TOWARD A POLYCENTRIC PERSPECTIVE ON THE BUSINESS FIRM

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Abstract: We rely on extensions of the Ostromian research program to information, knowledge, and infrastructure to take the recently proposed "corporation-as-commons" idea forward. We conceptualize firms as systems of shared heterogenous resources and argue that a vital institutional resource of any firm is its corporate mask, which enables a firm to operate as a singular actor. The corporate mask is a constitutional-level coordinating device, a legal and epistemic focal point that is shared by participants in various positions at the collective-choice and operational levels, as determined by formal legal rules (organizational law, employment law, commercial law, etc.) and context-specific rules-in-use (by-laws, organizational routines, business practice, etc.). We show that this resource has increasing returns to shared use, and that such anti-rival properties imply that it is polycentrically co-produced by the legal system, the firm participants, and the third parties with whom the firm contracts. We explore some implications for corporate governance.

Keywords: firm; heterogeneous resources; corporate mask; institutional resource; anti-rivalry; co-production; polycentric governance

1. INTRODUCTION

The idea that society's long-term prosperity requires replacing the extractive shareholder primacy model with a participative stakeholder model is gaining momentum. As business leaders, politicians, and regulators consider how corporate governance reforms may help ensure the sustainable creation of shared value (Business Roundtable 2019; World Economic Forum 2019; European Commission 2020; American Law Institute 2022), efforts to reimagine the business corporation are underway (Morrow & al 2016; Waitzer 2018; British Academy 2019; Mayer 2021; Meyer et al 2022). In this context, Simon Deakin (2012, 2017, 2019) suggests that valuable insights can be found in Elinor Ostrom's (1990, 2005) work on the natural resource management. If we think of the corporation not as shareholders' property but rather as a commons – namely as a shared but depletable resource which is collectively held and managed for the benefit of multiple interests – then the participative stakeholder model ought to follow.

Deakin's argument rests on two moves. First, Deakin shows that the legal system sees the firm as an organizational entity constituted around a pool of shared resources, which it seeks to preserve. Hence the bodies of law shaping and regulating the economic operations of the firm (corporate law, employment law, commercial law, insolvency law, and so on) specify the conditions under which various stakeholders contribute to and draw on the firm's resources while maintaining the firm's asset pool and going concern value. The partially overlapping rights different stakeholders hold in the corporate context, Deakin argues, are analogous to the partially overlapping combinations of property rights (access, withdrawal, management, exclusion, alienation) various actors hold in natural commons (Schlager & Ostrom 1992; Ostrom & Schlager 1996).

Deakin then transposes Ostrom's famous design principles for the sustainable governance of commons from the natural resource to the corporate context. For Deakin, this

implies that boards ought to be accountable to all stakeholders and that stakeholders ought to be involved in crafting the rules that govern them. And for such self-governance to be sustainable, governance norms limiting the excessive extraction of resources by one stakeholder group – most notably shareholders – and relative immunity from global capital market pressures are required. There is more to Deakin's discussion, but for our purposes here this outline of the argument will suffice.

We welcome Deakin's invitation to extend the Ostromian perspective to the business firm and seek to advance it in this paper. But we do not go about it in the same way. While the design principles may well be generalizable beyond the natural resource context (Wilson, Ostrom & Cox 2013), we should not expect them to be transposable by intuitive analogy, without qualifications. Any design principles applicable to corporations or other types of business firm must be established empirically. As in Ostrom's work, a meta-analysis of a wide range of case studies is needed (Poteete et al 2010; Cole 2014; McGinnis 2017). We do not pursue this sort of analysis here.

Nor do we explicitly take sides in the ongoing corporate governance debate. Although we agree with Deakin that corporate stakeholders hold property rights that in many ways are analogous to those held by the natural resource users studied by Ostrom and her colleagues, we doubt that this is a sufficient justification for the stakeholder governance model. Not all those with ownership claims have ownership competence – the ability to match judgment about resource uses and governance with the firm's evolving environment under uncertainty (Foss & Klein 2018; Foss et al 2020). More to the point, the property rights route is complicated by the fact that some of the firm's key resources are not appropriable and are shared not just by participants in the firm but by other firms and stakeholders as well.

To take the *corporation-as-commons* idea forward, we need to think about the kinds shared resources firms rely on or manage and ask whether it makes sense to view the

corporation as such a resource. This requires specifying what we mean by *corporation*. If we take *commons* to be an institutionalized arrangement of shared resources and people (Frischmann et al 2014; McGinnis 2019), the challenge is to determine who shares the corporation, and under which rules this shared resource is produced. We also need to understand how alternative rules operating at different levels affect outcomes and their evaluation. The lens of polycentricity (Thiel & Moser 2019) should in principle help bring these elements into focus. In this spirit, our argument can be stated roughly as follows.

We conceptualize firms as systems of shared heterogenous resources and suggest that the firm's corporate mask, which provides it with a singular vector for collective action, is a special kind of institutional resource. This resource is an essential constitutional-level coordinating device, a legal and epistemic focal point that is shared by participants in various positions at the collective-choice and operational levels, as determined by formal legal rules (organizational law, employment law, commercial law, etc.) and context-specific rules-in-use (by-laws, organizational routines, business practice, etc.). We show that this resource has increasing returns to shared use, and that such anti-rival properties mean that it is polycentrically co-produced by the legal system, the firm participants, and all third parties the firm contracts with. While the corporate mask cannot be depleted, it can be misused when captured or controlled by one interest to the exclusion of the others involved. This may lead to the deterioration or depletion of the firm's other shared resources.

2. FIRMS AS SYSTEMS OF SHARED HETEROGENOUS RESOURCES

On several occasions, Ostrom listed corporate treasuries and income as examples of common-pool resources (Ostrom 1998a, 2000; Dolšak & Ostrom, 2013), and noted that the corporation, though frequently thought of as the epitome of private property, was in fact an example of a common property regime (Ostrom 2000). Elsewhere, the corporation was

described as a share contract (Hess & Ostrom 2003) and the firm as a common property institution (in Aligica 2015) featuring a mix of communal and individual property rights.[1] These fairly limited and rather vague statements require clarification and elaboration. Ostrom did not differentiate firms from corporations and assumed, without explanation, the contractual nature of the corporation. In Ostrom's defense, she did not study firms or corporations. And in making these observations, her aim was to remind us that commons are neither relics nor confined to nature but can instead be found all around us today.

Though limited, Ostrom's observations nevertheless echo her recurring insistence on the need to distinguish resources (or resource systems) from the institutional regimes that govern them. Any "Ostromian perspective" on the question at hand must differentiate these aspects. Conceptual and terminological clarity was of paramount importance to Ostrom (Cole 2014), so we should seek to emulate this stance here. A suitably Ostromian point of departure would be to think – as a first approximation at least – of *firms* as resources systems and *corporations* as the institutional regimes that govern them. Let us examine the idea of the firm as a resource system first. Several relevant insights can be found in existing work on the firm, which we briefly summarize now.

2.1 Thinking about the firm

Following Ronald Coase (1937), the *contractual theory* of the firm revolves around the idea that the firm can be usefully understood as a centralized set of contracts among input or resource owners. Put differently, the firm is a coalition of resource owners who, in order to reduce transaction costs and thereby increase the joint surplus value, contract with a central

[1] If so, the corporation is perhaps best understood not as commons but as *semicommons* (Smith 2000; Fennel 2009; Bertacchini et al 2009) and we may wish to adopt the expression *corporation-as-semicommons*. Alternatively, we may note that Ostrom did not use the term semicommons, set aside the distinction, and use the term *commons* broadly enough to include semicommons. This is the stance we adopt here.

contractual agent instead of contracting with each other directly (Alchian 1984; Eggertsson 1990). Some of the resources used by the firm can earn just as much elsewhere. Other are specific to it, which is to say that they have a significantly higher value within the firm than outside it. According to the transaction cost economics associated primarily with Oliver Williamson (1985), firm-specific resources of this kind determine the size or boundaries of the firm.[2]

When firm participants specialize by engaging in firm-specific human or nonhuman investments, and when mutually compatible specialization is required, the resulting intangible and tangible resources are at risk because opportunistic participants can credibly threaten to withdraw their cooperation with a view to capturing a greater share of the joint surplus value (Klein et al 1978). Anticipating this risk, some or all participants will tend to underinvest, with the implication that at least some potential value will be foregone. Various kinds of institutional arrangements, ranging from monitoring to contractual incentives and career rewards, are needed to reduce the likelihood of this outcome (Rubin 1990).

The same logic extends to situations where firms in a supplier-buyer relationship need to make relationship-specific investments. Each firm is in a position to use the threat of exit to extract a greater share of the surplus. Since both firms are likely to underinvest in these circumstances, institutional arrangements, ranging from contractual specifications of penalties to joint ventures and vertical integration, are needed. The greater the value of a firm's specific investments, the more it stands to lose from the opportunistic behavior of its partner, and therefore the greater the likelihood that it will choose to eliminate the threat by buying out the other firm (Hart 1995). Turning outside parties into employees does not

[2] Williamson and most transaction cost economists talk about *asset*, as opposed to *resource*, specificity. We use these terms interchangeably here.

eliminate opportunism – selective incentives are still needed (Olsen 1965; Miller 1992) – but it does reduce the risks involved.

A partially overlapping explanation of how and why the firm grows can be found in the *resource dependence approach* proposed by Jeffrey Pfeffer and Gerald Salancik (1978). On this view, given that some key resources the firm requires to fulfil its strategic objectives are not tied to or controlled by it, the firm will attempt to manage external resource dependencies through mergers, joint ventures, board interlocks, or various forms of political or legal action (Hillman et al 2009). By securing at least some control over external resources, firms both diminish their exposure to the power of other organizations and reduce environmental uncertainty.

While thinking about the resources found outside the firm is important, there is much more to say about resources at the firm's disposal within its boundaries. The *resource-based view* of the firm, which stems from Edith Penrose's (1959) classic work, revolves around the idea that the firm' productive resources are heterogenous and must be dynamically specialized, combined, arranged, organized, and so on, by entrepreneurs or managers seeking to generate a surplus by creating value for third parties in the market (Wernerfelt 1984; Barney 1991). Excess resource capacity leads to diversification decisions. Diversified firms benefit from economies of scope when they are able share some resources across production processes or businesses without congestion (Teece 1980, 1982). Various kinds of governance arrangements are needed to avoid this collective action problem.

Overall, we note the following insights in existing work on the firm. First, resource owners come together in firms. Second, the presence of a central contractual agent is a key element of the institutional structure of the firm. Third, the value of resources is enhanced through firm-specific investments. Fourth, the firm's heterogenous resources must be organized to create value and competitive advantages. Fourth, some of the key resources the

firm needs to achieve these objectives lie beyond its boundaries (resource dependence approach). Last but not least, collective action problems inevitably arise when resources need to be shared, whether the resources in question are inputs into production processes (resource-based view) or outcomes of those processes (transaction cost economics). We build on these elements in the remainder of this paper.

2.2 The firm's shared resources

Firms rely on a range of shared tangible or *physical resources*. Many kinds of technological resources, ranging from machines to IT networks, but also buildings, office space, and parking fall into this category. These resources can be more or less excludable and more or less subtractable, depending on the institutional setup (Rayamajhee & Paniagua 2021). Still, crafting suitable governance arrangements to prevent exploitation, congestion, overuse, and so on, can be relatively easy, because it is relatively straightforward to assign various bundles of rights to different people. In Ostromian terms, it can be fairly simple to distinguish authorized users (those with access and withdrawal rights), claimants (access, withdrawal, and management rights), proprietors (access, withdrawal, management, and exclusion rights), and owners (access, withdrawal, management, exclusion, and alienation rights).

Firms also rely on a range of shared intangible resources. This category includes software and things like legal, administrative, secretarial, procurement, or marketing services (Vining 2003; Frost & Morner 2005). Like many of the physical resources listed above, services of this kind are *infrastructural resources*, which can be private, club, or common-pool, depending on the context. They are inputs into many different intrafirm processes, so are often centralized to make the most of the economies of scale and scope. But such pooled interdependence means that they are easily congestible when demand is high (Frost et al

2016). Here, too, it may be relatively easy to devise suitable rules to prevent congestion, overuse, and so on, by assigning different bundles of rights to different people.

Few of the above resources will help determine the firm's competitive advantage, which stems from a firm's ability to develop processes capable of harnessing imperfectly imitable and non-substitutable resources to create value for third parties (Barney & Clark 2007).[3] The possession of patents, by itself, is insufficient. The firm's know-how and knowledge base, perhaps its most important intangible resources, are from this point of view essential. Intrafirm knowledge exhibits high degrees of the non-excludability and non-subtractability (Spender 1996; Ellig 2001; Frost & Morner 2010). At the same time, it is mostly tacit and generally dispersed (Foss 1999). These features create a strong strategic need to ensure its productive combination. Intensive forms of coordination and intrinsic motivation are needed (Osterloh & Frost 2002; Grandori 2009).

A key challenge for knowledge governance arises from the fact that it is difficult to assign specific bundles of rights to different people. This is because knowledge, ideas, and what can be more broadly thought of as *intellectual resources* are not easily appropriable – they are fugitive, as Kenneth Arrow (1996) put it. Different degrees of access to or control over artifacts and facilities representing or storing intellectual resources can be assigned to different people, but it is much more difficult to assign access to or control over knowledge or ideas themselves (Hess & Ostrom 2003). Anyone who contributes to the firm's know-how may have a property-like claim (Hess & Ostrom 2007), but what shape an individual claim may take, and how it may relate to others' claims, is far from obvious. It is more useful to think of claims as held in common.

[3] This includes not just value for customers but also goodwill and going concern value.

Similar considerations apply to the firm's corporate culture (Crémer 1993; Hodgson 1996; Engel & Güth 2006), reputation (Weigelt & Camerer 1988; Tadelis 1999; Roberts & Dowling 2002), organizational routines (Nelson & Winter 1982; Feldman & Pentland 2003; Nelson 2009), organizational capital (Prescott & Visscher 1980; Tomer 1987; Gomes 2007), organizational capabilities (Chandler 1993; Levinthal 2000; Dosi et al 2008), and dynamic capabilities (Teece et al 1997; Winter 2003; Teece 2009). Although all of these sorts of intellectual resources are grounded in the firm's *human resources* (Wright et al 2001) and are sustained by the shared beliefs and mental models that provide meaning and guide the organized interactions of firm participants (Kreps 1990; Cohen 1991; Cohendet & Llerena 2008; Van den Steen 2010; Witt 2011; Felin & Foss 2011), they are in effect emergent properties of the firm that are shared by those involved.

Firm participants rely on such intellectual resources while contributing to their production and reproduction. Put differently, participants contribute to the production of these resources, which are both inputs into and outputs of their behavior and the firm's operations.[4] In the process, shared intellectual resources are gradually transformed. For example, if we think of organizational routines as grammars of action (Pentland & Rueter 1994), routinized actions instantiate and replicate the routines. But because routine replication is not a high-fidelity process, which is to say that it often is imperfect and subject to local variation, whether by accident or design, evolutionary mechanisms kick in. As a result, as Geoffrey Hodgson and Thorbjørn Knudsen (2004) have shown, the firm's routines effectively change over time. Evolutionary explanations of this kind are relevant for the firm's other shared intellectual resources.

[4] Because participants contribute to the production of shared intellectual resources in the course of contributing to the production of goods and services, we can speak of joint production in the sense used by ecological economists (Baumgärtner et al 2001).

These resources cannot be conceptualized as private goods because they are indivisible, non-subtractable, and exhibit high exclusion costs. They are more akin to club goods shared by insiders, although this presupposes institutional arrangements keeping them within firm boundaries, which will always be imperfect. This affects production and maintenance of the firm's important shared intellectual resources, a challenge that is compounded by internal problems of shirking and free-riding. After all, just as the revenue generated from employees' human capital investments must be shared by employers and employees (Hashimoto 1981), the revenue generated thanks to investments in intellectual resources is a common-pool resource, as Ostrom had intimated, to be shared by firm participants, who therefore have an incentive to reduce their contributions without a proportional reduction in their rewards.

To summarize, the firm is a system of shared physical, infrastructural, intellectual, and human resources, each raising different sorts of governance dilemmas. Some of the firm's resources are appropriable, others are not. Some can be private, common-pool, or public, depending on the institutional context, while others cannot possibly be private. This is the case of many of important shared intellectual resources that enable firms to operate and attain or maintain competitive advantages. Firm participants jointly produce, reproduce, and gradually transform these resources, which should accordingly be seen as both inputs into and outputs of the firm's operations. We are now in a position to rethink the corporation.

3. RETHINKING THE CORPORATION

Our initial distinction between firms as resources systems and corporations as the institutional regimes that govern them should not lead us to confine the latter concept to a narrow legalistic meaning, according to which a corporation is the separate legal entity created by incorporation under the corporate law of some jurisdiction. Such a definition reinforces the

idea that corporations are essentially legal phenomena, whereas firms are purely economic phenomena. This mindset explains why many economists have rejected legal concepts of the firm (Masten 1988; Hodgson 2002) and some lawyers have gone as far as suggesting that corporations are not firms (Robé 2022) – contrary to the widespread understanding among social scientists and others that business corporations are incorporated firms (Deakin et al 2021). A broader concept of the corporation, that can help us maintain the discussion at more general level, is needed.

A firm can take multiple legal forms. Formally, it can be a sole proprietorship, a partnership, a limited liability company, a corporation, a cooperative, and more. With the exception of the sole proprietorship, all these legal forms, despite their differences, are common property regimes or common property institutions, in both the legal sense that they are governance devices enabling people to hold property or interests in common, and the Ostromian sense that participants can be thought of as proprietors possessing access, withdrawal, management, and exclusion rights, but not the right to sell these rights to third parties (Schlager & Ostrom 1992; Ostrom 2000; Hess & Ostrom 2003; Cole & Ostrom 2012). What matters more for us here is that all legal forms transform the firm into a corporate actor thanks to a special kind of shared institutional resource.

3.1 The firm's corporate mask

All the legal forms the firm can take endow it with a legally recognized capacity to produce goods and services for sale (Deakin et al 2017),[5] which is to say, to engage in the economic life of society by acting as a firm. This capacity is, to some degree (depending on the legal

[5] While statutory procedures such as registration or incorporation establish the firm's separate capacity, the separate capacity of unincorporated firms can be established, for some purposes at least, by courts or tax authorities. The legal recognition of capacity is one of the constitutive powers of law.

form and the jurisdiction), separate from that of all the human beings involved. It essentially enables the firm to appear and function as a unit in the legal sphere. The legal recognition of the firm itself means that it acquires its own legal identity, that it is constituted, at least for some purposes, as a singular party in internal and external legal relations, and that the rights and duties arising in these relations are imputed to it, not to any of its members (Gindis 2016).

This is how resource owners are able to contract with the firm, rather than with each other, and why internal employment or external commercial contracts are typically made with firms, not their shareholders, managers, or employees. Organizational law – comprising the bodies of law governing the standard legal forms used by a wide range of business and nonbusiness organizations – supports this transaction cost-reducing institutional structure (Hansmann & Kraakman 2000; Hansmann et al 2006). Because the legal recognition of the firm itself implies, to some degree (depending on the legal form and the jurisdiction), that the firm's business assets are distinct from the personal assets of its founders or managers, this setup protects the firm's contractual and financial commitments from changes in its membership (Spulber 2009), which helps ensure the continuity of its activities through time.

The legal recognition of the firm itself constitutes it as a corporate actor, not on the narrow definition of the corporation derived from corporate law but rather in the broader sense that philosophers such as Christian List and Philip Pettit (2011) or sociologists such as James Coleman (1990) use this term. Firms, even unincorporated ones, are corporate actors – they have unified or corporate capacity. And this is socially recognized. Official and social recognition of institutional facts go hand in hand (Searle 2005). Both facets come together in our idea of the *corporate mask*. The corporate mask is represented in identifying artifacts such as registration documents, contracts, bank accounts, annual reports, websites, logos, and

so on, which project an outward appearance of unity.[6] But the mask itself is intangible. Economically speaking, it is a shared institutional resource.

Institutional assets have often been defined as either a category of a firm's capabilities that enable it to deal with and take advantage of a given institutional environment (Jansson 2007) or the beneficial features of the environment itself (Teece et al 1997). They have also been conceptualized as the set of institutions governing value-generating processes both inside the firm and between the firm and its external stakeholders (Dunning & Lundan 2008). Our view relates to all three definitions: *institutional resources* are interpersonal coordinating devices that are anchored in a given socioeconomic environment within which they serve as vectors for collective action and social sensemaking. Institutional resources combine features of infrastructural and intellectual resources because they provide scaffolding and meaning.

The scaffolding element comes into focus when we think of the benefits to entrepreneurs, firms, and other actors of having legal infrastructure they can simply plug into (Hadfield 2017). Good legal infrastructure implies clear statutes and rights, trustworthy property and business registries, impartial and experienced courts, reliable and easily accessible legal advice, and so on. These features influence, among other things, entrepreneurial plans, and international investment flows. If we think of law as a sort of public capital (Buchanan 1975), a kind of capital good (Pejovich 1981), or a social technology (Nelson 2005), it is easy to view legal infrastructures as a factor of production. Legal infrastructure can be consumed non-rivalrously, as Brett Frischmann (2012) argues, and its demand is driven by downstream activities requiring it as an input for the production of a wide range of private, public, or club goods and services.

[6] Work on the constitutive power of document acts – an extension of the ontology of speech acts – is relevant here (Ferraris 2012; Smith 2014).

These considerations shine a useful light on the functions and specificities of the corporate mask. Because it is a necessary input into many different intrafirm processes simultaneously, just like more mundane infrastructural service resources, the firm's legal infrastructure is centralized or pooled.[7] Having a single point of reference for contracts, rights, duties, assets, and liabilities underpins the organizational capabilities of the firm and unlocks a source of economies of scale and scope, largely simplifying the design and collective pursuit of multiple production lines or businesses. The centralized contractual structure of the firm is not just about economizing on transaction costs. However, contrary to, say, pooled intrafirm legal or procurement services, legal infrastructures in general – and the corporate mask in particular – are not congestible, even when demand is high. Nor can either be depleted.

The functions and specificities of the corporate mask are further revealed when its social dimensions are considered. Implicitly or explicitly, the idea of the firm as an identifiable and singular whole, and its outward appearance of unity, serve as a socially shared cognitive or epistemic focal point. In line with Ludwig Lachmann's understanding of institutions as instruments of interpretation (Dekker & Kuchař 2019), people refer to the corporate mask to interpret signals about and give meaning to the firm's activities, be they emitted by the firm, third parties in the market, or the broader environment. It is with an image of an identifiable and singular whole in mind that insiders and outsiders impute objectives and actions to the firm, evaluating the outcomes according to socially prevalent criteria. This is how firms acquire reputations and why these reputations attach to the firm itself, independently of the reputation any of its members or representatives may have.[8]

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[7] This is arguably true, albeit in more subtle ways, even in the case of corporate groups and multinationals.

[8] Shared beliefs about firms can foster or hamper trust in them. This affects the transaction costs of dealing with them and, indirectly, the boundaries of firms. Parallel observations can be made about the extent of markets (Dekker & Kuchař 2022).

In sum, the firm's legally recognized capacity to engage in the economic life of society, which is essential for its centralized contractual structure, is a corporate capacity. It establishes the firm as a corporate actor, with a legally and socially recognizable identity. The firm's corporate mask is represented in artifact but is really a special kind of shared institutional resource that combines the features of infrastructural resources (because it can be seen as a pooled input in many intrafirm production processes) and intellectual resources (because it underpins and feeds into shared beliefs about the firm's activities). We now need to look more closely at how this critical institutional resource is produced.

3.2 How the corporate mask is produced

The Ostromian perspective integrates the interplay between the legal and the social, between formal legal rules and informal social norms (Ostrom 2005), and provides a rich array of tools for the development of institutional analysis (Poteete et al 2010) we can draw on. Particularly relevant for our purposes, not least because of its relevance across a wide range of social settings, is the distinction the Institutional Analysis and Development (IAD) framework makes between three nested governance levels: the operational level of daily interactions and practical decisions; the policy (or collective choice) level, where strategic orientations are formulated and rules affecting the operational level are made; and the constitutional level, where the meta-rules of the game, including who can make policy decisions and how they must be made, are established (Cole 2017).

We can think of the corporate mask as a constitutional-level coordination device that is shared by firm participants in various positions at the policy and operational levels. A range of position, boundary, and choice rules – determined by the firm's legal form and general provisions of employment law, commercial law, and so on, and supplemented by context-specific by-laws, organizational routines, business customs, and other working rules

(or rules-in-use) – stipulate who can use the mask to bind the firm, in which action situations the mask can be thus used, and who is bound as a result. For example, when a manager makes the strategic decision of changing the location of a factory, if certain procedures (pertaining to health and safety regulations, union consultation, and so on) were followed, the decision binds the firm and all its employees, but not its suppliers and creditors.

That said, the decision may lead some employees to quit and some suppliers to exit.[9] Severing such (internal or external) contractual relationships amounts to shrinking the pool of those formally connected to the firm's corporate mask. For members of this pool, the corporate mask is a non-subtractable and non-congestible club good. A closer examination reveals that there may be a sense in which the corporate mask is also an *anti-rival good*, which is to say that it exhibits increasing returns to shared use. The idea was coined in the context of open-source software (Weber 2004) to denote a platform that is not just shareable, or non-rival, but is hyper-shareable, or anti-rival (Olleros 2008). The anti-rival nature of the good is closely connected with the concept of positive network externalities. Fertile ideas and some other kinds of intellectual resources fit the bill. Their representation in artifacts does not.

To make sense of this idea, consider some examples, starting with the traffic light. The physical object itself is rival, whereas usage of a traffic light is non-rival. By contrast, the symbolic meaning of the three-color code – the very thing that makes a traffic light, a traffic light – is strongly anti-rival, at both local and global scale (Olleros 2018). Something similar is going on in the scientific domain, where the hard copy of a journal article is rival, usage of the journal article is non-rival, but the argument or the claim are potentially anti-rival. It seems that the same can be said of the business domain. A firm's company identification number is rival, the registration procedure employed in non-rival, but the shared institutional

[9] This exit option means is vital for liberal commons (Dagan & Heller 2001).

resource of the corporate mask – the very thing that makes a firm, a firm – has anti-rival properties.

This could be taken to mean that the more participants band together behind the mask, whether at the founding moment or later on, the greater the magnitude of the collective action the corporate mask enables: the more, for example, the firm is able to make the most of economies of scale and scope. It could also be taken to mean that the more external parties, such as creditors, suppliers, and customers, deal with the firm, the greater its economic value, as measured, for instance, in throughput, turnover, assets, client lists, goodwill, and so on. Overall, the greater the number and value of internal and external contracts attached to the corporate mask, the greater the valuation of the firm. After all, the corporate mask is an institutional resource governing value-generating processes both inside the firm and between the firm and external parties.

It is perhaps with a view to exploiting its anti-rival properties that there is a widespread move in developing countries to make the corporate mask legitimate and readily available for business and non-business purposes. Advanced economies have also in recent years pushed to make the corporate mask more widely accessible by introducing a range of new simplified legal forms. That an entrepreneur's ability to set up a firm depends on availability and quality of the requisite legal infrastructure highlights the fact that firms depend on shared resources they do not possess. Even when their legal recognition is simple and effective, firms cannot operate without what Masahiko Aoki (2010) describes as extended cognitive resources, that they both draw on and create together with other social entities.

Given the importance of legal or shared infrastructural foundations of the corporate mask, we should not think of it as purely a creature of contract. And given its social or shared intellectual foundations, we would be wrong to think of it as a creature of the state. As

Ostrom (2010) observed, we need to stop thinking about private and public, or market and state, as mutually exclusive and exhaustive categories. The corporate mask is neither private nor public. It is essentially hybrid, to borrow Katharina Pistor's (2013) expression, and is *polycentrically co-produced*, in the sense associated with Ostrom and her colleagues (Parks et al 1981; Alford 2014). It relies on the constitutive powers of the legal system and is enacted, performed, and instantiated by insiders in specific positions and external parties doing business with the firm. The actions of certain insiders, which can be seen as kinds of specific investments, are imputed to the corporate entity by virtue of constitutive rules, which are typically a mix of formal and working rules.

Hence when someone signs an employment contract with the firm, two things happen. First, the employee legally commits to transferring the fruits of their labor to the firm. But secondly, the employee recognizes that the fruits of their labor is being transferred to a corporate agent. The signatories of the employment contract (the employee and the firm's manager or human resource officer) thus contribute to the production of the corporate mask. Something similar takes place when a supplier contractually agrees on the delivery of certain goods or services with a representative of the firm. On the one hand, by virtue of the agreement, the goods and services will normally be produced and delivered. Simultaneously, on the other hand, the supplier and the firm contribute to the production of the corporate mask, which takes place jointly with the production and delivery of the goods or services. Delivery can be thought of as reproducing the corporate mask.

The corporate mask, in conclusion, is a constitutional-level coordination device that is shared by firm participants in various positions at the policy and operational levels, but also external parties with whom the firm contracts. The sharing of the corporate mask is essential its production and reproduction. There is a sense in which the corporate mask is produced jointly with the regular operations of the firm. There is also a sense in which the corporate

mask is an anti-rival good with increasing value in shared use. Finally, there is good reason to believe that the corporate mask is neither public nor private but instead is polycentrically co-produced by the (public) legal system and the (private) actions of the participants. We now briefly explore the implications for corporate governance.

4. POLYCENTRIC CORPORATE GOVERNANCE

We have conceptualized firms as systems of physical, infrastructural, intellectual, and human resources, each of which raises different kinds of governance problems, and have suggested that a special kind of shared institutional resource – the corporate mask – is key for the operation of all kinds of firms. The corporate mask is a legal point of reference for contracts, rights and duties, and assets and liabilities, as well as an epistemic focal point to which the firm's organizational capabilities, reputation, and other shared social beliefs about the firm attach. That this resource is produced jointly along with the firm's outputs, that it is co-produced by the legal system and the actions of the firm's participants, and that a range of external parties is also involved, raises a series of difficult questions pertaining to the boundaries of the firm and corporate governance

It is increasingly recognized that firms do not own all the resources on which they depend (Rajan & Zingales 2000; Aoki 2010; Mayer 2020). But despite some promising recent attempts (Klein et al 2019; Aligica et al 2019; Gatignon & Capron 2020; Bridoux & Stoelhorst 2022), the question of how the Ostromian concept of polycentric governance can be usefully applied to the firm and its operations remains to be worked out. Thinking of firms as regulated by multiple layers of formal laws and social norms should in principle help us visualize firms as polycentric systems of governance nested in higher-order polycentric systems of governance, but what this means for the ongoing corporate governance or corporate social responsibility debates is not yet clear. In line with the idea that Ostromian

institutionalism can be seen as resting on the three pillars of value heterogeneity, co-production, and polycentricity (Aligica & Tarko 2013), we provide some tentative thoughts here.

4.1 Governing value heterogeneity

If we are right that the corporate mask has anti-rival properties, then the more the corporate mask is used, the greater the *institutional space* occupied by the firm. We can think of the increasing institutional space occupied by the firm in Ostromian terms as the constitution of a growing number and variety of networks of adjacent or nested action situations (McGinnis 2011) connected to and by the firm's corporate mask. This implies that key resources and decision-making powers are dispersed, as opposed to concentrated in one place ("the center" or "the top"). Given that a range of internal and external parties are involved, and that the relationships between these parties is simultaneously cooperative and competitive, it furthermore implies that multiple evaluative criteria and conflictual demands are continually brought into play. How these are reconciled is the central corporate governance problem.

Stakeholder groups (and individuals within each group) contributing to the joint surplus are semi-autonomous decision-makers who compete and cooperate within the singular or unified structure of the firm. Each participant in the corporate enterprise has its own valuation of the resources it brings to the table, its own conception of what the corporate purpose ought to be and what a just distribution of the surplus might look like. The presence of heterogeneous criteria for what counts as the appropriate purpose of the firm or the just distribution of the surplus implies that disagreements are inevitable, and that governance is achieved less through calculative mechanisms than through normative integration (Birkinshaw & Morrison 1995). Governance is not merely about reconciling conflicts of interests – it is, to paraphrase David Stark (2009), about organizing dissonance. The plurality

of organizing principles must itself be ordered, which is to say that a hierarchy of values must somehow emerge.[10]

The problem is compounded by the fact that potentially conflictual demands also emanate from the firm's broader societal or regulatory environment. The evaluative criteria formulated at other partially overlapping levels of governance must also be taken into account. Corporate governance, in other words, is a polycentric phenomenon (Thiel & Moser 2019). While only large firms operate in a polycentric transnational regulatory space (Backer 2016, 2021), that space affects the formulation of corporate governance principles, which in turn provide a set of overarching norms that smaller firms operating at local or national levels internalize or contest (Serafeim 2018). The legitimacy of such norms can be, and often are, contested.

Each firm, each sectoral or state regulator, and each non-state international norm-setter (including most notably accounting and reporting standards setters) plays a role in constructing their own legitimacy claims, which it manages by attempting to conform, most often selectively, or manipulate the legitimacy claims coming from their environments (Black 2008). Firms, in other words, negotiate the conditions of their operations by conforming, selectively conforming, or manipulating the institutional resources that sustain their existence. We can think of this as an organizational response to the complexity of the rule systems and accountability claims that confront firms. This kind of ecological governance has important implications for the corporate governance and corporate social responsibility debates.

An important premise of these debates is that the firm's boundaries can be determined, which is to say that there is a way to distinguish the parties that are inside the

[10] The governance order that emerges can be likened to what Williamson (1990) called a "nexus of treaties."

firm from those outside of it. While boundaries are contested and sometimes difficult to determine, their existence is assumed by those at the policy level in charge of making decisions about the distribution of the joint surplus value base their reasoning. Since decisions on who is in and who is out condition decisions on who gets what (Klein et al 2019), some sort of stakeholder analysis tool is needed. Alternative versions of such tools can be imagined (Mitchell et al. 1997; Aligica et al 2019). Whatever the model employed in practice, more theoretical and empirical work is needed to understand the behavioral microfoundations involved (Bridoux & Stoelhorst 2013, 2016).

…

4.2 Preventing the deterioration and depletion of the firm's resources

While the corporate mask is not congestible and cannot be depleted, it can be misused when captured or controlled by one interest (shareholders, for example) to the exclusion of the others involved, or when one level of governance (transnational level, for example) dictates how lower levels must operate. This may lead to the deterioration or depletion of the firm's other shared resources.

…

5. CONCLUSION

Simon Deakin has proposed to think of a corporation as a commons in order to reconsider the idea of shareholder primacy and focus on the role of other stakeholders in corporate governance. While we agree with Deakin that thinking of corporations as of commons is indeed useful, we suggest further conceptual elaboration is needed to make the contention

workable. In this paper we have provided what we see as necessary first steps toward such a conceptual elaboration.

In particular, we have suggested that while business firms typically make use of different kinds of heterogenous resources, there is one key resource – the corporate mask – which business firms use to structure, organize, and accumulate their physical, infrastructural, intellectual, and human resources in ways that would otherwise not be possible. As a shared institutional resource, which combines the features of infrastructural and intellectual resources (as we have defined them here), the corporate mask is produced, reproduced, and transformed by the actions and interactions of internal participants and external stakeholders that come in contact with the business firm. It is produced jointly with the regular operations of the firm. Overall, it is neither public nor private but instead is polycentrically co-produced by the (public) legal system and the (private) actions of the participants.

Because all the parties involved contribute to the production of the corporate mask, they acquire property-like-claims to the joint surplus value. Some of these claims have a legal nature and enable the stakeholders to directly take part in the corporate governance of the business firm. Other claims are not legal in nature. This, however, does not mean they can easily be dismissed. Corporate governance is about the reconciliation of a range of different kinds of claims. Broadening the understanding of the scope of claims different constituencies have on the operation and structuring of the business firm requires that we pay attention to the polycentric nature of corporate governance. Much work remains to the accomplished in this respect. As a matter of priority, we need to develop an understanding of how enduring value dissonance can lead to misuses of the corporate mask, which in turn can lead to the deterioriation or depletion of the firm's other resources.

While it reinforces the critique of shareholder primacy, the lens of polycentricity underscores the fact that we live in a world of possibility rather than of necessity, as Ostrom (1998b) put

it. The obvious implication that there is no best way to govern firms. Ostrom's work was never meant to provide normative guidance, in the sense that particular governance regimes are to be prescribed in given circumstances (Cole 2014). On the contrary, her approach was always diagnostic and always about going beyond panaceas (Ostrom, 2007). The Ostromian perspective embraces institutional experimentation and institutional diversity (Aligica 2014), and so should we.

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