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**Finding our way in the jungle:
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**Finding our way in the jungle:
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Abstract:

This contribution is about the variety of modalities of coordination of economic activities, with application to the agrifood sector. Building on recent developments in organization theory and institutional analysis, it explores two dimensions along which coordination operates: it proposes an extended transactional model to explain the variety of coordination devices, with a special emphasis on contracts and their role in hybrid arrangements; and it characterizes the different layers composing the institutional setting in which these arrangements are embedded, with an emphasis on the long ignored or neglected role of the intermediate, ‘meso-institutional’ layer. Insights are also provided on the technological background to coordination and on some policy issues.

Keywords: transaction, contracts, property rights, hybrids organizations, meso-institutions

JEL: D02, D23, D86, L14, P48, Q1

¹ This paper originated, like most papers in this book, from a pre-congress symposium of the EAAE organized in Ljubljana in 2014. Further development owes much to keynote speeches delivered at the University of Ghent, the Belgium Association of Agricultural Economists, the Perugia conference on Contracts in Agrifood Systems, and the Conference of the International Co-operative Alliance held in Stirling. I am grateful to the different organizers for the opportunity to develop these ideas and for the extremely useful comments and suggestions provided by numerous participants. Special thanks go to Jean-Marie Codron, Liesbeth Dries, Guido van Huylbroek, Kostas Karantininis, Gaetano Martino, Stefano Pascucci, and Richard Simmons. The usual disclaimer fully applies.

1. Introduction

A central issue in organization theory and more generally in economics, going back to Adam Smith (1776) and beyond, is about the nature and modalities of coordination and how these modalities make transactions possible in a world characterized by division of labor and specialization of tasks. Indeed, as rightly pointed out by Coase in his comment on Smith (Coase, 1994, chap. 6), coordination and transactions are tightly interwoven.

An important difficulty in that respect comes from the variety of modalities that can provide coordination. Although Smith was much aware of this variety, as shown in his discussion of the organization of production in a manufacture compared to a network of independent artisans, the issue of organizational diversity has long been put under the bushel, largely because of the neoclassical focus on the price mechanism. This issue has been reinitiated by Coase and substantiated by Williamson, among others, and well summarized in their respective Nobel lectures from 1991 and 2009. By giving content to what Coase identified as ‘the institutional structure of production’, modern organization theory thereafter acknowledged the richness of the arrangements that structure our economies (for a synthesis, see Gibbons & Roberts, 2013). It also faces a key puzzle: is there some logic at work in that jungle? With one subsidiary question: what forces determine the choice of a specific arrangement in that diversity?

What makes things even more complex is that these modalities of coordination change over time. In that respect, there have been major evolutions within the last decades in our economies, and particularly in the agrifood sector. These changes can be well illustrated by the passage from segmented activities largely coordinated through independent and relatively isolated local or regional markets to the worldwide organization of activities through tightly controlled value chains paired with vertical coordination. ‘Globalization’ is the catch word for this evolution although it says close to nothing about its content.

Indeed, these changes and their technological support have introduced profound modifications in the way economic transactions are structured, the modalities of their coordination, and the devices and mechanisms through which basic functions can be regulated. A vivid illustration is that of securing the quality of perishable agricultural

products in worldwide supply chains. As those familiar with this example know well, there are many institutional layers involved in facing problems such as food safety, beside the layer at which organizations operate. First, there are rules and norms framing the activities of the various organizational arrangements, defined at what can be called the macro-institutional level. For a long time these rules and norms were shaped mainly at the national level; they are increasingly dependent on international agreements of different types. Second, these rules and norms are embedded in beliefs and behaviors of individual as well as collective actors on the one hand, and they need to be implemented and enforced on the other hand. This complex interaction raises the issue of the transmission mechanisms linking the macro-institutional level at which rules and norms are defined and the organizational level at which rules and norms are actually transformed into actions. I have suggested identifying this intermediate layer as the ‘meso-institutional’ level (Ménard, 2014; 2017a). The resulting institutional setting within which the agrifood sector is structured, and this is true of course for all other sectors of the economy, is much more complex than the one initially considered by institutionalists of different obedience.

What I develop hereafter is far from pretending to review extensively what we have learned about organizational changes and the different institutional layers in which they are embedded. I do not even deliver a survey on specific aspects. I rather submit a very selective approach to what I consider as important lessons from recent researches with a clear focus on the organizational level and insights on the nature and status of meso-institutions. In doing so, my main goal is to point out a set of concepts that can provide tools to make progress in our knowledge of the jungle that so many chapters in this book illustrate.

These considerations are organized along four themes. Section 2 takes contracting practices as a starting point since contracts provide important tools to coordinate, although their role and significance vary widely across sectors and regions. Section 3 proposes an extended transactional model to explain these variations in contracts as coordination mechanisms, with a special emphasis on their role in hybrid arrangements. Section 4 switches attention to the institutional embeddedness of organizations and their contractual component and briefly explores characteristics of the different layers composing this institutional setting,

with an emphasis on the long ignored or neglected role of the intermediate, ‘meso-institutional’ layer, hypothesizing its key role in understanding the diversity of contractual practices and their performance. Section 5 concludes.

2. Why contracts matter ... but don’t do it all!

The rapid development of impersonal transactions (North, 1990a: 34) has led to an increasing role of contracts as a tool to organize and secure these transactions. Hereafter, *contracts are understood as formal **agreements** that explicitly determine binding rules for transferring rights to use goods or services among well-defined economic units (the « parties » to a contract)*. In what follows I first provide insights on their significance in the agrifood sector of some major economies. I then turn to data suggesting their limited role as coordinating tools, thus raising the issue: what else? Unfortunately, in doing so, I rely on a very limited set of data, concentrated on a very small number of countries. An initiative that originated at the OECD in 2008 to collect extensive data on contracts in agriculture was never carried to its final phase. However, preliminary results based on nine OECD members showed the scarcity of data available and the difficulty to collect new data (see preliminary indications in Ménard and Vavra, 2008; and Vavra, 2009).

2.1: The (slow) diffusion of contracts...

Notwithstanding these limits, available data suggest that the use of contracts to coordinate activities has been a striking change in the agrifood sector over recent decades, with particular impact at the farm level. Let me illustrate with two leading production zones: USA² and the European Community.

In the USA, the value of production under contract has more than tripled since the 1970s: it represented 11 % of the total value in 1969 and close to 40 % in 2008 (MacDonald & Korb, 2011). However, it is noticeable that this evolution concerned mostly large, often corporate

² For the USA we can benefit from the extensive data collected by ARMS, in the USDA. ARMS is a complex annual survey applied to a stratified random sample of all U.S. farms gathering information on the financial condition, production practices, resource and contract use, and economic well-being of U.S. farm households. See <http://www.ers.usda.gov/Data/ARMS/GlobalAbout.htm>

farms. Indeed, only 11 % of the total number of farms was concerned (same source). The practice of contracting also varies widely with respect to the type of contract and the type of the activity, as table 1 below suggests.

Item	1991-93	1996-97	2001-02	2005	2008
----- <i>Percent</i> -----					
Share of farms with contracts					
Any contracts	10.1	12.1	11.2	11.1	12.1
Marketing contracts	8.2	10.2	9.0	9.3	10.3
Crop	6.6	8.3	7.4	7.6	9.0
Livestock	1.6	2.0	1.6	1.9	1.4
Production contracts	2.1	2.2	2.6	2.1	2.2
Crop	0.6	0.6	0.5	0.4	0.3
Livestock	1.6	1.6	2.1	1.7	1.8
Share of production under contract					
Any contracts	28.8	32.1	37.7	40.7	38.5
Marketing contracts	17.0	21.5	19.7	22.0	21.7
Crop	11.0	12.2	12.7	13.1	14.9
Livestock	6.0	9.3	7.0	8.9	6.9
Production contracts	11.8	10.6	18.0	18.7	16.8
Crop	.9	1.0	1.6	0.8	0.5
Livestock	10.9	9.6	16.4	17.9	16.3

Table 1: Contracting in the agricultural sector in the USA

(Source: MacDonald and Korb, USDA, 2011)

In Europe, there is also a very uneven diffusion of contractual agreements. In Germany, according to Drescher (2000), the majority of contracts in the agrifood sector are 'short term contracts'. In the UK, contracts tend also to be short term (e.g., yearly in the milk industry) and mostly developed in highly concentrated sectors such as the poultry industry, entirely dominated by 4 main integrators (Royer, 2011). In France, contracting is mostly developed in specific sub-sectors (e.g., eggs, with 55 % of production delivered through contracts; or poultry, with 75 % of the total production), and driven mainly by cooperatives. In the Netherlands, 'a large part' of the hog sector operates under contracts, and contracting

prevails in the delivery of eggs (over 80 %). However, it is very unfortunate that the lack of consolidated data due to the absence of extensive national surveys does not allow having a global picture of the situation.

Notwithstanding this scarcity of aggregated data, numerous studies have substantiated the role of contracts and their characteristics in specific sectors. Pioneering studies are available on broilers and the poultry sector (Knoeber, 1989; Ménard, 1996; Goodhue, 2000; Tsoulouhas and Vukina, 2001), hogs (Key and McBride, 2003; Wang and Jaenicke, 2006; Reimer, 2006), beef packing (Xia and Sexton, 2004), etc. However, we still lack a synthetic view, whether it concerns the data or the analytics of contracts in the agrifood sector (see already Dubois, 2001).

2.2: ... with limited impact

This being said, we already know some limitations regarding the usage of contracts in agriculture. First, contracts are far from universal, even in countries where they are most developed. Let me focus again on the example of the USA for which we have data for over two decades. Those data (MacDonald and Korb, 2011; USDA, 2012) show a huge variation across commodities. For example, marketing contracts represent over 65 % (in value) in crops such as sugar beets and dairy products. Similarly, production contracts cover up to 90 % or more (in value) for livestock such as poultry, egg, hogs. But in field crops such as corn, wheat, soybeans etc., contracts concern less than 10 % in value of the transaction on these commodities.

Second, there are significant variations in contracting practices according to the size of farms, as illustrated by table 2 below. In some sectors, the number of farms under contract has even declined sharply (by about 6 % in fruits and vegetables and even more significantly by about 9 % for poultry farms), although the percentage of total production under contracts for these products increased, an indicator of the growing concentration of production (Vavra, 2009: 15-16)

Farm Sales Class (000\$)	Distribution of Farms	Distribution of Farm Production	Farms with Contracts	Production Under Contracts
	Percent of US Farms		Percent of Sales Class	
<250	92.5	29.1	6.2	19.9
250 - 500	4.1	15.1	43.5	31.3
500 - 1000	2.1	15.1	59.1	42.6
>1000	1.3	40.7	64.2	53.4

Table 2: Contracting practices according to size of farms

(Source: USDA, 2012)

The usage of contracts also varies widely across regions. A striking example is that of rice, with 90% of the production contracted in the ‘Fruitful Rim’ (California, Arizona), while only 15% is contracted in the ‘Mississippi Portal’ (Louisiana).

2.3: Hence the questions: why to contract? And what about this variety?

Notwithstanding their limited application, contracts matter because they provide support to coordination. Indeed, contracts establish common ground among parties, creating regularities that facilitate decision-making and joint-actions. This role of contracts particularly matters for parties to a transaction facing significant asymmetries of information and/or uncertainties affecting the outcome. However, the same factors that contracts intend to overcome are also the very sources of their limits: information asymmetries make most contracts incomplete, and uncertainties challenge the allocation of responsibilities over the resulting outcome as already observed by Stiglitz (1974) in his pioneering paper on sharecropping contracts. This is to say that contracts delineate ‘acceptance zones’ of action within which coordination develops rather than determining specific actions to be implemented.

There is now quite general acceptance in economic theory of this coordinating function of contracts. However, there are important differences when it comes to the interpretation of their role, their significance, and the potential ambiguities they may generate.

First, contracts can be viewed as tools to manage risks in an uncertain environment (Patrick et al., 1998; Allen & Lueck, 2003; EC, 2016). This is a main point made by agency theory, raising the issue of incentives needed to induce participants to a contract to deliver appropriate actions. The expectation is that in allocating risk among actors, for example in the supply chain system, and in associating adequate incentives to the related transfer of risk, with this adequacy a key to success (hence the search for optimal solutions!), contracts can reduce information asymmetries and the risk that agents derail transactions to their exclusive benefit. In that respect, contracts could be more effective than 'pure' spot markets: for example, contracting farmers would regard cash-forward contracts as effective in reducing risks. However, if it is so, farmers under contract should receive lower average returns since they face comparatively lower risks. But according to some studies, it is not what is observed: farmers under contract tend to benefit from relatively higher prices (MacDonald et al., 2004; Sexton, 2017).

Second, a different perspective building on standard industrial organization suggests that dominant firms (e.g., distributors) may use contracts to extend their control over factors such as quality, thus implementing vertically coordinated chain that consolidates their market power (Hegrenes and Borgen, 2003). Better coordination would then go hand-in-hand with concentration, making independent suppliers captive. Indeed, spot markets becoming very thin, buyers could benefit from their small number to impose lower prices to their (dispersed) suppliers, thus absorbing part of the rent of producers while simultaneously benefiting consumers thanks to the strong competition among these leading buyers. However, there is no available evidence that captive supply procurement would generate low prices for farmers (Schroeter and Azzam, 2004). Sexton (2017) even provocatively argues that the small number of strongly competing firms make them increasingly dependent from farmers to secure provision of required quality, which could explain why market leaders increasingly use contracts that are particularly advantageous to the most efficient farmers.

A third argument is that contracts are transaction enhancing. In easing coordination along the supply chain and securing ex-post returns, contracts would provide incentives for ex-ante specific investments. In doing so, they would open room for improved product quality and variety, and speed up transfer of technological innovations. Contracts do not need to be extensive to play such role, contrarily to what was suggested by agency theory. All that is needed is that contracts secure investments by delivering a blueprint within which participants can make decision and negotiate adjustments imposed by a changing environment. Note however that this incompleteness may also facilitate opportunistic behavior, so that there is a delicate equilibrium to find between too much rigidity, embedded into a detailed contract, and too many loose ends, permitted by a relatively vague blueprint. There is another potential drawback coming out of transactional enhancing contracts: the resulting increase in productivity and trade may create environmental damages rarely taken into account and admittedly difficult to assess and to take on board in the contractual process (although this is changing).

Notwithstanding these limitations (and more could be introduced), all arguments above converge in emphasizing the role of contracts as powerful tools to improve coordination and deal with uncertainties, particularly when long term specific investments are at stake. However, there is little in the above arguments to explain why there is such variation in the usage of contracts across sectors, or even within the same sector as illustrated by the rice sector in the USA; and across regions, or even within regions as illustrated by the role of contracts in the dairy industry in the European Community (Vavra, 2009). Two different explanations, that I explore hereafter, can be proposed to this variety of contracts and of the organizational arrangements in which they are embedded. One explanation is rooted in the very characteristics of organizational arrangements and the attributes of transactions they carry; the other, less often explored, is grounded in the properties of the institutional environment within which these organizational arrangements operate.

3. The variety of organizational solutions: an extended transaction costs model.

Indeed, notwithstanding the path breaking paper from Ronald Coase (1937), the analysis of this variety of solutions and of the forces pushing towards the adoption of a specific

arrangement in the set of possibilities as well as the analysis of the exact role of contracts in that context have long remained and still remain underexplored. Agency theory, for example, opened room for the examination of the types of contracts that could incentivize heterogeneous parties to **cooperate** in an **efficient** way, that is: at low cost, with high productivity, and with satisfying rewards for members (Jensen and Meckling, 1976; Bolton and Dewatripont, 2005). However, the contributions building on this paradigm almost exclusively focused on the drawing of optimal contracts, that is: contracts that maximize the probability to reach a preassigned goal (Milgrom and Roberts, 1988; Bolton and Dewatripont, 2005). It is striking how little has been done in that framework on issues regarding the conditions of choice among alternative organizational arrangements and about the modalities of governance, which by far exceed the role of contracts. A possible explanation to this bias could be tracked down to the attention paid to the conditions that make a contract as complete as possible (Tirole, 1999).

3.1: Contracts as part of a more general framework

Transaction cost economics remains a major source of inspiration when it comes to the exploration of these neglected issues. In its paradigmatic version (Williamson, 1985), the variety and incompleteness of contracts are embedded in the very nature of transaction costs, understood as the costs of organizing the allocation and transfer of rights to use resources, transfer that are made possible because the transactions at stake relate to technologically separable activities. A direct consequence of this conception of transactions is that the contractual dimension must be complemented: contracts must be understood in their interaction with the nature and type of rights to be allocated on the one hand; and the nature and modalities of transactions on the other hand. This configuration defines what has been called the ‘golden triangle’ of transaction costs economics (Ménard, 2005) within which organizational arrangements are embedded. Figure 1 summarizes this conceptual apparatus and suggests how the interactions of these concepts frame the representation of organizational arrangements

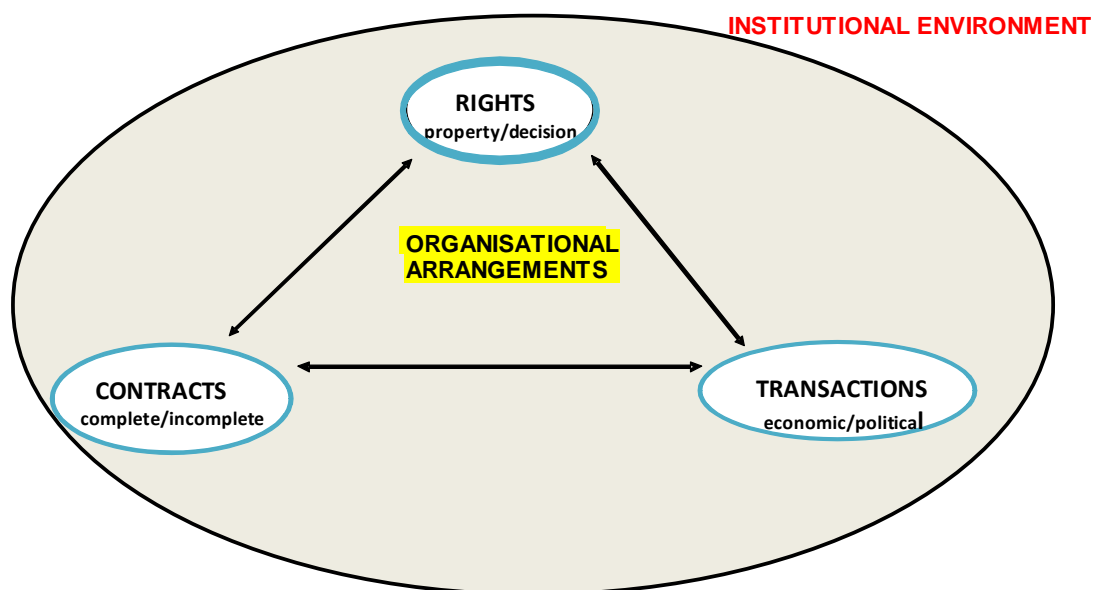


Figure 1: The ‘Golden Triangle’ of Transaction Cost Economics

The initial version of transaction costs economics viewed contracts as the typical transaction, and read organizational arrangements through their contracting features, characterized by the attributes of the transactions to which contracts and the associated organizational arrangements provide support (Williamson, 1985: chaps. 1, 2 and 3). These attributes (the frequency of a transaction (F), the uncertainty surrounding a transaction (U), the variable specificity of investments it requires (AS)) determine the cost of that transaction. In a competitive environment decision-makers are pushed towards choosing the organizational arrangement that can meet these attributes at the lowest possible costs. This now well-known approach to organizations is summarized in figure 2, which captures the impact of the attributes on the costs of organizing a specific transaction that in turn frame the conditions under which an organizational arrangement is chosen. The lower arrow, connecting directly the attributes of transactions to the organizational choice, corresponds to the strategy adopted in most empirical studies: facing the difficulty of measuring directly transaction costs, they focus on the direct impact of these attributes on the trade-off between alternative arrangements, implicitly assuming they do so by shaping the associated transaction costs (for a good discussion on this issue, see Masten et al., 1991).



Figure 2: From transactional characteristics to organizational arrangements

This initial version limited the trade-off to the choice between organizing the targeted transaction through markets versus doing it in-house (the now famous ‘make-or-buy’ trade-off). It was later extended to include alternative arrangements, identified as ‘hybrids’ (more on this below), which have characteristics of markets under certain aspects and properties of hierarchical arrangements on other aspects (Williamson, 1996; Ménard, 2004; Makadok and Coff, 2009).

Recent developments have extended and refined the concepts involved. First, following the initial insight from Alchian (1965) and the modern theory of property rights (Hart and Moore, 1990; Baker, Gibbons and Murphy, 2008; Gibbons, 2005; Arrunada, 2017; Ménard, 2017b) the nature of rights to be traded has been specified, with a sharper distinction between property rights, which are about who holds (transferable) rights over goods and services to organize transactions and ripe related payoffs; and decision rights, which are about how rights to use can actually be exercised, usually through delegation to ‘managers’ by holders of property rights. Property rights can be defined De Jure, thus feeding a legalistic approach; or established De Facto, referring to custom and tradition; decision rights depend on the modalities and degree of delegation so that their exercise can be more or less formally determined and more or less centralized. Second, contracts are viewed as defining the relationship of actors to these rights, which operates mainly through incentives. However, in the ‘incomplete contract’ perspective, incentives are understood in a broader sense than in the ‘complete contract’ approach in order to include motivations not connected to monetary rewards or penalties, a key issue when it comes to reducing the risk of opportunistic behavior (Benabou and Tirole, 2011). Third, there have been suggestions, following North (1990b), to extend the concept of transaction cost by differentiating economic transaction costs, coming out of the allocation and transfer of rights as defined above; and political transaction costs, which intend to capture the costs of building the political coalitions that define the rules of the game within which organizations and

individuals operate. Political transaction costs thus point out the institutional embeddedness of transactions, an issue discussed in section 4.

3.2: The relational dimension of contracts

These developments found a certain achievement in a model developed progressively by Baker et al. (Baker, Gibbons and Murphy, 2002, 2008; see also Gibbons, 2005). Building on MacNeil (1974), Goldberg (1980), Williamson (1985) and Hart and Moore (1990), these contributions propose a theory, identified as the ‘relational contract’ approach, combining transaction cost economics and the ‘new’ property rights theory.

As suggested by their labelling, these contributions focus on the key role of contracts as a mode of coordination, but in a limited and specific way. In a nutshell, contracts are viewed as most of the time incomplete, due to the presence of ‘noncontractibilities’ so that contractual clauses leave room for adaptation. The presence of these noncontractibilities also means that relational contracts leave room for opportunistic behavior: temptation to renege can be highly significant and its prevention requires specific devices to monitor associated risks. Moreover, the need to adapt and to face opportunism imposes quick decisions that most of the time does not allow time for renegotiating the contract (or at costs that are dissuasive). In such an environment, contracts must be complemented by other modalities of coordination. This is typically the role of management (Gibbons and Henderson, 2012), a view that allows reintroducing issues raised by agency theory, but in a very different conceptual context than the one prevailing in contributions inspired by Jensen and Meckling (1976). Moreover, there are organizational arrangements that may require modalities of coordination different from those provided by the management in integrated firms: this is typically the case of hybrid arrangements (see Ménard, 2013a; and the next subsection).

In that perspective, relational contracts can be viewed as playing a substantial role in the allocation and monitoring of the two types of rights defined above, thus being part of the

delineation of alternative organizational arrangements. Building on this intuition, Ménard (2013a; 2018) submitted a synthesis summarized in figure 3.

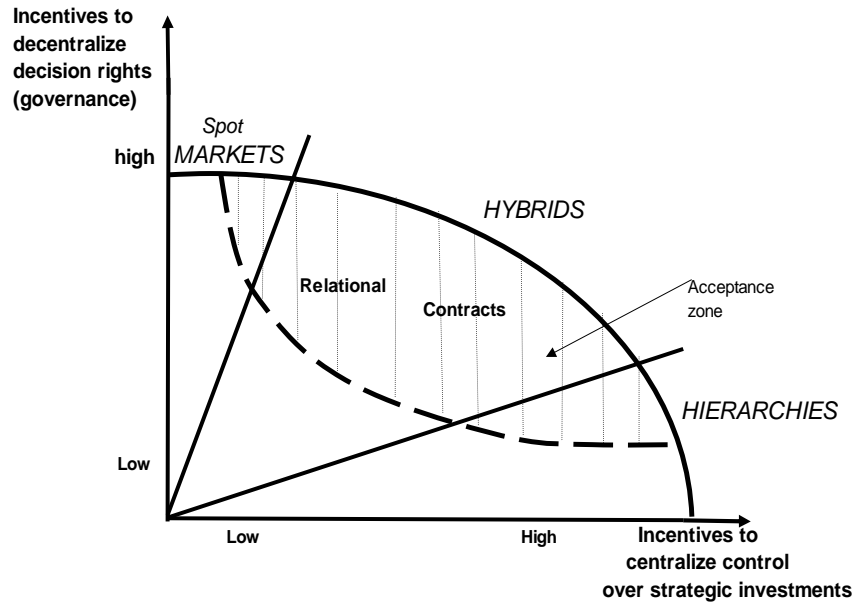


Figure 3: A synthetic representation of organizational arrangements
(Source: Ménard, 2018)

In this figure, the horizontal axis captures the incentives that parties to a transaction (or contract) have to take control over related assets, depending on how strategic these assets are with respect to the implementation and monitoring of the transaction at stake. In a market economy, control takes the form of holding property rights. The vertical axis relates to the other dimension of rights: it indicates the incentives for holders of property rights to keep more or less tight control over decision rights, thus determining the degree of decentralization that characterizes the modality of governance chosen. The upper bound shows the optimal combination of these two dimensions; the lower bound delineates the area under which the misalignment between decision rights and property rights tends to make transaction costs dissuasive. The unique boundary lines on the extreme left (extreme right, respectively) suggests situations where it is optimal to use ‘pure’ spot market (‘pure’ hierarchy, respectively). The lens thus delineated is the domain of relational contracts, which in a sense corresponds to what Simon (1951) identified as the ‘acceptance zone’ in his pioneering analysis of the employment relationship. The radials are proxies indicating

how the combination of the two types of rights and their contractual translation co-determine different organizational arrangements. In that respect this model diverges from the representation of organizations proposed by Williamson (1996, chap. 4), which focused on a single variable (assets specificity, here captured through the more general concept of control of property rights over strategic investments).

Note that there is a missing dimension in this representation, which is about the institutional embeddedness of property as well as decision rights and contracts, an aspect partially captured through the concept of ‘political transaction costs’ in the golden triangle (more elements on this issue in section 4).

3.3: Hybrids: the privileged domain of relational contracts

Figure 3 makes explicit the central role of relational contracts in providing modalities of coordination, particularly when it comes to hybrid arrangements. Following Williamson (1996, chap. 4) and Ménard (1996, 2004, 2013a), hybrids are understood as *organizational arrangements in which two or more partners pool strategic decision rights as well as some property rights, while simultaneously keeping distinct control over key assets*. Hybrids thus differ from arrangements in which parties interact mainly through the price mechanisms (spot markets) so that contracts leave little or no room for mutually negotiated adaptation; and they differ from integrated organizations (hierarchies) within which adjustments are made in last resort through forms of command and subordination. Hybrids are arrangements made among parties that remain distinct legal entities, which matters when it comes to liability issues; and that in last resort maintain control over key rights, which matters in a context in which parties remain competitors. Hence the important role for hybrids of relational contracts through which renegotiations can be conducted and adaptations implemented.

In a sense, this emphasis on the role of hybrids might look paradoxical if one considers some recent evolution in market economies. With respect to production, over the last decades agriculture faced changes similar to that of other sectors, with a strong movement towards **consolidation**. In the USA, production on large farms increased from 38 % to 56 % of total production while the total number of small farms went down by 40 % over the

last 15 years (USDA, 2014). In France, the leading producer in Europe, the number of farms fell by over 50 % while the average farm area doubled from 1988 to 2010 (France, 2015). In the distribution of food products the evolution towards **concentration** is even more spectacular. The top 5 retailers now represent above 90 % of total distribution in Canada and Australia and above 50 % on average for OECD countries (Vavra, 2009). Last, there have been major changes, still going on, in the relation between production and distribution via the development of **centralized procurement** through logistic platforms and distribution centers, with a shift towards non-price competition, the implementation of private standards of quality, and the increasing role of third party certification as a central mean for guaranteeing the reputation of the leading firms.

However, these deep changes were also accompanied by the development of hybrid types of relationship, as almost all chapters in this book illustrate. Producers' organizations, cooperatives, franchising, and the now well-known supply chain systems provide important illustrations. Notwithstanding the acknowledgement of their growing importance, supply chain systems are often misunderstood. In a recent document from the European Commission, they are defined as "... a series of consecutive markets involving input providers and producers, then producers and processors, then processors and wholesalers/traders and finally wholesalers/traders and retailers. Each of these markets is shaped by its own specific supply and demand accounting for price formation." (EC, 2016, par. 29). This is plainly wrong and misses the main characteristics of supply chain systems that the concept of hybrid helps understanding. Indeed, supply chain systems are network that by far exceed pure market relationship. They are arrangements that operate on a large scale, both vertically from producers to retailers, and horizontally among each layer of the supply chain system. Their development requires tight coordination with respect to quality, quantity, and timing of deliverables. This coordination issue raises specific problems because it must be implemented among legally independent actors that often simultaneously involve cooperation and competition. Besides prices, other mechanisms and devices need being implemented to guarantee this coordination and control the risks of opportunistic behavior that could destroy the expected value-added of a chain system. The resulting varieties of potential mechanisms and devices that can be chosen to meet these

goals translate into differentiated transaction costs that determine the comparative advantages or disadvantages for participants to a specific chain system as well as among different competing systems.

Contracts are definitely part of these mechanisms and associated devices. They are increasingly viewed as a major tool to coordinate and to allow efficient control. Their role is deeply entrenched into the nature of supply chain systems as hybrid arrangements, which are characterized by: (1) pooling resources among otherwise competing entities, which raises problems of allocation of property rights; (2) taking advantage of spillover effects from joint actions, which raises problems of allocation of decision rights; and (3) improving the monitoring of noncontractibilities, which raises the problem of allocation of rents jointly generated. Relational contracts can be viewed as (limited) means to deal with these problems, providing parties a framework within which they can operate safely (that is: limiting the risks of opportunistic behavior) while keeping the flexibility needed to constantly adjust without having to face costly renegotiations or to rely on prices that would be determined through distinct markets.

However, the other facet of these characteristics of relational contracts is that they cannot do it all. They are only part of complex governance systems required to deliver stability and guarantee resilience (for a detailed empirical example of this imbrication of different mechanisms in hybrids, see Raynaud and Ménard, 2017). Stability is particularly challenging in a context of legally distinct and heterogeneous partners, which for example differ from the heterogeneity of shareholders in a corporation in that hybrids maintain legal as well as economic autonomy of strategic rights among partners who remain competitors, developing a relationship that Brandenburger and Nalebuff (1996) captured as ‘co-opetition’. Moreover, resilience is also an issue since there is a variety of hybrid arrangements competing against each other on similar markets, with different transaction costs involved. The Brazilian agrifood sector provides a nice illustration (Ménard, 2013b; Schnaider, Ménard and Saes, 2017).

3.4: Some fundamental puzzles.

The problems raised above translate into several puzzles that organization theory still face in dealing with hybrid arrangements and their contractual practices.

A first puzzle concerns the very existence of these arrangements: why is it that competing economic entities with distinct strategic rights enter into binding relationships, partially formalized in contracts, committing to pool significant parts of their rights and to coordinate their decisions accordingly? The standard answer is that in doing so participating organizations expect the creation of value through interdependence, benefitting from spillover effects (Ghosh & John, 1999), and/or creation of buffer against uncertainties (Carson et al., 2006). However, if markets are efficient (which the above definition of the EC document presumed), why do firms abandon part of their autonomy and do not rely on market mechanisms to deal with uncertainty? And if there are benefits expected from close cooperation, why is it that they do not choose integration, along the line suggested by Grossman and Hart (1986), thus avoiding conflicts over rent sharing?

A second and related puzzle concerns the stability of hybrids. If partners to a binding agreement maintain distinct control over strategic rights and can potentially use them in a way that make them competitors on alternative activities or even on the very activities for which they have an agreement, how come that such arrangement are resilient? What governance structure do they adopt that make the arrangement efficient and resilient in a context of incomplete contracts (Hendrikse & Veerman, 2001)? Numerous empirical studies suggest the complexity and variety of the modalities of governance adopted, as illustrated for different arrangements by Jiang and Hendrikse, 2011; Karantininis & Nilsson, 2007; Raynaud and Ménard, 2017; and Martino et al, 2018, among many others. Then, how come that the transaction costs resulting from this complexity are not dissuasive, making hybrid arrangements unstable and transitory (this was the initial view of Williamson, 1975)?

A third puzzle is about what has been identified as ‘plural forms’ in organizational arrangements (Bradach, 1997; also Lindenberg, 1996; for a discussion, see Ménard, 2013b, section 2). Why is it that some economic entities, usually a firm, decide to not fully

integrate nor endorse a well-defined type of agreement with selected partners but rather organize their transactions through different organizational arrangements *simultaneously*? These combinations have been a major concern for analysts of the so-called ‘dual franchising systems’, from the pioneering work of Rubin (1978) to more recent developments (Lafontaine and Slade, 2007); and numerous other examples show the generality of this problem, from the automobile industry- (Monteverde and Teece, 1982) to recent studies in the agrifood sector (Lara et al., 2014; Schnaider et al., 2017).

A fourth puzzle concerns organizational innovation. Since transitions most of the times involve high transaction costs, what forces push towards organizational changes, not only within integrated organizations (e.g., a firm) but also along supply chains and other hybrids? The traditional view emphasizes technological pull. Technological changes are of course important factors inducing various organizational arrangements to adapt and/or imposing new modalities of governance, as illustrated by so many examples from the development of biotechnologies to the revolution in the transportation of agricultural products (controlled atmosphere, satellite navigation systems). These changes require major specific investments, which, according to standard transaction cost economics, should induce integration. Several observations noted above (sub-section 3.3) about consolidation and concentration substantiate this analysis. However, supply chain systems, producers’ organizations etc. often adapt well to these technological changes without integration. Moreover, transaction cost economics does not provide a clear explanation when changes go the other way around. Indeed, innovations are often organizational, with technological changes developing ex-post to provide adequate support. A formidable example is the development of containers, the box that revolutionized the world (Levinson, 2006). When it comes to the agrifood sector, it is almost impossible to understand the globalization of supply chain systems without the container revolution. So the puzzling question is: considering the transaction costs at stake, what motivates an innovator to engage a complex process of interlocked changes in organization and technology.

4. The variety of organizational solutions: institutional embeddedness

All these puzzles and their potential answer raise institutional issues. Developing hybrids requires a redefinition of rights, which by the way challenges the traditional approach that dominates among competition authorities (Ménard, 2005); contracting is embedded in the law; organizational as well as technological innovation impose changes in the rules of the game; and this list could be extended.

4.1: Positing the issue at stake.

The analysis of institutions went through substantial development over the last decades (e.g., North, 1981, 1990a; Aoki, 2001; Greif, 2005; Acemoglu and Robinson, 2012, among many others). However, most analyses remain at the general level of what can be called the ‘macro-institutions’. Macro-institutional rules and norms can be defined at the national level (e.g., Mongolia), the regional level (e.g., the European Union), or even the international level (e.g., the World Trade Organization). However, it is striking how little we know about the transmission mechanisms linking this macro-level and what can be captured as the micro-institutional layer. ‘Micro-institutions’ correspond to the level at which transactions are actually drafted, negotiated and implemented and within which the different organizational arrangements already mentioned (markets, hybrids, hierarchies) act and interact. These arrangements operate within contract laws, within regulation, and within other rules and norms that establish rights and the modalities of their allocation, thus framing potential usage of these rights. That we know so little about the exact modalities of interaction between these two levels, the macro level and the micro level, can be considered one more puzzle, and a fundamental one.

The challenge it raises should make it high on our research agenda. Recent contributions submit that one way to capture these interactions is by introducing a third, intermediate layer of institutions within which these interactions develop (Kunneke et al., 2010, 2018; Ménard, 2017a). This layer can be identified as the domain of ‘meso-institutions’. Meso-institutions can be understood as *the set of mechanisms and devices through which general rules and rights, established at the macro-level, are translated, interpreted, adapted and implemented, thus framing the domain within which alternative organizational arrangements, the micro-institutions, draw and operate transactions and through which they transmit their expectations and requirements to the macro-level.*

As such, meso-institutions provide the actual infrastructure to the actual organization of transactions. For example, macro-institutional rules regarding agriculture are defined at the level of the European Union through the ‘Common Agricultural Policy’, thereafter embedded into national laws (the ‘subsidiarity’ principle). However, these rules are then translated, adapted (possibly through negotiations with national or local organizations), and implemented through specific institutional arrangements. Meso-institutions differ from macro-institutions in that they strictly operate within the general rules defined by the latter. Typical examples are regulatory agencies, public bureaus in charge of certifying quality, institutions of arbitration or specialized courts monitoring conflicts in contractual agreements, etc. Meso-institutions also differ from the micro-layer at which organizational arrangements operate. Indeed, they do not implement actual transactions: they do not produce and deliver actual goods and services that are inputs to other organizations or that are delivered to consumers. What they do is they delineate the specific playing field within which actual transactions are organized. For example, laws (macro-level) may determine a specific fiscal regime for cooperatives (micro-level), but these laws need being translated (for example they may differ according to the type of activity or to the type of cooperatives) and implemented through a public bureau, a professional organization (e.g., accounting organizations that standardize the way cooperatives must respond to the law), etc.

Figure 4 visualizes these different institutional layers, also pointing out that all these layers interact with technology and technological changes, an important dimension that is not explored in this chapter (nor in the other chapters of this book in that respect).

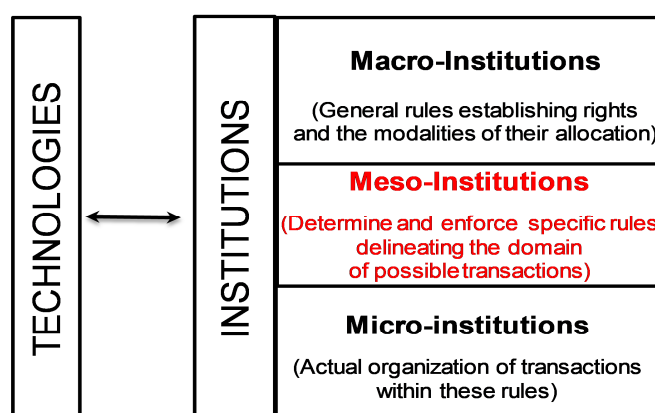


Figure 4: Institutional layers

(Source: Ménard, 2017a)

4.2: Specifying the key role of meso-institutions

Several contributions have already been published on arrangements that correspond to what above proposes to identify as ‘meso-institutions’. However, almost all attention regarding these arrangements has focused so far on the characteristics and role of regulations and regulatory devices (agencies, public bureaus) in charge of their implementation (Laffont, 2005, particularly chap. 7, provides an excellent synthesis). The point I want to make here is that there is more than regulatory agencies to be looked at in order to understand the key role of meso-institutions. Unfortunately, we do not have a general conceptualization of these intermediate mechanisms and devices linking general rules and their actual implementation by actors. For example, what is the theoretical status, beside that of regulatory agencies, of institutional arrangements such as ‘interprofessions’, which are establishing specific norms and standards; or certifying organizations (whether public, private, or mixed), which are playing an active role in implementing rules of quality established at the macro-level; or public bureaus defining geographical origins within the general framework delineated by the law. With this conceptual issue in mind, let me briefly provide indications on some aspects that I view as deserving special attention in our research agenda.

First, we must find ways to better understand the variety of meso-institutions and the logic behind this diversity. As already mentioned, some of these arrangements are public (e.g., a bureau in the ministry of agriculture; a national or supra-national committee involved in the implementation of a policy); others are private (e.g., an interprofession, a union of producers, a federation of cooperatives); and many are mixed (e.g., certifying organizations, marketing boards). What are the consequences of these different statuses? Can we assess their comparative advantages? For example, when it comes to guaranteeing food safety, what are the advantages and disadvantages of public certifying organizations operating through command-and-control compared to private ones operating through

reputation or to mixed arrangements with representatives of the different stakeholders and operating through consensus building?

Second, what are the consequences of these diverse solutions in terms of transaction costs? Here, the distinction between the two types of transaction costs mentioned in section 3 is relevant. There are economic transaction costs involved in these different institutional arrangements, for example the cost of running a public bureau compared to the costs of running a private arrangement in monitoring quality control. However, there are also political transaction costs, because of the very nature of these meso-institutions, at the intersection between policy-makers and operators. For instance, there are costs coming out of the decision to rely on a committee with representatives of stakeholders (costs of selection process, delays, costs of building a coalition) compared to the costs of a public bureau (costs of accountability, of legitimacy). To assess these costs, there is a need for 'institutional' indicators. A very positive signal is the increasing interest of international organizations in developing such indicators (see for example OECD, 2016a, 2017; World Bank, 2017) but much remains to be done in that respect.

Third, a central dimension of both types of transaction costs relates to the modalities of governance implemented by alternative meso-institutions. In the examples mentioned above, there are issues related to the composition of the board (of an independent agency) of the staff (of a public bureau), or of the representation (of joint committees). The modalities of decision-making, the conditions of implementation of decision made, and their acceptability for operators acting at the micro-level are all important factors and they all involve specific costs. In that respect, it is now quite largely acknowledged among policy-makers that participation of stakeholders is beneficial (OECD, 2016a, 2016b, 2017), but it has also drawbacks, for example what Spiller (2009) and others identified as the risks of third party opportunism. What is the balance between costs and benefits of such arrangements in a democratic regime, e.g., up to what point do they interfere with the responsibilities of elected policy-makers?

Fourth, there is the difficult issue of the overlapping of meso-institutions. Arrangements in charge of interpreting, translating, adapting and implementing general rules into specific ones are unevenly distributed in the vertical hierarchy of institutions. Most of the time,

different levels of public decision-making are involved: local authorities, regional or national ones, and increasingly supranational ones. But there are also interferences of different meso-institutions that overlap horizontally because jurisdictions and responsibilities are rarely perfectly defined and assigned. For example, decisions made by a bureau of the Ministry of Agriculture about how to implement the directives of the European Union in the dairy milk industry may well interfere and even be in conflict with the perspective of competition authorities or with the policy of the Ministry of Environment. In sum, the existence of various meso-institutions raises severe problems of coordination, both vertically and horizontally, and the resulting confusion is a source of transaction costs and (often and legitimately) a major source of complaints by operators acting at the micro-institutional level.

Last, but not least, it is necessary to keep in mind that in last resort meso-institutions should ideally be designed so as to establish optimal conditions for an appropriate alignment between organizational choices (e.g., adopting adequate organizational arrangement for guaranteeing food safety at the firm or cooperative level) and rules of the game (e.g., new standard adopted regarding the type and usage of pesticides allowed). Because the possibility and causes of misalignment has been too much neglected so far in the economic literature, adaptations are too often made following misalignments observed ex-post, which can significantly increase transaction costs (a good example is provided for fisheries in Haraldsson, 2017).

To sum up, I would argue that we are still in limbo when it comes to understanding the impact of, and the interaction between institutions long assimilated solely to the macro-level at which rules of the game are defined (typically the political and/or legal system) and the organizational level at which transactions are actually made. We need to take on board the more complex setting in which intermediate institutional arrangements play a crucial role in framing, within the context of the general rules and norms, the actual domain and some conditions within which actors and the different organizational arrangements they choose and implement can develop transactions. There is still a long way to go in this direction, which opens exciting perspectives for our research program.

5. Conclusion

In this chapter, I have emphasized: (1) the diversity of organizational arrangements in which contracts are embedded, so that we need to dig deeper in the variety of contracts associated to these arrangements; (2) the importance of hybrid arrangements, particularly supply chain systems, their diversity and the key role they play in the context of globalization of economic activities, which is particularly relevant in agriculture; (3) the central status of a specific category of institutions, identified as meso-institutions, that provides the essential intermediation between rules of the game that are too general to be implemented directly, and organizations that are operating within the domain thus delineated; (4) the problems of coordination raised at all these levels, and the role contracts play in that complex environment, an important role for sure, but a limited one, which explains the need to look at their embeddedness into broader governance structures and to look at them in the context of a more general theory.

Although important progress has been made over the recent decades with respect to the nature and role of institutions in economics, a general theory of institutional layers, of which organizational arrangements are an integral part, still remains to be developed. In this chapter, I have emphasized the possible role of a transaction cost approach in that research program. There is of course the need to push the analysis further, which will require the development of new concepts and, ultimately, new theories.

Yes we live in a jungle of organizational arrangements anchored in the broader jungle of institutions. However, a jungle is not as disorganized as it may look and unknown animals are strange only to outsiders' perception. Yes, the knitting of the capitalist fabric is a complex of interwoven institutional layers. However, tools are already available or in development that allow to unfold part of its secrets. What we need above all are young scholars, like those contributing to this book, who are risk-takers and willing to explore new terrains.

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