outweighs the gains from formal enforcement (Scott and Triantis 2006). These costs loom particularly large in many innovative settings where large-scale electronic discovery is likely, generating both direct costs associated with document production and review services and indirect costs that arise as the attention and time of employees and management is diverted to discovery compliance. Extensive discovery also increases the risk of exposing trade secrets. Litigation in these settings will also often be highly inaccurate as a result of the unavoidable presence of significant contractual gaps and vague terms (Scott 2006). Moreover, even if obligations can be articulated with reasonable clarity and performance or breach proved at reasonable cost, the potential remedies if breach is shown will often far fall short of providing sufficient compensation. In many cases, remedies come too late in fast-moving industries or systematically underestimate actual losses due to high levels of uncertainty about the prospects for fundamentally novel or emergent network goods and services. This is how we understand the frequent complaint from our innovator respondents about the cost of litigation as a means of ensuring contract compliance: the high cost is not simply due to high hourly rates for lawyers. It is fundamentally due to the complex, often discovery-intensive and often multi-jurisdictional nature of litigation in the context of highly incomplete contracts in novel, complex, dynamic, often global, relationships. Litigation is perceived as costly because it costs far too much relative to what it can do for contractors in relationships.

Firms in these relationships will thus inevitably have to rely on a wide



range of informal mechanisms to secure commitments to cooperation, investment of funds and assets (including information), confidentiality, quality, adaptation and value-sharing. These extra-legal enforcement mechanisms include a variety of ways in which incentives can be better aligned to joint profit-maximizing goals without the imposition of formal legal penalties. The self-interest of a contracting partner is a key mechanism. Indeed, the ideal for a business relationship is one in which self-interest on both sides is aligned with the type of cooperation that promotes joint profits. Where such interest alignment is not available, parties can sometimes make up-front changes in the structure of their relationship—such as allocating ownership of assets to one of the parties (Grossman and Hart 1986) to secure the benefits of self-interest. The threat to discontinue business dealings is also a key mechanism as is its extension to larger groups of potential future business relationships through reputation. In some organizations, preferences for reciprocity—conferring (withholding) benefits on those who have conferred (withheld) benefits—can support commitment if these preferences are strong enough and held by key actors in the organization. Similarly, preferences for honesty and trustworthy behavior—meaning that a person derives utility directly from speaking truthfully and living up to the legitimate expectations of others—can help to secure commitment. Informal norms of behavior can help establish these legitimate expectations as to what constitutes acceptable and fair behavior among business actors; these norms can help to support expected behavior if individuals have internalized the norm and/or there are negative social consequences for people who violate them.

3 A simple coordination model of formal contracting to support informal enforcement

If partners in innovative relationships do not expect that formal enforcement of their contracts is likely, or likely to be very effective, why do we nonetheless see evidence that they make considerable use of formal contracts? Our preliminary interviews suggest that firms expend considerable resources retaining lawyers to draft extensive agreements, seeking legal advice about contractual “obligations” throughout the relationship, and resorting to legal advice and negotiations to address disputes. We see more here than just bargaining in the shadow of the law (Mnookin and Kornhauser 1979): the



threat of litigation, as seen by our respondents, is often not seen to be credible. Perceiving litigation threats as largely empty in this setting is also predictable from an understanding of how litigation works in practice when contracts are complex and incomplete. So what function is being played by all this formal legal structure if it is not providing a credible threat of coercive penalties for breach?

In a recent paper, Hadfield and Weingast (2011), provide a framework for thinking about a function for law and formal legal structure that exists independently of the availability of formal coercive enforcement by a centralized authority such as the state. They propose that law—as a distinctive system of reasoning to reach classifications of conduct as ‘wrongful’ or not—serves to coordinate decentralized enforcement mechanisms such as collective refusals to deal and multilateral reputation mechanisms. They emphasize that coordination of these decentralized mechanisms faces the fundamental problem of overcoming ambiguity in classification of conduct: decentralized enforcement requires a common knowledge basis for classifying conduct and hence predicting when others will also participate in punishment when punishment is ineffective or too costly if conducted unilaterally. (A single person boycott, for example, is likely to be ineffective at changing the behavior of a seller and so produces a cost without return benefit for a unilateral boycott.) A reliable basis for predicting when others will boycott is also necessary for a more subtle reason, namely, ensuring that participation in collective punishment when someone else is cheated is incentive compatible. Hadfield and Weingast (2011) present a model in which participation in collective punishment is supported by the incentive to secure the payoff associated with coordinated punishments that reduce the risk that an individual participant suffers wrongs in the future. (This is in contrast to a large literature in experimental economics (Fehr and Gächter 2001) and evolutionary biology (Boyd, Gintis, and Bowles 2010) studying collective punishment as altruistic punishment, where punishers do not secure direct material gains for assisting with costly punishments.) In deciding whether to participate, and hence signal a willingness to participate (this signaling requirement is also recognized by Boyd, Gintis and Bowles (2010)), individuals need to be able to determine reliably what conduct will trigger a collective punishment in the future and hence assess the likelihood they will benefit from the threat.

We propose that formal contracts can perform a coordination function to support decentralized (“informal”) enforcement of contractual obligations. To develop this, we build on the model presented in Hadfield and Weingast

(2011). The model we present here is a simple one; it cannot capture the richness of the interactions we discovered in our interviews with innovative companies. But with this simple model in hand, it is easier to interpret the more complex behavior we learned about and to place it in context.

Suppose we have two parties, A and B , that are contemplating a cooperative venture. Formally, A and B have an option to enter into a series of repeated interactions over an infinite horizon. (An infinite horizon captures the idea that there is no definitive end date for this relationship, not that it must in fact continue in perpetuity.) In each period t , we suppose that A and B each take an observable action, $x_t^A \in \mathfrak{X}^A$ and $x_t^B \in \mathfrak{X}^B$, respectively. The current period expected payoff associated with that action for each agent $i, i = A, B$, is given by $V_t^i(x_t^i, x_t^j; X_{t-}, E^i X_{t+})$ where X_{t-} is the history of actions taken by both players up to date t and $E^i X_{t+}$ is i 's expectation about the future path of the relationship. For each agent the expected continuation value of the relationship, discounted and evaluated in period t , is given by $C_t^i(X_{t-}, X_{t+})$. We will speak of a continuation of "the relationship" even if the parties abandon their cooperative venture and thus pursue future actions that may be competitive or completely unrelated to one another. The expected payoff for an action x_t^i is then the sum of V_t^i and C_t^i .

One of the key features of the environment we are trying to capture is the difficulty of determining and articulating future actions: in highly innovative settings, parties often may not know today what their actions, or even their action sets, will look like tomorrow. Rather than describing a contract, K , as a sequence of particular future actions, then, we suppose that a contract sets out a procedure for determining in each period as it arrives what actions are required from each party. In the language of Hadfield and Weingast (2011), a contract constitutes a *common logic* for analyzing available information and options and classifying behaviors as either "*wrongful*" or "*not wrongful*"; in contract language, the common logic is a *contract logic* that classifies conduct as "*breach*" or "*performance*." Formally,

$$\begin{aligned} K(x_t^i) &= 0 \text{ if } x_t^i \text{ is breach} \\ K(x_t^i) &= 1 \text{ if } x_t^i \text{ is performance} \end{aligned}$$

This formalization captures the essence of contractual analysis and a primary feature of what contract lawyers do: they provide advice about what behaviors are, and not, likely to constitute a breach of contract. Conducting contract analysis is a complex process that draws on contract language,

norms, jurisdiction, judicial practice, and more to reduce potentially complex actions in complex circumstances to binary classifications: breach or not. We assume that the contract reaches, in theory, a deterministic classification of behaviors: in theory, there is a yes/no answer to the question of whether action x constitutes a breach, just as there would be ultimately a yes/no answer to that question if the case were litigated to conclusion and all appeals exhausted. In practice, there is, of course, uncertainty about what answer the contract gives to any particular question. But for the purposes of developing this simple model, we will presume that in any period t both parties, drawing on legal advice as needed, are able to determine precisely whether an action x_t^i is classified as breach or not by a contract K and are able to form expectations about the classification of future actions.

We can then think of K as generating a particular expected path for the continuation value of the relationship for each party, specifically the continuation value under the assumption that in each period both A and B choose actions that are classified as “performance” by the contract. That is, we can speak of $C_t^i(K)$ as the expected continuation value for agent i under the assumption that both parties are expected to perform in all periods $t > 1$ as required by the contract K . Note that each agent can form an expectation that a party will choose future actions that are or are not classified as breach, without predicting what specific actions will be taken. This is a substantial reduction in the complexity of the problem facing contracting partners.

We contrast the expected payoff on the contract path, $C_t^i(K)$, with the expected payoff on the next-best alternative non-contract path, $C_t^i(\sim K)$. On the non-contract path, both parties are expected to choose optimal actions in all periods $t > 1$ without regard to whether the contract logic classifies them as breach or performance. If the cooperative venture continues, this could mean that the parties continue to negotiate in each period and choose their actions cooperatively on some basis other than the contract K . They might, for example, renegotiate to adopt a new contract, K' . Alternatively, they might continue in the venture but each choose their actions unilaterally. Or the cooperative venture may come to an end and the parties may become competitors or cease to interact in economic terms entirely.

We treat each agent’s expectations about the continuation payoffs on the contract and non-contract paths as matters of what Hadfield and Weingast (2011) call an *idiosyncratic logic*. By this we mean that each agent has a means, largely inaccessible to outsiders, for reaching judgments about the

relative value of the contract and non-contract continuation paths. Formally,

$$\begin{aligned} I_t^i(K) &= 0 \text{ if } C_t^i(K) < C_t^i(\sim K) \\ I_t^i(K) &= 1 \text{ if } C_t^i(K) \geq C_t^i(\sim K). \end{aligned}$$

That is, agent i 's idiosyncratic logic reaches an ultimately binary assessment at each time t about whether or not the contract path produces a higher expected payoff than the non-contract path. We think of this as not necessarily reflecting (only) a mathematical assessment of probabilities and values; it can also reflect business judgment in the context of organizational norms, processes and practices, factors that would ultimately influence an entity's choice between continuing on the contract path and abandoning it. This is what makes the idiosyncratic logic (largely) inscrutable to outsiders; it does not necessarily follow from mathematical formulas about the probabilities of profit associated with the contract in each period, appropriately discounted to the present. It is the product of practical judgment within an organization and judgment exercised in the context of high degrees of uncertainty in the sense of being irreducible to measurement as in Knight (1921). The ultimate classification rests not only on information but also on processes and the way in which information is shared and acted upon within an organization. The private idiosyncratic logic is thus akin to the public contract logic, which similarly is capable of reaching an ultimate decision, through particular procedures and evidentiary practices, about a complex question of whether a particular action constitutes performance or breach. Both logics judge which of two actions or paths constitutes the 'right' choice: the idiosyncratic logic judges whether continuation of the contract is the right choice for the entity; the contract logic judges whether a particular action is the right choice under the contract. The important distinction between the contract logic and the idiosyncratic logic is that the classifications reached by the contract logic are accessible to both parties, and this is common knowledge, whereas those reached by an idiosyncratic logic are not. Both parties can know what the contract classification of any particular contract action will be in the current period; but an agent's predictions at any point in time about the value of continuing contract performance relative to the alternative non-contract path are private information. An agent only learns about the idiosyncratic judgments about the value of the contract made by the other agent by observing the choices that agent makes.

As in Hadfield and Weingast (2011), we will refer to a contract K as *sufficiently convergent* with agent i 's idiosyncratic logic in period t if $I_t^i(K) = 1$.



When a contract is sufficiently convergent with an agent's idiosyncratic logic, the agent has concluded that—given what it knows now—the contract's expected classification of actions as breach or performance generates a higher payoff than the alternative of following an unconstrained non-contract path. The contract picks out as 'performance' actions that, often enough and with value enough, match the agent's own assessment of what is required by an optimal path. The essence of each agent's private information, then, is the yes/no answer to this question: does K map out a path for this relationship that, assuming the other party also follows the contract, produces a higher expected payoff than the alternative of abandoning the contract? This is an assessment that can change over time, as the environment evolves and the parties learn about how K resolves into classifications of breach and performance. A contract that is initially sufficiently convergent for one or both parties can diverge because alternative opportunities become more valuable, for example, or because the contract plan constrains behavior in initially unexpected, and unprofitable, ways that are not sufficiently compensated by the contract.

With this framework, the question we analyze is this: under what conditions will the parties choose to enter into a contract K and make behavioral choices that follow the contract path? Here we make an important final assumption. We assume that the prospect of formal contract enforcement is remote: the threat of third-party coercive penalties to secure contractual commitment is not credible. The parties must thus rely exclusively on informal enforcement mechanisms to produce desired actions. (We are not supposing that this is descriptively accurate for all aspects of the contractual relationships we describe in our empirical discussion; rather, this is an assumption we make in order to focus in on the elements of relationships that are effectively beyond the reach of reasonable formal enforcement.)

In a comparable but more highly specified setup, Hadfield and Weingast (2011) show the conditions under which a common classification logic can secure a perfect Bayesian Nash equilibrium with behavior that follows its classifications (avoiding conduct classified as 'wrongful' by the logic) despite the absence of a centralized coercive force that imposes penalties on wrongful conduct. The equilibrium relies only on punishments of 'wrongful' conduct delivered in a decentralized way by agents in the model. This equilibrium can obtain when the common logic is sufficiently convergent with the idiosyncratic logic of each agent and sufficiently public and clear to allow the agents to coordinate their expectations about how conduct will be classified,



and thus coordinate their punishment activity. We do not reproduce a detailed proof here but rather work through the intuition of this result as it applies in the current setting.

We start by supposing that A and B can identify in period 0 a contract K that provides a mechanism for classifying any action x_t^i as either breach or performance and for which $I_0^i(K) = 1, i = A, B$. That is, both agents, drawing on their idiosyncratic logic, judge the expected continuation payoff under the contract K , assuming both parties always choose actions classified by K as performance, to be higher than the next-best alternative non-contract path: $C_0^i(K) > C_0^i(\sim K), i = A, B$. The only publicly observable aspect of this judgment process is the result: A and B both agree to enter into contract K . We do not analyze the question of when such a contract will exist, or how it will be found. Instead, we focus on the question of whether, assuming the parties can reach such a contract, the contract can generate compliance with its terms despite the absence of formal contract enforcement.

Once the contract is formed, each agent must select an action, x_t^i , in each period. We have assumed that the contract K provides a common contract logic, accessible to both A and B , that produces common knowledge binary classifications of all possible actions for a given period as either breach or performance. Although there might be substantial uncertainty about how the contract will classify future actions, in period t both A and B can determine the classification for their own action and that of the other party. Let $V_t^i(K, K)$ be i 's expected payoff from choosing an optimal action from the set of actions that K classifies as performance, given the expectation that j also chooses an action that K classifies as performance. Let $V_t^i(\sim K, K)$ be i 's expected payoff from choosing an optimal action from the set of actions that K classifies as breach, given the expectation that j chooses an action that K classifies as performance. Similarly, let $V_t^i(K, \sim K)$ and $V_t^i(\sim K, \sim K)$ be i 's expected payoff from choosing optimal contract and non-contract action, respectively, when j is not expected to perform in period t . We will use comparable notation, $C_t^i(K, K)$ and $C_t^i(\sim K, \sim K)$, to represent the expected continuation payoff for i when both players are expected to follow the contract and non-contract path, respectively. We assume that $C_t^i(\sim K, \sim K) > C_t^i(K, \sim K)$: an agent who expects the other party to abandon the contract strictly prefers to abandon the contract as well and make unconstrained action choices after period t .

Both the current period payoff and the continuation payoff depend on i 's beliefs about j 's current action and the path of actions for both agents in

the future. (We are assuming that the history of actions, X_{t-} , is common knowledge in period t .) What we want to show is that there is a specification of these beliefs, together with a set of strategy choices, that supports a perfect Bayesian Nash equilibrium in which both agents continue to comply with the contract—despite the absence of third-party coercive penalties—so long as the contract relationship remains sufficiently convergent—that is, more valuable than the non-contract relationship—for both parties.

The proposed equilibrium strategies and beliefs are these:

- Agent i chooses $x_t^i(K, K)$ so long as

$$V_t^i(K, K) + C_t^i(K, K) \geq V_t^i(\sim K, K) + C_t^i(\sim K, \sim K) \quad i = A, B$$

- Agent j maintains the belief that $I_t^i(K) = 1$ if and only if agent i chooses $x_t^i \ni K(x_t^i) = 1, i = A, B$.

To show that these strategies and beliefs generate an equilibrium, we need to confirm that the strategies are optimal for each agent given the beliefs and that the beliefs are consistent with those strategies.

We can easily see that the strategies and beliefs constitute an equilibrium which generates contract performance for as long as both parties value continuation of the contract path over the non-contract path. We will first confirm that the proposed equilibrium strategy of following the contract path in a given period is indeed optimal for each agent so long as the continuation payoff is higher on the contract path than the non-contract path and the other agent is expected to follow the equilibrium strategy and maintain equilibrium beliefs. To see this, assume $I_t^i(K) = 1$, meaning that player i has concluded that the expected continuation value generated if both players choose actions classified as performance under the contract in periods $\tau > t$ is higher than under the alternative non-contract path. Suppose, for a contradiction, that i decides to breach in period t , choosing action $x_t^i(\sim K, K)$. Given the expectation that player j will perform as required by the contract, this action secures for i the current period payoff $V_t^i(\sim K, K)$. Suppose $V_t^i(\sim K, K) > V_t^i(K, K)$, so that breach raises i 's current period payoff. This action will be observed by j and under the specified beliefs, j will update its beliefs to conclude that $I_t^i(K) = 0$; that is, that implementing its idiosyncratic logic, i has concluded that the continuation value of the non-contract path exceeds that of the contract path. With this belief, j 's best response after period t is also to

follow the non-contract path, $X_{t+}(\sim K)$, in future periods. Anticipating j 's interpretation of its conduct, i will only choose $x_t^i(\sim K)$ if $I^i(K) = 0$, that is, i prefers the non-contract continuation payoff to the contract payoff. Thus we have a contradiction: if $I_t^i(K) = 1$, in equilibrium i will not choose to breach. Clearly, the same result holds if $V_t^i(\sim K, K) \leq V_t^i(K, K)$: choosing to breach in these circumstances lowers the current period payoff as well as the continuation payoff because it leads j to adjust its beliefs and abandon the contract in future periods. This demonstrates that the equilibrium strategy calls for i to choose an optimal action. It also confirms the consistency of j 's belief: if i chooses to breach ($x_t^i \notin K(x_t^i)$) then it must be the case that i has concluded that the non-contract continuation path is preferable to the contract path ($I_t^i(K) = 1$).

4 The role of formal contract law in supporting informal enforcement

The simple model presented in the previous section is an application of a well-known result in game theory. As we have formulated the contract relationship here, it has a structure similar to a repeated prisoners' dilemma game: in a period in which the risk of breach exists, the potential breaching party is better off (in terms of current period payoff) breaching, regardless of whether the other party breaches or not (that is, breaching is a dominant strategy).⁸ The potential deterrent to breach is the risk that this one-time breach will cause a loss of all the future value of the contract by leading the other party to abandon the contract. A party that responds to a one-time breach by defecting permanently from the cooperative strategy (abandoning the contract) is pursuing a "grim trigger strategy."⁹ If the game is one of

⁸The difference between the contract relationship we describe and a repeated prisoners' dilemma game is that in the repeated prisoners' dilemma, both players have a dominant strategy—cheat—in each period of the one-shot game. In a contract relationship, there may be lots of periods during which both parties prefer to cooperate so long as they expect the other player to cooperate.

⁹More generally, the Folk Theorem (Fudenberg and Maskin 1986) says that in any repeated game there exists a set of strategies that will sustain cooperation; these strategies have the structure of punishing a defector with future periods of low payoffs. Because we have assumed that a player's best response to a non-contract action is also a non-contract action, the punishment of abandoning the contract is credible for a player who expects the other player to abandon the contract.

incomplete information, the credibility of the threat to punish a defector rests on the inferences that a contracting partner will draw from an action choice. In the famous “Gang of Four” paper (Kreps, Milgrom, Roberts, and Wilson 1982), for example, cooperative play in the finitely repeated prisoner’s dilemma (where grim trigger strategies under complete information unravel because it is not rational to cooperate in the final period, even if there has been cooperation up to that point) is achievable if each player believes that there is some small chance that the other is not rational and hence will play the grim strategy, cooperating even in the final period. In that setting, cooperating when it is rational to cheat leads to higher payoffs by supporting the inference that one is an irrational type.

The game theory that shows that a grim trigger strategy can secure cooperation in these settings standing alone, however, does not take us very far down the road of providing a plausible explanation of actual contracting behavior. An equilibrium supported by a particular pair of grim trigger strategies is just one of many, many equilibria in a repeated game like this. The challenge is to provide a reasonable account for why *this* set of strategies might emerge. Why would actual contracting parties land on the strategies, and beliefs, we propose?

This, we argue, is where we can find a significant role for contract law. Our approach is in the same vein as the literature that recognizes the role that law can play as a focal point to select from multiple equilibria in a coordination game (McAdams 2000; McAdams and Nadler 2005; Myerson 2004). Unlike that literature, however, we are not analyzing the selection of equilibrium in a coordination game in which both players always prefer to cooperate if the other cooperates. Instead, we are analyzing the selection of 1) a common knowledge procedure for classifying complex conduct in simple binary way and 2) a common knowledge inferential scheme for assigning significance to conduct that falls into one classification or the other, specifically a scheme that instructs the user to infer that breach behavior implies a private conclusion that continuing under an existing contract is less valuable than an alternative. The incentive to adopt these procedures comes not from the incentive to coordinate—as it does in the standard focal point account of law—but rather from the incentives created by the (particular) grim trigger strategies that these procedures for belief formation support: choose actions that the procedures classify as “performance” so long as you privately conclude that the contract path is more valuable than a non-contract path and so long as the other party has not chosen an action that the procedures

classify as “breach.”

In the abstracted context of game theory, players are observing whether the other has played “the equilibrium strategy” or “cheated.” But in real-world contexts, this implies a difficult problem of inference. In order to play these strategies in the deeply complex settings that our innovator subsample faces, contracting partners will be constantly engaged in trying to interpret the other’s behavior in order to predict what they will do in the future, and by extension, to discover what they have already done that may have been based on expectations about the future. Will the contracting partner continue to invest in the relationship? Will they enter into competing relationships? Have they already made decisions about investment or competing opportunities based on a downgrading of expectations about the current relationship? We saw considerable evidence of this in our interviews.

It is a behavioral process where communication over time signals a rise in importance of the proposed business. It furthers the relationship and their commitment to share information and further the proposed deal...You are trying to get the other player to sink more and more money into the project so that he is important to you and then you also become important to them. (vendor of database systems)

For us the primary value of the contract is a guide on how to answer questions about the relationship, but the ultimate remedy for us usually is not if you breach the contract, then screw you! The remedy is, you breached the contract, and you’re not the kind of company we want to do business with. So it’s a litmus test for: do they value us, do they have integrity, do we want to [continue to] do business with them? (online business service provider)

If you have to rely on your contract to enforce the interest alignment that you thought you had, there is probably a bigger problem. Because the other party should be interested in meeting their obligations and if they start [going off] on their own it’s because they are getting value from [that]. So when in my experience, one party determines their value from a contract is decreasing, they are less likely to care about adhering to their own obligations. When their value is high they are very interested in the aligned terms; they want to [fulfill] their obligations but when the value



goes down then they don't care as much that the other party is upset. (information technology)

I'm finding a lot more as I get into this [relationship] that I'm sitting down, sitting across from someone and assessing them and saying, "I think you have the same goals in mind, which is to make this really successful and grow this the way I want to grow it, I think we are of like mind here." And you can't put that in a contract, in the same way you can't put it in a marriage, and that's truly the case. Contracts and marriages, relationships and business are identical, almost, in certain matters. So you have to sit down and say, does this person fit with my business? (online service provider)

Contracting partners in innovative relationships will also be engaged in complex second-order inferences as they gauge the possible consequences of their own choices: how will my contracting partner interpret my decisions about investments of time, money, intellectual property, or personnel? Or about my participation in other ventures? We also saw evidence of this in our interviews.

...and it is infrequent that [when] you take [the contract] out of the drawer [that you] then talk to other party about it. Because you would not want to tell the other party that you are evaluating your obligations. I frequently analyze the contract [to determine] if something we are considering doing complies with our relationship but I won't talk to the other side about it. There is no upside; there is no benefit in telling them; there is little benefit in one telling others "I am considering divorcing you - I am considering other options." What would be the upside? It destabilizes the relationship. (information technology)

These inferences underpin the informal enforcement mechanisms on which contracting partners rely in the absence of robust credible threats to litigate. As we have seen, in the absence of such formal enforcement, parties rely on assurance that their interests continue to be aligned (making the threat of cutting off the relationship an incentive to comply), reputation, and the slowly revealed organizational character of the contracting partner to support

their reliance on the contract. These informal mechanisms require the parties to interpret behavior in order to update their beliefs about the interests of the partner and their capacity and willingness to continue to perform on the contract. This is also true of trust mechanisms, which, strictly speaking, are not captured by our formal model but which undoubtedly also play a role. Trust is an expectation of cooperative behavior and it is based upon knowledge of how the other party will exercise its idiosyncratic logic to judge between compliance and non-compliance. This private information, however, is revealed through conduct which then serves as the basis for trust formation. In our strict model, one instance of non-compliance terminates the contract. In a more general model, we would expect contract termination to follow a history of non-compliance. In other words, there would be a more gradual process whereby breach or non-breach in each period revises the prior and updates the expectation on performance in the future. If a breach occurs in period 2, for example, this may push the expectation below the threshold for abandonment - i.e. form the belief that the other party judges contract path to no longer be more valuable than the non-contract path. If, however, the breach occurs in period 20, the prior on the expectation for future performance is much stronger (each period in the past gave a basis for updating beliefs about the convergence between the contract and the alternative non-contract path). Thus a single breach may not lead the expectation to cross the threshold of abandonment. Past compliance, along with beliefs about personal preferences, organizational competence and availability of outside options to the other, helps to raise the prior on the expectation of performance, hence endogenously building trust that the other party will continue to judge the contract path to be more valuable than the non-contract path.¹⁰ This endogenously formed trust is then available for enforcing aspects of the relationships that are not formally enforceable.

For trust to be endogenously built by repeated observations of cooperative behavior, it must be the case that the parties have a basis for determining what behavior should be classified as “cooperation” (performance) and not (breach). Formal contract law and reasoning, implemented by legal specialists (lawyers), who have a shared background in the application

¹⁰Note that this discussion accommodates multiple definitions of trust - from the notion of calculative trust, where given the right incentives parties will cooperate, to more psychological definitions of trust based on cognitive and affective processes that result in a positive expectation that the other party will cooperate (Lewicki, Tomlison, and Gillespie 2006).

of that reasoning, provides a common template for conducting the complex inferences that are required by these informal enforcement mechanisms in the complex environment of innovative contracting. By entering into formal contracts, contracting parties give each other a reason to expect that it will be common knowledge that both will be focused on interpreting conduct as breach or not using formal contract law and that breach behavior will and should generate the inference that the partner has concluded privately that continuation of the contract is no longer more valuable than alternative non-contract options. This is one sense in which we say that the formal contract provides scaffolding for the informal relationship: it supports the formation of the belief structure that underpins trust by reducing ambiguity in the interpretation of behavior.

Indeed, our interviews suggest that the formal interpretation of a contract—often using formal legal advice, norms, and expertise—is a key piece of the ‘mental map’ of contracting partners.

...[Y]ou can have a very complex set of terms that is difficult *to remember or record*. *Even if it is not, the writing that immortalizes what you think you agreed to, it helps. It reminds both parties what their expectations were and what their obligations were. [Contracts]are frequently revisited to understand your own obligations and the other party’s obligation.* (information technology, legal counsel)

Also without a contract, there is no way to suggest that someone violated the contract and therefore their reputation should be tarnished. You know: “If a tree falls in the forest and no one is around to hear it, does it make a sound?” They are operational documents that lets everyone know how they can proceed; it is the basis for reviews and performance assessments. It shows the level of commitment between me and the company for others to see, like my investors. I can tell them, look we just signed a deal with these guys. (database systems vendor)

If there’s something new, or an addendum or an amendment, something like that, a contract that we haven’t put in place before. We’ll send that to an attorney. (logistics services provider)

I have an in-house counsel that does look at all contracts. If supplier contracts with stipulations that we’re not sure about, we check [with counsel], and modify maybe a little bit. So that keeps



us out of trouble. I know when somebody doesn't pay. . . it always looks good when legal counsel writes a letter and sends it to them, they tend to react a little bit more seriously. We [used to have] quite a few of those where distributors didn't end up paying me, so we changed the way we operate there. (optical equipment manufacturer)

[By using legal counsel in dispute resolution] you can almost use the good cop bad cop. "Look, I have to send you the letter because my board will go crazy if they know that I'm not following up on this. But I got to do it, I don't want to do it. You're going to get a letter from our lawyers, but I think we can really resolve this. The board said I've got to do this." A little bad cop, good cop. I mean you know, you can use the lawyers as the bad cop. Specifically to the CEO. . .I say, "if I go to that meeting, then you have no room to negotiate because I'm sitting there. So you need room to work, okay, so you can get the lay of the land, understand and try to get to a resolution. And you still have a fallback because you get to talk to me about it, okay?" (optics systems, legal counsel)

...the odds are reasonable that you're going to be successful and make this investment, but it has no guarantees, so the contract has to serve in some places to insure that . . .one side or the other doesn't withdraw if their expectations are not immediately met. Because it's very common that one side is in fact all- "we're going to make so much money off this!" and the other side is "That's great, I'll be satisfied if we do this." "You expect to do this, I'll be happy with this." Well, let's put a contract in place, so we're kind of defining the level of effort such that, since we don't really know how things are going to go, we are clear on what we're going to put into this to try to be successful. And if we're not, well then okay. (online productivity platform)

Of course, parties that are seeking to reach common ways of interpreting behavior could do this expressly: through conversation. Our Macaulay sub-sample clearly speaks to this: many of our respondents spoke about getting on the phone to work out problems. But express efforts to reach shared interpretations of behavior are not costless, particularly in the environments facing our innovator sub-sample. These are settings in which information



is (and even more often, perceived to be) a highly valuable commodity; contracting partners in relationships that are relatively new and undefined will be reluctant to, as one telling¹¹ technology cliché puts it, “open the kimono” and speak freely to promote convergence in their interpretive strategies. Our interviews also help explain why the parties in these relationships are particularly interested in a coordinating device that allows them to reach common inferences in complex settings without having to engage in routine discussion to do so: doing so is costly both in terms of time and the risk of disclosing private information.

This is not to say that contracting partners in innovative relationships do not get together to hammer out their understanding of their contractual obligations and the inferences they draw from each other’s behavior. Our approach helps to understand a motivation for this behavior. Because it is costly, both in time and resources and in terms of disclosures of private information, and generates external benefits for the other partner, we should expect that contracting partners underinvest in joint problem-solving. The structure of the model we have presented, relaxed to incorporate the realistic possibility that contract reasoning does not lead to a single, unambiguous, classification of conduct, suggests an added incentive to incur problem-solving costs and thus overcome at least some underinvestment. That incentive is the incentive to avoid the inference of breach, by either side, where it is not intended and hence is not a signal that a party has reached the private assessment that the contract path is no longer optimal. Suppose *A* engages in action *x*, for example, that it believes is not breach but which it recognizes may with some probability be interpreted as breach by *B*. In this setting, *A* does not want *B* to infer that *A* has concluded that the contract is no longer valuable as this will induce *B* to abandon the contract. *A* therefore has

¹¹It is telling about many things, including the centrality of information sharing decisions to the mindset of the technology sector and the popularity of terms that analogize business relationships to personal relationships. While we did not hear this particular phrase in our interviews, we did hear many in the technology industry use marriage or dating metaphors to describe their relationships. “So for example, you go out on a date, you don’t really know in the first month if this is somebody you want to invest the time in. Right? If you have a customer that comes in, it’s the first time they’ve ever used your product, you don’t know if they’re just going to use it, and they’re gonna dump it, or they’re going to keep using it. So you really can’t assume.. and usually there’s more money involved over long term. I mean usually relationships grow over a longer term, right? [...] Like my wife, we’ve been married 28 years. We got a lot more at stake. There’s a lot more invested in this. So it’s the same thing with a business relationship.”



an incentive to incur the cost of problem-solving and discussion to attempt to reach a shared determination that x should not be classified as breach under the contract. This is another way that formal contracts provide the scaffolding for informal relations: formal contracting offers the structure that encourages joint problem-solving and information exchange which advances the relationship or limits the scope of disagreement in the future.

You can have an honest disagreement that if you read [the contract] rationally, well I understand why you disagree. Well I gotta figure this: you're a good customer, you're a good distributor, you're a good partner, okay. Well let's come up with something, let's extend the terms, let's change the royalty rate, let's do this, let's do that. Or come up with something that we both win-win. You know, I want to keep the relationships, I don't want to blow it up over this, and you don't either. But I understand that you've got a problem with it, and it's not working for you. Or vice versa, not working for me. (optical systems)

You know, we've had issues like this [where we disagree about obligations] happen before. Most of them get resolved informally, when you state to someone: "you agreed that it would only be 3 days, here is the latest turnaround sheet where you can see the average turnaround time is 4.5 days, what's going on?" And if the person comes back and says, "we had a huge volume increase, it wasn't normal, I'm staffing up people, I've had someone recently quit", they have a good reason for it, you give them some more time. Like I said, it's a cure. These businesses, they're not held to perfection, they're held to trying for perfection, which is easier to attain. (online service provider)

And the agreements that tend to look more like business partnerships, which comes closer to the case of our investor/strategic partner, [those] depend on active participation on both sides to make it successful. One can define very specific [terms], like "we will agree to do this. many sales seminars, we will agree to provide this level of support with this" and you can get very specific, but . . . agreeing to have a sales seminar doesn't mean you're going to get a sale, agreeing to do a sales seminar doesn't mean you're going to do a good sales seminar. All you can say is "we'll



agree to do this,” so if you do a couple of them and you find that one side’s putting a lot of work into it and the other side is just showing up, that’s going to be a discussion: “well, we worked our butts off to make this successful, you guys just waltzed in here and didn’t do a damn thing- if that’s the way you’re going to do it, we’re not going to do any more sales seminars.” ...If it ever gets to [someone saying] “if you don’t do the sales seminar, we’ll sue you” and [the other person saying] “okay we’ll be there,” and you go through the motions to fulfill the terms—well, by then the marriage is lost. You walking into the same house together, but you’re not speaking, and for all practical purposes it’s over. So you decide, ultimately, . . . [to] say [instead], “let’s try something else.” And you carry on the spirit of [the agreement]... the contract may say “seminars” and you end up doing something totally, totally different. But the spirit of it was such that we’re going to jointly work to try to close business together. And, yes, we said seminars, but now we know more, and it’s better if we try this other thing. And maybe on the third thing you try, you find a solution. (online productivity platform)

Shared determination as to what constitutes breach under the contract may prompt a clarification or modification of contract language or a formal amendment. Putting clarification, modifications or amendments into the formal document, as we heard some respondents do, then secures the benefit of this joint problem-solving for the future of the relationship: it aligns interests better and increases the information that particular actions convey to the other side by reducing the scope for disagreement across the organization and between partners about whether a party is in breach or not.

We need to put our fixes in writing and how we agreed to resolve it in case different people come on board. That way the next person knows what to do (space technology)

If they acknowledge that the goal set was not achieved, then negotiations are easier, things can slide. Sometimes there is no need to update the contract. If there are repeated violations, the contract may get amended in the sense that emails [that] mention that some performance goals will be allowed to slide for that period are recorded. (database systems vendor)



When this company was in its infancy, it very much relied on confirming emails, more than formalization of contract. If you tell someone I'd like you to start turning stuff around in 3 days, and then they say okay and they're turning it around in 3 days, and they do so for the next 6, 8, 10 months, and they keep going, to many entrepreneurs who don't find the risk great, that's enough. They don't need to go then and say now let's put that in the contract and we'll amend that term and take care of it. That being said, if that contract has a termination date where it says it will expire on this date, and it's coming close to that date, they'll say we need to sign an agreement again, so they'll take those terms they had informally agreed to and put them in the new one, and sign that agreement. So it's a little bit of a patchwork quilt, but then it's what I call restated, and then it moves forward again with maybe some patchwork, hopefully less. (online service provider)

4.1 A role for formal contract doctrines as scaffolding

The scaffolding role of contract law that we are emphasizing is not simply that it provides a common language, although it certainly does do this and this is a source of value. The deeper observation is that specific contract doctrines can also be seen to play a role in generating the natural emergence of the particular structure of beliefs that support contract compliance equilibria even in the absence of formal contract enforcement. We illustrate here the role specific contract doctrines might play.

It is one of the most well-worn cliches of legal education that the first year of law school teaches students how to “think like a lawyer.” In first-year contracts, this transformation is most apparent in the process that students go through in learning that the words on the page of a contract are read by lawyers through a distinctive lens, different from the one they themselves deployed just a few short months ago. Contracts professors drive home two key ideas necessary to understand the legal import of a contract. First, the “contract” is not necessarily the same thing as the words in a document that look like—may even be titled—the “contract.” The contract is the product of the intent of the contracting parties and the document may only be evidence of what that intent was. Second, the “intent” lawyers look to in discerning the content of a contract is not the privately held subjective intent of the contracting parties, but rather the objectively reasonable interpretation of

the intent of each of them, as judged by the words and actions made manifest to the other party.

These two key ideas are examples of the way in which lawyers' distinctive methods of contract reasoning can coordinate the classification of behavior as breach or performance. As struggling first year students discover, it is not obvious or easy to apply these techniques to answer the question of whether a particular set of words or actions gave rise to a particular obligation. Is a man who was drinking and joking around when he signed a paper saying "I promise to sell my land for \$50,000" bound to sell the land?¹² Students new to the law can see many possible answers to that question. They can use ideas about fairness or reliance or 'real' intent or the moral obligations of those who drink and fool around to argue about what the answer should be. And yet, over time, students discover that Anglo- American lawyers don't disagree much about whether the joker is bound to sell: fairness, reliance, moral obligations, subjective intent: these are all irrelevant considerations. The only thing Anglo-American lawyers focus on is whether it was objectively reasonable for the person to whom the signed paper was given to believe that the offer was seriously intended. There may be some scope for disagreement among lawyers about the answer to *that* question, but it is far less than the disagreement that will exist in the absence of that clean reduction of the problem to a single inquiry. Moreover, *every* Anglo-American lawyer will agree that this single inquiry is the only one that needs to be conducted.

There is a further idea that first year students in contracts come to understand about how lawyers approach contract interpretation. Lawyers interpret contracts and look for the obligations they contain not in order to produce an accurate description of an object or interpretation of a text. They do it for the decidedly practical purpose of determining whether particular actions are breach or not. If a contract calls for the delivery of "chicken,"¹³ to choose another chestnut of the first year Contracts curriculum, the task of contract interpretation is not to arrive at the best understanding of what the parties meant by that term in the abstract, but rather to answer the very specific question of whether the delivery of "stewing chicken" constitutes a breach.

There many other distinctive features of the way contract law reasons its

¹²Lucy v Zehmer 84 S.E.2d 516 (Va. 1954)

¹³Frigalment Importing Co. v. B.N.S. International Sales Corp. 190 F.Supp 116 (S.D.N.Y. 1960)

way towards a determination of whether a contract classifies particular conduct as breach. Contract interpretation is understood by Anglo-American lawyers to take place within a framework that privileges—in the sense of assigning greater, sometimes preclusive, weight to—particular kinds of written documents. When the process of negotiating an agreement has resulted in the production of a writing that purports to contain the agreement, the parol evidence rule carves up the statements made by the parties into those that are in a writing and those that are not. If the parties did not produce a written representation of their agreement, what a seller told a buyer about delivery times may be relevant to determine whether a delivery that is later than the buyer expected is a breach or not. But it won't be if they did produce a written representation that it was objectively reasonable for each to understand to be a final and exclusive statement of the seller's delivery obligation and that statement is unambiguous. (Unless this is a contract that is governed by the Uniform Commercial Code and the statements that were made by the seller arose in the course of previous dealings. And so on.) This particular way of carving up the world is unlikely to emerge spontaneously between two individuals with no knowledge of American contract law; it is the only one that an American lawyer would use, and would expect another American lawyer to use. The same is true of the set of rubrics the Second Restatement of Contracts calls “rules in aid of interpretation”: express terms are favored over implied terms, a reasonable interpretation is favored over an unreasonable one, terms should be given a meaning that as much as possible makes all the terms in a contract effective and consistent, terms used by the drafter of a standardized agreement should be construed against the drafter, an interpretation based on evidence of course of performance should be preferred to one based on course of dealing which should in turn be preferred to one based on trade usage, and so on. This is how all legally trained American experts approach the problem of interpretation and classification. Becoming a legal expert—learning to think like a lawyer—means precisely to coordinate on this particular approach.

When contracting parties enter into a formal contract and invite lawyers and contract law into their relationship, then, they are naturally led to engage in a common process: looking at the words, looking at the context, and filtering that material through contract doctrines to determine answers to the questions that contract law says should be asked. More precisely, they are focused on the activity of assessing the content of contract obligations in order to classify conduct as breach or not. And, critically for our analysis,



they are self-consciously engaged in what they understand to be an effort to arrive at the *same* classification as other experts. They are not reading the text for their own private assessment of its proper classification; they are actively engaged in trying to locate the meaning that *the law* ascribes.

This is precisely the form of the belief structure that underpins the trigger strategies we propose in the equilibrium, above. The trigger is unique: breach. The classification procedure is unique: the relevant body of contract law. And once it is common knowledge that parties are looking to law and lawyers for assistance in organizing their relationship through the use of a formal contract, it is natural to expect that they will land, as a matter of common knowledge, on this particular system of belief formation. This can be a reason to use formal contracts to provide scaffolding in support of the formation of this belief structure.

The content of contract law provides an even deeper basis for the structuring of the belief system we describe, going beyond the coordination of classification of conduct as breach or not. Contract law naturally orients analysis of a complex set of facts in terms of whether a breach is “material” or not, or whether there is some “condition” that must be met before a performance is due. Even if breach has not occurred, contract law, in the appropriate circumstances, prompts lawyers to ask whether there has been “repudiation” or not. Moreover, the implication of determining that a breach is “material” or that there has been “repudiation” or that there has been a failure of a “condition” is that the other party is released from their contractual obligation: a future non-contract action by them will not be classified by contract law as a breach.

This framework for analysis of a complex set of circumstances grounds the reasoning of the belief structure we propose. If *A* concludes that *B* has engaged in unambiguous material breach or unambiguously repudiated, then *A* no longer has a contract reason to choose contract actions: it will be common knowledge that no action *A* takes in these circumstances will be classifiable as breach. This should lead *B* to expect that *A* will no longer perform when a non-contract action yields *A* higher value, and this expectation by *B* will also be common knowledge. If *A* anticipates that *B* anticipates that *A* will no longer be obliged to perform, then *A* should anticipate that *B* will no longer perform. It is certainly true that the determination of whether a particular breach is material, or whether actions constitute repudiation, or whether an event was a condition of performance, is ambiguous in some cases. But even in those cases, the process of assessing how strong

is the claim of material breach, repudiation, or failure of a condition will be common knowledge, and there will coordination on a determination that the risk to *A* of being judged to be in breach of contract in the future will be correspondingly lower.

The point we wish to emphasize is that the beliefs that we propose support an equilibrium in which an informal enforcement mechanism—terminating a valuable contract—can be derived from reasoning grounded in a particular set of legal doctrines. In predicting that this equilibrium can help to explain why parties use formal contracting in their relationships, we are thus not relying purely on the game theorist’s equilibrium reasoning (that is, the reasoning that says that the parties play these strategies and arrive at these beliefs because that is what the equilibrium calls for.) We can make a stronger claim: not just that this particular structure of beliefs and strategies *can* be an equilibrium but that there is good reason to believe that it *is* the equilibrium contracting parties who rely on formal contracts but do not expect to rely on formal contract enforcement are playing.

There is another contract doctrine that we believe we can see at work in supporting the equilibrium behavior we may be seeing among our innovator respondents. This is the doctrine of waiver. This doctrine says that (in some cases) if *A* does not object to *B*’s choice of an action that is classified by the contract as breach, then the contract will not classify similar actions by *B* as breach in the future. The doctrine is of particular relevance when there is ambiguity about what constitutes performance, so that although legally-aided interpretation significantly narrows the range of possible classifications, it does not lead to a singular classification. In these circumstances, the risk of waiver—which changes the value of the contract to *A*—generates an incentive for *A* to invest in costly efforts to problem-solve with *B*. As we have seen, contracting parties pay close attention to the path of deviations from the formal agreement, seeking clarifications and amendments to memorialize the product of their problem-solving or accommodations to unexpected contingencies. Again, because the doctrine of waiver is part of the structure of contract, we can see why the use of formal contracts would focus both sides on the need for attention and concordance between performance and contract language—in order to reduce disagreement in the future about what should, and should not, be classified between them as breach.

5 Conclusion

Fifty years ago, Stewart Macaulay's conversations with leading companies in the economy of the 1960s upended the simple idea that contracts and contract law serve as the platform on which businesses operate. His work illuminated the complex role of informal norms and enforcement, even in the sophisticated commercial world of mega-corporations like G.E. and S.C. Johnson. Our conversations with leading companies of the economy of the early 21st century add a further dimension of complexity to the interrelationship of formal contract law and informal mechanisms in commercial life. We have found suggestive evidence that the relationship between formal and informal mechanisms to support commitment in innovative business partnerships is deeply complementary. Specifically, where the dynamism of an innovative sector generates relationships in which it is difficult *ex ante* to specify what contracting partners should do to further their joint enterprise, we see partners turning to formal contract law and legal advice to structure the terms of their deals. But they do so not in order to secure the threat of formal contract remedies - as the conventional view in the literature holds - but, we argue, in order to coordinate the inferences each makes, and expects the other to make, about their commitment to the joint enterprise. Contract law, we suggest, plays a key role in providing a common system for classifying complex behavior as either 'breach' or 'performance.'

In this way, formal contract law serves as scaffolding that allows transactional partners to bridge the incompleteness of the inescapably informal structure of complex relationships in settings of high uncertainty. Informality serves the purposes of firms in these settings precisely because it is flexible and ill-defined in an *ex ante* sense. It thus allows accommodation to a rapidly changing and significantly unpredictable environment; its content is filled in only as information develops over time, as opportunities and alternatives evolve, as new companies, products and markets emerge. The benefits of informality are clear. But so too are the costs: how are the contracting partners to know what is expected of them when their obligations are filled in only after they commit to each other? Formal contract law lays down a structure that bridges the gaps in the informal relationship as it is built: when the future arrives, if the parties run the risk of looking at each other across a gulf in understanding - I think it is okay to staff our sales sessions with our existing sales force, you think we need specialists to address a key set of potential customers - the formal contract lays down a structure for



bringing our beliefs to the same point. It does this not by leading us to agree on the optimal composition of the sales force, for example, but by leading us to agree that the contract specifies a particular composition. If the contract's specification does not match my private assessment of what I should do, I will think hard before I stay on my side of the gulf: with the scaffold's plank in front of me, I will know that you know I could get over to your side if I wanted to. If I don't cross over, I know you will conclude that I must not be interested in living in this structure with you any longer. If I don't want to abandon the structure, I will walk my way across the plank to your side. Or I will call across to you and suggest we both invest the time and resources in filling in the gap ourselves.

In this sense, we can see the role of formal contracting in the endogenous generation of trust in business relationships. As Gilson, Sabel and Scott (2010) (GSS) emphasize, trust is something that grows with relationships. This is a critical insight. If the extent of trust between two entities is a fixed attribute, then businesses in search of new transactional partners have no option but to search within the set of people and businesses they already trust sufficiently to support the risks of an uncertain future. This is a fairly restricted set, especially in highly innovative industries. But if trust can be generated endogenously within a relationship, then the set of potential partners expands. This draws our attention to the availability of structures that can support the growth of trust. GSS propose one role for formal contracts in this regard: the use of formally enforceable agreements to exchange information and engage in specified decisionmaking and dispute-resolution procedures to directly improve the information available to each party.

Our framework provides another mechanism by which formal contracts can build trust endogenously - even in the absence of formal enforcement. Our framework also emphasizes the connection between trust and information: businesses trust each other more when they know more about how their partner perceives its interest, values its alternatives, and manages its organization. In our model, however, contracting parties learn about each other indirectly by observing each other's choices about whether to select an action that the contract deems "performance" or one that the contract deems "breach." A partner that consistently chooses "performance" is trusted more than one that sometimes takes a "breach" option when it is available: the probability that the contract will survive is higher for the partner that chooses performance than the one that chooses breach. Partners can build trust, then, by demonstrating that they will consistently choose performance

over breach. Formal contract law supports this process by supplying a common definition of what counts as performance and breach, precisely in the settings in which it will be difficult to provide a common definition at the outset of the relationship. More precisely, formal contract supplies a common process for resolving complex in-the-moment information into a binary breach/performance classification. Ex ante the parties designate this common process; ex post they both refer to it to fill contractual content as needed. A set of formally contracted terms which are informally enforced then secures the commitment of parties to problem solve and exchange information to advance their relationship.

We think this is, in fact, much like the process Stewart Macaulay uncovered in his original research half a century ago. For Macaulay's manufacturers - as for the modern businesses we spoke to who did not perceive their industries as particularly innovative - the scaffolding for their informal relationships comes from stable industry norms. As Macaulay observed for his respondents, "most problems are avoided without resort to detailed planning or legal sanctions because usually there is little room for honest misunderstandings or good faith differences of opinion about the nature and quality of a seller's performances." Contractual relationships in dynamic innovative settings, however, are rife with the potential for honest misunderstanding and good faith difference of opinions. In those settings, we argue, formal contract law fills in for the missing norms. It provides the scaffolding that helps to bridge misunderstanding, supporting the informal relations on which contracting parties in innovative enterprises ultimately rely.

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