

The Economics of Multilevel Governance*

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This paper was presented at the 2006 ISNIE Conference (U. Colorado, Boulder), at the Third French-German talk in Law and Economics (U. of Kassel) and at seminars held at ATOM (U. of Paris I), the University of Bucharest, the Sant'Anna School (Pisa), the University of Luxembourg, INRA-MOISA (Montpellier), CLEI - Università di Torino. We thank the event organizers, participants and discussants for their valuable comments. In particular, we would like to thank Céline Bignebat, François-Xavier Borcy, Emmanuela Carbonara, Claude Ménard, Annie Royer and Raphaël Soubeyran.

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Abstract

This paper proposes a framework for analyzing governance in terms of centralization vs. decentralization of the provision of an order to a given community. It is the main tradeoff behind many issues related to the organization of the institutions that frame either political activities (constitution and federalism) or the economy (e.g. public vs. private/self regulation). We systematically analyze the costs and benefits of centrally vs. decentrally provided orders. Benefits are assessed in terms of the adequacy of the rule with agents' preferences and needs. Costs are linked to the resources earmarked by agents for solving coordination problems at a given "level" of governance. We show that there is no way to completely eliminate transaction costs. The benefits related to centralized governance are inherently lost when a coordination problem is decentrally solved, and vice versa. We highlight two methods for reducing them: "subsidiarity" and "check and balance". In multi-layered systems of governance, various "levels" of order provisions cure imperfections or weaknesses of the others.

JEL classification: D23, D71, L14, L22

1 - INTRODUCTION

Over the last 30 years, the term governance has been increasingly used in social sciences. At the same time, it is a very versatile term. However, despite its different connotations in various disciplines, it broadly refers to organizing or framing social, political and economic interactions within a society through the provision of an “order”. Whereas political science emphasizes the allocation and exercise of power between various centers of authority or constituencies of a political system (Hooghe and Marks, 2003), economic governance focuses on the set of devices used to frame economic transaction through the definition of property rights, contracts and related enforcement devices.¹ This paper relates to this emerging literature. However, while Williamson describes the economic of governance as “*principally an exercise in bilateral private ordering*” (Williamson, 2005, p. 1), we rely on a broader understanding which encompass bilateral and collective as well as public and private ordering (see also, Richman, 2004). More precisely, the aim of this paper is to address the question of the optimal degree of centralization/decentralization of governance in a society and to explore the design of institutional system based on several “levels” of governance. The notion of level refers to the size of a population to which a particular order applies (its “scope” of application). The lowest tier in our analysis is the provision of an order to a pair of agents (“local” or “decentralized” governance). This refers to bilateral governance structures and contractual arrangements as analyzed by many scholars (see Brousseau and Glachant, 2002, Williamson, 2000, for overviews). The provision of both common rules and common enforcement for the whole population is described as “generic” or “centralized” governance

¹ Economic governance is defined by Dixit (2006, p. 1) as “*the processes that support economic activity and economic transactions by protecting property rights, enforcing contracts and taking collective actions to provide appropriate physical and organizational infrastructures*”. Williamson (2005) defined it as “*an effort to implement the study of good order and workable arrangements*”.

(our highest tier). In the New Institutional Economics (hereafter NIE) tradition, this refers to the general institutions of societies that set the (formal and informal) “rules of the game” and make them mandatory, through a coercive, last resort power (*i.e.* the State), or because they represent the beliefs and conventions that serve to create the identity of a society (religion, customs, language, etc... - see North, 1990, Williamson, 2000). We then consider that there are several intermediate levels of governance on this “centralization/decentralization” axis. When the order is (more) centrally provided (or provided at higher levels of governance), uniform principles are applied to a larger fraction of the population. When the order is (more) decentralized different principles are applied to small(er) sub-sets of the population, which means several orders co-exist. Institutional systems are thus viewed as multi-leveled (or multitiered) systems of governance.

The paper analyzes the trade-off of this centralized/decentralized provision of order to understand how economic agents choose (or should choose) the level(s) of governance to depend on. We thus detail the costs and benefits of centrally vs. decentrally provided orders. Benefits are assessed in terms of the “quality” of the rule meeting agents’ preferences and needs. Costs are linked to the amount of resources earmarked by agents for solving coordination problems, or transaction costs, for a given interaction, at a given level. We show that there is no way to completely eliminate these costs. The benefits related to centralized governance are inherently lost when a coordination problem is decentrally solved, and *vice versa*. We therefore highlight that agents should rely simultaneously different governance levels to solve the complex coordination problems they face. This suggests a complementarity among levels and we identify two sources for this complementarity: “subsidiarity” and “checks and balances”. The first states that coordination challenges must be split into various sets of problems, to be dealt with on appropriate levels. The second

states that, since each governance level is imperfect, agents need to simultaneously rely on the various layers to compensate for the relative weaknesses of the others.

Several examples may illustrate the multi-level nature of several governance issues. As stressed in political science, the issue that usually comes first to mind is the allocation of authority in law-making, regulation, provision of public goods among several tiers of the state, that is, within the scope of a national jurisdiction (Hooghe and Marks, 2003, Roseneau, 2007). A large literature inspired by fiscal federalism tries to assess what are the levels of government to which various prerogatives have to be assigned (see section 2 for references). In these references, the national community is considered as the widest jurisdiction concerned by a generic institutional framework. However the provision of order to organize trade or provide various types of public goods might also goes beyond national boundaries and raises multilevel governance issues. This is the case for instance with issues where a discrepancy exists between the scope of “natural” problems (environment, health, etc.) and the scope of “artificially” built jurisdiction (like a nation). Current global coordination problems (like global warming, public health, financial crises, etc.) and their governance (or lack of) are all good examples. This is also the case when formal political institutions are designed to cover several countries. The European Union is a good example with its several layers of governance. Central governance refers here to operations carried out by the Union’s institutions (European Commission, European Court of Justice, etc.) and there are several increasingly decentralized levels from national states to local districts and cities within national regions.²

² As quoted in Hooghe and Marks (2003), the European Union white paper on governance characterized the political Union as one “*based on multi-level governance in which each actor contributes in line with his or her capabilities and knowledge to the success of the overall exercise*” (2001, p34-35).

These previous examples emphasize the allocation of “political power”. Furthermore, other issues that are not usually analyzed in terms of “levels” of governance might benefit from being analyzed in such terms. This is for instance the case of the contrast between public vs. private governance. Previous works on specific sectors or industries showed that “private institutions” or “self-regulations” govern exchanges both in developing and developed countries by creating a private and collective order through deontological codes, collective agreements, “quasi-private laws” and their related enforcement mechanisms (among others, Bernstein, 1992, 2001, Pirrong, 1995, Greif, 1993, 2005, 2006, and Milgrom *et al.*, 1990, Ogus, 1999a).³ Thus the coexistence of these private orders and public ones in developed countries suggests a complementarity between them. One dimension of these complementarities might well depend upon the fact that public and private (or self) regulations do not cover the same scope of the population, *i.e.* do not belong to the same level. In a national context, the later regulations are organized on a more decentralized basis than the public one and it might well explained many of the contrast that are generally highlighted among the two. In the same spirit, informal coordination often refers to mechanisms at play in closed and small communities, and contrasts with formal mechanisms required allowing a larger community to perform. Some of the contrasts between formal and informal institutions are therefore linked to differences in levels of governance, rather than to contrasts due to the degree of formality of rules *per se*.⁴ Thus many of the contrasts dealt with by analysts of institutions can be analyzed in terms of contrasts (and complementarities)

³ In the same spirit “community” mechanisms are recognized as powerful tools of regulation to manage the provision of common goods like irrigation systems, fisheries (see Ostrom, 1990).

⁴ Of course, we do not claim that all the whole contrast between formal and informal orders lies in a difference of levels. There are of course social norms and beliefs that are established on very wide scope, while some legal orders could be very “local”. We just claim that some of the contrasts between formal and informal highlighted in the applied literature are more due to contrast among levels of governance than to differences due to degrees of formalism. In addition, we think that there are solid arguments linked to enforcement constraints to claim that, everything equal, orders wider in scope tend to be more formal. Some of these arguments are made in section 5.1.2.

among levels of governance. This leads to identify more precisely what is the actual effect of other characteristics like the “public” or “private” character of a regulator or the degree of “formalization” or the order. Such clarification are especially needed when one deals with complex issues in which not only the level (e.g. centralized vs. decentralized) but also the mode (e.g. public vs. private) of governance needs to be chosen; which is the case for the global governance issues mentioned above. Furthermore, analyzing all these different institutions within a common framework helps to better understand their interactions as well as the common drivers of their genesis.

This paper is structured as follows. Section 2 reminds the theoretical frameworks already addressing the issue of alternative levels of (vertical) governance and points out how our analysis attempts to contribute. Section 4 presents our framework. Section 5 analyzes the selection of a governance level by casting it in a “centralization / decentralization” trade-off. It emphasizes how the level of governance influences different costs and benefits. Section 6 reveals the interaction between governance levels. Our conclusions follow.

2. - COMBINING TWO THEORETICAL FRAMEWORKS

Our paper builds on and borrows from two main theoretical approaches in the economic literature: the New Institutional Economics and Fiscal Federalism. The related applied literatures cover issues that are usually dealt with separately. We thus contribute to make more explicit the complementarities and convergences among different applied researches enlightening one of the key dimensions in institutional design.

Fiscal federalism (hereafter, FF), deals with the optimal centralization/decentralization of public goods provision given several constraints such as the scope of these goods, information asymmetries, and so on. It points out, in particular, that when decentralized provision fails to take into account spillovers among local areas, supply by the central government is more

efficient even if potential misfit between heterogeneous local needs and a uniform service appear (see for instance, Oates, 1972, 1999, and Weingast, 2005, for overviews and Tiebout, 1956 for the seminal contribution). Several Law and Economics scholars apply this to the provision of law or regulations at different levels (Cooter, 1994; Faure, 2004; Grajzl and Murrell, 2005; Hadfield, 2000; Lin, 2006; Ogus, 1999a, 1999b; Van den Bergh, 1998). We rely on this idea of potential misfit between individual heterogeneous needs and general coordination solutions (later on, we will label it maladaptation costs). This is one of the costs of centralization we identify. Centralization leads to the provision of a uniform order (and which is not challenged by an alternative order). To the opposite, decentralization provides diversity. Thus agents get either the benefits and drawbacks of uniformity, or the advantages and costs of adaptation to local specificities. We also borrow from the FF literature the idea of alternative (vertical) layers of coordination solutions. However, instead of taking the set of layers for granted, we follow the NIE literature and endogeneize it. Furthermore, we have a broader perspective than traditional FF. In his survey of FF, Oates (1999) stated that “*the traditional theory of fiscal federalism lays out a general normative framework for the assignment of functions to different levels of government and the appropriate fiscal instruments for carrying out these function*” (p. 1121). Leaving the fiscal issue aside, our goal by laying out the multilevel approach is to provide a framework for the assignment of functions to different levels of *governance*. There are more than semantic differences involved as the shift from government to governance has several implications. Firstly, it brings enforcement of rules at the front stage. Enforcement of rules and property rights at these different levels is at the heart of institutional design. NIE thus complements the idea of different levels of rules provision with a detailed analysis of alternative enforcement devices (see for instance, Aoki, 2001, Dixit, 2004, Greif, 2006). Secondly, we provide a “bottom-up” approach to governance where private agents may self-regulate their interactions. In our

framework, the provision of (local or global) public goods does not exclusively rely on public provisions. This is not surprising as we are dealing mostly with public goods – rules and enforcement devices – whose production is sometimes decentralized. Finally, most papers in the FF literature consider benevolent central regulators. This idea of benevolence might lead to under-estimation of factors essential for the analysis; especially in terms of incentives for the central regulator to provide efficient and adapted (coordination) solutions to his principals (Barzel, 1989, North, 1990). This leads to a different trade-off not envisioned by the traditional FF literature.

The NIE approach focuses on the institutions able to secure property rights and enforce contractual agreements. Numerous institutions have been analyzed as a way to secure and promote market-based exchanges leading to a deeper social division of labor (see among others, Aoki, 2001, Greif, 2006, North, 1990, Williamson, 1996). While it is not the only alternative, government action through legal establishment of property rights, contract law and so on play an important role. But, as nicely illustrated by Weingast (1995), “*a government strong enough to protect property rights and enforce contracts is also strong enough to confiscate the wealth of its citizens*” (p. 1). Potential capture of wealth by government can however be mitigated by competition among “sovereigns”, who have interest in promoting the wealth of their citizens and in limiting forum shopping among jurisdiction (North, 1990, Greif, 2005; North and Weingast, 1989; Weingast, 2005). This leads to recognize a trade-off between potential private and public expropriations that vary with the degree of competition among orders.⁵ Decentralized governance mitigates public expropriation at the costs of higher possibilities of private expropriations by means of theft, violation of agreements, strength. To the opposite, a fully centralized order provided by a powerful sovereign provides security among the agents in the society. They have however

low incentives to efficiently use the available resources, because the powerful sovereign can capture their wealth, and because the system of rules has been designed to optimize the sovereign's wealth and strength, not to maximize its citizens' wealth. A good institutional framework must thus contain what Grief (2005) calls “contract-enforcement” and “coercion-constraining” institutions (see also, Barzel, 2002).

More generally our framework tries to reconcile two visions of the drivers of governance building by recognizing that the governance solutions are impacted by the asymmetric situations of parties and by recognizing that the implemented governance mechanisms influence the future of the competitive games. This is directly linked to a full recognition of the consequences of heterogeneity of agents. Heterogeneous agents have both heterogeneous sets of options when they decide to settle a common order and heterogeneous coordination needs.⁶ Those who benefit from more attractive options have more bargaining power and can influence the process of order settlement in order to have their favorite rules selected as the common rules. In the same time, this power to influence rule selection is bounded if the other agents have a choice among several possible collective orders. The establishment of collective orders is thus depending upon two logics — quest for efficiency and rent seeking —, which respective influence is depending upon the degree of centralization, since a more centralized provision reduces the exit options of agents.

This vision leads us to fully acknowledge a process of competition in the provision of order(s), which leads to endogenize the emergence of levels of governance. Since the design of an order leads to the establishment of rules and enforcement mechanisms which benefits

⁵ Similar trade-off has been studied in Djankov et al. (2003) under the heading disorder vs. dictatorship.

⁶ Heterogeneity is recognized in NIE, because both in the North/Barzel framework and in the Williamson's one, agents have different bargaining capabilities; either because they own strength or power (Barzel-North) or because they own assets that have different degrees of redeployability. It is also recognized in fiscal federalism since agents have different coordination needs. The two understanding of heterogeneity — *i.e.* related, respectively, to different capabilities and contrasted needs — are however never combined.

and costs are distributed in a certain way among agents, they will develop strategies to influence this design. Their “influence ability” is depending upon their bargaining positions. These positions themselves are linked to the “rights” that were allocated to agents at an earlier stage by the pre-existing arrangements. It results in a *de facto* competition among promoters of competing orders.

Our effort of endogeneization is useful at least from two perspectives. First, it is helpful to analyze the properties of institutional frameworks, especially in terms of complementarities among “levels” to which orders are established; since “levels” have set of properties each of which are not expressed with the same intensity. Combining levels of governance allows to fine tune the resolution of a coordination issue by matching the level with the specificity of the problem to be solved. Also, dealing with an issue at several levels allows compensating for the drawbacks of the other levels. Second, it is powerful to analyze institutional design (both in a normative and positive perspective). Actual institutional systems are made of many orders settled at various levels, and designing institutional policies does not consist in choosing between full centralization (or uniform rules) and full decentralization (or customized rules). It consists in recognizing how the solving of a given coordination problem might be more efficiently achieved by distributing various tasks among diverse levels of governance, and by implementing new governance devices at specific levels when needed.

3 – THE TASKS OF GOVERNANCE LEVELS AND THE EMERGENCE OF INTERMEDIATE INSTITUTIONS

In this section, we describe our framework. Firstly, we analyze the main functions of institutional or governance levels and the reasons for the emergence of intermediary orders.

Two key features of our study should be emphasized here, as they will play important roles in this section and, more generally in the rest of the paper. Firstly, regardless of the population in question, we consider the population of agents to be finite and heterogeneous. All agents have both contrasted preferences and endowment, which result in heterogeneous coordination needs. Thus, the more general the order, the more it must deal with heterogeneous coordination needs. Heterogeneity of agents is important, as it will play a crucial role in the costs/benefits of alternative governance levels.⁷ Secondly, we consider coordination problems in general, not only those related to economic transactions (*i.e.* the transfer of property rights for goods or assets). Governing the transfer of property rights is important, but it is just a sub-set of the coordination issues involved in the creation and enforcement of property rights. For instance, rules in a condominium do not regulate trade, but the mere fact that some agents share a common space. So we prefer to speak about interactions rather than transactions.⁸

Any governance mechanism plays two main roles: creating rules and providing enforcement capabilities. A rule is the allocation of decision-making rights to agents, stating what they can or cannot decide concerning the use of resources or their interaction with other agents in various circumstances. Rules state sets of (authorized, forbidden or mandatory) actions to be taken and/or allocate decision-making rights (delegation of prerogatives, negotiation rules).⁹ In addition to creating rules, governance also involves ensuring they are

⁷ Heterogeneity may be assessed in terms of “distance” between agents. Our understanding of “distance” between individuals in the reference populations is pretty wide. Distance may be geographic, or more generally socioeconomic (for instance, based on needs or preferences).

⁸ Our notion of interactions is close in spirit to the definition of “transaction” given in Greif (2006, p 46).

⁹ In practice, the nature of these rules widely differs. They can cover the provision of tools for interacting (e.g. languages and nomenclatures, measurement systems, technical standards, etc.), indicate how to get in touch (whether parties are anonymous or not, whether they can exchange types of information, etc.), control the behavior of parties in certain circumstances (by stating, for instance, liability principles or a “fair” dealing principle), and/or provide them with solutions to help create inter-individual agreements (e.g. standard reference contract, etc.).

enforced.¹⁰ Transaction costs are the costs of performing these two sets of tasks, namely the costs for measuring and enforcing rights of access and of use over resources, and the costs of establishing and managing agreements to reorganize and transfer these rights (Allen, 1999, Barzel, 1989). Since the rules provide economic agents with a certain ability to use resources, they later consider the difference between the “efficiency of use” resulting from a given order and the “level of transaction costs” when they must decide which governance principle to apply or create. By convention, we will use the notion of transaction cost minimization in this paper, but as pointed out in NIE literature, it must clearly be understood as the maximization of governance efficiency.

In our framework, individual agents are embedded in a, or a set of, pre-existing “collective” order(s). Generic institutions in the form of state-level collective rules or social norms already exist and grant agents initial rights and general coordination solutions. A given (generic) institutional framework sets the “general rules of the game”, and hence the initial costs of transactions. However, this order is both incomplete and imperfect in that some transactions/uses cannot be performed because transaction costs are prohibitive, or in other situations, transaction costs could be lower if more appropriate coordination solutions were available. So agents must make individual efforts to more clearly tailor their property rights over economic resources, to transfer them and ensure they are enforced (Barzel, 1989). Bilateral contracting is an option, and leads to a bilateral order. However, when several pairs of agents face similar coordination challenges (*i.e.* transaction, collective action, providing public goods and usage), they are motivated to build collective devices to more effectively overcome this set of difficulties on a joint basis. Intermediary institutions emerge to address coordination problems at a lower cost than bilateral and generic levels. Section (4.1) will

¹⁰Enforcement can be provided for rules established at the same “level” but also for those created at higher and (most often) at lower levels. In a given nation-state, for instance, the judiciary is responsible for enforcing both

stress in more details the benefits of centralization. The initial agreement at the heart of intermediary institutions results in the creation of a “club”, *i.e.* a set of agents who agree to adopt common coordination rules and decision mechanisms for creating additional rules or adapting existing ones.¹¹ Because agents have heterogeneous coordination needs, several intermediary institutions or “clubs” may emerge decentrally. This results in potential discrepancies between these orders that become problematic when agents must deal with both orders. This may also result in competition between these intermediate orders, which is further studied together with its consequences by Brousseau and Raynaud (2006).

4 - THE TRADE-OFF BETWEEN VARIOUS GOVERNANCE LEVELS

In this section, we explore both the costs and benefits of settling orders on different “levels”; *i.e.* depending on the size of the community. We pinpoint a reduced number of factors influencing their benefit/cost. Our framework thus recognizes a basic “centralization / decentralization” trade-off. Benefits of decentrally solving coordination problems through bilateral governance may be inherently lost when these problems are settled on a collective level, and *vice versa*. Given the degree of generality/specificity of a particular coordination problem, a level of coordination provides the best benefits/costs ratio. This explains why some aspects of coordination are best settled by bilateral contracting, others by intermediary institutions and others by generic institutions. We first sum up the main factors involved in this trade-of, then describe the benefits (4.1) and costs (4.2) of centralization (and therefore the respective costs and benefits of decentralization) in further detail.

the law and bilateral contracts.

¹¹ Like the rules, each mechanism may differ greatly. It may take the form of a simple negotiation process stating how a proposal can be made, discussed and approved among members of the club. It can be based on the delegation of decision-making rights (authority) to a decision maker such as one of the parties, a committee, external expert, etc. Lastly, the mechanism can be more formal and lead to the setting up of an organization for

4.1- The Benefits of Centralization

Below, we review and detail the benefits of centralization. Centralization provides agents with (i) scale and scope effects, (ii) learning and specialization benefits, and (iii) means to reduce collective welfare losses by boosting consistency between local rules, and internalization of externalities, and the creation of positive network effects due to the use of common rules. We point out how the identified factors work both for measurement (4.1.1) and enforcement (4.1.2) operations.

4.1.1 Measurement Operations

4.1.1.1- Scale and Scope Effects

One benefit of centralization is the potential for economies of scale in the establishment of rules. When there are redundancies in bilateral coordination problems (trading of comparable goods, pairs of principal-agent relationship for providing a similar service, etc), the rules developed to govern a given transaction can be used to (partly) govern a set of other bilateral interactions. Common systems of quality measurement are good examples. For instance, heterogeneity of many agricultural products is manifested in the numerous varieties of product such as wheat or fresh fruit and vegetables. It is not surprising that in most of these sectors collective organizations (sometimes public but not always, see Pirrong, 1995) set common rules and standards (for instance, a grading system) to guarantee quality along vertical chains of transactions (see Mazé and Ménard, 2006, and Cook and al., 2007, for a summary of how agri-food industries are organized). In addition to pure economies of scale, common rules generate also economies of scope. Even different types of

creating rules on the basis of delegating power to “representatives” of the various stakeholders within the club; these representatives are backed by experts hired to help them.

interactions can share similar problems. For instance, the conditions of bounded rationality and potential opportunism are universal and generate contractual frictions. Contract law explicitly recognizes this and provides some general remedies. When collective mechanisms are created to settle problems encountered during a given type of interaction, it may well be that these mechanism could prove useful for other forms of interaction.

4.1.1.2- Learning and Specialization Benefits

Learning and specialization also play a role. Since collective rules are applied to a wide range of different interactions, the actual performance and potential improvement of these rules can be more easily measured and tested than those applied uniquely to bilateral relationships. All things being equal, the designer(s) of a rule benefit(s) from greater feedback on the actual performance of the rule in various contexts when it is collective, rather than when implemented for a couple of transacting parties only. Moreover, learning costs are written-off on a large number of interactions. In addition, “communities” are encouraged to focus specific agents on creating rules to settle their coordination problems. When greater cognitive resources are devoted to creating each rule, rules should be of a higher quality.

4.1.1.3- Reducing Collective Welfare Losses

“Local” regulations may create incompatibilities. Sector-based standardization in the field of technical standardization (Brousseau, 1994) may be the cause of technical incompatibilities. On information networks, many discrepancies between local self-regulations also exist (Brousseau, 2004). By definition, rules designed by a small set of agents aim to enhance coordination efficiency within the resulting community. If members of different communities are connected, or if an individual belongs to several communities, the “internal” consistencies of local collective rules might generate negative externalities or even conflicts. In other words, when externalities and systemic effects exist (or potentially exist),

rules designed on a “system” level can take these collective effects into account, resulting in enhanced efficiency. This is for instance one of the rationales for centralized provision of public goods in the fiscal federalism literature (Oates, 1972, 1999). Risks of systemic failure such as electric blackouts, panic in the banking industry, or food safety crises (Hennessy and ali, 2003), are others examples of externalities within an economic system. Another factor plays a positive influence on the efficiency of collective solutions: network externalities (Katz and Shapiro, 1985) that boost increasing returns of adoption (Arthur, 1989, David, 1985, Farrell and Saloner, 1986, Liebowitz and Margolis, 1994). The greater the number of users of a coordination rule, the higher its utility, since, in particular, its adoption results in a decrease in the lock-in effect. All things equal, an agent who faces a larger community of potential traders applying the same rules, runs less risk of being held-up and dominated. He is also more likely to obtain a match by meeting a co-trader able to provide him with the quality and quantity he needs.

4.1.2- Enforcement Capabilities

The three effects mentioned above — scale and scope, learning, and internalization of externalities — also play a role in enforcement. This is illustrated by the wealth of literature on the benefits of mutualizing/collectivizing resources to secure bilateral commitments, self-regulations and property rights. How does this relate to centralization of enforcement? Centralization is the collective implementation of an order; so centralization of enforcement describes any situation where mutualizing/collectivizing of supervision and punishment of infringers exists. This is what occurs when each member of a community is responsible for enforcement; a founding rule of the community being that each member must oversee the conduct of the others, and punish both those who break the rules and those who fail to punish identified infringers. Centralization occurs because enforcement results from collective

action. Secondly, it is what takes place when members delegate supervision and retaliation tasks to any entity that becomes a last resort enforcer on a community level.

4.1.2.1- Scale and Scope Effects

It is easier to illustrate the scale and scope effect in enforcement by starting with the enforcement of decentralized bilateral relations. The self-enforcement of bilateral relations relies mostly on repeated relations and reputation effects.¹² A large literature points out how economic agents build collective information and sanction mechanisms to widen the scope of “self-enforcement” from bilateral to multilateral self-enforcement (see, for instance, Kandori, 1992, Ellison, 1994; Greif, 1993, 2005, Greif *et al.*, 1994, and Dixit, 2004, and Richman, 2004, for overviews).¹³ Milgrom, *et al.* (1990) point out how “communities” make their constitutive rules enforceable for credible fear of exclusion and the corresponding loss of access to various types of benefits provided by the communities. These benefits differ, depending on the context. They may involve access to social networks, collective reputation, assets facilitating trade (which may be as tangible as marketplaces, whether a medieval fair or electronic platform), trust, self-regulation, etc. Such “facilities” decrease transaction costs and generate positive network externalities. Thus, not only does an excluded party bear higher transaction costs but she also loses access to benefits provided by those “facilities”. Furthermore, exclusion also reduces the value of “community-specific investments” (if any) made by the former member (Aviram, 2003). The expected opportunity costs of exclusion may therefore expand beyond the costs of exclusion from trade. Previous studies by Bernstein (1992, 2001) and Richman (2004) provide good examples on how opportunistic

¹²See Klein and Leffler (1981) for a path breaking contribution, and MacLeod (2007) for a recent survey.

¹³These findings also fall in line with studies on the ability of close communities to implement self-enforceable collective rules, such as those providing for the efficient supply and exploitation of public goods and commons. Contributions by Ostrom (1990) and Ostrom *et al.* (1994), in particular, reveal that mutual supervision and ostracism lie at the core of these local, collective self-regulations.

players may lose social interactions in addition to future transactions. In the words of Aoki (2001), this is a situation of institutional linkage, where social exclusion boosts the power of economic sanctions. Collectivizing enforcement generates scope effects.

The sanction mechanism is complemented by devices for collecting and disseminating information in the community. Information mechanisms must exist to allow ostracization of rule (or commitment) breakers, including members who do not ostracize rule-breakers (Milgrom *et al.*, 1990). One of the original features of collective self-enforcement is indeed the fact that supervision is peer-based. As a larger community means that more people monitor each others (Carpenter, 2007), this increases the likelihood of being identified in the case of fraudulent conduct.¹⁴ In addition, peers can use “soft” information to detect and punish non-compliance. Whereas external oversights, e.g. by public courts, is limited by the need to depend on verifiable information, peer-based enforcement depends on observable, but unverifiable, information.

4.1.2.2- Benefits of Learning and Specialization

When “spontaneous” supervision and retaliation mechanisms are no longer effective (because of increased information asymmetries, as analyzed in Section 4.2.2), or when they do not emerge (because of their collective good character), members of a community can organize themselves, particularly by implementing an organization in charge of observing and keeping track of members’ conduct, in order to establish collective information for managing a grading system for “measuring” individual reputations.¹⁵ They also have incentives to gain benefits from specialization in matter of retaliations against infringers. As in any activity,

¹⁴ We will see however in section (4.2.2) that a larger community may also end up with larger information costs because scale and scope effects in enforcement marginally decrease, due to information costs, as the community grows.

¹⁵ Systems like eBay on the Internet play such a role (see, for instance, Dellarocas, 2004).

there are lessons to be learned when controlling conduct, either physically or morally. The merchants' guilds in Milgrom et al. (1990) are examples. Agents have the incentive of benefiting from economies of specialization — plus scale and scope effects due to the fixed costs of these activities — by delegating supervision and retaliation rights to entities that will focus on enforcing collective rules (and bilateral agreements). Specialized enforcers, relying on learning and specialization, perform their task more efficiently thanks to greater observation capabilities, incentives to develop relevant knowledge, and to invest in equipment to exercise constraints, etc. Moreover, they avoid redundancy of efforts.

4.1.2.3- Taking into Account the Net Social Benefit of Enforcement

Whether “centralized” enforcement relies on peers, or on a specialized entity, it should provide two benefits because the enforcer(s) take into account the impact of his/their conduct on the collective order.¹⁶ Firstly, being accountable of the order, the enforcer(s) will avoid under-provision of effort in supervision and punishment. In particular, he/they will be aware of the collective distrust that may emerge and threaten the order on failing to punish infringers. In addition, since the enforcer(s) bear(s) the cost, he(they) is(are) encouraged to optimize (by considering the trade-off between benefits and costs). Secondly, central enforcer(s) are encouraged to consider the potential side effects of sanctions. It is widely acknowledged that over-harsh sanctions — implemented to deter — can have social implications: they may discourage agents (like in the classroom with weaker students); they may hinder action (for fear of heavy sanctions, agents no longer take risks); they may no

¹⁶ This obviously depends on adequate incentives with the best solution being a system where he/they would be residual claimants of the surplus brought by the collective order (in accordance with Alchian and Demsetz's study of the role of team supervisor; 1972). In the case of several enforcers it is clear that sharing the surplus creates a free rider problem, especially if this surplus is shared independently of the distribution of enforcement costs among enforcers. It brings us back to the question of collective action. Further study should include a detailed analysis of the trade-offs of various alternatives in organizing supervision, based on the alternative delegation of enforcement and on alternative incentive schemes for enforcers. The aim of this paper is however not to go into these details, but to highlight the key elements of the centralization/decentralization trade-off.

longer deter conduct (noted in criminal justice, when individuals definitively excluded from society, with no chances of rehabilitation, no longer fear sanctions). This may result in enforcer(s) more effectively weighing up and tailoring sanctions and remedies in light of the “net social cost” of infringement and sanctions. On this latter issue, he(they) will consider the true dissuasive effects of sanctions, their actual costs and potential negative externalities for the society to avoid overdeterrence.

4.2. - Costs of Centralization

We have highlighted the advantages of establishing a collective order, compared to implementing coordination solutions on a decentralized basis. Are there any factors inhibiting these positive effects? The answer is clearly yes, and we analyze the costs of centralization by pointing out the origins of maladaptations (4.2.1), raising information asymmetries (4.2.2), increasing enforcement requirements (4.2.3) and private capture (4.2.4).

4.2.1- Maladaption Costs

The concept of maladaptation and related maladaptation costs concerns the potential discrepancy between collective orders and individual coordination needs. As agents have heterogeneous preferences, a given collective order cannot perfectly meet the coordination needs of any pair of agents. Those pairs of agents who interact via a collective order bear opportunity costs, compared to what they would obtain if they use the best possible bilateral agreement. The difference between net output obtained by implementing the best (feasible) solution and net output obtained by following a more generic rule, is what we describe as “maladaptation cost”. In the following, we explain why increased centralization intensifies maladaptation costs. We disentangle the effect of heterogeneous coordination needs (4.2.1.1) and heterogeneous bargaining position (4.2.1.2).

4.2.1.1– *The Impact of Heterogeneous Preferences on Maladaptation*

Maladaptation costs should increase as the implementation scope of an order rises. This is a direct consequence of the increasing heterogeneity of coordination needs as the size of the community grows (assuming that each party has the same bargaining power). To see this, start with bilateral relations. The two parties are generally not identical (otherwise, there would be no gain from trade), but bilateral negotiations should result in a contractual agreement that balances the needs of both parties. When a collective rule has to be designed, additional heterogeneous needs will be “brought to the table” with the selected rule(s) adapted to the smallest common denominator.¹⁷ The collective rule is thus a compromise. We thus expect maladaptation to be comparatively lower in bilateral, rather than in collective governance. In line with this maladaptation argument, several scholars highlight the costs of international (in this specific case, European) harmonization of civil codes (e.g. Faure, 2004, Van den Bergh, 1998). They argued that existing discrepancies among legal systems reflect different social preferences throughout Europe.¹⁸ What is hold true for rules, is also true for enforcement. Studies on alternative dispute resolution mechanisms (e.g. Cooter and Rubinfeld, 1989), focus on the idea that arbitrators and private courts can take into account the preferences of parties, and that they may also be more specialized than judges and public courts (because they are nominated depending on the specific nature of the case in question and are experienced professionals in the field, etc). In addition, they tend not to apply generic

¹⁷ Here, we implicitly assume that parties face a “battle of sexes” type coordination problem *i.e.* when two agents prefer to agree on a common solution, while their preferences differ over which solution should be adopted. The problem would vanish if we were in a pure coordination problem (featuring indifference or convergence of preferences for coordination solutions).

¹⁸ This literature also highlights a potential “race to the bottom” when harmonization is at play. In line with the argument on the “race to the bottom” — which applies when the mobility of factors induce competition in national legislation, resulting in the dismantling of legislation to attract more mobile factors — the argument put forward by some law and economics scholars suggests that legal harmonization also leads to alignment with the smaller common denominator (or with the weakest, common norms of protection). This is further studied by Revesz (2001). Note, however, that this question is controversial since, at the same time, many scholars see competition among decentrally provided orders as a guarantee of adequately meeting the needs of agents (which

default rules. The comparison between arbitrators and courts illustrates the maladaptation costs inherent to centralizing enforcement when diversity is at play.

The impact of heterogeneous preferences is also relevant for evolving situations. As a common rule is a compromise, if changes are needed, reshaping the compromise may be complex, because changes in the system of (property) rights are likely to have redistribution effects (Libecap, 1989, North, 1990, Pirrong, 1995); either because there are losers and winners, or because the benefits of changes are unequally distributed. If negotiations among participants in the collective order are difficult to implement, a collective action problem might emerge. Indeed, it would be difficult to coordinate all the stakeholders to have them switching spontaneously and timely to a new equilibrium of mutually recognized rights. These difficulties in modifying an existing order tend to rise with the size and the heterogeneity of a community and can be called dynamic maladaptation costs (opportunity costs of poor or bad adaptation to a new context). Consequently, collective orders may fail to evolve in line with changing preferences and needs. This results in discrepancies between *ex-ante* established rules and *ex-post* coordination needs.

4.2.1.2- The Impact of Heterogeneous Bargaining Power on Maladaptation

Heterogeneity impacts also on negotiation capabilities since all agents do not have the same alternative options when they consider adhering or not to a common order. The greater the bargaining asymmetries, the greater the potential maladaptation costs born by those with poor exit options. In line with the discussion of figures 2 and 3 (section 4.2.), collective orders result from a progressive adoption process by agents. Initially, coordination rules and enforcement capabilities are created by a kernel of agents with close or similar needs. This

is a one of our key arguments, i.e., that decentrally provided orders should meet the participation constraints of agents; see also Ogus, 1999).

initiates “clubs” whose members benefit from the associate order. Individuals like B in our figure 3 can decide to join the “A club”, but they will face maladaptation costs because the rules were not initially designed to meet their specific coordination needs. Furthermore, they will have less attractive outside option and thus less bargaining power. So members of the kernel have fewer incentives to modify the order to meet the coordination needs of less central agents in the community. The wider the community relying on a collective order, the higher the proportion of individuals with their first best far from being the solution implemented. In addition, the “distance” between the rules preferred by marginal members and the implemented solution also increases. This should result in higher maladaptation costs. Generally speaking orders wider in scope results in higher probability of sub-coalitions forming among those with more attractive exit-options to try to influence the collective order design in their favor, raising maladaptation costs for those with less attractive exit-option. Other consequences of this are further discussed in section 4.2.4. In addition, broader institutions should have less incentive to evolve and adapt to evolving coordination needs and changing preferences of members, unless core members are concerned (which may explain why brutal “adaptation” may occur from time to time in formal institutional systems).

Thus, the collective resolution of coordination difficulties inevitably creates maladaptation costs. There is an unavoidable trade-off between economies of *ex-ante* costs (design/creation and negotiation) and *ex-post* costs (maladaptation).¹⁹ This relates to our understanding of the process of extending locally established orders to larger communities via the gradual adhesion by new adopters, who share less and less features in common with “core” members.

¹⁹ Similar trade-off was already highlighted by Williamson (1985) in the context of bilateral modes of governance.

4.2.2- Information Asymmetries

In addition to maladaptation issues, another factor hinders the benefits of centralization: the accumulation of information costs/asymmetries that decrease the efficiency of supervision/retaliation applied to a larger population. This phenomenon does not rely on population heterogeneity. As pointed out in Section 4.1.2, centralization provides benefits in terms of enforcement because of the ability to rely on peers and/or specialized supervisors to detect infringers and punish them. However, this requires transmission of information among agents involved in deterring opportunistic behavior, to ensure rule breakers are really punished.

In peer-based monitoring communities, information asymmetries are likely to rise with the size of the community decreasing its ability to turn its observation ability into efficient enforcement. Firstly, if each peer remains in touch with all the members of the community, he will devote less attention to each of them as the community expands (Carpenter, 2007). Secondly, if the costs of transmitting information to peers about potential misconducts increase with the size of the community, not all members will be informed.²⁰ Furthermore, the costs of transmitting information and the resulting information asymmetries decrease the chances of being detected as a negligent supervisor. It hinders incentives for each member to participate in supervision and retaliation. Thirdly, information on misconduct may simply fail to reach the agents able to punish infringers. Finally, some peers can use their low profile to harm the reputation of some members (for various strategic reasons), even if the latter has not cheated or broken any rule. This also reduces the effectiveness of peer-monitoring since specific mechanisms are then needed to ensure the credibility of statements

²⁰ The same apply if information costs are related to the “span of control” by each peer. Each peer member will only monitor a sub-set of the community. In both case, one can think of information costs has rising with the

made by peers, re-enlarging the gap between visibility and verifiability (since, for instance, “evidences” have to be provided to launch punishments). All these factors might explain the limits of reputation-based enforcement.

Basically the same phenomena occur with specialized supervisors. If the supervisor has bounded observation capability he will devote less attention to monitor each individual as the size of the community expands. Secondly, if a network expands by successive addition of peripheral agents in such a way that the supervisor has no longer direct link with each individual, the “distance” between the supervisor and peripheral agents increase as well as the number of links in the networks. If there is a loss of information (or additional information costs) for each added links or for larger distance, a growing networks exhibit higher information costs. The larger the size of the community to oversee, the greater the information asymmetries between specialized supervisors and supervisees. Bernstein (1992) and Richman (2004) illustrate this by stressing that, while public courts are reluctant to incorporate lost profits into expectation damages (due to lack of information for accurately measuring this lost value), arbitrators in industry-private law routinely rely on them. This highlights the greater ability of local supervisors to observe compliance to the order, compared to the ability of a central one, which is far from the field and from current, local practices.

4.2.3- Enforcement Requirements

Due to the increasing heterogeneity of individuals, the more centrally the order is provided, the higher the maladaptation costs, while centralized orders are harder to renegotiate. Agents have therefore greater incentives to cheat, which increase enforcement

“distance” between peers. In social network analysis, the distance between two individuals is the length of the

costs. Using Hirshman's categories (1970), we can compare the tendency of agents to comply with generic and mandatory orders vs. local and voluntary ones in order to understand the rise of enforcement costs. According to our analysis, the exit option is harder to exercise in generic institutions than in local ones. Agents should therefore be encouraged to exercise voice within a generic, institutional framework. However, given the size of coalitions behind generic institutions, and given the wide diversity of interests at stake, an individual voice is hardly likely to convince the other parties to change the set of common rules. So obligations imposed by the collective order are unlikely to be lifted, while exit is impossible. On the other hand, within the framework of local institutions, since individuals can exercise their exit option more easily, they can either depart or negotiate adaptations of the collective obligations according to their specific needs. So, when it comes to enforcement, individuals subject to a generic order that would be weakly adapted to their preferences have only one option: cheating. All things equal, generic institutions should take a more systematic approach to cheating because individuals are forced to obey a collective regulation they cannot change, while they have the capacity of amending a private regulation or deciding not to adhere to it.

To put it another way, adherent to a more local order should more “spontaneously” comply with the order. This “spontaneity” obviously depends on the probability of being identified as infringers by peers, and the reaction of these peers (as discussed in Section 4.2.2). It also depends on the homogeneity and density of the community in question. Homogeneity refers to similarity in terms of preferences and types, while density refers to the number of links between members given the size of the community. Homogeneous communities of agents face fewer hazards when negotiating changes. Denser communities face fewer potential for free-riding as monitoring is easier. More homogeneous and denser

communities should result in convergence of individual evaluations of the benefits provided by the common order.²¹ Thus, orders involving more heterogeneous populations, which is the case when they expand, are likely to request more enforcement efforts²².

To sum up, when an order is provided on a more decentralized basis, agents who can leave and who are aware of the benefits of the local order, have fewer reasons to cheat. This reduces enforcement costs (while the exit option weakens the local order). To the opposite, enforcement requirements (and costs) should increase the more centrally the order is provided.

4.2.4- Private Capture

The final cause of inefficiencies in centralization is the potential for individuals and/or coalitions to capture the collective order and extract private benefits by manipulating rules. Indeed, rent seeking plays a role in the dynamics and economics of establishing a collective order. Institutions can be seen as the consequences of coalitions seeking to implement coordination rules that enhance their situation. There are two sides. On the one hand, the collective order decreases transaction costs, which boost individual, collective and social efficiency. On the other, it allows redistribution of transaction costs and capture of wealth.

²¹ This is a different explanation to the one mentioned above (Section 4.1.2.1), explaining why, in terms of economies of scope — the value of social relations in a community as a collateral —, specific transactions or industries are organized by homogeneous communities, such as the diamond industry in New York (Bernstein, 1992), or trade in eastern Asia (Landa, 1981). Here, community members understand the logic of the order and spontaneously comply with it because they are able to assess its value, and this reduces enforcement costs. This might also explain results suggested by Li (1999), and formalized by Dixit (2004), that extended self-enforcing agreements are plagued by rising marginal costs.

²² This could also be interpreted in terms of “legitimacy” of the rules resulting from the voluntary adhesion of individuals to contracts and intermediate institutions. When agents deliberately choose to join a local (and not “too large”) order, they have more exit options and the options are more interesting as compared to what they get when the community of adopter is large. They therefore join an order because everything equal the advantages are far above disadvantages of the order. Weighing up the advantages and disadvantages of the order, agents tend to comply more spontaneously with it, especially if they fear exclusion in case of infringement. When an order becomes more mandatory because it is more generic, net benefit of compliance are weaker. Only repression can, as a last resort, force agents to enforce the associated rules.

This occurs internally between members, and externally vis-à-vis outsiders. The same mechanisms used to deter opportunism and enforce property rights on a community level may also be used to facilitate collusion and rent-seeking.

Let us first analyze the potential for rent-seeking within a community (or internal capture). By decreasing transaction costs between members, a collective order favors transactions among them, and this reduces the strength of potential competition from non-members (outside options of members are less attractive). This encourages sub-coalitions of members to develop strategies to convince the population to implement their “ideal” system of rules and enforcement (or a system “close” to it). Indeed, rules dealing with the interests of a wide population of heterogeneous individuals result in higher transaction costs for members of any sub-coalition. Following the logic described in section 4.2., asymmetric bargaining power among members favors the emergence of these sub-coalitions. Firstly, many institutional communities are organized and expand in concentric circles around a group of “core” (often founding) members (as explained above in sections 4.2.1.2).²³ These core members enjoy closer and more relationships with other members of the community than peripheral members. Because they are more likely to trade with core members than among each other, peripheral members accept rules that under-weigh their preferences. Secondly, those who have less or un-attractive outside options, or those who face higher exit costs, must accept rules that are “far” from their preferred rule. Thus the unequal attractiveness of agents in a community and the heterogeneity of exit options explain the high probability of coalition

²³ For instance, the creation and evolution of the New York Stock Exchange (Banner, 1998), as well as the rules applying to the (marine) insurance industry (Kingston, 2005) fit this description.

forming (or existence), which result in collective order designed to the greater benefit of some.²⁴

The probability of internal capture increases with the scope of application of an order. Institutions with greater reach have a more heterogeneous population of members, which encourages sub-groups to push for the creation of collective rules in their favor. Moreover, orders applying to a larger population downgrade exit options for agents, which boosts the ability of coalitions to capture rents within the institution. Lastly, the larger the institution, the greater the incentives to collude since the “surface” area for collecting rents is wider. Centralization thus creates opportunities for internal rent seeking, which may result in inefficiency due to biased incentives in efficiently using resources.

However, decentralized orders also allow capture. Members of local institutions may indeed try to capture wealth from non-members (external capture). Collective rules can be used to create barriers to entry, in order to benefit from an oligopolistic market structure and in an attempt to control competition among rivals (Richman, 2004). This is the well-known case of middle-aged corporations. Technical standards can also be used to exclude producers using alternative technologies. Coordination rules may also result in *de facto* strategic coordination among players. As revealed in studies on vertical restraints, pricing rules and quality management rules in force in transaction chains can result in pricing coordination that implements monopolistic tariffs. This is a traditional subject for antitrust.

²⁴ This relationship between “core-periphery” structure and asymmetric bargaining capabilities, fits with recent studies on social networks and networks dynamic (see, for instance, Cook and al., 1983; Hojman and Szeidl; 2005, Goeree *et al.*, 2005). This literature shows that a wide variety of social networks share two features. On the one hand, a small number of agents act more “centrally” in the network, with more connections than “common” members; on the other hand, there is a positive correlation between the centrality of agents and their payoff.

Taking into account the possibility of “external” capture by institutionalized communities offers a balanced view of private capture, and its impact on the trade-off between centralization and decentralization. Self-regulation by local institutions may result in (external) capture by interested groups; generic regulation may result in (internal) capture by interested groups. However, exit options are greater when rules are provided on a decentralized basis. Capture capabilities are reduced. Thus, while decentralized provision of collective order may result in capture, the essential point to be made is to highlight that capture is before all linked to the reduction of outside options for the victim, which is raising with the centralization of the order.²⁵

To conclude section 4.2., the combination of increasing static and dynamic maladaptation costs, increasing incentives to shirk, and higher incentives for capturing rents explain why certain institutions remain local.²⁶ Given the nature of the coordination task to be performed, the heterogeneity of the population, the topology of potential transactional networks, centralization costs may well cancel the benefits highlighted in Section 4.1. Figure 5 sums up the different factors at play in the centralization/decentralization tradeoff discussed in section 4.

²⁵ Thus capture is not only the “dark side” of private ordering (like organized crime) as pointed out by Milhaupt and West (2000), it is also a potential strong risk in public institutions as highlighted by North and Weingast (1989) and more generally by the public choice school. Constitutional guarantees are implemented to control for such hazards.

²⁶ The public good nature of collective coordination solutions should also be highlighted. There is an obvious lack of coordination between individual incentives to contribute to the emergence and functioning of collective institutions with collective benefits. Because of free-riding, useful collective governance may fail to emerge or perform, which results in opportunity costs. This is another factor for the limitation of the centralization of provision of order.

Figure 4: Factors affecting Trade-offs of Centralization

<p style="text-align: center;">Benefits</p> <p style="text-align: center;"><i>(Advantages of collectively settling coordination problems compared to more decentralized levels)</i></p>	<p style="text-align: center;">Costs</p> <p style="text-align: center;"><i>(Inefficiencies of collectively settling coordination problems compared to more decentralized levels)</i></p>
<ul style="list-style-type: none"> • Scale & scope effects (positive network effects by using common standards for interactions...), • Learning and specialization benefits, • Reduction of collective welfare losses (greater consistency of local rules, internalization of externalities, ...) 	<ul style="list-style-type: none"> • Static maladaptation (increasing heterogeneity of preferences), • Dynamic maladaptation (reduced renegotiability) • Cumulative Information Asymmetries • Enforcement requirements (increasing incentives to free ride), • Private capture (greater incentives to distort collective governance)

5. INTERACTIONS AMONG GOVERNANCE LEVELS

The centralization/decentralization trade-off explains why growth/expansion of institutions is limited. It also explains why different levels of coordination are combined in an attempt to minimize transaction costs. In this section, we explain why the different governance levels both complement and substitute (Section 5.1). We also explore in detail the reasons for their complementarities (5.2).

5.1. – Complementarity and Substitutability

The previous section clearly reveals the lack of “optimal” (Nirvanian) governance levels for canceling transaction costs. We substantiate here the idea that “complementarity” and “substitutability” effects between governance levels allow agents to mitigate transaction costs. We show that agents simultaneously play on different levels to maximize individual net-gains of coordination. We illustrate this by pointing out the roles played by substitution (5.1.1.), then by complementarity (5.1.2.).

5.1.1. Substitutability

Substitutions may take place in interactions between bilateral contracts and collective institutions. The latter may substitute to explicit contracting because it is not necessary to reinvent rules collectively negotiated and agreed upon for each bilateral transaction. By relying on them, agents economize on *ex ante* transaction costs when drafting bilateral agreements. The possibility of substitutability can also be optional as when "default" contractual provisions are created either by professions or by the legislator to reduce the time and efforts needed to draft bilateral agreements. For instance, French and European franchise associations provide standard contractual provisions for their members. These non-mandatory standards provide them with a framework they can use as a starting point for additional negotiations. Collective governance thus simplifies the drafting of bilateral contracts or favor simpler bilateral governance structure. We might expect more market-like bilateral governance when collective governance is at play. This is consistent with one of the main propositions of transaction costs economics which predicts greater, market-like governance in a system where property rights are well established and enforced (Williamson, 1991, p. 286-288).

Above, we described a situation where bilateral contracting is made simpler thanks to collective rules. The latter may even totally substitutes the former as illustrated by substitution between collective rules and contracts in closed communities (most of the time ethnic or religious-based) such as the ones studied by Bernstein (2002) and Richman (2004). Informal agreements dominate business in these social communities. Extending this line of thought, there is also a substitution effect between local and generic orders, since development of the latter alleviates the former. This was the main point raised in the paper by Milgrom et al. (1990), linking the scope of trade to the scope of the collective order and is

consistent with Barzel/North's understanding of the process of development as an expansion of impersonal market exchanges.

5.1.2. Complementarity

On the other hand, alternative governance levels might also complement each other. Previous scholars already study the interactions between governance devices. In his analysis of bilateral contractual agreements, Klein (1996) emphasized the complementarities between what he called “court-enforced” and “self-enforced” (relational) contracts. Macleod (2007) also analyzes complementarities by pointing out how contract design depends on enforcement capabilities, even when these capabilities are informal (relational contracting depending on the nature of social networks and reputation effects). Finally, Aoki (2001) stresses the relations of complementarities between alternative institutions of governance in his study of institutional framework. In all these contributions, the definition of complementarities is based on the same basic principle: the coexistence of alternative governance devices is a source of value. The simultaneous presence of these alternatives increases the return of each. Collective orders, more generally each governance level, cannot handle all the aspects of coordination difficulties that must be managed for each transaction and coordination issue.²⁷ Intuitively, it is more efficient to have each level focusing solely on a subset of coordination difficulties and risks, and run the different levels simultaneously.

Highlighting these possibilities of multilevel substitutabilities and complementarities results in important, practical consequences, since the design of a coordination solution on one level strongly depends on solutions available on other levels. This fact has already

²⁷ This view is in line with papers dealing with the interactions between the “formal” and “relational” aspects of bilateral contractual coordination. One can argue that the “relational” aspect of contractual coordination is

attracted attention in the NIE literature, where scholars described a “shift parameter”, where particular transactions may reveal different governance structures in different countries because of differences in the institutional environment *à la* North (our generic institutions) (Williamson, 1991, Oxley, 1999). Our analysis suggests that a difference in terms of bilateral governance may appear due to the presence/absence of intermediate (often private and sometimes informal) institutions. This is, for instance, what Brousseau and al. (2007) show in their study of technology licensing agreements.

5.2. - The Nature of Complementarities between Governance

Levels

In this section, we detail the nature of complementarities between governance levels by pinpointing two underlying principles: “subsidiarity” and “check and balance”. The first states that agents should match coordination/transaction requirements with the level of governance best able to address them. The second states that, since each governance level is imperfect and incomplete, one way of mitigating transaction costs (or enhancing coordination quality) is to simultaneously rely on several governance layers to compensate for their relative, individual weaknesses.

5.2.1. Subsidiarity

Subsidiarity (or the subsidiarity principle) has a precise meaning in political science. It states that matters should be handled by the lowest competent authority. As such, it tends to emphasize the benefits of decentralization. It is a principle of governance that explains the

rooted in the collective rules established by collective institutions and by the enforcement capability they provide. The seminal paper by MacNeil (1974) provides valuable insights.

division of power and responsibility between several authorities and is found in several constitutions around the globe (Inman and Rubinfeld, 1998). We use the term to describe how agents try or should attempt to match coordination difficulties with a level of governance that minimizes their private transaction costs. This should result in a division of coordination tasks among the various governance levels.

Each coordination issue is a definition/redefinition of rights, or a transfer of these rights. By analogy with the property rights scholars that consider an asset as a (potentially infinite) bundle of property rights (Barzel, 1989, North, 1990), we consider an interaction as a bundle of different coordination requirements and risks. Our framework suggests that some of these issues are best solved on a bilateral level, others on an intermediary level and others on a generic level. Thus, the basic logic of our “subsidiarity principle” is as follows: “generic” problems should be settled by generic institutions (or centralized governance); “community” problems should be settled by intermediate institutions; “inter-individual” problems should be dealt with via bilateral contractual agreements (decentralized governance). Agents must first identify the various aspects of their coordination problems that would better be settled on a collective basis, and set up intermediate institutions or contracts to settle those that are ineffectively dealt with (or not at all) by generic institutions.

For example, when they transact over the exchange of goods, agents must, amongst others, agree on three points: (i) the consequences of transferring ownership, especially in terms of liability; (ii) defining quality, (iii) a price. In a given situation, they might bear high maladaptation costs if they follow a collective rule for setting the price, because the optimal price will probably strongly dependent on idiosyncratic factors such as individual preferences and local specificities at the time of the transaction (Hayek, 1945). It is more efficient to manage coordination on the characteristics of goods on the basis of professional grades and

standards, because there are probably many redundancies and specialization gains to managing quality on a collective level (see the examples provided in Bernstein, 2001, Pirrong, 1995). Transacting parties may rely on general liability rules when not trading specific goods, since a liability rule should be independent of the parties and the goods transacted. Agents would therefore rely on centralized governance for settling liability problems, intermediate ones for defining and managing quality, and on contractual agreements (including market governance) for setting prices.²⁸ So, economic agents must identify the types of rules that can be collectivized, and those that should remain bilaterally negotiated. Governance and regulation are inherently multilevel.

5.2.2. Checks and Balances

As highlighted in Section 4.2, it is clear each level of governance is plagued by inefficiency. Complementarities between them must also be viewed in terms of “check and balance” type interactions. Each governance level is beset with costs, and the simultaneous use of other levels compensates for its relative weaknesses.²⁹ For instance, static and dynamic maladaptation costs may be higher in intermediate institutions compared to the level of these costs in decentralized governance. As pointed out above, these costs increase with the size of the population using this collective order. By simultaneously relying on bilateral agreements

²⁸ Above, we illustrate the concept of subsidiarity by referring to the design of rules. The same reasoning applies to enforcement since the centralization/decentralization tradeoff plays for enforcement as well. An example of this can be found in the literature when the optimal level of enforcement is analyzed. We already mentioned the literature on Alternative Dispute Resolution in section 4.2.1.1 which balances the argument in favor of central (public) vs. local (private) enforcement of contracts. We can also quote the literature on self-regulation, which argue that generic institutions (here public courts) are unable (or too costly) to enforce particular transactions. Credit purchase for diamonds or “time sensitive” transactions of fresh comestible products are examples (see Richman, 2004, p. 15-17). More generally, transactions of small value, or of perishable products, or of products with difficult-to-verify attributes tend to be more efficiently oversight by decentralized mechanisms.

²⁹ A similar idea can be found in works studying bilateral “plural form” governance, *i.e.* when firms simultaneously depend on different bilateral contractual arrangements to govern a particular transaction. For instance, the literature on franchising has analyzed the benefits of relying on both franchised and company-

and intermediate institutions, agents benefit from this intermediate level while, at the same time, mitigating some maladaptation risks by tailoring complementary decentralized governance devices. These bilateral devices should be less costly to implement because aspects of the transactional difficulties are already settled at a collective level. This is, for instance, common practice in technical standardization (e.g. Brousseau, 1994). Several alternative coordination solutions are created *ex-ante*, and agents choose which solution should apply when they actually coordinate. This is, of course, a way of mitigating maladaptation costs, since parties can choose the least maladapted solution. But it does have its limitations. Negotiation costs are not cancelled, since agents must negotiate which collective rule should apply. They save on design costs only. Some of the advantages of collective solutions are also mitigated. Economies of scale are weaker since more solutions must be provided. Positive network externalities are also reduced since different coordination solutions coexist.³⁰

The coexistence of central and intermediate institutions is also useful because the mandatory nature of generic institutions overcomes the dilemma of public goods production, when conflicting interests and the ability to free ride prevent collective and voluntary orders from emerging. If individual agents cannot agree on the appropriate collective orders to be created, they can rely on the generic rules provided by the generic institution. The mere existence of a generic order provides a basis for bilateral contracting (even if less efficient than an intermediate collective order), and a default option if these negotiations fail. The generic order can even implement default rules that take into account interdependencies

owned units (see Bradach, 1997). Azam (2003) also stressed the potential benefits of relying simultaneously on alternative governance levels.

³⁰ For instance, Brousseau (1994) reveals how optional standards developed to support and automate inter-firm coordination, restrict the ability to communicate between firms, which in turn restricts the ability to implement preferred coordination processes at some point in the transaction chain (for instance, because some information

among agents. When dealing with a population wider in scope, the organization providing a generic order can alleviate costs that arise from discrepancies between local private regulations set by intermediate institutions. By overhanging intermediate institutions (because they are more general and mandatory), they can — when provided with compelling capabilities — reduce the ability of coalitions to capture rents (external capture). This is, for instance, the main task of anti-trust policies.

The ability of public/generic institutions to efficiently thwart monopolistic capture by intermediate institutions must, however, be questioned, since the latter might not be acting in good faith. Probability and incentives for internal capture on a centralized level are extremely high for reasons given in section (4.2.4).³¹ At the same time, the presence of intermediate institutions also mitigates capability of complete capture or discretionary conduct within generic institutions. With intermediate institutions, individual agents have an alternative option and can try to “bypass” or alleviate the existing generic order by relying on collectively and privately created orders. This also implies that generic institutions cannot be “too” inefficient” because they are submitted to a permanent challenge of efficiency by potentially emerging intermediate institutions³². Except in very specific cases, the presence of intermediate institutions provides agents with means to alleviate the drawbacks and even to by-pass more generic regulations. In dynamic, innovative rules created by intermediate institutions may be relied on by more generic ones to adapt to changing circumstances.

required from up-stream firms is not communicated along the chains of providers, making it unavailable for downstream partners).

³¹ This obviously falls in line with the Chicago School approach to political and bureaucratic conduct (see Stigler, 1971, for an initial study) and consistent with North’s idea that public institutions are partly driven by political capture and bargaining among influential groups. However, the ability to collude and capture depends, in our approach, on certain conditions. It is not systematic and institutions can be created to avoid capture. In particular, in formal institutions, governance mechanisms may be implemented to make coalition harder to settle and to prevent capture. This even forms the basis of constitution design (e.g. Voigt, 2003).

³² This is not the case when the sponsors of the most generic institutions are able to forbid the emergence of any intermediate institution as documented by Greif (2006) in the case of the history of the Muslim civilizations.

6 - CONCLUSION

This paper is based on the premise that the dichotomy currently in force within NIE between “Institutions”, which are mandatory and collective, and “Governance Structures”, which are voluntary and inter-individual, is too sharp. From a theoretical point of view, there is a kind of “no-bridge” between inter-individual and collective coordination. The former is based on voluntary agreements, themselves based on economic efficiency and rent seeking. The latter is based on a political logic of capturing power, and also on complex procedures aggregating individual conduct, e.g. distribution and selection processes for rules based on individual and decentralized adoption choices, resulting in collective outcomes beyond any individual control. By pointing out that collective coordination means result from negotiation and processes of adhesion, while in games that are biased by initial endowment of agents and consequences of past choices in terms of governance mechanism design, we have established a link between “Governance Mechanisms” and “Institutions”. Both modes of coordination have very different properties, but they share the same logic, since they all result from agents’ coordination strategies. Agents seek to coordinate efficiently, by reducing transaction costs and being able to distort distribution of these costs (and benefits) in their favor. It is more difficult for an individual to manipulate coordination mechanisms that are wider in scope, because many other parties are involved. At the same time, agents have more incentives to manipulate these mechanisms because they multiply efficiency gains (economies of scale, scope, specialization; positive network externalities). We also point out that economic foundations for institutional frameworks must admit that the individual quest for increased efficiency in coordination can result both in cost reduction and rent-seeking. This draws from the assumption that the competitive process among alternative institutional solutions is biased because the pre-existing institutional framework creates asymmetries due to the existence of hierarchies among “regulators” and to difference of attractiveness (largely linked

to size effects) among communities of adopters of competing solutions. All this together leads us to establish a temporal and logical continuum between contractual governance mechanisms and institutional ones. The resulting analyzes of the trade-offs of centralization/decentralization provides a set of basic and consistent principles for explaining the differing economics of contractual agreements, intermediate institutions and generic ones. These principles also justify why such devices must be combined to settle coordination problems.

From an applied point of view, our analysis draws on studies of “private institutions”, whose role is often underestimated, despite being numerous in the real economic world and well documented. When agents seek to coordinate in a given institutional framework, not only must they choose a governance mechanism (or draw up contracts), but their choices are further complicated because they must, in addition, decide whether it is appropriate to identify problems to be settled on a collective level, and participate in the creation and running of collective and voluntary governance mechanisms. Of course, we are not claiming this complexity should be grasped in all models and studies of inter-individual coordination. However, it is vital to take into account the fact agents develop strategies involving several levels of coordination, and that the strategies developed on a collective level have long-term impacts.

We believe the logics highlighted in this paper contribute to studies on the emergence and transition toward greater integration among local orders when needed. Our analysis of the benefits of centralization/decentralization and of external options helps better understand multi-level, multi-mode governance problems that are, for instance, vital on a global level today. Our framework provides tools for analyzing governance problems where sub-national, national and transnational public and private entities interact and compete to create and

enforce rules for solving all kinds of coordination problems.³³ It highlights issues such as the need for a last resort oversight of the various regulators, or the rationale and consequences of decisions taken by various economic players to opt out of the various regulatory arenas. It also provides a better understanding of how negotiations between order settlers could end up in orders broader in scope, together with competition between them to win new adherents.

As revealed in this paper, there is plenty of scope for further study, since the complex interplay between the various phenomena we have reviewed needs to be further analyzed from a theoretical point of view, and also calls for further systematic and empirical investigation, depending on different contexts, in terms of the nature of coordination problems in question, the heterogeneity of communities, existence and overlapping between communities, etc.

³³For instance, implementing common technical standards (in transport and telecommunications industries, for instance), providing public goods (e.g. biodiversity), and including common trade or competition regulations.

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