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The Problems and Promise of Hierarchy: Voice Rights and the Firm

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Abstract: The firm's continued importance for coordinating economic activity is puzzling given that (1) economists have not demonstrated that the greater alignment of effort they expect from hierarchical coordination overcomes the reduction in employee effort created by "low-powered" incentives, (2) employee effort is further threatened by the alienating effects of hierarchical control, and (3) firms, as we show, are necessarily hierarchical. Why, then, do firms dominate the capitalist economy? Our theory is rooted in a more subtle set of rights that is also intrinsic to the firm hierarchy: "voice rights" (who can speak within and on behalf of the firm). Control of voice is crucial for endowing the firm with a capacity that cannot be acquired by a mere "nexus" of contractors: it can become a reliable and accountable actor. This, in turn, gives the firm three necessary (if insufficient) ingredients for creating strong identification with the collective enterprise. Our theory thus suggests why firms remain important despite their inherent limitations and why some firms are marked by alienation and perfunctory performance while others are marked by strong identification and consummate performance.

Keywords: theory of the firm; hierarchy; organizations; voice rights

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WHY are firms such an important feature of the capitalist economy, and what does this imply about the kind of activity capitalism tends to foster? Beginning with Coase (1937), this question has been framed in a manner that reflects the commitments of neoclassical economics: if the invisible hand of the price mechanism is most efficient for coordinating economic activity (Hayek 1945), why is the visible hand of managerial authority so prevalent? This framing of the question is compelling, especially given the widespread rejection of the idea that economies can be administered efficiently via central planning. Moreover, although coordination by "direction" (Demsetz 1988) may be quite efficient when managers have key know-how and it is hard to transmit (Conner and Prahalad 1996; Hodgson 2004), such conditions have well-known limits. Especially in the modern "knowledge economy" (i.e., sectors where productivity depends on worker initiative to adapt to changing local conditions), the range of matters about which managers will know best is often quite limited, and managerial interventions can be quite counterproductive (see especially Scott 1998). To be sure, there is evidence that an increasing amount of economic activity takes place outside the large corporations that dominated Western economies in the twentieth century because of technology-driven declines in the costs of organizing (Davis 2016). But many of these changes merely imply smaller corporations rather than their disappearance, much of this new activity is coordinated by firms if not corporations (on the distinction, see below), and the vast majority of work still takes place within firms (Katz and Krueger 2016). Why is the firm still so important?

As summarized by Gibbons (2005), the general answer to this question in the economics literature is that firms are *relatively efficient* "second-best" solutions to the problem of aligning effort. In particular, although markets achieve efficiency across a wide range of transactions, firms are proposed to be more efficient than markets for certain "difficult transactions" that markets handle less efficiently. A key insight is the paradoxically productive role played by "low-powered" (or "flat") incentives—that is, forms of compensation that are relatively insensitive to employee performance. On the one hand, low-powered incentives necessarily limit employees' motivation to expend effort and creativity and thereby to achieve what Williamson (1975) called "consummate" rather than "perfunctory" performance.[1] But by removing the incentive to maximize the surplus from private objectives that are not aligned with those of the firm, greater alignment may be achieved. In sum, the firm then reflects the fact that it is often worth living with a lower average *level* of effort because of the greater *alignment* that is achieved.

But is the problem of low employee motivation sufficiently addressed by the greater alignment of effort achieved? There is no evidence that it is. Moreover, the problem of employee motivation is much more challenging than the fact that formal incentives are underpowered. As long recognized in the sociological literature and in other more critical literatures (see below), the problem is that *hierarchical control tends to be alienating* and thus demotivating. This is a particularly acute problem insofar as a premium is placed on employee initiative and creativity. "The problem," as Rothschild (2000:197) put it, "is that creativity cannot be coerced." And insofar as this problem is acute, it raises the question of why firms are not replaced by their main alternative—a "nexus of contracts" of independent contractors.[2] Such contracts could also be based on low-powered incentives (thus helping to align effort) while avoiding the alienating effects of hierarchy.

The main objective of this article is to develop a theory of the firm that can account for and address the deep challenges associated with eliciting sufficiently high levels of motivation, especially given the alienating tendencies of hierarchical control. We begin in the next section by outlining the legal foundations of the firm and how it is necessarily hierarchical. We make four key points. First, the firm's ability to exercise administrative control is fundamentally a legal accomplishment based on three elements: (1) the achievement of legal personality, (2) holding property rights, and (3) the ability to enter into agency relationships with human actors, especially employees. Second, we argue that the firm constitutes a rights hierarchy in two well-known respects (i.e., the firm's control over decision and membership rights) but also in terms of the right to speak within or on behalf of the firm (i.e., "voice rights" [Zuckerman 2010]). Finally, we note that the three legal elements constitute the firm as *intrinsically* hierarchical. Although the rights of superordinates may be delegated, such rights are always "loaned, not owned" and thus can always be unilaterally "retracted by those higher up in the hierarchy" (Baker, Gibbons, and Murphy 1999:56).

Having established the legal nature of the firm, we then turn in section three to developing the building blocks of our theory. We incorporate the key insight of the economics literature on firms as "second-best" vehicles for achieving high-effort alignment despite low levels of effort. But we also incorporate a wide array of literature that has shown how firms sometimes do much better than "second best" as they elicit strong identification and achieve consummate performance. Such research has noted that commitments to limiting hierarchical control (e.g., Osterman 1994; Adler and Borys 1996; Appelbaum et al. 2000) are key to such efforts, but it has not been explained why—given how difficult such commitments are to uphold—firm hierarchy paradoxically plays a key role in limiting the use of hierarchical control.

As developed in section four, the heart of our answer is the observation that lies in the control of "voice rights" (Zuckerman 2010) that allows a firm to become a reliable and committed *actor* (Hannan and Freeman 1984; cf. Coleman 1982; Kreps 1990; King, Felin, and Whetten 2010). Centralized control of the right to speak on behalf of an enterprise allows a collection of individuals to become a single *actor* that can be held *accountable* for following reasonable and/or agreed-upon procedures. Moreover, control of voice internally allows for shaping coordination via the "definition of the situation" (March and Simon 1958), which increases reliability without resorting to direct control. Further, we argue that such indirect control, as afforded by control of voice, gives the firm its distinctive potential—usually unrealized—to create an environment that supports consummate performance. In particular, control of voice affords the firm a distinctive capacity for clarifying its identity such that (prospective) employees can more easily identify with it, and the firm's capacity for projecting accountability allows it to make clear, credible commitments to bureaucratic processes that foster strong identification (Miller 1992; Gibbons and Henderson 2012). The paradox is that effective suppression of hierarchy depends on the rights hierarchy that defines the firm. And this leaves us with a central challenge for management—that is, how to be disciplined in its use of hierarchical controls.

Firms as Hierarchies

The bedrock observation of those who have grappled with a theory of the firm (excepting those in the agency-theoretic tradition; see Alchian and Demsetz [1972]; Fama and Jensen [1983]) is that all forms of economic organization, from small businesses to large multinational corporations, share key attributes that cause them to differ from market coordination. Drawing on Robertson's (1923:85) characterization of firms as "islands of conscious power in [an]. . . ocean of unconscious cooperation," Coase (1937) famously argues that this shared essence is the firm's ability to coordinate human actors with physical factors of production through the exercise of authority. Inside the firm, administrative directives replace price signals as the mechanism guiding action, and this substitution of authority for price constitutes "the distinguishing mark of the firm" (Coase 1937:389). Adopting Coase's focus on "conscious cooperation," we define a firm as any legally recognized economic organization consisting of two or more people (cf. Hodgson 2002:56). We argue that firms entail an inherently hierarchical organization of rights. The firm's inherently hierarchical nature has the crucial and largely unexamined consequence of establishing control over voice rights.

Before we turn to the claim that firms are inherently hierarchical, let us first clarify what we mean by hierarchy. In network-theoretic terms, the building blocks of any hierarchical system are nodes and relations. Two types of nodes are of interest here. One is an "actor," which is a human being or collectivity that controls a legal, nominal identity (i.e., their legal name and the rights and responsibilities accorded to the holder of that name by law). The second is a "role" or "position," which is defined by particular rights and responsibilities. The "offices" in Weber's (1958) image of hierarchical bureaucracy are examples of such roles. A structure of relations is hierarchical when, for each pair of nodes, one is regarded as ranking "above" the other, and these relations are transitive. What it means to be above or below in rank can differ depending on the type of relation that is being considered.

The firm is a particular type of a *rights hierarchy among roles*. A rights hierarchy is constituted by relations whereby disputes between the nodes about a particular type of decision are handled as follows: (1) they are decided by appeal to a third party; (2) except in extenuating circumstances, the third party will rule in favor of one party (the superordinate) over the second (subordinate); and (3) the decision is justified through reference to what "ought" to happen based on the larger social purpose by which such rights are justified. The chain of command in an army is a classic example of such a rights hierarchy, as are firms. Such hierarchies may take various shapes, but insofar as conditions (1) through (3) apply, they are still hierarchies.

Firms are inherently hierarchical because of the legal building blocks used to construct them. All legally recognized forms of economic organization share three key ingredients: legal personality, property rights, and the employment relation (Freeland 2016). A legal or juridical person is a legally recognized actor that can legally enter into business relations with others. In most modern forms of economic organization, legal personality resides with the organizational entity itself, making the firm a legal entity separate from its owners or any specific set of individuals.[3] When this is the case, decision rights are exercised by authorized bodies (such as the board of directors in a corporation), which constitute the "decision-making body" for the organization "as a separate juridical person" (Robé 2011:34). Legal personality constitutes the firm as a "node" in the first sense outlined above—an actor that controls a legal, nominal identity. It is the legal personality that exercises property rights—the rights to own, use, and access property (and exclude others from doing so); appropriate profits from its use; and sell or transform property. It is also the legal personality that serves as the employer. The employment relation confers unique power on the employer to control the actions of employees by creating a right of close control that allows the employer to direct the employee's physical activity, methods of work, detailed allocation of time, and the outcomes resulting from that work. The employer's right of close control gives rise to a reciprocal duty of obedience such that the employee is legally obligated to obey all reasonable, job-related orders of the employer (Masten 1988; Freeland 2016). This provides the foundation for the firm's hierarchical control over human actors, creating a form of unilateral power or "fiat" that is absent in market relationships (Freeland 2016; cf. Williamson 1991).

The firm's capacity to exercise fiat is ultimately supported by its ability to control *membership rights* through hiring and firing (cf. King et al. 2010). The right of close control gives the employer the legal power to direct employees across a broad range of activities, and the employee's reciprocal duty of obedience means that as a general rule they are obligated to obey such employer directives. Ultimately, however, if an employee delays or refuses to adhere to orders, the employer can simply fire her. This allows the employer to exercise control instantaneously and unambiguously if need be. Equally important, the courts will generally back up such action after the fact. Whereas the unilateral cancellation of most contracts is likely to be subject to lengthy and costly dispute in the courts, the employee's unique duties of obedience and loyalty mean that "proving bad faith termination is likely to be difficult" in the employment context (Masten 1988:193). The employer's prerogative to hire and fire is thus substantially less likely to be subject to successful court challenge.

The legal elements outlined above constitute the firm as a rights hierarchy in which the juridical personality is the legally recognized actor that owns property, serves as the employer, and holds ultimate authority over decisions. Yet the legal personality's powers extend beyond the ability to direct workers and control property in the narrow sense. It possesses full legal authority to run the business, giving it the power to determine general strategy, design incentive systems, and implement standard operating procedures and routines—that is, to design the firm's bureaucracy. The legal personality can and typically does delegate many of these decision rights to committees, officers, and managers, who in turn can delegate portions of their power down the line. Yet it always retains the ultimate authority and responsibility for these decisions, putting it at the apex of the rights hierarchy. Two key consequences flow from the legal construction of the firm in terms of the elements outlined above. First, the firm's legal foundations constitute it not only as a hierarchy of control and membership rights but also of *voice rights*—the ability to speak within and on behalf of the firm (Zuckerman 2010). Second, firms are inherently hierarchical. Even when control, membership, or voice rights are delegated, they remain the "property" of the legal personality and can be recalled at will. Commitments to fully delegate such rights can thus never be credible.

Voice Rights

The firm's constitution as a rights hierarchy confers control over voice rights. As Zuckerman (2010) discusses, the importance of voice rights may be appreciated when we recognize that the firm can "act" only through its human members. Typically there are many employees or agents who could speak in ways that influence how the firm is understood. As such, the potential for confusion is significant, perhaps especially with the advent of social media technologies (Turco 2016). Internally, if any member of the firm is allowed to speak within a public sphere (whether physical, virtual, or electronic) owned by the firm, and especially if such communications are all presented as equally authoritative, the risk increases that members will be bewildered by the multitude of ambiguous and even contradictory indicators of how they should proceed. Below, we will discuss this issue in terms of its implications for the firm's *reliability* (Weber 1958; Hannan and Freeman 1984; Kreps 1990). For outsiders, and for external stakeholders, the key issue is whether communications and promises made by agents of the firm are authorized and credible. We will elaborate on the implications for the firm's capacity to project *accountability* (Weber 1958; Hannan and Freeman 1984; Kreps 1990). In both cases, the ultimate issue is whether commitments or communications made by an individual member of the organization will be "owned" or honored by the collectivity and thereby constitute the firm as a collective *actor* (Coleman 1982; King et al. 2010).

The firm's constitution as a rights hierarchy allows it to control voice rights via exercise of fiat (Zuckerman 2010). Like all decision rights within the firm, the ability to speak on behalf of the firm and to publicly and legally commit it to a course of action is controlled by the legal personality, but many of these rights are delegated. The broadest and most substantial rights to speak on behalf of the firm are often held by those at the top of the hierarchy—governing boards, officers, and managers. But because employees are agents who act on behalf of the firm, even very low-level actors often have at least limited power to make binding commitments for the firm or to speak on its behalf. A purchasing agent can make commitments that the firm is legally bound to honor, for example, while a local plant manager can make formal or informal commitments on the part of a larger corporate parent. Yet because the firm is inherently hierarchical, such delegated voice rights can be rescinded at will by the legal personality. This occurs in two ways. First, in formalized bureaucracies, the legal personality can control the formal delegation of voice by delimiting, altering, or revoking a unit's jurisdiction over voice in a specific area. By outlining the "constitutional powers" of various offices and units within the firm, the legal personality can control who has the right to make commitments for the firm. Second, and more important for our purposes, the legal personality can use its power of close control to delimit employees' exercise of voice. If an employee exercises voice in a way that the legal personality finds undesirable, the firm can order her to change course (Turco 2016: chapter 4).[4] If the employee refuses to heed such directives, the employer can simply revoke the employee's power to exercise voice by firing her or removing her from her position. The firm's power of fiat, and especially its right of close control over the employment relation, is thus the crucial underpinning of the firm's control of voice.

Firms Are Inherently Hierarchical

This last observation brings us to our final key point: the firm is *inherently* hierarchical. Because the legal personality retains ultimate legal responsibility for all decisions, it also retains "ownership" of decision rights, even when its powers are formally or informally delegated to subordinates. Internal delegations of power are generally not legally binding and can be taken back by the legal personality "at a moment's notice" (Hart 2011:107). Delegated decision rights within the organization are therefore always "loaned, not owned" (Baker et al. 1999:56).

Consider, for example, property rights. It is the legal personality that owns, rents, or leases property and that thus exercises property rights. Although control, use, and access rights can be delegated to divisions and managers, the ultimate ownership of those rights remains with the legal personality and can be rescinded at will. A corporate headquarters can, for example, allow an operating division to exercise control over specific property, but it does not thereby relinquish ownership of the property to the division. Indeed, it cannot do so because the division has no legal personality of its own and thus cannot own property in its own name.[5] The internal delegation or transfer of property rights is thus not legally binding: real ownership and ultimate control always rests with the juridical person.

The firm's authority over employees works the same way. The employer (legal personality) has a right of close control over its employees, and employers routinely delegate portions of this control to specific offices and to managers with line authority. The result is a hierarchy of offices and/or personnel in which employees are obligated to obey all policies, communications, instructions, rules, and standard operating procedures issued by superordinates (Weber 1958). Yet even though the legal personality typically delegates its powers of decision-making and control, it retains ultimate responsibility for their use and can revoke their delegation at will. Managers' orders can be overridden by those further up the hierarchy, and a manager who issues orders that go against the wishes of superordinates can be removed from office. Perhaps more surprising, an employee who disregards her employer's instructions violates the duty of obedience, even if the employer has previously promised not to exercise such control (American Law Institute 2007:§1.01f).[6] Control rights over employees are owned by the employer (the legal personality), and promises to refrain from exercising those rights over employees will not be enforced by the courts. The same is true for membership rights and voice rights. Consequently, even the "flattest," most "post-hierarchical" firms (Zuboff 1988) remain inescapably hierarchical.

Restating the Question of the Firm

The previous discussion clarifies the nature of the firm as an intrinsically hierarchical legal construction and sets the stage for our analysis of why this hierarchical form dominates the capitalist economy. One possible reason is that when production processes involve high degrees of reciprocal interdependence, they are then very difficult to decompose into contractible transactions and thus must apparently be governed by firms (Baldwin 2007).[7] But Baldwin and others imagine firms as "nexuses" of independent contractors (NOICs) that are not intrinsically hierarchical (Jensen and Meckling 1976; cf. Alchian and Demsetz 1972; Fama 1980; Fama and Jensen 1983), whereas we demonstrated in the previous section that the firm is legally constituted as a rights hierarchy. Yet the idea of a nexus of contracts is important because it clarifies the most salient *alternative to the firm:* an arrangement among legal persons who can own assets but who choose to coordinate their activity without using the employment relation. The key question is why so much of the economy is governed by the firm, with its intrinsically hierarchical nature and its heavy demands on an employee loyalty and obedience, rather than being governed by the relatively undemanding defaults encoded in contract law.

To be clear, the mere *existence* of the firm in the capitalist economy is unsurprising. Firms seem clearly superior to nexuses of contracts under three conditions in which hierarchy is clearly beneficial to the capitalist (the legal person owning assets). First, the capitalist is sometimes concerned solely with capturing value from existing assets (e.g., by increasing the quantity of commodities produced by those assets) rather than with innovating and enhancing value creation (Edwards 1981; Langlois and Robertson 1995). Insofar as the focus of the capitalist is on maximizing surplus, the stronger control over labor afforded by the firm is attractive (Marglin 1990). Second, insofar as the achievement of military-like discipline is paramount (cf. Novak and Stern 2009), governance by the firm will seem more attractive than using contractors. And third, hierarchy is sometimes clearly the best governance device for achieving value creation. This will be true insofar as key knowledge is held by the capitalist and is most efficiently transmitted and inculcated through orders or rules (see Demsetz 1988; cf. Hodgson 2004; Conner and Prahalad 2006; cf. Goode and Fowler 1949).

But although the above three conditions may be sufficient to explain the *existence* of the firm in the capitalist economy, they are insufficient to explain its *prevalence* because firms are found even when none of these conditions hold, especially in the contemporary "knowledge economy." Despite technological and financial trends that have greatly impacted organizing in Western economies (Davis and Kim 2015; Davis 2016), 85 to 90 percent of work is still conducted by employees (see Katz and Krueger 2016). And it seems evident that although value creation is a critical goal in many such firms, managers cannot possibly hold sufficient knowledge to direct the firm efficiently because of the importance of adapting to changing local conditions (see especially Scott 1998). Conversely, as demonstrated by much sociological research over the past thirty years (see Macaulay 1963; Granovetter 1985; Bradach and Eccles 1988; Powell 1990; Uzzi 1997), contracting relations among capitalists can be augmented by "strong" or "embedded" relationships with one another, which are marked by notable levels of goodwill, trust, and commitment (Zuckerman 2014). These relationships in turn aid in value creation (i.e., making final goods and services more attractive to customers and/or lowering the cost of sourcing inputs, producing the goods and/or services, and/or distributing and selling them), generally because of the way they enhance learning in the knowledge economy. But then why do we see governance by firms in the knowledge economy, even when it is a key objective of the enterprise to stimulate the collection and sharing of knowledge?

This question is sharpened further by considering two important literatures that have made significant contributions in the past generation: (1) the set of economic approaches that see the firm as a "second-best" governance device and (2) a broad array of other theories that see the firm as a "first-best" device. Sociologists have not engaged with either of these literatures as productively as we might, and this represents a forgone opportunity because each has important insights on the contemporary economy. Our goal in the remainder of this section is not to provide a comprehensive review of either literature but to distill two key insights—(1) that the firm's provision of "low-powered" incentives helps to align effort and (2) that commitments to suppress hierarchical control can raise the possibility of consummate performance—that should be incorporated in any theory of the firm. We argue that these insights help us understand how firms can create value in the knowledge economy while also adding to the mystery of the firm's prevalence given that its intrinsically hierarchial features seem to undercut worker effort.

The Firm as Second Best: Low-Powered Incentives for Effort Alignment

The signal contribution of economic theories of the firm is to identify key mechanisms that the firm uses to *align effort* even at the expense of producing high *levels of effort*. In particular, these approaches see the firm's relative advantage in aligning effort as deriving from its capacity to design terms of employment that are relatively open ended as to the work required. But this raises question as to how members might be induced to work *hard* and *creatively* to realize shared goals. This trade-off is the basis for the conclusion that the firm is a "second-best" solution to transactional difficulties. We review how this trade-off appears in three prominent economic theories of the firm and then note key limitations that serve to sharpen our question.

The centrality of effort alignment is clearest in the case of Williamson's (1985, 1996) transaction costs economics (TCE) and Holmström's (1999; cf. Holmström and Milgrom 1991, 1994) agency-theoretic approach. TCE is founded on the idea that when transactions involve high levels of asset specificity (such that at the extreme, the asset's use is so specific to the parties that there is no outside market for the asset), one or both parties will have bargaining power, and (because bounded rationality blinds actors to future contingencies and opportunism causes them to take advantage of any increase in leverage) this leads to protracted, costly bargaining over the division of rents.

For Holmström (1999), the deviation from neoclassical assumptions is not the recognition that bargaining over rents can be costly (unlike TCE, he assumes efficient contracting) but that valued goods will be undersupplied insofar as such goods require cooperation by producers. For instance, a franchisee that seeks to maximize the income of his franchise can be expected to adopt distinctive practices that are well adapted to his particular market even if this lowers the overall income for the franchise system because consumers are confused by the inconsistency of the franchisees' practices (see Lafontaine and Slade 2007:631–48). The achievement of such consistency seems to require some kind of compromise among suppliers, whereby they each forgo certain actions that would be the best response to the particular market conditions they face.

A third line of research that began with Coase (1937) and is best represented by Wernerfelt (1997; Novak and Wernerfelt 2012) in contemporary work sees the price system as failing because of the "adjustment costs" that accumulate when a buyer requires a large number of different (small) tasks or jobs over a relatively long period of time, especially when the work required cannot be specified in advance. As in TCE, the deviation from neoclassical assumptions stems from transaction costs, but the issues highlighted by the adjustment costs approach derive from the ex ante cost of rewriting contracts over ongoing work rather than the ex post issue of haggling over rents from ongoing projects. Accordingly, adjustment costs theory provides a theoretical foundation for the "knowledge based theory of the firm"—the idea that firms have a distinctive capacity to foster knowledge creation

(Conner and Prahalad 1996; Kogut and Zander 1996; Nickerson and Zenger 2004). Insofar as collective learning requires a wide array of mutual adjustments based on unforeseen developments, avoiding the time and cost of rewriting contracts is critical (Novak and Stern 2008; cf. Argyres and Zenger 2012).

In sum, each of these three economic approaches proposes that the firm enjoys a distinctive advantage in aligning effort. The common reason for this is the implicit recognition that the firm can design relatively open-ended terms of employment as part of the bureaucracy that it builds. For the adjustment costs approach, this aspect of the firm allows it to avoid the costs of rewriting contracts to align effort by relying on the general "zone of indifference" (Barnard 1938) established by the employment relation. For Williamson and for Holmström, the key to the employment relation is that the terms of compensation typically provide "flat" or "low-powered" incentives. What makes an incentive low-powered is less the amount of formal compensation received than the extent to which it is tied to performance. Even though employees may be compensated with relatively high salary or wages, they usually own neither the assets of the firm nor the full value of residual profits. They thus lose their incentive to engage in costly bargaining over rents (Williamson) and to pursue personal profits at the expense of cooperative activities (Holmström).

It is important to emphasize why economic theories tend to regard the firm as a "second-best" governance device, as illustrated in Figure 1. In particular, the issue is that whereas flat incentives may address the problem of misaligned effort, this very device can also be expected to lower the employee's incentive to expend creative effort relative to an entrepreneur or capitalist who is motivated by high-powered, market-based incentives. In Azoulay's (2004:1592) words, these "balanced" (i.e., between individual and collective) yet "sluggish"' incentives constitute the "mixed blessing" of the firm. For Williamson (1975), the tension is between "consummate" performance that capitalists seek and the "perfunctory performance" for which they must typically settle.[8] Consummate performance may be distinguished from perfunctory performance along three related dimensions: (1) going beyond the formal terms ("letter") of a contract, rule, or order to pursue (the "spirit" of) a goal; (2) making specific investments that improve the long-term value of an asset but leave one vulnerable to holdup; and (3) engaging in "organizational citizenship" activities (e.g., Schnake 1991; van Dick et al. 2006) that create public goods and are therefore subject to free riding (Miller 1992). At first blush, it is not clear how one can elicit actions of type (2) or (3) in either the market or the firm. But for now, the key point is that whereas actions of type (a) seem to be the hallmark of the entrepreneur who claims the residual (and glory) from her success, it is questionable why we should expect such initiative from employees. In Williamson's view, insofar as the various perfunctory performances of employees achieve greater *alignment* within the firm than the consummate performances of (poorly aligned) independent contractors, this trade-off is often worthwhile.

But there is a basic problem with this formulation: although empirical research has generally supported the idea that difficult transactions are conducted within the firm (see Lafontaine and Slade [2007] for a review) and that this is due to greater alignment (Novak and Stern 2008), *there is no direct evidence that this is because the improvement in effort alignment trumps the expected reduction in effort* (Gibbons

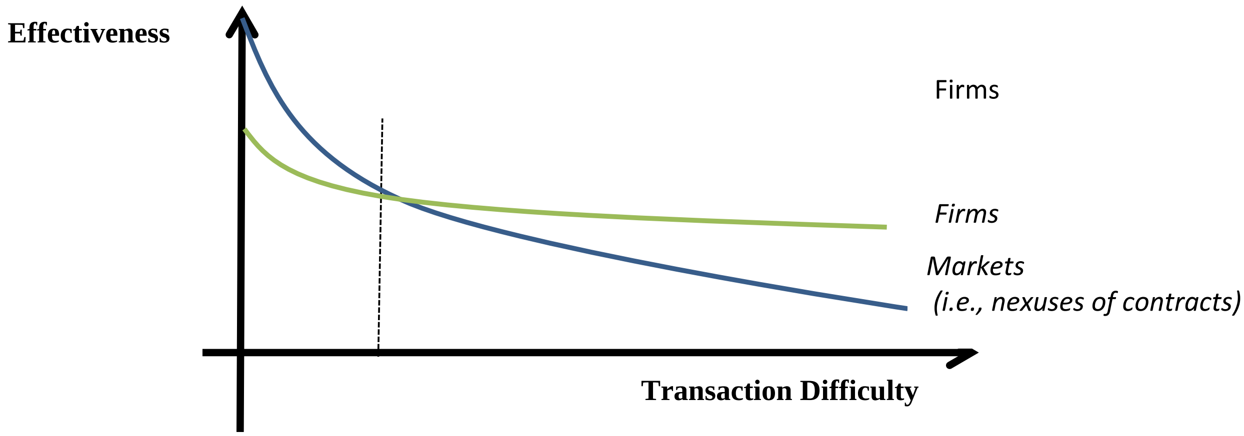


Figure 1: The firm as a second-best solution. Source: Gibbons (1999:148)

2010:277–79). This is largely an article of faith: because low-powered incentives seem to imply perfunctory performance, it must be that firms (insofar as they rely on them) achieve sufficiently high alignment of effort to make up for this. But without evidence to back up this logic, "second-best" approaches rest on a shaky foundation.

Firms as First-Best Solutions: Identification and the Suppression of Hierarchy

This issue is implicitly addressed by a set of literatures that espouse a more sanguine view of the level of effort achievable inside firms. Over a period of at least 60 years, research in the human relations tradition (e.g., McGregor 1960; Likert 1961), organizational behavior (e.g., Katz and Kahn 1966; Ashforth, Harrison, and Corley 2008), organizational sociology (Hodson 2001), and industrial relations (e.g., Appelbaum et al. 2000) documents many cases in which firms have succeeded precisely because they elicit consummate performances that reflect the second (specific investments) and third (citizenship behavior) elements reviewed above. Firms are thus sometimes able to achieve feats of collective performance that are remarkable and inspiring. Any theory of the firm must therefore reckon with the fact that we observe a *range* of performance outcomes, including some very high levels of performance, as depicted in Figure 2.

The key to understanding how consummate performance is possible is to go beyond formal incentives and recognize the importance of *internal motivation*. As is by now well demonstrated, an individual's level of effort derives from some combination of both extrinsic incentives (e.g., public recognition and formal compensation) and internal motivation—the strength of an individual's *identification* with a project such that she regards the project's success or failure as her own personal success or failure. As Katz's (1964:133) classic characterization suggests, internal motivation is particularly important for achieving consummate performance:

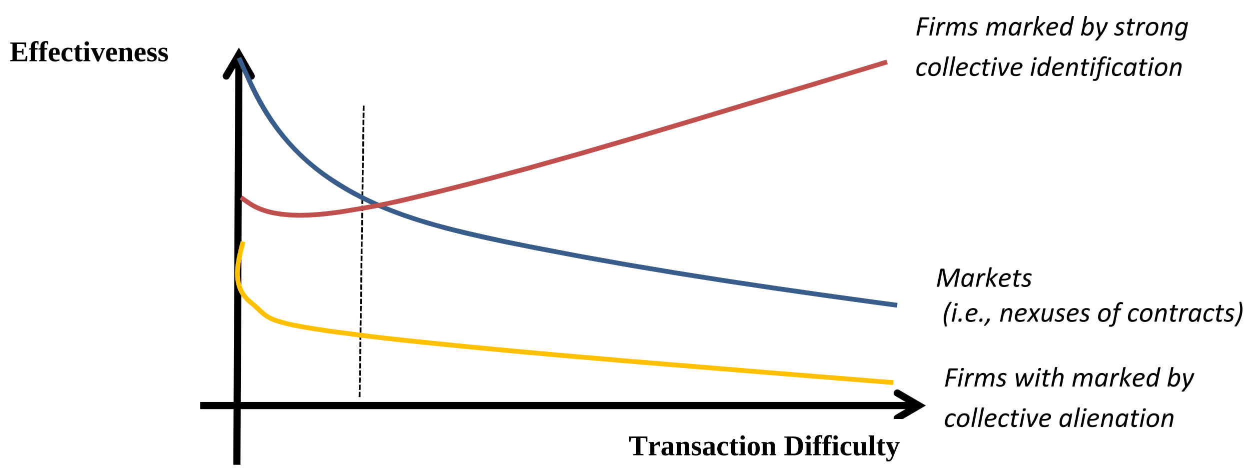


Figure 2: A range of firms, from first best to poorly performing.

> In short, for effective organizational functioning many members must be willing on occasion to do more than their job prescriptions specify. If the system were to follow the letter of the law according to job descriptions and protocol, it would soon grind to a halt. . . .[T]he worker who goes out of his way [to exercise initiative, even sometimes in violation of informal rules] is an invaluable man for the organization.

It is thus possible for employees to strongly identify with the work of the firm and thereby to perform consummately.

Yet as reviewed in the introduction to this article, a basic problem must be confronted—that is, hierarchical control tends to generate the *opposite* of identification: alienation. Although the basic idea is intuitive and goes back to Marx ([1844] 1975), the general mechanism is most clearly identified by self-determination theory (Deci and Ryan 1985; Ryan and Connell 1989; Ryan and Deci 2010). In short, motivation is hampered when workers perceive that the impetus for the project is external (by formal compensation and especially by hierarchical control) rather than internal (the individual's own skills and desires). If receiving high-powered compensation can subtly suggest to us that a project's goals are not internally driven, this suggestion is far less subtle when one is ordered to contribute and told how to do so. Mollick and Rothbard's (2014) study of employers' use of production games provides crucial experimental evidence in this regard, as they demonstrate significantly higher levels of worker "consent" (cf. Burawoy 1979; Freeland 1996, 2001) when there is a choice over which game to play as opposed to when it is forced. The alienation produced by hierarchical control may sometimes extend to wishing for the failure of a project rather than its success. Accordingly, Hodson (2001:88) documents that management by direct supervision is often experienced as a threat to employees' sense of "dignity" or self-worth, thereby increasing the likelihood of resistance and diminishing the tendency to exert more than perfunctory performance. It may not be rational, but it is not surprising that workers who feel humiliated in this fashion may sabotage their employers' projects (cf. Hart and Moore 2008).

Consistent with this logic, it appears that the common denominator among firms that elicit strong identification is that they commit themselves to *limiting the use of fiat*. As exemplified by the Toyota Production System (Adler and Borys 1996) as well as the internal labor markets in pharma (Azoulay 2004; Azoulay, Repenning, and Zuckerman 2010), such firms tend to develop particular kinds of "multilateral relational contracts" (Levin 2002)—that is, "shared understandings of each party's role in and rewards from achieving cooperation" (Gibbons and Henderson 2012:696) that encompass either all employees or those of particular classes. Two key elements of such understandings seem to be (1) managerial limits on the exercise of membership rights, in the form of assurances regarding job security; and (2) delegating decision rights and encouraging employee "involvement"—that is, empowering them to use their discretion and creativity to solve problems. More recently, limitations on the firm's monopoly of voice is also important (Turco 2016). The common logic underlying each of these commitments seems clear. Although the provision of job security may be problematic from an incentive point of view (see Pfeffer 1998), it has potentially valuable effects in that insecure employees will be more willing to suggest labor-saving ideas that might otherwise threaten their jobs or that of their friends (see e.g., Blau 1963:246–47; Locke 1995:18–19). And although delegation creates the risk that subordinate goals will displace that of the firm (March and Simon 1958), it seems important for overcoming the alienating tendencies of hierarchical control and thereby eliciting strong identification with the firm.

The range of cases that is illustrated in Figure 2, and the role of the suppression of hierarchy at the high end of this range, is well captured in the late twentieth century contrast between the typical mode of governance among U.S. automakers in the United States and those in Japan, particularly under the Toyota Production System (see Adler 1993; Adler and Borys 1996). Similarly, in their study of clinical research in pharmaceuticals, Azoulay et al. (2010:480) note comparably high levels of identification that provide the basis for consummate performance. Such examples give us a very different image of the firm from that of a "second-best" device. In some cases, the alienating tendencies of hierarchy may foster a perfunctory level of performance, or worse, but in other cases, firms seem capable of fostering an inspiring level of collective achievement based on the eliciting of high levels of identification (Adler 2012). This is why one strand of this literature has described such firms as "post hierarchical" (Zuboff 1988) and others invoke nonhierarchical images such as "clan" (Ouchi 1980) or "community" (Kogut and Zander 1996; Adler and Heckscher 2006). The implication is that such firms succeed and are distinctive precisely because they commit themselves to refraining from invoking the rights hierarchy that defines the firm.

Compatible Lessons but Deepened Mystery

Our review of these two literatures leads to two key observations. First, whereas "second-best" approaches must rely on the unsubstantiated assumption that firms achieve sufficient effort alignment to make up for the lower level of effort they elicit, “first-best” approaches suggest how higher levels of effort may in fact be achieved in some firms insofar as they commit themselves to limiting hierarchy. Thus, firms may do even better than “second-best” theorists expect when they combine low-powered incentives with commitments to limit hierarchical control. Moreover, these two mechanisms complement one another: just as hierarchical control has been shown to “crowd out” internal motivation, so too do high-powered incentives (Osterloh and Frey 2000). Accordingly, some economic research belies the image of perfunctory performance. In particular, Encinosa, Gaynor, and Rebitzer (2007) show that mutual help among physicians is more common when incentives are low powered. And Azoulay (2004; cf. Azoulay et al. 2010) shows significantly more team-oriented effort by clinical monitors (workers who collect data for clinical research) when they are subject to the low-powered incentives within large pharmaceutical firms than among those subject to the high-powered incentives of clinical research organizations. Thus, although we noted above that the downside of low-powered incentives—and the basis for calling firms “second-best” devices—was the fact that the weakness of such incentives provides a weak stimulus for exerting effort, this may be true only if we reduce motivation to extrinsic incentives. Once we recall that motivation derives from internal factors as well, low-powered incentives turn out to have potential advantages. In sum, while we earlier expressed doubts about the conjecture that the increased alignment provided by low-powered incentives is sufficient to make up for the reduction in the level of effort, this conjecture is more persuasive when we embrace a key principle: *deployment of low-powered incentives is complementary with commitments to limit use of fiat, thereby promoting identification with the collective enterprise and the potential for consummate performance*.

But even if we embrace this principle, we are left with practical problems that indicate a larger theoretical problem. The key practical problem is that insofar as the firm is inherently hierarchical, the project of suppressing fiat is necessarily quite precarious—what is in the background can spring quickly and painfully into the foreground. Accordingly, although it is true that *some* firms have clearly succeeded at this “high road" project, this is a very difficult road indeed, and some of these difficulties can be traced to the difficulty of suppressing hierarchy in a consistent and credible manner. One perennial issue is the division of surplus, which is necessarily controlled by management (see Adler 2001:221; Miller 1992).[9] Insofar as the firm generates a surplus (especially if it is unexpected and its allocation is thus not clearly specified in compensation contracts), employees will be sensitive to the division of this surplus. They may expend significant effort to try and influence how it is allocated (Milgrom and Roberts 1988, 1991) and may react negatively if the allocation seems unfair (Nickerson and Zenger 2008; Hart and Moore 2008).

Beyond the question of surplus allocation, there are serious challenges in firm attempts to delegate authority to employees. Vallas’s (2006) detailed analysis of the introduction of “empowerment” in manufacturing, for instance, strongly suggest that Toyota’s success with NUMMI and a few other cases may be the exceptions rather than the rule. One problem is that when employees are empowered, this *can* increase employees’ level of identification with the firm, but it hardly guarantees it. Thus, the effort-alignment problem can reemerge. A second problem is that empowerment programs may be alienating when they are introduced from above and they substitute for those developed at the divisional level (Litwin and Eaton 2013). Third, suppression of hierarchy can lead to confusion insofar as it becomes ambiguous where decision rights reside (Turco 2016).

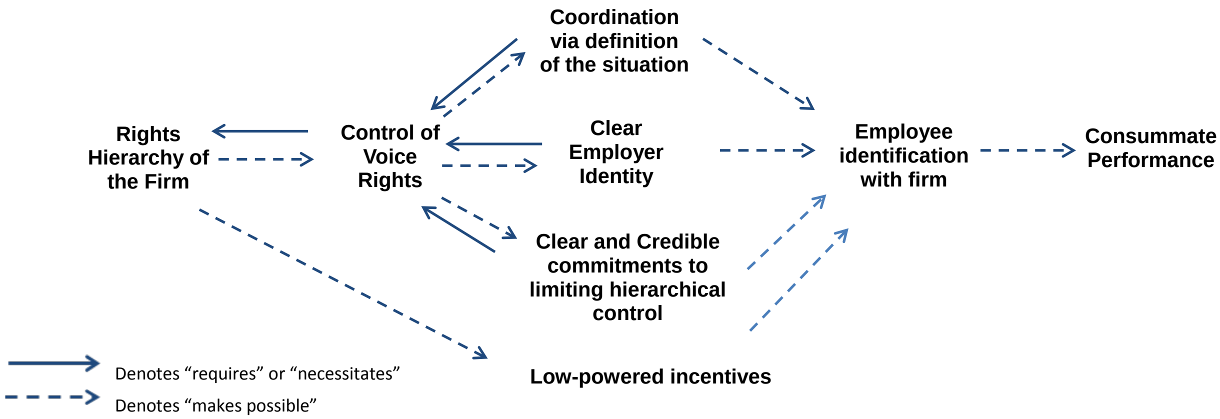
Finally, a major challenge is that managers' commitments to empowerment may be tenuous at best, and when they are perceived as reneging on these commitments, employees become even more alienated than they might otherwise have been. In his discussion of the "impossibility of selective intervention," Williamson (1996:341) elaborates on this point (see also Foss 2003). He argues that precisely because higher-level executives always retain fiat rights, they face the constant temptation to use them (and the information gleaned from monitoring mechanisms) strategically and opportunistically, especially vis-à-vis lower-level employees. Indeed, whereas Williamson intends this point to suggest why firms can be no better than second-best solutions, Dow (1987:21; cf. Miller 1992) earlier made the same point to suggest that TCE "generate(s) the structural preconditions under which employer opportunism is most likely to be encouraged; namely, information impactedness, small numbers, and availability of a tool (decision by fiat) which is tailor-made for unilateral pursuit of self-interest" (Dow 1987:21). Both scholarly and popular accounts suggest that employers often use their powers in such opportunistic ways. They withhold information and use fiat to undercut lower-level employees' bargaining position (Dow 1987), they use their powers to strengthen their own positions and tenure in the organization (Michels [1915] 1962), and they redistribute surplus away from lower-level employees and toward top managers (Miller 1992). Similarly, Williamson (1975:149) notes that top managers find that it is "evidently difficult to resist" the temptation to intervene in lower-level operating decisions, even when such intervention leads to suboptimal outcomes and involves the pursuit of pet projects that sap profitability. In sum, because firms are intrinsically hierarchical, the project of suppressing fiat is very challenging in practice.

Together, our review implies a reframed version of Coase's (1937) question of why firms dominate the capitalist economy. Any such theory must confront the puzzle of how firms elicit a sufficient level of effort despite both the low-powered incentives and the alienating tendencies of hierarchy. Such a theory must explain why an NOIC—especially one that relies on low-powered incentives and therefore does not crowd out internal motivation—is not a more attractive vehicle for governing economic transactions. If the highest-performing firms are those that commit themselves to limiting hierarchical control but such commitments are fragile and can backfire, why not eliminate the problem entirely and govern via NOICs? The answer would seem to be that firms have a special capacity to *both align and enhance effort* despite the problems associated with their hierarchical nature. But how?

Voice Hierarchy for Reliable and Accountable Actorhood

We now incorporate the lessons from the previous two sections into a theory that addresses this puzzle. Our argument proceeds in two main parts. The first part, captured in Figure 3a, explains why it is specifically *hierarchical* firms that dominate

(a) Why hierarchical firms dominate the capitalist economy.



(b) How firm hierarchy can support consummate performance.

Figure 3: Graphical illustration of the theoretical framework.

the capitalist economy. The second, captured in Figure 3b, explains how firm hierarchy creates potential for eliciting consummate performance. The control of voice is the key link between both parts of the argument. We argue first that control of voice is necessary for achieving the reliable and accountable actorhood that gives the firm its distinctive advantage. We then argue that it also gives the firm a capacity for projecting a particular identity and environment, including conditions that can elicit strong identification.

Part 1: Why Hierarchical Firms Dominate the Capitalist Economy

Our argument proceeds from left to right according to the diagram in Figure 3a. That is, the ultimate question is what conditions call forth the rights hierarchy that is the firm. We begin by synthesizing the work of the literature on emergent, informal organization and that on the firm as a reliable and accountable "actor" (Weber 1958; Coleman 1982; Hannan and Freeman 1984; Kreps 1990; King et al. 2010) to note the key environmental conditions in which the firm holds its advantage.

Limitations of firms in the short-term. We begin by returning to a crucial observation first made by Hannan and Freeman (1984:153):

> Collections of skilled workers collaborating in ad hoc groups can often complete quite complex tasks. From the perspective of the performance of a single, complex collective action, it is not obvious that a permanent organization has any technical advantage.

This observation finds clear support in the large literature on responses to disaster situations in which the participants often are not even "skilled." This research demonstrates that a key role in recovery efforts is played by "emergent groups, entities that had no existence prior to the crisis (and) often have only transitory existence" (Quarantelli and Dynes 1977:31). Such emergent groups—which are especially prevalent in search and rescue efforts and in the first stages of response more generally—tend to be much quicker on the scene than official first responders, to display a very high level of intrinsic motivation, and to foster high levels of trust even among strangers (Wachtendorf 2004; Majchrzak, Jarvenpaa, and Hollingshead 2007). And although such improvisation can suffer from a lack of coordination (see Rosow 1977:17) and promote unlawful behavior (Tierney 2007:510–12), careful analysis of even such notorious cases as the aftermath of Hurricane Katrina provide support for the general finding that such situations are marked by prosocial (if sometimes illegal) activity carried out by emergent groups (see Rodríguez, Trainor, and Quarantelli 2006). The success of informal organizing is not confined to emergency situations. In particular, Chen's (2009) account of the Burning Man festival documents similar success in tackling situations of high reciprocal interdependence. Each year, volunteers manage the feat of building a temporary city with a unique culture despite the near absence of hierarchical governance. And Mollick and Kuppuswamy's (2014) analysis of the role of formal organization among crowd-funded projects shows that informal groups reach their product development milestones more quickly than do firms.

Such informal organizing has four implications for the question at hand. First, these cases often involve production tasks involving a high degree of reciprocal interdependence—the very conditions that seem ripe for either NOICs or firms. Second, common to all such cases is the absence of both contracts (which means they are not NOICs) and a legally sanctioned hierarchy organized around a legal personality and concentrated property rights (which means they are not firms). Third, in line with our discussion in the previous section, the absence of such hierarchy seems to be a key reason for such groups' success. This is a central theme in Chen's analysis of Burning Man; a major draw for participants is to engage in decentralized self-organization. Finally, these situations clarify how the collective action problem may be overcome. In particular, participants join these organizing efforts based on a very high degree of intrinsic motivation, which can be operationalized as a low-collective-action "threshold" (Granovetter 1978; Schelling 1978)—that is, the minimum number of other participants that one requires to trigger one's own participation. When the average threshold is high, it is difficult to get projects off the ground, and once they are established, they may be subject to runs, as exits by some participants undermine others' participation (see Sgourev 2011; Centola 2013).[10] But when there is a critical mass of individuals with low thresholds, their participation draws in others with higher thresholds, and this critical mass effect can have a powerful mobilizing effect, as it draws in those with higher thresholds (see Marwell and Oliver 1993; Centola 2013).

Hannan and Freeman's (1984) observation thus helps to crystalize our question and provides us with a means towards addressing it. We have endorsed Baldwin's (2007) view that simple contracts are stymied by conditions of high reciprocal interdependence. But this does not necessarily mean that *firms* will step into the breach rather than NOICs because both firms and NOICs face significant weaknesses in solving the collective action problems that are intrinsic to such systems.[11] Thus, when production tasks are *short-term*, what prevails are not firms but *informal organizations*. These informal groups tend to emerge when there is a critical mass of intrinsically motivated individuals and they sustain such motivation in part due to the absence of hierarchy.

Accordingly, in the quote cited above, Hannan and Freeman (1984) indicate that the *firm* has its advantage not in the short-term but in the *long-term*. This is reflected in the fact that although the informal organization that constitutes Burning Man disappears each year, what persists from year to year is a formal organization, one that exchanges in the market and has employees—that is, a firm. Similarly, the emergent groups that predominate at the outset of a disaster soon give way to a more bureaucratized structure, one populated by civil servants (Quarantelli and Dynes 1977). This occurs despite the likely dissipation of some of the energy that drove the participants. That is, the firm may not be more efficient than an informal organization or even an NOIC. But insofar as there is demand for an entity that can provide a consistent set of goods and services over time, the firm is uniquely capable of doing so. Mollick and Kuppuswamy (2014) provide key evidence for this when they show that although firms are slower to reach their product development milestones than informal groups, they are more successful at raising funds and hiring employees.

Reliable and accountable actorhood. Having identified the environmental conditions in which the firm has an advantage (*long-term*, reciprocally interdependent production processes), we now clarify the logic of this advantage. As illustrated in Figure 3a, and following Hannan and Freeman (1984), Kreps (1990), and King et al. (2010; cf. Coleman 1982), we argue that this advantage lies in its capacity to become a *social actor*—an entity that is socially recognized as possessing the *capability* and *commitment* to exercise agency on behalf of a *name* and to do so in a way that is consistent *through time*. There are three crucial elements in this definition. The core element is the possession of a name through time—that is, a legally sanctioned linguistic marker that allows agents to mark the entity across social contexts, to distinguish it from entities that do not have agency and from other actors, to assign rights and responsibilities to it, and (thus) to coordinate their interactions with it. The importance of this element can be seen from considering what happens if names are not consistently assigned. In particular, imagine if the names (along with the accompanying legal rights and responsibilities) of individuals were reassigned randomly every hour. Immediately, focus would become radically short-term; moreover, commitments beyond an hour's length would be infeasible, and it would be impossible to sustain coordination for more than an hour.

Note as well why both *capability* and *commitment* are important (cf. King et al. 2010:294–95). A newborn baby is the classic example of a human entity that does not have the capability or commitment to exercise agency on behalf of its name. It is given a name so that actors may coordinate their actions with respect to it, but no one would attempt to coordinate their actions *with* it or to expect it to make or honor commitments. Of course, perhaps the most important stage in the socialization of a child to become an actor is teaching it its name and the rights and responsibilities of actorhood. But the development of the capability to exercise agency on behalf of a name is insufficient to be an actor unless the individual is *committed* to that name (cf. Becker 1961; Kanter 1968). Capability without commitment can be observed in settings where human beings interact with others without using their legal names—for example, when using a pseudonym to participate in an Internet chat room. There are a variety of advantages to such "anonymity," including the ability to share information in a way that does not incur reputational risk (i.e., damaging information cannot be traced to the actor in possession of the legal name). But following Friedman and Resnick (2001), consider the conditions under which you might be willing to *trust* the user of a pseudonym to honor her promises (e.g., to deliver goods or services in return for payment). Rationally, there will be no reason for her to do so unless she cares about protecting and enhancing this "good name." That is, if whether she honors or reneges on her promise has no bearing on her ability to make future transactions, why should she not just take the money and run? More generally, it is insufficient for actorhood that an individual be capable of exercising agency on behalf of a name; she must also be (recognized as being) committed to do so, in that she sees herself as acting on behalf of future bearers of the name (i.e., her future selves) and manages the name on their behalf.

The discussion helps to clarify the limits of NOICs and informal organizations and what is the source of the firm's advantage. In short, the legal infrastructure that constitutes the firm allows it to become an actor, and actors are demanded insofar as agents in the economy seek to coordinate their exchanges over time. In Hannan and Freeman's (1984) terms, the key issue is that modern economies privilege reliability and accountability. We define *reliability* in terms of the *lack of variance in the quality and costs of output*. Insofar as exchange partners (expect to) engage in a series of transactions over time, they will want to reduce the variance in a counterparty's performance independent of the mean level of performance. Typically, counterparties' concerns reflect a mix of Knightian (1921) risk (when the range of variation is known) and uncertainty (when it is unknown). Whether exchange parties seek to minimize risk, uncertainty, or both, they will prefer more reliable actors. And the question of reliability will be particularly acute when the production process involves a high level of reciprocal interdependence; under such circumstances, there will be particular reason to question whether a performance can be repeated over time and in the face of changing conditions.

Moreover, if achieving reliability is difficult under such circumstances, the achievement of *accountability* may be even more daunting. We define an actor as accountable insofar as its *commitments to following promised and/or reasonable procedures are credible* to exchange partners. The demand for accountable actors can be traced to two considerations. First, and following from the previous points about reliability, it is never possible ex ante to have complete confidence that an actor can be relied on to fulfill its promises ex post—that is, after payment for a good or service has occurred. Second, this becomes a particularly difficult challenge insofar as the decision to exchange with actor A or B must be communicated and justified to third parties, such as investors and other stakeholders. Under those conditions, it is critical that such outside observers (including but not limited to the courts) be able to (1) establish that a promise has been made, (2) achieve a relatively clear sense of what has been promised, and (3) determine (often at some future date) whether the parties have fulfilled or violated those promises.

The demand for both reliable and accountable actors is intensified not only by reciprocal interdependence but also by bounded rationality and the unforeseen contingencies that accompany almost all economic activity (see, e.g., Williamson 1985; Kreps 1990; Gibbons and Henderson 2012). Even very simple economic exchanges often entail a temporal dimension that causes the transaction to project forward into time, thus engendering uncertainty (Macneil 1978). At the most basic level, there is the question of whether a seller will actually deliver the service or product promised upon payment by the buyer. More commonly, there are many cases in which customers cannot be confident ex ante that the goods and services will perform as expected once they are delivered, especially when new and unanticipated conditions emerge. Such hazards are exacerbated by the fact that the desired performance criteria are frequently unknown, ambiguous, or subject to change ex post by those who review the customer's decisions—for example, capital providers, managers, or the customer's own customers. Such circumstances raise complex problems of accountability that go beyond the focus on what agreements actors have entered into and fulfilled. The question becomes one of character or reputation—how will actors behave in the face of unanticipated problems that were not considered in the original agreement? Will they honor the "spirit" of the agreement or only the letter of the law?

Accountability via voice hierarchy. In some sense, the prior three elements of our argument serve largely to restate the principle, first outlined in compatible form by both Hannan and Freeman (1984) and Kreps (1990), *that the firm's prevalence reflects its capacity for becoming a reliable and accountable actor*. Of course, the governance structure of the firm hardly ensures that firms will be highly reliable and accountable in some absolute sense. What is claimed is only that firms will be *more* reliable and accountable than either NOICs or informal organizations.

But what distinguishes the firm from NOICs and informal organizations such that it uniquely can become a (reliable and accountable) actor? Hannan and Freeman (1984) are largely silent on this question, as they rely on our intuition that firms can achieve actorhood without saying how. By contrast, Kreps (1990) focuses on the fact the firm is a transferable asset and discusses how this provides current owners with incentives to ensure the reliability and accountability of the firm into the future. Yet this mechanism seems to have limited import beyond the case of small partnerships. For a firm of any scale, the typical member is an employee who works under the low-powered incentives of wage or salary rather than the high-powered incentives of ownership. Furthermore, Kreps notes that the reputational mechanism requires that the firm's actions and commitments be "observable" (cf. the "clarity" condition in Gibbons and Henderson [2012]), but it is not clear how observability can be achieved in large firms dominated by employees.

This, we argue, is precisely where the firm's rights hierarchy comes in and especially the control of voice. As Zuckerman (2010) suggests, we must consider the counterfactual that any employee—or even anyone who is a nonmember of the firm—could speak on its behalf. Immediately, the basis for the firm's accountability evaporates as credible commitments are impossible. How can one entrust valuable interests to an actor when anyone can say that they represent that actor? But when voice rights are tightly controlled—perhaps delegated, but under tight restrictions such that deviations from firm interests are met with severe sanctions—the basis for accountability returns. Under such conditions, exchange partners can easily observe which commitments the firm has made and whether the firm has honored or reneged upon its commitments. If an exchange partner has any question as to what the firm has promised, it must merely turn to the top of the hierarchy for clarification. And if an employee speaks or acts in a way that is at odds with the firm's commitments, the firm has the ability to discipline the employee and to fire her if need be. In short, we argue that the firm's control of voice, backed by its control of decision and membership rights, is what enables the firm to achieve a level of accountability unachievable by a nexus of independent contractors or an informal organization.

Control of voice is equally important for creating a capable actor that can achieve the level of reliability required in the capitalist economy. The most straightforward basis for the firm's reliability lies in the exercise of fiat. As exemplified by nineteenth-century manufacturing firms (see Edwards 1981; Jacoby 2004), firms can achieve reliability via direct orders or via "coercive bureaucracy" (Adler and Borys 1996)—that is, unforgiving rules. Insofar as employees must follow orders or face termination from their jobs, they will comply with such orders, however perfunctorily. And if a manager is consistent in the orders she gives, the firm can achieve a significant level of reliability. Such consistency in turn depends on control of voice. It must be clear who can issue orders and who can establish rules. Without control of voice, such clarity cannot be achieved, and the basis for reliability is shattered.

Part 2: How Firm Hierarchy Can Support Consummate Performance

To this point, and as summarized in Figure 3a, we have provided a *sufficient* resolution to the puzzle of the firm's dominance of the capitalist economy. Insofar as exchange partners prefer to do business with reliable and accountable actors when they are exposed to long-term production processes marked by reciprocal interdependence, and insofar as the firm's hierarchy uniquely allows it to be such a capable and committed actor, the firm will predominate. Moreover, our theory provides a sufficient explanation for why high-performing knowledge-economy firms rely on precarious efforts to suppress hierarchical controls rather than eliminate them entirely. In short, hierarchy simply cannot be eliminated without losing the reliability and accountability that is necessary for operating in the economy over any meaningful stretch of time. Consequently, insofar as the goal is to mitigate the alienating effects of hierarchical control, *the only possible way* to do so is via commitments to reduce hierarchical control, however limited and precarious those commitments may be; eliminating hierarchy is not an option.

Yet we are still left with the heart of our puzzle, which may be summarized by two related questions. First, if limiting hierarchical control (complemented by low-powered incentives) is the only available route to elicit consummate performance, it is nonetheless a difficult one. Given the precariousness of such commitments, how and why does this ever work? Second, if the only way to achieve reliability is through orders and coercive bureaucracy, how can a more "enabling bureaucracy" (Adler and Borys 1996) be achieved without sacrificing reliability? The second part of our theory, which is summarized in Figure 3b, involves clarifying the role of voice rights in facilitating—but not ensuring—(1) a more indirect form of control (Perrow 1986) that provides a basis for reliability that is consistent with high employee identification, and (2) two additional ingredients that promote such identification: (a) a clear identity and (b) credible commitments to limiting the use of fiat, as discussed above. We now discuss these three mechanisms, as illustrated at the center of Figure 3b. For each, we note how each makes high levels of employee identification possible and how each depends on the firm's control of voice and thus on the firm's hierarchy more generally.

Coordination via the definition of the situation. Although the prior section noted that fiat can provide the alignment necessary for achieving reliability, it is well known by both organization theorists and practitioners that management through "direct controls" is "expensive" and "reactive" Perrow (1986:128). In his review of the work of March and Simon, Perrow stresses that "the vast proportion of the activity in organizations goes on without personal directives and supervision—and even without written rules—and sometimes in permitted violation of the rules." Coordination is achieved instead via "unobtrusive controls," which are rooted in a shared "premises" or a common "definition of the situation" (March and Simon 1958; Perrow 1986). This argument appears in parallel form in economic work on the role of "focal points" (e.g., Schelling 1956; Kreps 1990; Gibbons and Henderson 2012) and "codes" (Arrow 1974; Argyres 1999; Crémer, Garicano, and Prat 2007; cf. van den Steen 2010). The key principle, as Schelling (1956) first demonstrated, is that coordination does not require a coordinator; as long as individuals prefer complementary solutions and they share a common language and common knowledge, they can achieve significant alignment of their action without orders or even direct communication because of their common definition of the situation (Chwe 2001). Miller (1992:217) put this matter at the center of his theory of the firm:

> The advantage of hierarchy over markets is that it can be a means for creating common knowledge and cooperative work norms. . . .The role of the hierarchical leader is to. . . shape expectations among subordinates about cooperation among employees, and between employees and their hierarchical superiors. This is done through a set of activities that have traditionally been in the realm of politics rather than economics: communication, exhortation, symbolic position taking. Most important, perhaps, the leader has a central role in committing the organization to what is in effect the "constitution" of the hierarchy—the allocation of generally accepted responsibilities, rules of the game, and property rights that provide the long-run incentives for investment in the firm.

Although Miller (1992) may go too far in making control of common knowledge the very basis for the firm's dominance of the economy, the key point is that firms can sponsor coordination via control of common language and knowledge rather than via fiat. Accordingly, research shows that information technology allows firms to reduce hierarchical layers—more horizontal coordination substitutes for hierarchical control (Argyres 1999; Crémer et al. 2007). Moreover, insofar as such alignment is achieved without heavy-handed use of fiat, it limits the crowding out of internal motivation. As illustrated in Figure 3b, coordination via the definition of the situation thus makes employee identification with the firm possible.

But although this principle may be widely recognized, what is less appreciated is that coordination via common language and knowledge is impossible without a particular use of the firm's hierarchy—that is, the hierarchy of voice. After all, a situation cannot be defined if anyone can speak publicly to define it. The language that a firm uses is chosen by management and reinforced through consistency in public communication. Similarly, senior management has a monopoly on the broadcast of statements of firm policy that serve as focal points for coordination. Thus, if achieving alignment via defining the situation is a quite distinct method of achieving reliability without recourse to fiat (and its alienating effects), it still depends on the hierarchical nature of the firm. In particular, the firm must control the public sphere much as authoritarian regimes do: a cacophony of alternative languages and ideas can be tolerated only up to a point. In particular, the exercise of speech in the firm's name will be closely controlled.

Clarifying the target of identification. If firms that coordinate via the definition of the situation can be likened to authoritarian regimes,[12] one wonders how such coordination avoids the alienating effects of hierarchy. The key reason, we submit, is that unlike in the case of an authoritarian regime, employees have the right to choose which firm to work for. In Hirschman's (1970) terms, the difference is as follows: the subject of an authoritarian regime faces sharp limits on both voice and exit—thereby making her loyalty questionable (see Obukhova, Zuckerman, and Zhang 2014:24). By contrast, the employee of a capitalist firm may have sharp limits on voice, but she has much greater freedom to choose where to work, and this means that she is much more likely to identify with the firm and to be recognized by others as such.[13] Indeed, perhaps the most important factor in enabling firms to have employees who identify with its objectives is the matching process effected via the labor market. In particular, it seems an obvious goal for the firm to hire employees who are already aligned with the firm's objectives and who therefore are poised to rejoice when the firm succeeds and are dismayed when it fails (Miller 1992:95–101; cf. March 1991; Carroll and Harrison 2006; van den Steen 2010).

This leads us to a second key way that the firm's control of voice allows it to facilitate coordination—by *clarifying the target for identification*. As Baron (2004) notes, a key basis for competition among employers is via their labor market "identities"—how their workplaces are similar to and different from others in terms of working conditions and firm objectives.[14] But recruiting on the basis of the firm's identity is impossible unless the firm is able to convey clearly and consistently how it is similar and different from other employers and to make such messages credible. Moreover, such clarity and consistency is crucial for eliciting the strong identification that is the basis for consummate performance. As discussed above, it is useful to think of such identification as obtaining when the worker sees the firm's success as her own success. But the identification of self with the firm is impossible if the identity of the firm is ambiguous or is changing in unpredictable ways (see Tripsas 2009). Put differently, identification requires a *clear target;* one must have a clear sense of what one is identifying with. When the management of a firm is able to articulate that target in a clear and consistent way, it can use it as a basis for recruitment and as a basis for identification. And this requires control of voice. To the extent that anyone can speak in public (e.g., via public emails, mailings, or teleconferences) and say they represent the firm, the capacity for articulating a clear identity is shattered. But if such speech is curtailed, it becomes possible.

The paradox of committing to limiting fiat. The third mechanism for eliciting identification was reviewed above. In particular, we noted that a central theme in discussions of "high-performance work systems" is that such firms (e.g., Toyota and the pharmaceutical companies described earlier) make strong commitments—especially multilateral relational contracts (Levin 2002)—to refrain from exercising their fiat rights. That is, they tend to commit themselves to providing job security (thus foregoing membership rights) and to various "involvement" or "empowerment" programs (thus foregoing decision rights). Let us endorse the view that such commitments to limit hierarchical control are important for eliciting strong identification and (thus) achieving consummate performance. And let us recall as well that such commitments are complementary with the use of low-powered incentives, and thereby afford the possibility of both high alignment of effort and a high level of effort. But let us also recall that such commitments are often quite fragile and precarious, thus raising the heart of our puzzle: why isn't hierarchy avoided altogether? Our main answer (as illustrated in Figure 3a) has been that hierarchical governance cannot be avoided; it is necessary for becoming a capable and committed actor, and the hierarchy of voice is critical to this achievement. And we have now also seen that firm's voice hierarchy also underpins the key mechanisms that allow the firm to become a capable actor without resorting to fiat—that is, by articulating a common definition of the situation and a clear target for identification.

Furthermore, and quite paradoxically, firm hierarchy is not only a necessary evil that makes the suppression of hierarchical controls difficult, but *firm hierarchy also provides the tools—that is, control of voice—that make suppression of hierarchical control possible*. As Gibbons and Henderson (2012) discuss, multilateral relational contracts are very difficult to construct and sustain, and firms' relative success in this regard may be responsible for persistent performance differences between firms and persistent underperformance in general (cf. Azoulay et al. 2010). They summarize the challenges in terms of "credibility" and "clarity." In short, why will employees be willing to make firm-specific investments if managerial promises cannot be believed and/or if the nature of those promises or whether they are being honored is unclear? Managerial failure to make clear, credible commitments is what consigns many firms to the "bad equilibria" of perfunctory performance.

But if as *clarity and credibility are achievable at all, this is only because managers maintain control of voice rights*. That is, the very same mechanism that allows the firm to achieve accountability and reliability to external stakeholders also makes it possible for managers to achieve credibility and clarity in their commitments to employees, including those that involve limitations on the use of fiat. The logic is based on the very same counterfactual we noted above in the context of the firm's external accountability: what if any employee was authorized to speak in public spheres controlled by the firm, and especially on *behalf* of the firm, on such matters as the firm's policies with respect to delegating decision rights or employment security? In such a context, the possibility of clear and credible relational contracts dissolves.

Of course, the firm can only control voice rights because it ultimately retains fiat rights—promises of job security and of delegation can always be withdrawn, and one should expect them to be withdrawn if the employee speaks in an authorized way on behalf of the firm. And the presence of such hierarchical controls is precisely what makes it so difficult to make such commitments appear credible. It seems that only a minority of firms succeed at managing this challenge. But insofar as they succeed, they do so precisely because the firm is hierarchical; unless management can speak with a consistent voice, such commitments will never be clear or credible.

Summary

The main contribution of our article has been to articulate a question that has not been raised before—that is, if the firm is intrinsically hierarchical and hierarchy tends to breed alienation rather than identification, and if high-performing enterprises in the contemporary knowledge economy tend to limit hierarchy, why is this economy filled with firms? Our argument, which has centered on the importance of the hierarchy of voice that is entailed by the legal construction of the firm, has two main features. First, we build on those theorists (Weber 1958; Hannan and Freeman 1984; Kreps 1990; King et al. 2010) who argue that the modern economy places a premium on reliability and accountability and thus on committed and capable *actors* and that firms are unique devices for constituting such actors. Our main contribution here has been to point out that such actorhood is achieved via the firm's hierarchy, with the hierarchy of voice playing the key role. Second, we have argued that although the firm faces difficult challenges in using its hierarchy to elicit high levels of identification, its control of voice provides it with a distinct mechanism for doing so. In particular, the hierarchy of voice allows it (1) to shape the bases for coordination by controlling the common language and knowledge, (2) to clarify the firm's identity (i.e., its similarities and differences from other firms) such that it can effect good matches with employees who might identify with it, and (3) to allow its managers to achieve clarity and credibility in the commitments they make to employees, including those that limit use of hierarchical controls.

Discussion

In our concluding discussion, we address three issues raised by our analysis. First, we review how our theory relates to, and largely complements, existing theories of the firm. Second, we address potential challenges to our theory from literatures that are largely outside those we have reviewed to this point—that is, on recent social movements, on culturalist-historical approaches, and on professional services firms and universities. And finally, we note the implications for management of our idea that the firm's hierarchical nature involves both problems and promise.

Relationship to Theories of the Firm

In clarifying the relationship between our approach and various theories of the firm, let us recall how our approach complements theories that explain the *existence* of the firm in the capitalist economy but are ill-suited for explaining its *prevalence*. We noted above that insofar as the goal of the capitalist is to capture as much value as possible (Edwards 1981) or to maximize discipline, it is not surprising that the firms will be attractive governance devices. Moreover, insofar as the goal is to create value but the key knowledge for doing so is embodied in managers, the firm will be an attractive vehicle for imparting and extending that knowledge. But the firm's presence is more surprising in the conditions that have become known as characteristic of the "knowledge economy," where the key knowledge for creating value is distributed and changing and thus requires initiative at the local level to discover. Our theory is thus designed to explain the ubiquity of the firm in the capitalist economy, even under conditions characteristic of the knowledge economy.

Next, and as illustrated in Figure 3b, let us recall how our approach complements economic theories of the firm. As reviewed above, these accounts see the advantage of the firm as stemming from the greater alignment of effort afforded by flat or low-powered incentives. Although these theories do not explain (and do not provide evidence for) why the increase in alignment of effort outweighs the reduction in effort, various studies suggest that low-powered incentives are compatible with enhanced internal motivation through greater identification with the firm's objectives (e.g., Azoulay 2004; Encinosa et al. 2007). To this line of our work, our theory supplies a key missing piece—how the firm's hierarchy can support such consummate performance despite its potential to alienate workers and thus bring about a problematic reduction in the level of effort. We have suggested that low-powered incentives are not a basis for the existence of the firm (after all, contracts can be written with low-powered incentives), and they do not enhance internal motivation on their own. But they can play a role in doing so as part of as a larger system of complements, at the center of which is the use of the firm's control of voice to articulate a clear and compelling identity and to develop clear, credible commitments to limit use of hierarchical controls. Thus, our theory is compatible with the idea that firms have advantages in governing "difficult transactions" and that the use of low-powered incentives plays a key role in providing this advantage. At the same time, we argue that to provide this advantage in an intrinsically hierarchical governance form, managers must deploy their hierarchical rights in particular ways.

Accordingly, we contend that it is this system of complements that is at the heart of what has been discussed as the "knowledge-based theory of the firm" (Kogut and Zander 1996; Conner and Prahalad 1996; Nickerson and Zenger 2004). We have suggested that insofar as such accounts of the firm emphasize its nonhierarchical aspects and the "community"-like elements that they achieve (see Adler and Heckscher 2006), they are accurate in heralding the firm's *capacity* for eliciting consummate performance. But they are problematic insofar as they disregard the fact that the firm is irretrievably a hierarchical form that carries with it a tendency to alienate its members. We have argued that the key to resolving this conundrum is by appreciating the role of the voice hierarchy, both in giving the firm its key advantages of accountability and reliability and in creating its capacity for eliciting consummate performance. The voice hierarchy is key because without it, the firm can neither project reliable and accountable actorhood externally nor make clear, credible commitments internally to limit use of hierarchical controls. It is this limited use of hierarchy that earns certain firms the reputation of being nonhierarchical. But such limits are in fact backed by a feature of the hierarchy that has been largely taken for granted in the past—the firm's hierarchy of voice.

Challenges to the Theory

One possible objection to our theory comes from recent social movements that seem to have looser hierarchical controls than firms do, perhaps especially as pertaining to voice rights. Consider the recent Occupy movement, for example (Milkman, Luce, and Lewis 2013), or the hacker group known as Anonymous, which is well known for its denial-of-service attacks on various corporate targets (Coleman 2013). Such cases are intriguing and they may very well indicate the need for adjustments in our theories of social organization. But our theory is intended to explain the prevalence of the firm in the *capitalist economy*, and it does not necessarily imply that firms should be prevalent outside of this context. Our argument is that the prevalence of the firm can be traced to the fact that participants in the capitalist economy tend to avoid exchange with counterparties who are not reliable and accountable. We have noted that when the good or service requires short-term reciprocal interdependence, it may very well be that informal, relatively nonhierarchical organizations are most efficient. But the absence of (legal) hierarchy, and specifically the lack of control over voice, means that such organizations cannot repeat their performances over time with any reliability and they cannot convey accountability. Accordingly, although individual hackers may be successful in using Anonymous as a vehicle to attack common targets, it is unclear whether they have an *organizational* capability, and it is quite clear that they cannot convey accountability such that outsiders would be willing to commit valued resources to them. Indeed, that is the whole point of the name Anonymous. Thus, although it would be problematic for our theory if such organizations were prevalent in the capitalist economy, this does not appear to be the case for the very reasons highlighted by our theory.

The example of Anonymous also helps address a second potential objection to our theory, that which emerges from the cultural-historicist tradition associated with Meyer (2010; Meyer and Rowan 1977; Meyer and Jepperson 2000). This approach would seem to imply that the demand for reliable, accountable actors is a contingent product of a particular historical moment in which actorhood is privileged; but insofar as alternative paths of historical evolution were equally possible, whereby different governance forms would have been favored, the dominance of the firm reflects cultural rather than structural forces. This objection is important because it sensitizes us to the likelihood that the proximate reason that contemporary entrepreneurs build firms is less because key constituents (customers, labor, investors) demand reliability and accountability than because they have become accustomed to exchange with firms (Mollick and Kuppuswamy 2014).

At the same time, a purely culturalist explanation for the prevalence of the firm faces at least two difficulties, which our theory helps to address. First, if the prevalence of the firm reflects the widespread endorsement of a particular idea, this raises the question of why such endorsement seems to be suspended in particular circumstances. For instance, if actors are universally demanded in the contemporary cultural zeitgeist, how do we explain the appeal of such nonactors as Occupy and Anonymous or the dominance of informal organizations at the inception of disasters? Such contextual variation seems more readily understood by our approach, whereby some contexts privilege the reliability and accountability that firms provide, whereas other contexts privilege the adaptability and cooperative energy fostered by informal groups. Note as well that our theory can potentially address a related difficulty with the cultural-historicist tradition—that is, that it begs the question of what caused the cultural trend that has privileged actorhood. Our theory suggests that this trend may be *a result* of how modern society and economy foster the extension of commitments over time (and space) rather than the *cause* of such extension. To be sure, it seems likely that demand for the firm has become partly decoupled from the underlying demand for reliability and accountability. But there are limits to the endogeneity of culture (cf. Obukhova et al. 2014), and our theory points to the exogenous factors that explain the dominance of a particular cultural form as well as when its dominance is suspended.

A third objection to our theory can potentially be formulated by identifying organizations that meet our definition of the firm but do not seem to achieve a high level of accountability or reliability. In particular, one could base such an objection on the workings of the professional service firm (PSF) or the university, insofar as managerial control over professionals and professors seems relatively limited. Most notably, such professionals can often exercise a great deal of voice. Again, however, although these cases are quite interesting, they do not contradict our theory. In particular, although professionals in such firms often enjoy a great deal of leeway, there are limits to their freedom, and these limits are telling. In particular, professionals face harsh consequences if (1) they express voice in a manner that misrepresents the organization, as determined by its management, or (2) violate professional norms in an egregious manner. To put it more concretely, although it may sometimes seem impossible for a "tenured" university professor to lose her job, one can expect this to happen if she (repeatedly) leaks confidential information about university policies to the press or if she is found to have engaged in fraudulent research. The first case is an illegitimate use of voice that is really no different from that in any firm. The second reflects the multilateral relational contract (Levin 2002) that is constitutive of the PSF. According to the terms of this contract, the professional receives significant freedom to exercise professional discretion, and in return the professional commits herself to operating within professional norms of conduct (and pursuing the standards of excellence promoted by that profession). Thus, the reason that the PSF firm loosens hierarchical controls is that the firm effectively hires the profession as its agent. But to the extent that the agent falters in fulfilling its job, and thereby puts the reliability and accountability of the firm at risk, the firm can be expected to use its hierarchical controls and enforce discipline. Thus, as in any other firm, delegation in PSFs involves decision rights that are "loaned, but not owned" (Baker et al. 1999:56).

Implications for Managers

We close by returning to the central paradox that animates our article, and the nature of the challenge it implies for those who are entrusted with the responsibility of managing firms. The paradox and challenge have most salience in the case of a manager who seeks to cultivate a collectivity that can both achieve the reliability and accountability necessary to operate in the economy on a sustained basis and elicit the strong identification that affords the possibility of consummate performance. We have reviewed several well-known cases that suggest that building such firms is possible. Indeed, such examples are so compelling that they belie the suggestion that firms can only be "second-best" cultivators of perfunctory performance. We have also reviewed evidence suggesting that especially in contexts that privilege local knowledge and adaptability to changing circumstances, such firms will be marked by clear and credible commitments to limit hierarchical controls. At the same time, we have noted that the clarity and credibility of such commitments paradoxically depends on the hierarchy of voice that is afforded by the firm's legal structure, and this hierarchy of voice is in turn embedded in the larger rights hierarchy of the firm, which includes fiat rights. Firms can neither maintain reliability and accountability nor credibly commit to suppressing hierarchy unless they retain control of the right to control work and to fire disobedient workers. Of course, if managers retain such powerful rights, there will be many occasions where they will be tempted to use them. Classic challenges include situations in which there is a downturn in demand that makes promises of job security expensive or when divisional managers resist the entreaties of senior management to coordinate with other divisions so as to seek more attractive exchanges on the outside. Moreover, promises to refrain from giving in to short-term temptations to shed employees or to enforce compliance can ring hollow when employees know that management constitutionally retains the rights to implement unwanted policies. Conversely, there will be occasions when it is indeed the right move for managers to bite the bullet and intervene. What is thus required is not only discipline in refraining from using these rights but the ability to convince various stakeholders of such discipline. It is thus the *rare firm* that is able to manage this challenge for an extended period of time.

Notes

1 Williamson also discusses the use of hierarchical control as helping to achieve alignment, and he discusses how firms can deploy an array of mechanisms to increase the employee's motivation. But nowhere does he claim that this raises the employee's motivation to the level of an independent contractor in the market.

2 Some scholars have attempted to reduce the firm to a nexus of contracts (Jensen and Meckling 1976; Fama 1980) in a manner that elides the difference between employees and

independent contractors. We show that this distinction is crucial, with the employment relation making firms intrinsically hierarchical. This makes the question of why the capitalist economy is dominated by firms—and not nexuses of independent contractors—more salient.

3 The main exceptions here are sole proprietorships and older forms of general partnership. In these forms of organization, legal personality resides with an individual owner or proprietor or with the partners as a group and not with the organizational entity. This does not alter our analysis.

4 The firm can only revoke or alter the employee's future use of voice. The employer generally cannot rescind legally binding acts already carried out by the employee. Thus, if an authorized employee enters into an undesirable contract on behalf of the firm, the firm is legally obligated to fulfill the contract or suffer damages for breach.

5 When an internal subsidiary is organized as a separate corporate entity with its own legal personality, however, the subsidiary (and not the parent) owns and exercises property rights (Robé 2011:50–51). In this case, contractual arrangements between the parent and subsidiary are possible. Although this may appear to undermine our argument, it is in fact the "exception" that proves the rule. One major purpose of organizing subsidiaries as separate legal personalities is to avoid legal accountability for their actions and their financial obligations.

6 If the employer's pledge not to intervene is found to be contractually binding, the employer may be subject to remedies for breach of contract, but the employee would still be obligated to obey. Such cases are vanishingly rare in the employment context because employers almost never make such contractual commitments not to intervene.

7 Baldwin draws on Thompson's (1967) classic distinction between three types of task interdependence: pooled, sequential, and reciprocal. The latter encompasses complex patterns of mutual dependencies, wherein a given production unit both provides input and receives output from other production units, with potentially quite complicated patterns of interdependencies (e.g., the different roles on a basketball team or a symphony). Although systems consisting of pooled or sequential interdependence can be decomposed into discrete modules, it is impossible to decompose units that are reciprocally interdependent (Simon 1962).

8 Williamson (1975; 1991) does note that the firm's hierarchical structure allows it to implement a wide array of distinctive bureaucratic (i.e., based on formal rules) mechanisms for enhancing employee motivation that are associated with internal labor markets. But nowhere does he or his followers claim that employees are as motivated as independent contractors.

9 Thanks to Cat Turco for discussions on this point.

10 This fragility due to interdependent commitments is why such organizations as cults and radical political parties are so focused on increasing exit costs (see Selznick 1952; Kanter 1968).

11 Miller (1992) identifies three weaknesses of firms in this regard: (1) the use of hierarchy induces "feelings of oppression," lowering employee morale and motivation; (2) managers may have "bad information" about the value of the public good to the various employees and the cost of producing it, such that the incentives they design are inefficient; and (3) managers who are given hierarchical rights may abuse them rather than further the firm's interest. Similarly, although we reject Alchian and Demsetz's (1972) claim that the firm is not intrinsically hierarchical, we do not yet have warrant to reject their skepticism about the capacity of hierarchical governance to allay the motivational problems inherent in team production

12 See Turco (2016). Thanks to Cat Turco for discussions on these issues.

13 Turco's (2016) analysis suggests another reason: when employees are granted significant voice, this can influence managerial decisions, thus increasing a sense of efficacy.

14 Note that the firm's identity on the labor market may be distinct or "decoupled" (Meyer and Rowan 1977) from the firm's identity to customers and other external stakeholders (Zuckerman 2010). Such decoupling is difficult to achieve, however (Turco 2012).

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