



Authority inside the firm: multiple mechanisms of coordination

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Abstract

In the last twenty years, through a growing awareness of contractual incompleteness, the concept of authority has regained primacy in the analysis of the employment relationship. This article pursues two goals. First, we assess the famous controversy between Coase and Alchian and Demsetz via an analysis of the foundations of intra-firm authority. Second, we argue that intra-firm authority cannot hinge on a single variable and, to the contrary, rests on multiple mechanisms. The employer's authority over the employee is therefore not binary – infinite or null – and should be understood in terms of degree.

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In *The Limits of Organization*, Kenneth Arrow devotes an entire chapter to the role of authority in organizations. He thus writes that “among the most widespread characteristics of organizations is the prevalence of authoritative allocation. Virtually universally, in organizations of any size, decisions are made by some and carried out by others” (Arrow, 1974, p.63). Arrow underlines the value of authority as a coordination device in organizations whenever incentives and/or information diverge between organization members. This analysis of authority, while crucially considering authority as a coordination device, is not in any way innovative. Indeed, important work on intra-organizational and thus intra-firm authority has preceded this analysis both in organization theory and in economics.¹

In economics, the two most cited works are Ronald Coase's (1937) path-breaking article and Armen Alchian and Harold Demsetz's (1972) article, the latter being in a sense a response to the former. While Coase considers that authority is the distinguishing mark of the firm relatively to the market, Alchian and Demsetz believe that authority cannot be the basis of such a comparison since the employer has no more authority over his employee than a consumer over his grocer. Stemming from this argument, in an important set of papers, economists interested in intra-firm coordination mechanisms have analyzed the nature of the firm and of intra-firm authority.

During the 1970's, the general recognition of contractual incompleteness has led to a new surge in the debate about the concept of authority. Oliver Williamson's (1975) work in particular paved the way to the analysis of devices capable of filling in the blanks contained in the ex ante contract during its ex post execution, especially in the presence of conflicts of interest. Here, the function of authority, in relation to other incentive mechanisms, is clearly the filling in of these contractual blanks. In relation to this argument, Claude Ménard's (1994) contribution must be noted as an effort to establish a clear-cut line between the concepts of authority and hierarchy, both considered as different forms of a larger concept of

¹ At least two authors are worth mentioning here: Max Weber and Chester Barnard. However, while Barnard develops a consensual and quasi-horizontal conception of authority, Weber insists on the vertical character of authority in his model of bureaucracy with authority hinging on competence as well as on legal rules.

commandment. However, in the present article, we do not pursue this distinction and concentrate solely on the concept of authority as defined by Herbert Simon (1951).²

In this paper, we are specifically focusing on a question raised by Oliver Hart (1995): why does an individual inside the firm, i.e., an employee, obey the person in whom authority is vested, i.e., the employer? (p.57) Mentioning Alchian and Demsetz's argument, Hart correctly notes that an independent firm can also give orders to another firm (*ibid.*). The issue, central to the debate between Coase and Alchian and Demsetz, is why does an employee obey while an independent firm does not necessarily do so?

Related to this question, our objective is twofold. First, we analyze the foundations of intra-firm authority using what we consider the major achievements in this area in order to shed new light on the aforementioned debate. Can these foundations account for the difference between the employment relation and the sales contract? Second, we show that the intra-firm authority relation, complex as it is, cannot be resumed by a unique variable and on the contrary rests on plural mechanisms. Thus, taking into account this plurality, we show that that *in fine* the authority relation between the employer and the employee should be apprehended in terms of degree and not as a binary variable – infinite or null.

Our problem thus stated, the rest of the paper is organized as follows. In the first part, we analyze what we regard as the foundations of the authority relation. These are based on the specificity of the employment relation in terms both of power and the particular legal contractual link between the employer and the employee. Power is crucial because the employment relation, contrary to the ordinary sales contract between two independent agents, is the confrontation of two owners of different but complementary specific assets, namely non-human assets and human assets. But the employment relation is also a contractual relation structured by particularly clear-cut legal rules since the labor contract implies the legal subordination of the employee as shown by Scott Masten (1988). Case law repeatedly reveals the substantial differences between the labor contract and the sales contract. Having thus analyzed the foundations of intra-firm authority, we revisit the debate between Coase and Alchian and Demsetz.

However, as we discuss in the second part, these foundations are only part of the story. The analysis of the functioning of the authority relation reveals two other mechanisms that are manifest at different points of the employment relation. As shown by Raghuram Rajan and Luigi Zingales and by Philippe Aghion and Jean Tirole, the employee can create and use specific resources created by her specific human assets. Such resources reshape the power relation between the employer and the employee and thus change the degree of authority. Furthermore, Simon, Williamson, as well as David Kreps, show that the employer-employee relation, at least at the time of conclusion of the contract, implies the employee's implicit commitment of voluntary acceptance of the employer's authority. Again, the level of engagement influences the degree of authority between the two parties.

We conclude with a global explanation of intra-firm authority relations based on the plurality of mechanisms that regulate them. It is this pluralism that determines the degree of authority of an employer and an employee.

² According to Simon, if x is an element of all the employee's possible behavior patterns in the context of his job, "we will say that B [boss] exercises *authority* over W [worker] if W permits B to select x . That is, W accepts authority when his behavior is determined by B 's decision" (Simon, 1951, p.294, emphasis in original).

Foundations of the authority relation: ownership of non-human assets and legal rules

We believe that the foundations of the intra-firm authority relation lie at two different but complementary levels. These foundations are to be found in the combined effect of the ownership of non-human assets, which leads to the employer's power over an employee, and the legal rules of employment, which are the basis of the employee's subordination vis-à-vis the employer.

Ownership of non-human assets, power and authority relations

Asset ownership is the center-piece of the incomplete contracting approach, also known as the property rights theory, developed by Grossman and Hart (1986), Hart and Moore (1990) and Hart (1995).³ Beyond its particular formalization, the approach develops an original perspective of the economic meaning of contractual incompleteness. Without denying the importance of transaction costs, GHM look at incompleteness in relation to asset ownership and more specifically to the incentive effects of property rights. Since incomplete contracts cannot, by definition, specify all possible uses of an asset in all possible states of nature, decision rights in circumstances not provided for by contract become important. In the property rights framework, such *residual control rights* are synonymous with ownership, with residual rights of control defined as the right to choose those missing aspects of usage in any way not inconsistent with prior contract, custom or law.

This being said, GHM go on to argue that agents are more inclined to develop specific relational investments when they own the assets that make their productive effort more valuable. With ownership of an asset providing the right to decide on its usage, this implies that the owner can exclude any other agent from using or working with the asset at her discretion. This discretionary possibility of exclusion that goes with ownership is assimilated, in GHM's theory, to *power*.⁴ Given this identity, power is necessarily indirect: all power stems from and passes through asset ownership.⁵

What are the implications for the analysis of the employment relationship? Hart (1995) mentions Alchian and Demsetz's (1972) discussion of the uncertain sources of intra-firm authority but states that the correct question is: why is an employee more responsive to what the employer wants than is an independent contractor? "In the former case, if the relationship breaks down, the employer walks away with all the nonhuman assets, whereas in the latter

³ Henceforth, we refer to these authors as GHM. The incomplete contracting approach rigorously generalizes the pre-existing hold-up framework developed by Williamson (1975), Goldberg (1976) and Klein, Crawford and Alchian (1978) around the idea of appropriable quasi-rents. For a recent literature review, see Malcomson (1997) who curiously does not mention Goldberg and Klein *et al.* For a synthesis of recent developments of the incomplete contracting literature, see the January 1999 special issue of the *Review of Economic Studies*. For a methodological evaluation of the incomplete contracting literature, from the point of view of the complete contract framework, see Tirole (1999). Finally, for a critique of the main results of GHM-type models, see Holmström and Roberts (1998) and Holmström (1999).

⁴ In his introduction to his book, Hart (1995) uses *control* and *power* interchangeably. *Power*, a term that appears around twenty times between page 3 and page 6, thus means residual rights of control.

⁵ Ownership cannot be the source of power if contracts are complete. In a world in which it is possible to write such contracts, all possibilities would be provided for in advance and no agent would benefit from residual control rights, i.e., from power. In such a case, ownership would not be the source of power and would only provide a specific income.

case each independent contractor walks away with some nonhuman assets. This difference gives the employer leverage. Individual *i* is more likely to do what individual *j* wants, if *j* can exclude *i* from assets the *i* needs to be productive than if *i* can take these assets with her. (...) *In other words, control over nonhuman assets leads to control over human assets*" (Hart, 1995, p.58, emphasis in original).

Why does an employee obey the employer? Because the employer can deprive the employee of the assets he works with. The employer's authority is thus indirect, stemming from the ownership of the non-human assets. In other words, the employer does not exert any direct power over the employee. The employer's *power* of decision – who works with which asset – thus also confers *authority* in Simon's sense over the employee. Intra-firm authority is therefore based on the property of the means of production.⁶

This notion according to which the authority relation rests on the ownership of non-human assets pre-supposes several hypotheses that need to be discussed. Indeed, to assume that the employer's authority stems from a credible threat, i.e., the employee will be deprived of the assets he works with if he does not obey, implies that (1) the non-human assets in question are *indispensable* for the employee in order to be productive and thus to receive income and that (2) the human assets of the employee are *not indispensable* for the employer.⁷

Thus, from the start, there is no symmetry between the employer and the employee since the latter is economically dependent on the former. The employee has few if any alternatives to valorize his productive effort outside the specific relationship with the employer (the owner of the means of production in person or a representative). Therefore, the employee's labor force is not redeployable without considerable cost. On the other hand, the employer does not depend on the employee. To be sure, if the relationship were to end, the employer would not lose his total income. And in any case, the employer will seek to organize production in such a manner as to make the employee replaceable at a low cost (cf. infra).

In sum, residual control rights are a manifestation of power over objects – a power that leads to authority over men. The employee obeys the employer, or in a sense anticipates the employer's desires and acts accordingly, because (1) the employee possesses his human assets only and (2) needs the non-human assets owned by the employer in order to obtain an income. The employee is thus economically dependent on the employer. The employer's authority stems from the credible threat of termination that this dependence creates. However, this approach overestimates the employer's power and thus remains incomplete. The actual functioning of authority is not explained since the resources at the employee's disposal, limiting the employer's power, are ignored. The cooperative aspect of the employment relation is also overlooked. Finally, the institutional environment in which the authority relation is embedded is also passed over. We next turn to this last point.

⁶ However, the incomplete contracting approach does not give any indications as to how the authority relation might actually work. Hart and Moore (1990, p.1153) simply state that in their model, "an employer never has to tell an employee what to do: the employee simply figures it out himself and acts accordingly."

⁷ In Marxian terms, the worker sells his labor force for a wage. Curiously, Hart considers that the question of the allocation of power in contractual relations is not all that different from the Marxian framework: "Given its concern with power, the approach proposed in this book has something in common with Marxian theories of the capitalist-worker relationship, in particular, with the idea that an employer has power over a worker because the employer owns the physical capital the worker uses (and therefore can appropriate the worker's surplus). (...) The connection between the two approaches has not so far been developed in the literature, however" (Hart, 1995, p.5, fn.5).

The institutional foundations of the authority relation: legal subordination

As we have seen, ownership of non-human assets can be the source of the employer's power of direction over employees, a power that leads to authority. However, ownership is not the only source of this authority. Indeed, the law, via a certain number of rules, institutes the subordination of the employee and thus the employer's authority by imposing constraints and obligations on the employee.

In this context, Scott Masten's (1988) paper dedicated to the nature of the firm is exemplary. Masten identifies the aspects that differentiate the firm from the market by going through the provisions of employment law compared to commercial contract law as well as through case law. Noting the peculiar eviction of the actual institutional environment from the economic theories of the firm, Masten adopts a rather atypical position among economists. In discussing Michael Jensen and William Meckling's (1976) "nexus of contracts" approach in which it makes little sense to distinguish those elements that are "inside" the firm from those "outside", Masten indicates the contradiction in their view of the importance of the legal system: "This view of the firm points up the important role which the legal system and the law play in social organizations, especially, the organization of economic activity" (Jensen and Meckling, 1976, p.311). Indeed, Masten continues, along the very path that Jensen and Meckling avoid, "does the law (...) treat commercial and employment transactions equivalently?" (Masten, 1988, p.185). His answer to this question goes through two phases.⁸ We briefly summarize the proposed approach and its main results before proposing a critical review.

First of all, Masten seeks to ascertain whether any rights or authority (rights, authority or responsibility *in original*) are vested in the employer in any way different from those available in commercial transactions, i.e., between independent firms. The compelling conclusion is that the law does not treat equivalently commercial transactions and the employment relation: "the investigation reveals that the law does in fact recognize substantial differences in obligations, sanctions and procedures governing the two types of exchange" (*ibid.*, p.196). An individual entering an employment relation "accepts an implied duty to "yield obedience to all reasonable rules, orders and instructions of the employer"" (*ibid.*, p.185). This is all the more apparent from the criteria used by courts to establish the nature of a particular transaction. In the employment relation, authority and control are used not only with regard to the outcome but also with regard to the manner in which the work is performed. This is not the case of the commercial transaction in which control can only apply to the outcome.⁹ Masten can therefore conclude that "the traditional emphasis in economics on the authority of management to direct the efforts of employees is at least nominally supported by the law governing employment transactions" (*ibid.*, p.186).

In the second essential phase, Masten looks for the existence of specific mechanisms allowing the effective enforcement of authority inside the firm, i.e., the means at the employer's disposal ensuring that orders are carried out. If the employer's authority rests solely on the threat of dismissal then the "authority of management is no different from that of an

⁸ In his study, Masten analyzes not only authority but also other legally related issues. In particular, among other properties of the employment contract relative to the commercial contract, the former's flexibility and capacity of reducing asymmetric information between the employer and the employee. We focus here only on the first issue of authority.

⁹ This is also the definition of the employment relation that can be found in Coase (1937).

independent transactor engaged in ordinary market exchange” (*ibid.*, p.188), the nominal duty of obedience notwithstanding. Indeed, the threat of termination is the only sanction that an independent contractor can impose. Thus, to base intra-firm authority solely on termination is to adhere to Alchian and Demsetz’s position on the absence of a distinguishing mark of the employment relation.

However, an examination of the large bodies of case law governing both the employment relation and the commercial contract reveals that termination is not the only means of sanction at the employer’s disposal. An employee may be held liable for prejudice to his employer’s business were he to fail upholding his duties. This duty of loyalty obligating the employee to act in the employer’s interest is quite different from the matter of loyalty in commercial transactions which is strictly a matter of business judgment.¹⁰ Thus, “the important point is that the law entitles an employer to recover damages from a disloyal or uncooperative subordinate and thereby differentiates the incentives of employees from those of independent contractors in a discrete fashion, altering the payoff to uncooperative employee behavior in a way that arguably supports the authority commonly attributed to employers in the theory of the firm” (*ibid.*, p.189). In contradiction with Alchian and Demsetz, this means that the law’s effect is that the employee, wishing to keep his job, has stronger incentives to comply to the employer’s orders – and thus to accept the employer’s authority – than does an independent transactor vis-à-vis another independent contractor.

In sum, it is possible to synthesize Masten’s analysis in the following manner.

/ First, legal rules institutionalize the economic power of direction of the employer, power stemming from the ownership of non-human assets. The law guarantees the employer’s freedom in the use of the assets (activity creation, organization of production).

/ Second, legal rules provide resources complementary to those created by ownership by establishing the employee’s legal subordination via an employment contract. It is in this sense that, within the limits of the law, the employer can “complete” the employment contract whenever unforeseen contingencies may arrive.

/ Third, from the point of view of the employer, legal rules create the possibility of sanctions other than those stemming simply from the ownership of non-human assets.

Masten’s paper highlights the fundamental richness of pluridisciplinarity and contributes to assessing the importance of the institutional environment in terms of the choice of governance structures – an aspect most economists ignore in analyzing intra-firm authority.

We retain all of Masten’s essential points except an important one related to the distinction between the employment relation and the sales contract. Contrary to Masten, we do not believe that the sanction of termination is the same in both cases since the consequences of termination are quite different. In the case of two independent contractors, each agent keeps her non-human assets and thus the possibility of other business. In the case of the employment relation, however, as is shown by Hart, the employee keeps only her human assets. This is a source of the employer’s power and such power is not available to the independent contractor.¹¹ Thus, to imply that intra-firm authority cannot solely hinge on the threat of dismissal because in the absence of such a threat there would not be any elements specific to the employment relation (as in Alchian and Demsetz) is to deny that the presence of non-human assets is indispensable in the employment relation (see *supra*). The nature of this

¹⁰ The same is true in France.

¹¹ Except in the low probability case in which an independent contractor is 100 % dependent on another contractor. In this case, courts would probably requalify the relation as an employment one.

relation is very different from the relation of a grocer to a customer, or between two independent firms, because no specific asset is attached to the latter relation.

The first part of this paper evaluated the Coase/Alchian-Demsetz controversy on authority. An analysis of the foundations of intra-firm authority clearly reveals the differences between the employment relation and the ordinary sales contract between two independent transactors. These differences explain why an employee obeys whereas an independent contractor does not necessarily do so. On one hand, in the employment relation, the owner of the non-human assets deprives the dismissed employee access to these assets and thus of an income whereas in a commercial transaction, each agent retains his non-human assets.¹² On the other hand, in terms of obligations and sanctions, the legal rules applicable in the employment context are quite different from those applicable in the context of the sales contract. As opposed to the legal equality of the parties to a commercial contract, the employer's authority is established by law.

Functioning of the authority relation: specific human assets and implicit contracts

An analysis of the foundations of intra-firm authority is not sufficient: the analysis of its actual functioning reveals two mechanisms situated at two different moments of the employment relation that influence the degree of authority. In particular, the employee possesses specific resources that counterbalance the employer's power stemming from the ownership of non-human assets. These resources are the employer's own human assets that develop during the course of the employment relation. The second mechanism is related to the cooperative dimension of the employment relation: at the time of conclusion of the contract, the employee freely enters the organization that employs him and thus accepts the employer's authority.

Specific human assets, the employee's power and the authority relation

The preceding discussion of the respective roles of the ownership of the means of production and of the institutional environment in the employment relation leaves the impression that the employee disposes of no resources of his own limiting the employer's authority. Rajan and Zingales (1998) and Aghion and Tirole (1997) have recently shown that this is not the case. Without implying that the employment relation is perfectly balanced – in fact, an imbalance in the employer's favor is here considered efficient – these authors consider that the employer's authority over the employee is limited by the specificity of the employee's human assets as well as by informational asymmetries.

The role of asset specificity

The employee has, in certain cases, an important resource at his disposal in order to limit the employer's authority: his human capital. Human capital can be a source of power only if it

¹² One could object that the independent contractor also loses access to a client but, as we have indicated in the preceding footnote, total dependence of an independent contractor is extremely rare whereas virtually all employees depend on a unique employer for income.

may be sufficiently valorized. Rajan and Zingales develop this idea through the notion of “access”, defined as the “ability to use, or work with, a critical resource. If the critical resource is a machine, access implies the ability to operate the machine; if the resource is an idea, access implies being exposed to the details of the idea; if the resource is a person, access is the ability to work closely with the person. The agent who is given privileged access to the resource gets (...) the opportunity to specialize her human capital to the resource and make herself valuable” (Rajan and Zingales, 1998, p.388).¹³ Access affects the balance of power between the employer and the employee in at least two manners. First, access conditions the specialization potential of the employee and, second, this potential is more or less strong depending on the degree of exclusion that the access involves.

The central idea, absent in GHM’s theory, is that ownership may not provide sufficient incentive for engaging in a specific productive investment. In fact, specialization in certain tasks may destroy the owner’s outside options. In this case, granting the employee access to the non-human assets, instead of assigning simply property rights, may actually improve his productivity since “insecurity [related to the absence of property rights] may *encourage* rather than discourage specific investment by stakeholders” (*ibid.*, p.424, emphasis in original).¹⁴ The idea is straightforward: access to certain critical resources allows the employee to specialize his human capital through a learning procedure. Therefore, access thus fosters the accumulation of specific human assets that may be more or less complementary to the non-human assets owned by the employer. Specialization thus can make the employee more or less indispensable to the owner of the means of production, affecting the balance of power.¹⁵

Power is exercised differently by owners and non-owners. The power of the owner of non-human assets is effective only in the absence of bilateral monopoly, i.e., if several workers compete for the use of the non-human assets in a rat race. However, the non-owner (i.e., employee) draws power only from the relation that binds him to the owner (i.e., employer). Put differently, specialization is a no-return commitment (the agent specializing burns his boats) in that it seals the non-owner’s destiny to that of the non-human asset to which access has been granted without damage to the value of the outside options. This implies that the situation is somewhat closer to a bilateral monopoly than the employer would have liked in order to fully exercise his power. The employee counterbalances the employer’s power without having authority over him in Simon’s sense, i.e., in the sense of being able to give orders to the employer.

Residual rights of control are thus not the only source of power. Access to “critical resources”, be they human or non-human assets, allows employees to develop their human

¹³ Rajan and Zingales do not define precisely the concept of “critical resources” which is crucial to their analysis. While the idea is intuitively appealing, a clarification would allow a better understanding to who in the firm might develop such specific assets in order to gain power.

¹⁴ Rajan and Zingales use the example of an island economy in which a tanner (T) tries to enlist one or several cobblers (C) in an enterprise making leather shoes in order to answer the question of the ownership of the unique sewing machine. Whereas the property rights approach would argue that ownership should be assigned to the cobbler that is to engage in important specific investments, Rajan and Zingales show that with ownership the cobbler in question may actually reduce his specific investment if this reduces his outside options. This result seems close to an argument of Holmström and Milgrom (1991) according to whom asset ownership may be efficient only if the variance of asset returns is low. Indeed, it seems plausible to assume that the variance of asset returns is an increasing function of specialization in Rajan and Zingales’ sense.

¹⁵ This idea can also be found in Williamson for whom employees may choose between specializing to the assets specific to a firm or not. Those choosing the second option have the possibility of working for a larger number of employers (Williamson, 1985, p.259). However, for those that chose the first option, the threat of termination is less credible.

capital and to become indispensable.¹⁶ This is why Rajan and Zingales consider access as a form of power able to limit the employer's authority. However, this limitation can only be effective in a second stage. In the first stage, the power of decision of granting some employees access to these assets lies with the owner (or with his representative). In other words, the employee's limiting power is subordinated to that of the employer. Employees to whom access is not granted are not able to develop their own specific human assets through which future power may be gained. For these agents, the "degree" of authority is quite strong.

Access to critical resources represents an important stake for the protagonists since it contributes to the future distribution of power. The employer's incentive is to limit as much as possible access to the critical resources in order to avoid giving the employees too much power. This leaves him with more power and allows for their easy replacement. The employer has to trade off loss of control and productive efficiency (productivity gains). On the other hand, of course, each employee seeks to gain as much access as possible. How should the employer decide which agent should be granted access to which resource? We consider this issue below.

Rajan and Zingales next discuss the influence of the type of technology involved on the employees' capacity to limit the employer's authority. Specifically, a productive organization based on the additivity of tasks allows (1) employees to have a strong incentive to specialize while (2) limiting their power vis-à-vis the employer. To the contrary, production techniques requiring substitutable or complementary tasks lead to sufficient investment only if accompanied by exclusive access rights.¹⁷ Those granted such exclusive access rights gain power vis-à-vis the owner of the non-human assets. This implies that whenever the firm owners or their representatives fail to organize labor by breaking up tasks in order to render them additive, they face a trade-off. Either the employer grants exclusive access rights to a small number of employees who thus may specialize or no one gets access rights, the outcome being lower output. Wishing to raise the output, the employer does grant access rights to some. But, of course, those who specialize gain hold-up power, since exclusivity creates a local monopoly – the specialized are indispensable. The employer can now himself be excluded from the human assets of the employee. Such a possibility limits the scope of the employer's authority.

In this story, technology is chosen endogenously. On one hand, the technical characteristics of the production process (task additivity, substitutability or complementarity) are chosen by the employer in view of limiting the employees' power. On the other hand, the specialized employee gains power and with it the possibility of modifying the characteristics of the non-human assets. It is this alteration of the assets – which in the GHM models is equivalent to a change in technology – that reduces the value of outside options for the owner. But how does the employee actually affect the non-human assets? In seeking to become indispensable to the owner, the employee attempts to create idiosyncrasies between the assets he has access to and his own human assets.¹⁸

¹⁶ Rajan and Zingales insist on the fact that "the agent who is given privileged access to the resource gets *no new residual rights of control*. All she gets is the opportunity to specialize her human capital to the resource and make herself valuable. When combined with her preexisting residual right to withdraw her human capital, access gives her the ability to create a critical resource that she controls: her specialized human capital. Control over this critical resource is a source of power" (*ibid.*, p.388, emphasis in original)

¹⁷ As an example, consider that this exclusive right may be effective simply by hiring one agent per given task (or given job), with the enforcement of the exclusive right depending on the characteristics of the other tasks.

¹⁸ The account of this process of the employee making himself indispensable by acting directly on asset characteristics is destined to explain the power of managers vis-à-vis the shareholders.

Asymmetric information

At this stage of the analysis, the manner by which the employer's authority is somewhat countered by the employee's power remains unclear. In fact, the situation seems one of pure conflict. Aghion and Tirole's (1997) contribution allows a better understanding of how these powers stabilize via a delegation mechanism. In their model of the allocation of formal and real authority¹⁹ based on informational asymmetries, authority can be delegated from a superior to a subordinate by virtue of the former's asset ownership.²⁰ In discussing Weber's rational and legal authority, Aghion and Tirole note that "officials, employees, and workers attached to the administrative staff of a bureaucracy do not themselves own the nonhuman means of production and administration, yet they may exert substantial control over the bureaucratic machinery" (Aghion and Tirole, 1997, p.2). With formal authority defined as the right to make decisions and real authority as the effective control over decisions, the model illustrates the following decision-making process: the subordinate, i.e., the agent, suggests a potential project to the principal, who may or may not accept it, depending on the costly information gathered about the project.²¹

The benefits of delegating formal authority are of two types: first, delegation increases the agent's incentives to acquire information and, second, delegation ensures his continued participation in the contractual relation. The delegation of authority stimulates the agent's initiative, mainly in the sense of an increased exertion of effort. As a counterpart, the principal's costs of delegation are measured by the loss of real and formal control over the agent's actions. Therefore, delegation of a particular task or set of tasks results from trading off these costs and benefits. Individual rationality constraints are clearly derived from the multi-task model. All else being equal, delegation is a suitable solution for the "decisions (or activities) that are relatively unimportant for the principal; for which the principal can trust the agent; that are important to the agent" (*ibid.*, p.27). Initiative and participation are thus the complementary determinants of the allocation of formal authority. Furthermore, in the absence of delegation, relevant information about the projects is communicated to the principal only in the case of sufficiently congruent objectives. If objectives are too dissonant, communication is efficient only in the case of delegation.

Finally, what are the factors allowing for improvement in the agent's initiative with the principal retaining formal authority? First of all, a firm is always optimally in a situation of overload with this overload situation described as that in which the marginal profit of an extra employee is negative. Overload implies that the firm "credibly commit[s] to rewarding initiative" (*ibid.*, p.20) because it means that subordinates cannot be fully controlled. Second, among other cases, initiative is favored by the existence of multiple principals, by the principal's reputation for intervening only when justified or by urgency of the decision-taking

¹⁹ Formal authority relates to the *right* to carry out a certain task (who is authorized to perform task x) whereas real authority is the effective performance of the task (who actually performs task x).

²⁰ That formal authority is *in fine* derived from asset ownership is reaffirmed forcefully by Baker, Gibbons and Murphy (1999), henceforth BGM, in order to criticize Aghion and Tirole's idea that such authority may be delegated. In BGM's perspective, all intra-firm delegation is necessarily informal. However, this point seems at odds with the fact that in any firm the organization chart is a *formalization* of authority delegation.

²¹ This mode of exercise of authority, that may be qualified as "passive", is in general consonance with Simon's "right to the last word", described in *Administrative Behavior* (Simon, 1997, p.182). However, contrary to Simon, Aghion and Tirole consider the possible divergence between what the principal has to say and the action effectively taken by the subordinate.

(urgency increases the probability of the principal rubber-stamping the decision). Finally, for obvious reasons, monetary incentives may increase the agent's initiative.

This model of authority delegation based on asymmetric information is closely related to Rajan and Zingales' arguments. Indeed, the idea according to which the employee's power stems from her specific human assets encompasses that of asymmetric information. The agent's specific information in Aghion and Tirole's model is akin to the tacit knowledge that the agent acquires while specializing in Rajan and Zingales' model in the sense that it is included in the subordinate's specific human assets. As a consequence, the delegation model of authority captures the organizational mechanism of equilibration, the relative balancing out of the employer's authority as seen through the GHM point of view and the limiting power of employee as argued by Rajan and Zingales. Aghion and Tirole's real authority corresponds to the employee's countering power of Rajan and Zingales. The three models, built in an incomplete contracting setting, are all the more complementary.

The preceding discussion insists on the emergence of an economy of power in organizations. Nevertheless, beyond the conflict dimension of the authority relation, the cooperative dimension must also be stressed.

Cooperation in the employment relation: the acceptance of the authority relation

Two major contributions to the analysis of intra-firm authority develop the idea that there exists an implicit contract between the employer and the employee – Williamson and Kreps. While both authors start from a similar stance, i.e., without special reference to the employer's power stemming from the ownership of the non-human assets, the theoretical framework developed to account for the implicit contract is quite different.

Williamson's point of view: the concept of voluntary subordination

In Williamson's work, reference to the concept of intra-firm authority is recurrent and constitutes a major building block of the approach. Authority, seen as a coordination device, allows the firm to be distinguished from other governance structures, namely the market and various hybrid forms (Williamson, 1991). Authority also plays an essential role in the mitigation of opportunistic behavior, should it arise, as well as in the adaptations of the firm to environmental changes. Williamson, following Coase (1937), places authority at the center of his analysis of the firm and the employment relation: "hierarchy usually implies a superior-subordinate relationship" (Williamson, 1975, p.XV). The dichotomy between the firm and the market being central, the "unified governance structure" is defined as follows: "the transaction is removed from the market and organized within the firm subject to an authority relation (vertical integration)" (Williamson, 1985, p.75-76). But what are the foundations of intra-firm authority in this analysis?

Intra-firm authority is based on several, complementary devices. Williamson's reasoning is in line with Coase (1937), Simon (1951) and Masten (1988) in the sense that the source of authority lies in the legal specificities of the employment contract. Legal rules composing the institutional environment are, in Williamson's terms, the "rules of the game" and as such constitute resources complementary to the private orderings of the "players" (Williamson, 1993, p.113). But, in various works, Williamson also repeatedly stresses that the employee, upon entering the organization, adheres at least partly to that organization's objectives. In

adopting this implicit contract conception of the employment relation and of authority, Williamson (1990) pays homage to Chester Barnard (1938). But the concept is also needed for the rest of the theoretical apparatus.

Indeed, “what is referred to as an ‘employment relation’ is commonly associated with voluntary subordination” (Williamson, 1975, p.XV). The accent put on *voluntary* subordination is fundamental because in Williamson’s view, agents choose between entering a hierarchy and joining some other form of economic organization, such as the peer group. If some choose the first alternative that implies authority, then it follows that they do so voluntarily since this increases their welfare. In other words, contrary to Hart, for whom authority is enforced through the threat of exclusion, in Williamson’s view authority results from the free choice of agents who, in considering it beneficial, knowingly consent to it. This position resembles the classical concept of “organizational equilibrium” developed by Barnard (1938) and further used by Simon (1945) and March and Simon (1958) according to which agents trade-off the potential retribution and their implied contribution.²²

This point is crucial. Incentives and sanctions eliciting employee “obedience”, while not completely absent from the analysis, are secondary in Williamson’s construction, since the employees voluntarily accept orders even though only within an “acceptance zone”. Incentives are thus designed more to maximize cooperation than to obtain strict obedience. The contract between the employee and the employer is implicit: the former obeys the latter as long as it is reasonable to believe that the employer will ensure acceptance by fairly compensating effort and by respecting the agreed upon *ex ante* zone of acceptance. This analysis allows Williamson to next look at cases in which the employer reneges on the implicit contract, e.g., by attempting to grab rents from the employee’s specific human assets.

Williamson thus does not develop a naive, or ideal vision of the employment relation. His conception of authority does not exclude the possibility of conflict between the employer and the employee. Indeed, in Williamson’s view, the employment relation is not symmetrical: “the worker is one of many and the employer can and will realize strategic advantages by making an example of one or a few workers, thereby teaching a lesson to the many” (Williamson, 1985, p.260). It is therefore unfounded to consider that the relation between the employer and the employee is symmetrical since this amounts to ignoring this “fundamental disparity” (*ibid.*).

However, Williamson does not relate authority to power, contrary to Hart, though he clearly takes interest in the possibility of the employer’s abuse of authority, i.e., “predation” (*ibid.*, p.262).²³ Here, several devices act as safeguards against such predation. First, unions act in order to maintain the terms of the implicit contract. Second, the penalty may come from the employees themselves who may choose a minimum level of cooperation instead of maximizing their effort. Finally, the employer’s reputation may suffer in which case the recruitment of new employees may become difficult.

The fact that the employer-employee relation is asymmetrical from the outset is not contradictory with the idea of voluntary subordination. The two aspects are simply highlighted at different moments of the employment relation: *ex ante*, the individual freely adheres to the organization’s objectives, i.e., accepts to obey orders, while *ex post*, this acceptance may be revoked if the employer behaves opportunistically. The consensual aspect

²² Simon (1991) restates his analysis of the employment relation.

²³ This question is not considered by Hart.

of the relation is further stressed when Williamson indicates that employers and employees should cooperate even more fully whenever specific human assets are involved.

Williamson's approach is richer and more complete than the property rights theory. While the latter focuses exclusively on the coercive aspect of the employment contract by putting to the fore the employer's ownership of the non-human assets, Williamson highlights the positive aspect of the employment relation by insisting on the *ex ante* voluntary adherence to the organization's objective. Furthermore, Williamson takes into account the possibility of the employer's opportunism, i.e., that the employer may abuse of the authority that was willingly transferred to him. In Hart's work, in which individuals obey mechanically, this question is eluded. In this sense, as we shall now argue, Kreps' work on reputation may be considered in Williamson's line. Reputation facilitates the *ex ante* adherence to an organization and thus authority when contracts are incomplete.

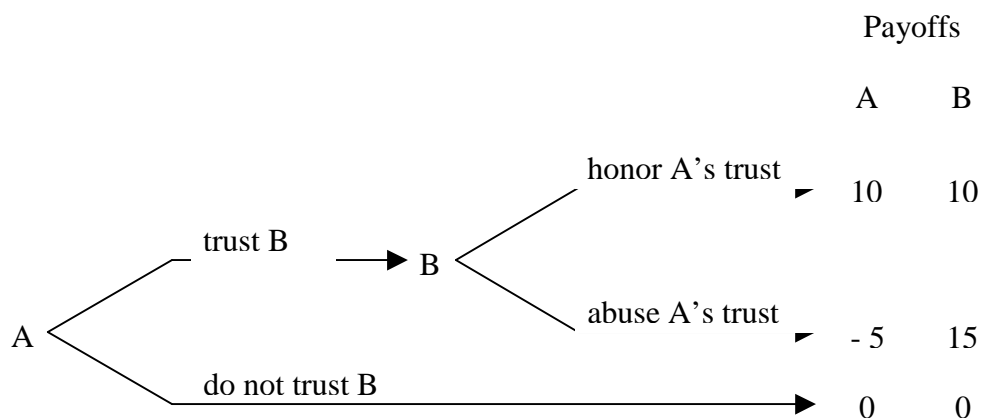
Trust and reputation seen by Kreps

Like Williamson, Kreps considers authority between the employer and an employee as the result of an implicit contract between these two agents and not as the consequence of the employer's ownership of non-human assets. Kreps distinguishes between two types of transaction: "specified" transactions and "hierarchical" transactions (Kreps, 1990, p.99).²⁴ In a specified transaction, as the expression implies, "all terms are spelled out in advance", whereas in a hierarchical transaction, i.e., the transaction related to the implementation of the employment relation, "certain terms are left unspecified" (*ibid.*, p.99). In this case, what is specified is who, in the face of unforeseen contingencies, holds the authority to determine within certain limits the contract's *ex post* execution. In other words, "the hierarchical superior party, either explicitly or implicitly, has the right to direct the inferior party" (*ibid.*, p.113).

This leads Kreps to a meaningful question: "why would anyone ever willingly enter into such a contract in the inferior position?" (*ibid.*, p.113). Put differently, why do employees bestow the *ex post* right of specification of the contract to the employer? Surely the employee accepts authority because of the expectation that the employer will use it fairly. What then is "the source of this faith?" (*ibid.*, p.92) that may be called "trust"? In examining the foundations of this trust, Kreps fully recognizes the possibility that the superior may abuse that trust²⁵ as is manifest from the proposed trust game (figure 1). If the game is played non-cooperatively and only once, A will not trust B.

²⁴ Kreps notes that this dichotomy is related to that of Simon (1951).

²⁵ A problem partly considered by Williamson.

Figure 1. *The trust game*²⁶

Kreps next gives the following example of a hierarchical transaction. An employer B hires a worker A for a certain task that can be difficult or not. If the task is easy, a compensation of \$3 is adequate for the employee whereas if the task is difficult, the required compensation is of \$13. Kreps crucially assumes that the result is observable but not verifiable, i.e., that the contract cannot be enforced. In this case, if the employer and the employee deal only once, the transaction will fail as in the trust game above. The employer will abuse the employee's trust by only paying \$3 even if the task is difficult. Kreps then considers repeated transactions in which future employees refuse to deal with the employer if he is known to abuse employee trust. The employer's reputation, which can be ruined, is thus at the center of the hierarchical transaction and the implicit contract linking the superior and the subordinate. Reputation is therefore the basis of the implicit self-enforcing trust between the employer and the employee.²⁷

Kreps can now provide an answer to his initial question: "Why would anyone ever willingly enter into such a contract in the inferior position? It might be because the worst that could happen is good enough so that the transaction, even on those terms, is worthwhile. But when the superior party has a reputation to protect or enhance, a reputation that turns on how that party exercises authority, then the inferior party need not presume the worst. That party can count on the superior party to live up to an implicit contract in his or her own interests." (*ibid.*, p.113).

However, reputation remains a fragile coordination mechanism, relying on the conjunction of several conditions (Williamson, 1985, p. 395-396, and Baron and Kreps, 1999, p. 557-559). The establishment of a reputation supposes means of information dissemination. Given this cost, the passage to individual transactions between large numbers is not immediate. Often, reputations will be effective only in limited individual networks. Furthermore, for the reputation mechanism to work, the transactors need to be able to verify the ex ante engagements. Thus, it is necessary to be able to determine ex post which of the parties did not cooperate.

²⁶ Cf. Kreps (1990), p.100

²⁷ This line of reasoning allows Kreps to stress that it is rational that authority be vested in the hierarchical superior.

Kreps also considers coordination difficulties and thus the role of authority are the face of unforeseen contingencies. Corporate culture, materialized by rules established through learning, serves as a focal point for organization members in such cases. For agents in the hierarchically inferior position, corporate culture gives a general idea of how the organization will react in these particular circumstances. Corporate culture is thus not only a coordination device but also a means of ensuring the exercise of hierarchical authority. Indeed, the execution and enforcement of these rules by people acting in the name of the firm, i.e., the hierarchical superiors, constitute a control device that mitigates the non-observability of their actions.

This second part of Kreps' reasoning seems less convincing than his demonstration of the mechanisms of reputation as a foundation of authority²⁸ because of the overall generality of the argument and the absence of precision about the learning process and the types of rules that emerge. An additional drawback is the vagueness of the nature of authority that Kreps assumes. In the paper, it is not fully clear whether Kreps refers to formal authority or to real authority. For example, when the employment relation and thus the employment contract are defined, the emphasis is clearly on formal authority and reference is made to Simon (1951). Yet in other sections, when Kreps is interested in the superior-inferior hierarchical relationship, the superior is not necessarily the employer. This relates more to real authority.

This critique notwithstanding, Kreps' treatment of the acceptance of authority – and thus of the possibility of the employer's abuse of authority – is apposite and develops Williamson's view. Both analyses stress how the individual, upon entering an organization, accepts authority knowing that several mechanisms, of which the employer's reputation, guarantee the underlying implicit contract. The contributions of Kreps and Williamson can therefore be considered complementary to those that we developed at the outset. Hart explains how the employer obtains obedience during the execution of the contract via the threat of exclusion from the non-human assets. Williamson and Kreps underline the voluntary *ex ante* acceptance of authority by employees without any use of threats.

Conclusion

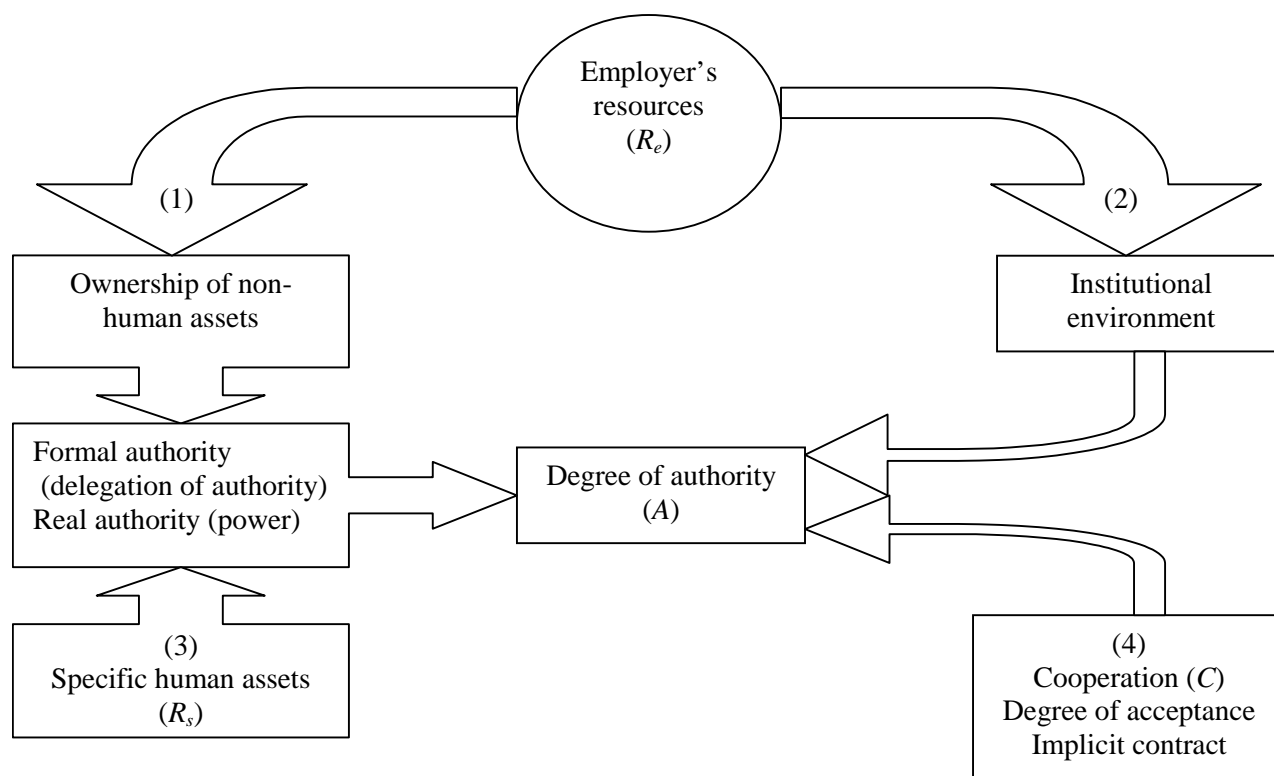
The perspectives presented in this paper stress different aspects of the authority relation. We have argued that these differences do not mean that the approaches compete with each other but rather that they are complementary. The central idea of the paper is that the employer's authority should be apprehended in terms of *degree*. Reality is necessarily somewhere between two poles. On one hand, the degree of authority may be equal to zero. This corresponds to the situation in which the employer has no grasp over the subordinates. On the other hand, the degree of authority may be equal to one. Correspondingly, this is consistent with the situation in which employees have no autonomy whatsoever. Authority in organizations should thus be thought of as a shrewd mix of autonomy and control. How is this mix accomplished? We have shown that it is the result of the combination of three major forces that operate distinctly: the employer's resources, the employee's specific human assets and their cooperation.

Figure 2 indicates that the employer bases his authority on two different types of resources. First, ownership of non-human assets (Hart) gives the employer a real way to exercise

²⁸ Kreps admits that his exposition is exploratory.

authority since it makes the threat of termination credible (1). Second, the institutional environment (Masten) reinforces this authority by establishing the legal subordination of the employee (2). However, the employee does not endure this authority passively and in fact disposes of some resources that limit the effect of the authority. This limiting power (Rajan and Zingales), also called real authority (Aghion and Tirole), is based on the specificity of the employee's human assets (3). This being said, it is crucial to understand that the relation is not one of pure confrontation. Principles of delegation of authority establish a mechanism internal to the employment relation that counterbalances and stabilizes the employer's power over the employee. Finally, authority is not only about imposed constraints. Its voluntary acceptance by an employee entering the organization and the trust that is built through time reveal the importance of cooperation (4).

Figure 2. *Determinants of the degree of employer authority*



The employer's degree of authority, A , is defined as the following function:

$$A = \Phi(R_e, R_s, C) \text{ with } \frac{\partial \Phi}{\partial R_e} > 0, \frac{\partial \Phi}{\partial C} > 0 \text{ and } \frac{\partial \Phi}{\partial R_s} < 0$$

In sum, the degree of authority, A , of an employer over an employee is an increasing function of the employer's resources, R_e , materialized by the more or less pronounced ease of termination. Conversely, the employee's autonomy is an increasing function of the specificity of his human assets, R_s . Accordingly higher levels of employee autonomy decrease the employer's degree of authority. Cooperation, C , acts positively on A : the more the level of C is high, the less the employer's decisions are questioned. We distinguish authority from authoritarianism. All else being equal, less cooperation leads to more constraints and threats from the employer seeking that his orders be carried out. Thus, a high degree of authority is compatible with low authoritarian relations if the level of cooperation is high.

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