

## Firms (and Other Relationships)

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January 14, 2000

By now, many non-economists know the two key events in the birth and revitalization of the economic theory of the firm. First, in 1937, Ronald Coase argued that firms will exist only in environments in which firms perform better than markets could. To create space for firms, Coase suggested that some environments might be plagued by “transaction costs” that cause markets to perform poorly. Second, in 1975, Oliver Williamson significantly deepened the discussions of why markets might perform poorly and why firms might perform better than markets. Roughly, Williamson argued that markets rely on formal contracts (*i.e.*, those enforceable by a court), but formal contracts are typically incomplete, whereas firms might use “relational contracts” (*i.e.*, informal agreements not adjudicated by courts) to overcome some of the difficulties with formal contracts.

It seems less well appreciated in economics that the second prong of Williamson’s argument borrowed a central theme from four decades of organizational sociology. Williamson relied primarily on Barnard (1938) and Simon (1951), but many others had also emphasized the importance of informal agreements in organizations, including Blau (1955), Dalton (1959), Gouldner (1954), and Selznick (1949) in the landmark case studies that signaled American sociology’s departure from Weber’s emphasis on formal organizational structures and processes. By 1962 it was uncontroversial (at least among sociologists) that “It is impossible to understand the nature of a formal organization without investigating the networks of informal relations and the unofficial norms as well as the formal hierarchy of authority and the official body of rules ...” (Blau and Scott, 1962: 6).

But informal agreements can be crucial between firms as well as within. In sociology, Macaulay (1963) documented the importance of such “non-contractual relations” between businesses. In law, Macneil (1978) compared classical contracts (enforced to the letter by courts) and neoclassical contracts (interpreted and updated by

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\*\* This essay draws heavily on my joint work with George Baker and Kevin J. Murphy, especially our 1999 paper “Relational Contracts and the Theory of the Firm.” Any good ideas I offer here were co-developed with them. I am also grateful for helpful advice on cross-disciplinary communication from Paul DiMaggio.

arbitration) to relational contracts (interpreted and updated by the parties). And in organization theory, Dore (1983) was the first of many to describe Japanese supply relationships as relational contracts, and Powell (1990) emphasized that relational contracts exist horizontally as well as vertically, such as in the networks of firms in the fashion industry or the diamond trade.<sup>1</sup>

Given this emphasis in the sociological literature on relational contracts both within and between firms, it is not surprising that the main chapters in this volume – by Powell, Stark, and Westney – all accord important roles to such relational contracts. As one example from within firms, Powell notes the importance of semi-autonomous project teams, but such a team's autonomy can be revoked at any moment by higher management, (that is, such autonomy is backed by promise and reputation, not law). And in discussing alliances, partnerships, and other collaborations among U.S. firms, Powell argues that “fixed contracts are ineffectual” and so are replaced by “relational contracts” supported by “reputation, friendship, interdependence, and altruism” (p. 39). Similarly, in describing “recombinant” organizations in postsocialist Hungary and the Czech Republic, Stark emphasizes the continuing importance of “informal and interfirm networks that ‘got the job done’ under socialism” (p. 11). Interestingly (for Stark’s argument and for my purposes below), even such networks may not result in flawless coordination and control: in one Hungarian network, the central firm had to try repeatedly to “introduce stricter accounting procedures and tighter financial controls” (p. 19), apparently without full success. Finally, in characterizing large Japanese firms circa 1950-90, Westney notes not only the “implicit contract” (p. 23) within the firm concerning employment security and seniority-based pay but also important relational contracts between firms. In particular, supply relationships in vertical keiretsus were managed by “contact, not contract” (p. 26): coordination and control were often achieved not by ownership but by dense flows of information, technology, capital, and people across firm boundaries (and these flows, like a project team’s autonomy, are backed in part by promise and reputation rather than entirely by court-enforced contracts).

In this brief essay, I begin by summarizing a recent economic model of relational contracts within and between firms (Baker, Gibbons, and Murphy, 1999). This model uses the theory of repeated games to create a stick-figure rendition of relational contracts

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<sup>1</sup> For further examples of relational contracts between firms, see Nishiguchi and Brookfield (1997) on hand-in-glove supply relationships, Kogut (1989) on joint ventures, Gerlach (1991) and Gulati (1995) on alliances, Kogut, Shan, and Walker (1992) and Podolny and Page (1998) on networks, Granovetter (1995) and Dyer (1996) on business groups, and Chesbrough and Teece (1996) on “virtual” firms.

like those described by Powell, Stark, and Westney. The model's relevance to this volume is not in its caricature of real relationships, but rather in its reconceptualization of relational contracts and the boundary of the firm: in this model, the parties' relationship takes center stage; the integration decision is merely an instrument in the service of that relationship.<sup>2</sup> For example, in a supply relationship between an upstream supplier and a downstream user, the best feasible relational contract between the two parties can differ dramatically depending on whether the parties belong to one firm (vertical integration) or two (non-integration). In this case, the vertical-integration decision is driven by whether integration or non-integration facilitates the superior relational contract. Simply put, the old "make or buy" decision should instead be viewed as "make or cooperate" (Kogut, Shan, and Walker, 1992), where *both* options involve important relational contracts.

Having articulated this new perspective on relational contracts and the boundary of the firm, I then return to the Powell, Stark, and Westney chapters. In particular, I use the model to consider three overarching themes: (1) contingency, such as Powell's contention that rapid technological change places a premium on relational forms of organization and Westney's observation that the Japanese employment system was premised on continuous growth; (2) efficiency, such as Stark's observation that even relational forms of organization have their problems, including "problems of accountability that accompany the relentless pursuit of flexibility" (p. 3); and (3) path dependence, such as Stark's and Westney's arguments that which relational forms of organization come into existence and flourish depends on the history of prior relationships. For each theme, I find encouraging agreement and complementarity between the economic model and the sociological accounts.

### A One-Shot Supply Transaction

Consider the following model of a one-shot supply transaction involving an upstream party (supplier), a downstream party (user), and an asset (production equipment). Suppose that the upstream party uses the asset to produce a good that can be used in the downstream party's production process. The value of this good to the downstream party is  $Q$ , but the good also has an alternative use with value  $P$ . Such a supply transaction is shown in Figure 1 below.

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<sup>2</sup> See Gibbons (1999) for other kinds of contributions that formal models can make to organization theory.

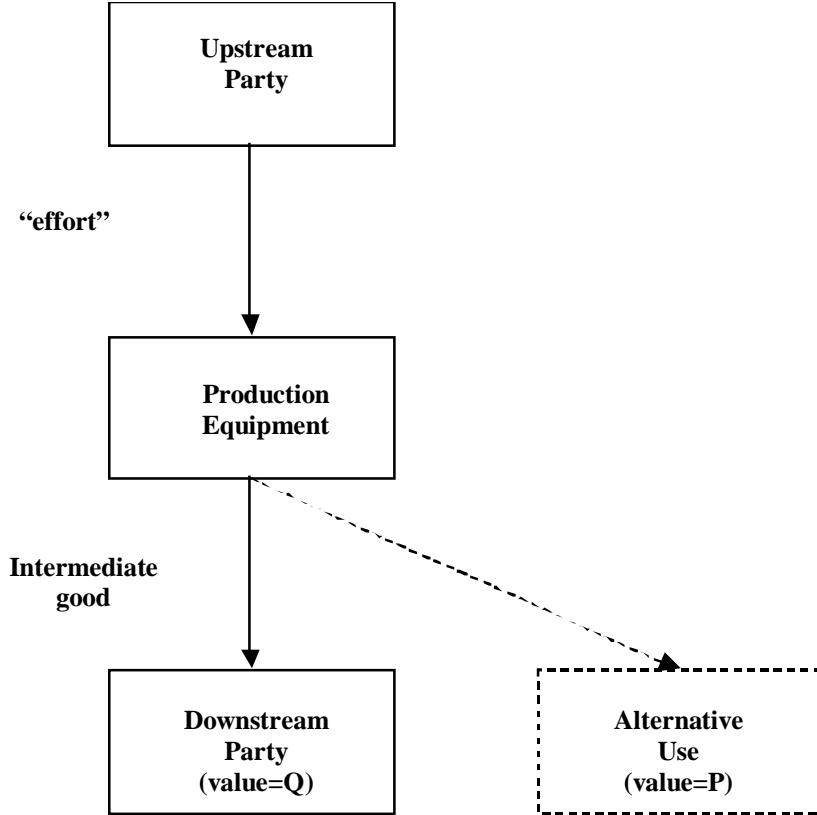


Figure 1: A One-Shot Supply Relationship

If the upstream party owns the asset, we will call her an *independent contractor* (*i.e.*, someone who works with her own tools); if the downstream party owns the asset, we will call the upstream party an *employee* of the downstream organization (*i.e.*, someone who works with the boss's tools). Alternatively, we can think of the upstream and downstream parties as firms rather than as individuals, in which case it is more natural to use terms such as *supplier* and *division* rather than independent contractor and employee, respectively. Whether the parties are individuals or firms, if the upstream party owns the asset we will call the parties *non-integrated*, but if the downstream party owns the asset we will call the parties *integrated*.<sup>3</sup>

To fix ideas, much of the discussion will be cast in terms of a famous business-school case: Crown Cork and Seal Company (Gordon, Reed, and Hamermesh, 1977). The details of the case become important below; for now, it suffices to say that in the 1950s

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<sup>3</sup> Grossman and Hart (1986) originated the idea that asset ownership patterns define who works for whom, and consequently whether a supply chain is integrated or not. As I describe in somewhat more detail below, their paper is on a par with Coase (1937) and Williamson (1975, 1985) in its impact on the emerging field of organizational economics.

and ‘60s Crown made metal cans for the soft-drink industry. So suppose that Crown owns a can plant located near a Pepsi plant, but there is also a Coke plant two towns away. That is, Crown is the upstream party, Pepsi the downstream party, and Coke the alternative use. In actual fact, Crown was never integrated with Pepsi or Coke, but we will at times consider the hypothetical case in which Pepsi has purchased the can plant from Crown (in which case the can plant is a “division” of Pepsi).

Suppose that ownership of the asset conveys ownership of the good produced using the asset. For example, if Crown owns the can plant then Crown owns the cans produced there until Pepsi buys them. Furthermore, in bargaining over the sale of the cans, Crown can threaten to sell the cans to Coke (*i.e.*, under non-integration, the upstream party can threaten to consign the good to its alternative use). On the other hand, if Pepsi owned the can plant then Pepsi could prevent the can plant from dealing with outside customers.

Suppose also that the production equipment has been specialized to meet the downstream party’s needs. For example, the can plant might have been configured to produce cans to Pepsi’s specifications rather than Coke’s. Then the good’s value to the downstream party will exceed its value in the alternative use; that is,  $Q > P$ . The surplus that the upstream and downstream parties can jointly achieve by transacting with each other is thus  $Q - P$ , but each party would like to capture all of this surplus. For example, Crown would like to sell its cans to Pepsi for  $Q$ , but Pepsi would like to pay only  $P$ .

This model may seem rather distant from the contemporary and international concerns of Powell, Stark, and Westney, but I believe it is actually quite closely related. First of all, there are many direct applications of this model beyond soda cans in the 1950s. For example, suppose that the upstream party is an inventor, the downstream party is a manufacturer, and the asset is the inventor’s invention. Rather than discuss ownership of a physical asset like a can plant, we now consider ownership of intellectual property – the invention. If the manufacturer will own any inventions that the inventor might produce then the inventor can be thought of as an employee working in the manufacturer’s R&D lab. Alternatively, if the inventor will own her inventions then she can sell them either to the manufacturer or to an alternative user. This second example (which can be enriched to include issues such as licensing, alliances, and so on) is quite close to some of Powell’s discussions of the biotech and pharmaceuticals industries.

In addition to expanding the list of direct applications of this model, one can also reinterpret the model more broadly, along the following lines. Organizational sociologists have long emphasized the distinction between formal and informal aspects of

organizational structure. Formal aspects include the job descriptions and reporting relationships described in an organization chart, as well as formal contracts and ownership stakes; informal aspects include norms and mutual understandings, as well as networks of non-reporting relationships among individuals. In the model presented above, asset ownership is the formal aspect of organizational structure (and relational contracts will be the informal aspect, as discussed below). I believe that close cousins of the model sketched here can be used to analyze other formal aspects of organizations – not just ownership rights to physical or intellectual property, but also job design, reporting relationships, formal contracts, and share ownership.<sup>4</sup> Throughout this family of models, the common question will be how formal aspects of organizations support or constrain informal aspects, such as the relational contracts to which we turn next.

### An Ongoing Supply Relationship

In the 1950s and '60s, the metal can industry looked horrible: suppliers were strong (such as U.S. Steel), customers were strong (such as Pepsi, Coke, and Campbell's Soup), and entry into the industry was cheap (a used production line cost only \$150,000 and could be set up in a small space close to an important customer). Industry giants such as American Can and Continental Can were losing money and diversifying out of the industry, but Crown Cork and Seal made money by specializing in customer service. That is, Crown not only began a relationship with a customer by tailoring the specifications of the cans and the schedule for deliveries to the customer's requirements, but (more importantly) Crown stood ready to modify can specifications and delivery schedules when unusual circumstances arose. Of course, Crown did not make these modifications for free; to the contrary, Crown was able to charge a premium because of its reputation for flexibility and service. In short, in the terminology of this essay, Crown had an important relational contract with its customers: Crown would make reasonable modifications under the terms of the existing formal contract; substantial modifications

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<sup>4</sup> There may seem to be an inconsistency here: I argued above that the semi-autonomy of Powell's project teams is backed by informal promise and reputation rather than formal contract, yet here I argue that the job designs and reporting relationships in an organization chart can be viewed as formal structure. But what is formal and what is informal depends on the level of analysis. If the CEO can redesign the organization at a moment's notice then *for relationships involving the CEO*, the organization chart is informal – it is backed by promise rather than law. But in analyzing (say) the relationship between a middle manager and her subordinate (assuming that neither can affect the organization structure), the organization chart can sensibly be viewed as formal – it is backed by something more like law than by the promises of either the middle manager or her subordinate.

could also be made, but would create the expectation of fair compensation, either on a one-shot basis or by revising the terms of the formal contract for the future.

Crown's customer service illustrates both of Williamson's (1975) ideas. First, formal contracts are almost always incomplete — they often do not specify important future events that might occur, not to mention what adaptations should be made if a particular event does occur. Second, relational contracts may overcome some of the difficulties with formal contracts — relational contracts may allow the parties to utilize their detailed knowledge of their situation to adapt to new contingencies as they arise. Of course, the irony in this illustration is that Crown was not integrated with Pepsi. That is, the motivation for and benefits of relational contracts are as Williamson (1975) described, but the transaction is occurring between firms instead of within. A useful model of relational contracts must therefore be applicable both within and between firms.<sup>5</sup>

To see why the theory of repeated games may help in developing such a model, recall that the drawback of any relational contract is that it cannot be enforced by the courts: having a contract that utilizes the parties' specific expertise makes it prohibitively expensive for the courts to adjudicate disputes. Therefore, relational contracts must be "self-enforcing," in the sense that each party's concern for its reputation must outweigh that party's temptation to renege on the relational contract.<sup>6</sup> This kind of logic — in which the shadow of the future subdues the temptations of the present — is widely

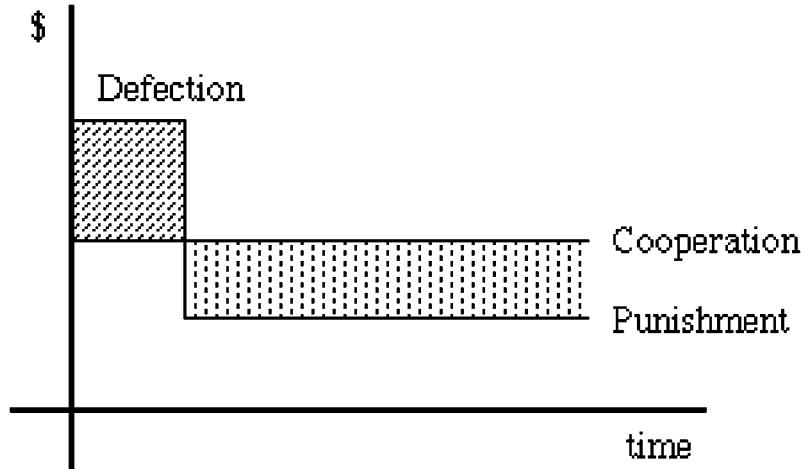
<sup>5</sup> Williamson (1985, Chapter 3) pays greater attention to relational contracts between firms, but construes them as features of "hybrid" forms of organization, lying on a continuum between markets and hierarchies. In contrast, the model in Baker, Gibbons, and Murphy (1999) suggests that the set of governance structures is at least two-dimensional (integrated vs. not and relational governance vs. spot), in which case it is not possible to array all governance structures on a line between markets and hierarchies. This two-dimensional view of governance is consistent with Powell's (1990) assertion that networks are "neither market nor hierarchy."

Williamson (1996, Chapter 4) devotes still greater attention to relational contracts between firms, recognizing the prevalence and longevity of these relationships and their associated "hybrid" organizational forms. The contributions of the Baker-Gibbons-Murphy model are to ask and answer how and why relational contracts between firms might differ from those within, and consequently when one might outperform the other.

<sup>6</sup> Powell's chapter observes that a "dense, transactional infrastructure of lawyers, financiers, and venture capitalists has emerged to facilitate, monitor, and adjudicate network relationships" (p. 41). This observation is completely in keeping with the model developed here, because the model can readily be extended to involve more than two parties. As an example of such a multi-player relational contract (where some of the players are monitors and adjudicators), see Greif, Milgrom, and Weingast's (1994) model of a merchant guild. The key feature of both the basic model presented here and all such extensions is that the courts would find it prohibitively expensive to engage in such monitoring and adjudication. That is, the game may include more than two players, but it is still a game rather than a formal contract.

known outside economics from Axelrod's (1984) analysis of Tit-for-Tat strategies in the Prisoners' Dilemma. In economics, however, many analyses focus on "trigger" strategies in repeated games, in which defection ruins the relationship forever. Trigger strategies can be applied in a very broad class of repeated games, including an ongoing supply relationship based on the one-shot model above.<sup>7</sup>

To illustrate a trigger strategy, consider a repeated Prisoners' Dilemma. A player's current options are to "Cooperate" or "Defect," but defection will be discovered and result in "Punishment" forever after, whereas cooperation today will create the same choice between cooperation and defection tomorrow. As suggested by Figure 2 below, cooperation is the optimal choice today if the present value of the current and future payoffs from cooperation exceeds the present value of the higher current payoff from defection followed by the lower future payoffs from punishment.



*Figure 2: Time-paths of Possible Payoffs from Trigger Strategy*

To analyze trigger strategies in an ongoing supply relationship, recall the model of a one-shot supply transaction described above, but now suppose that the transaction is to be repeated indefinitely, with the outcome of each transaction observed by both parties before the next transaction occurs. Crown's promise of customer service is an important relational contract between firms. In the model, think of Crown's promise as the upstream party's pledge to deliver a high value of  $Q$  to the downstream party. Of course, the same promise might also be quite important within a firm. That is, if Pepsi bought the can plant from Crown, Pepsi might well expect and desire its new can division to provide the same

<sup>7</sup> For a more detailed but still fairly non-technical motivation and analysis of trigger strategies in repeated games, see Gibbons (1997).

modifications to can specifications and delivery schedules that Crown had previously provided.

The key result in this repeated-game model of an ongoing supply relationship is that the size of the incentive to renege on a relational contract (*i.e.*, the extent to which the payoff from defection exceeds the payoff from cooperation in Figure 2) depends on who owns the asset. Consequently, implementing the best feasible relational contract requires making the right choice about integration. In certain settings, integration supports a better relational contract than non-integration can; in other settings, the reverse holds. The remainder of this section is devoted to explaining this key result.

To begin, suppose that the upstream party owns the asset. This case gives rise to the classic “hold-up” problem emphasized by Williamson (1975), because the upstream party can threaten to consign the good to its alternative use unless the downstream party pays a high price. That is, Crown could threaten to sell the cans to Coke. In the model, Pepsi’s value for the cans is  $Q$  and Coke’s is only  $P < Q$ . Thus, Crown’s threat to sell the cans to Coke should not be carried out, because Pepsi is willing to pay more than  $P$  for the cans. Instead, after such a threat, suppose that Crown and Pepsi agree on some price between  $P$  and  $Q$ . The key point is that Crown will receive at least  $P$ , and this in turn gives Crown an incentive to take actions that increase  $P$ : Crown will pay attention to Coke so as to improve its bargaining position with Pepsi. But actions that increase  $P$  may have no (or even negative) effect on  $Q$ . Thus, Crown may find it privately optimal to take actions that give it a larger share of a smaller total surplus in its relationship with Pepsi. Such actions are inefficient: both Crown and Pepsi could be made better off if those actions were stopped.

Pepsi’s instinctive reaction to this hold-up problem might be the one often prescribed in the transaction-cost literature: buy the can plant, in order to decree that the plant cannot sell cans to Coke. In this sense, vertical integration could indeed prevent one hold-up from occurring, as argued by Williamson (1975) and Klein, Crawford, and Alchian (1978). The insight of Grossman and Hart (1986), however, is that using formal instruments to eliminate one hold-up problem typically creates another. As an example of this conundrum, consider Klein, Crawford, and Alchian’s account of the events preceding the acquisition of Fisher Body by General Motors. GM asked Fisher to invest in a new technology to produce closed metal auto bodies rather than the then-standard open wood bodies. Both parties understood that GM could hold-up Fisher after such an investment, such as by offering to pay only marginal rather than average cost. Consequently, the

parties signed a contract that gave Fisher certain protections, including a formula specifying the price as a mark-up of Fisher's variable costs. But this contract created ways for Fisher to hold-up GM, such as by threatening to overstaff its plants so as to pad variable cost. Grossman and Hart's abstract model is similar: using asset ownership (another formal instrument, akin to a formal contract) to solve one hold-up problem inevitably creates another.

Ultimately, GM bought Fisher, but at a high price. The price had to be high because Fisher had to be persuaded to give up its strong bargaining position created by the pricing formula in the formal contract. But the reason that it was efficient for GM to buy Fisher does not hinge on this acquisition price, which is merely a transfer between the parties and so has no effect on the efficiency of operations. Instead, the reason for GM to buy Fisher (according to Klein, Crawford, and Alchian) was to stop Fisher's inefficient actions, such as overstaffing. Analogously, it might be efficient for Pepsi to buy the can plant from Crown if, under non-integration, Crown has a strong incentive to take inefficient actions that increase the cans' value to Coke (P) but distract Crown from providing service to Pepsi (*i.e.*, reduce Q).

The striking feature of this long-standing and sensible account of the Fisher Body acquisition (see also Klein, 1991) is that it never mentions life in the Fisher division of GM after the acquisition. But without considering the difference between life as a division and life as an independent firm, the analysis cannot ascertain whether the Grossman-Hart conundrum applies. That is, if vertical integration stopped Fisher's hold-up of GM, might it also have created a new way for GM to hold-up Fisher? In keeping with Grossman and Hart, I will argue that integration probably did create such a reverse hold-up. But I will then argue that this conundrum arises because of the reliance on *formal* instruments (such as formal contracts or asset ownership) to eliminate individual hold-up problems, and that a potential solution to the conundrum is to use *informal* instruments (namely, relational contracts) in tandem with formal instruments to ameliorate all hold-up problems simultaneously. To make these arguments concrete, I return to the Crown-Pepsi example and the model above.

Imagine that Pepsi bought the can plant from Crown. That is, the downstream party owns the asset. The upstream party is then an internal division rather than an external supplier, but the downstream party is still interested in receiving high-quality service. The downstream party could try to create an incentive for the upstream party to supply high-quality service by promising to pay a bonus to the upstream party if the latter produces a

sufficiently high value of  $Q$ . Unfortunately, like all relational contracts, this promise is vulnerable to renegeing: when the downstream party owns the asset, the downstream party can simply take the intermediate good without paying the upstream party anything.<sup>8</sup>

Reneging on a promised bonus is just one example of possible hold-ups within organizations. Richer models could capture renegeing temptations concerning promotions, task allocation, capital allocation, internal auditing transfer payments, and so on. (See Lawler (1971), Bower (1970), Dalton (1959), Eccles (1985), and many others for evidence that such varieties of renegeing are alive and well in many organizations.) The key feature of all of these examples is that one party with authority makes a promise to another party without. In each case, the temptation to renege on such a promise can again be analyzed using Figure 2.

We are now ready to revisit the key result in this section: that the incentive to renege on a relational contact depends on who owns the asset. Suppose the parties would like the upstream party to deliver quality  $Q^*$  and the downstream party to pay upstream a fee  $F^*$ . Under non-integration, the upstream party is tempted to renege, by taking actions that increase  $P$  so as to collect a fee greater than  $F^*$ , even if the resulting quality is  $Q < Q^*$ . Under integration, it is the owner (here, the downstream party) who is tempted to renege, by simply taking the good and not paying the fee  $F^*$ . Thus, not only the size of the incentive to renege but also the identity of the party tempted to renege depends on who owns the asset.

We therefore have a situation dear to an economist's heart: a tradeoff. Upstream ownership offers the upstream party some recourse should the downstream party renege, and hence decreases the downstream party's temptation to renege, but upstream ownership also encourages the upstream party to consider the interests of other parties, and hence may create a temptation for the upstream party to renege. In some settings, the first of these considerations is more important, so integration is optimal; in others, the second dominates, so non-integration is preferred. In all settings, however, the guiding principle is to induce efficient actions (and discourage inefficient actions) by implementing the best possible relational contract. The integration decision is merely an instrument in this quest.

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<sup>8</sup> In case such renegeing is not immediately plausible, recall the inventor-invention-manufacturer example sketched above. Imagine that the inventor is an employee in the R&D lab of a large pharmaceutical firm, and suppose the firm has promised to share the profits from inventions 50-50 with the inventor. If the inventor creates a drug worth ten billion dollars, do we expect the firm to keep its promise? How would the situation differ if the inventor had worked in her own independent research firm?

This section's equal-opportunity analysis of renegeing on relational contracts within and between firms is related to Granovetter's (1985) observation that Williamson's (1975) treatment of markets is undersocialized but his treatment of hierarchy oversocialized. In the repeated-game model, the possibility of relational contracting between firms makes markets less undersocialized, and the possibility of renegeing on relational contracts within a firm makes hierarchy less oversocialized. Similarly, Dow (1987) argues that authority within a firm that is strong enough to restrain opportunistic bargaining may also be strong enough to engage in its own novel forms of opportunism. Dow's argument is a cousin of the Grossman-Hart conundrum: making one party the owner may stop hold-ups by the non-owner, but it may also create hold-up opportunities for the owner. This section's repeated-game model extends Dow's argument by noting that an appropriate relational contract may discourage the owner from engaging in the latter hold-ups, but also that the power and effectiveness of such a relational contract is limited by renegeing temptations. Finally, Sako and Helper (1998) analyze supplier relationships in the auto industry and find that reported levels of trust and opportunism are independent of whether the parties were integrated or not — consistent with the spirit of Granovetter, Dow, and the repeated-game model.

In the model above, I interpret a relational contract between non-integrated parties as a hand-in-glove supply relationship. But there are many other relational forms of organization discussed in the business and organizational literatures, including joint ventures, strategic alliances, networks, and business groups, as well as the structures described by Powell, Stark, and Westney. Although the model above has only two stages of production with one party at each stage, richer models could add both parties and stages. For example, one could begin to model a joint venture as two parties at one stage who create an asset at the other stage that they control by both formal and informal means. Similarly, one could begin to model a business group as several parties at several stages of production, with both cross-ownership and relational contracts linking the parties, possibly through a central party. Formal structures such as fifty-fifty ownership in joint ventures or minority stock holdings in business groups may be better understood using models that study the interplay between these formal structures and informal relational contracts between the parties.

## Conclusion

In summary, I have tried to say four things about relational contracts and the boundary of the firm. First, following Williamson (1975) and Klein, Crawford, and Alchian (1978), ownership can stop hold-up. Second, following Grossman and Hart (1986), using formal instruments (such as formal contracts or asset ownership) to stop one hold-up problem typically creates another. Third, following Barnard (1938), Simon (1951), Macaulay (1963), Macneil (1978), and many others, relational contracts offer important advantages over formal contracts and ownership structures, but relational contracts are vulnerable to renegeing. Finally, following Baker, Gibbons, and Murphy (1999), implementing the best feasible relational contract requires optimizing the boundary of the firm. Combining these ideas produces a new perspective: the parties' relationship is the central issue; the integration decision should be made in the service of that relationship.

To conclude, let me return to the Powell, Stark, and Westney chapters. In particular, I will consider three overarching themes: contingency, efficiency, and path dependence. For each theme, I find encouraging agreement and complementarity between the economic model and the sociological accounts.

First, contingency: Powell argues that rapid technological change places a premium on relational forms of organization, and Westney suggests that the Japanese employment system was premised on continuous growth. Using the model above, one can interpret these two observations as claims about the value and the feasibility of relational contracts, respectively. Recall that the role of relational contracts is to utilize the parties' detailed knowledge of their situation to adapt to new contingencies as they arise. Surely this role is more valuable in settings of rapid change (but just as surely, formal contracts cannot be abandoned in these settings, else change may too easily cause renegeing temptations to exceed the value of continuing the relationship). Whether rapid or gradual, change may cause a relational contract that is feasible and valuable today to become infeasible and valueless tomorrow. For example, the market shift from mainframe to personal computers can be seen as causing IBM to abandon its no-layoffs policy. The end of decades of continuous growth in Japan can be interpreted similarly.

Second, efficiency: Stark claims that even relational forms of organization have their problems, such as "problems of accountability that accompany the relentless pursuit of flexibility" (p. 3). This is an important point, and is again consistent with the economic model. Relational forms of organization may offer advantages over purely formal

organizations, but this does not imply that relational forms of organization can or will be perfect. In Gibbons (1999) I say more about this distinction between the best imaginable (first-best) and the best feasible (second-best) organizational forms. For the purposes of this essay, the central idea is that relational forms of organization are most useful in difficult environments, such as Powell's world of rapid technological change. Thus, saying that relational forms may outperform purely formal organizations in such difficult environments is by no means a guarantee that relational forms can perform perfectly. Furthermore, there is abundant evidence that relational contracts often hurt rather than improve organizational performance; see Roethlisberger and Dickson (1939), Roy (1952), and many others. Thus, even if relational forms could perform perfectly, there is some doubt about whether they will. This indeterminacy appears in the economic model as the existence of multiple equilibria in the repeated game. I believe that an economic theory of leadership can and should be developed around the idea that leaders try to move organizations to new equilibria. Hermalin (1998) has already made a nice start in this direction.

Finally, path dependence: Stark and Westney predict that which relational forms of organization come into existence and flourish depends on the history of prior relationships. I agree. Unfortunately, if economics has just started to make progress on leadership, it has done even less on such path dependence. From an economic perspective, the two problems are similar: both involve creating a new equilibrium from the understandings and expectations of actors with different (or even conflicting) experiences. Understanding this interplay between history and incentives seems a daunting task, but I will close on a happy note: Granovetter (1999: 162) not only agrees that the task is important, but suggests that this is where "the true potential lies for interdisciplinary cooperation."

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