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FROM BILATERAL ENFORCEMENT TO STRUCTURAL ENFORCEMENT IN ECONOMIC TRANSACTIONS : THE NETWORK EFFECT.

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*“Network analysis offers a means for bridging the
gap between macro- and micro-level explanations”.*

- Knoke & Kulinski (1982, p. 13) -

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Abstract: The work carried out by the New Institutional Economics and the New Micro-Economics attempts to specify the contents of a private arrangement that is held to be characterized by bilateral enforcement. According to these theories, transactions potentially subject to opportunism take place between two actors without the intervention of any third party, thanks to the mobilization of such mechanisms as hostage, private arbitration and reputation. However, a re-examination of this work shows that there is a social arrangement hidden behind the private one, suggesting that we must abandon strictly bilateral enforcement in favor of enforcement of a structural nature. The actors are embedded within social structures that influence their behavior and that enable social mechanisms (reciprocity, solidarity, reputation and ostracism) to ensure the efficient accomplishment of transactions.

Key words: contract, enforcement, embeddedness, network, institutions.

JEL classification: L14, A12, A14.

1. Introduction

For the most critical transactions, those that feature a hold-up problem (Klein et al., 1978; Williamson, 1985) or free rider behavior, some approaches aim at identifying the mechanisms that ensure their progress in an efficient way. According to these theories, either formal (contract, authority, and hostage) or informal mechanisms (reciprocity, reputation, trust, etc.) are mobilized to promote the efficient execution of transactions.

Beyond the distinctions that may be made between the formal or informal nature of these mechanisms, these studies most often seek to define a private arrangement within which the mechanisms work in a self-enforcing manner. Moreover, through transaction unit analysis (Commons, 1931)ⁱ and individualistic paradigm observance, these theories try to define a strictly bilateral enforcement of transaction that focuses on private arrangement. Here, we use the term enforcement to signify all the formal and informal mechanisms used to facilitate the progress of transactions. We use the term bilateral enforcement to refer to formal and informal mechanisms involved in the development of transactions between two actors within a private arrangement, i.e. without the implication of a third party. In this paper, we will attempt to describe a different type of private arrangement.

Our argument is that these theories, proposed mainly by the New Institutional Economics (NIE) or the New Micro-Economics (NME), do not succeed in describing a strictly bilateral enforcement. Contrary to all expectations, they confirm the embeddedness of economic relations within social structures (Granovetter, 1985). Transactions occur within networks of actors bound in one way or another by systems of stable and lasting relations, within which intangible and tangible resources circulate. Finally, the complex transactions described by the NIE or the NME take place precisely because they occur within social structures that influence actors' behavior and thanks to a particular type of enforcement, which we will call structural enforcement. This notion of enforcement expresses the idea that social structures, by influencing actors' behavior, facilitate the use of formal and informal mechanisms to sustain the progress of transactions between two actors outside a private arrangement.

Reciprocity, reputation, trust, solidarity, contract and price are social mechanisms that ensure the efficient progress of the most critical transactions within hybrid forms: networks, alliances, communities, etc. So, one must acknowledge that rationality is not the feature of an isolated individual, it derives not only its strength but also its significance from the social context within which it is embedded (Arrow, 1987). The embeddedness of actors explains

why “*general principles*” such as “*beliefs and preferences may be the product of social interactions that are not mediated through price mechanism or market*” (Arrow, 1998, p. 97).

We propose to demonstrate how a part of economic theory fails to define a concept of bilateral enforcement of transactions consistent with a private arrangement because it addresses on the contrary the structural nature of enforcement. At the same time, we will see how “*instrumental reductionism*” may be overcome (Swedberg & Granovetter, 2001, p. 9) through a vision of economic actions that is located exactly between “*under-socialized and over-socialized*” visions of economic behavior (Granovetter, 1985), by combining economic and sociological works.

To achieve this goal, we will begin by discussing the NIE studies. They deal with the governance of transactions involving specific assets. They predict the progress of complex transactions within a special governance structure that is a “*hybrid form*” and under a private arrangement. This self-enforcing arrangement is based on hostage or private arbitration, which is to say that court judgments are not involved. However, these transactions rely intrinsically on “*relational contracting*” where hostage and private arbitration play no role, for it is the real capacity of actors to cooperate and to trust each other that prevents the opportunistic behaviors predicted by NIE (§2). We will then analyze Kreps’ reputation model. A re-interpretation of this model will be proposed, to demonstrate how the reputational mechanism works because transactions are embedded in social structures that favor structural enforcement. Within this structural enforcement, the function of informal mechanisms such as trust is enlarged (§3). Furthermore, we will discover that the Williamsonian private arrangement has little in common with the Krepsian one. Nevertheless, through the examination of these two theories about efficient private arrangement we hope to emphasize the presence of both levels of enforcement and attempt to demonstrate how the two are intimately intertwined. For complex transactions, bilateral enforcement is largely dependent upon structural enforcement. The latter encompasses the former and favors the flow of information about actors’ behavior in social structures, facilitates social sanction and finally justifies the use of informal mechanisms such as trust to sustain the progress of economic relations (§4).

2. A first endeavor: bilateral relation and formal mechanisms in private arrangement

Developing Coase's argument (1937), Williamson (1975, 1985, 1996) carefully identifies the essential attributes of transactionsⁱⁱ. With supposedly realistic assumptions about the resources invested (assets specificity) and about actors' behavior (opportunism and bounded rationality), the NIE school defines the most critical transactions, those endangered by "*interaction effects*" or "*hold-up problems*" (Williamson, 1985; Klein & al., 1978). Subsequently, this theory searches for the most efficient governance structure, the one able to solve strategic uncertainty, reduce transaction costs and preserve economies of scale. It asserts that recurrent transactions with mixed assets will take place within hybrid contractual arrangements.

From hold-up to hybrid forms: NIE predictions

For Williamson, actors may decide to invest in specific assetsⁱⁱⁱ to create a quasi-rent, "*the excess of its value over its salvage value, that is, its value in its best use by another lessor*" (Klein & al., 1978). In doing this, they expect to receive ex-post a part of this quasi-rent (Klein & al., 1978; Klein, 1980; Monteverde & Teece, 1982; Williamson, 1985). However, they also expose themselves to their partner's potential strategic behavior, i.e. ex-post opportunism^{iv}. In fact, the partner may allege non-anticipated expenses to appropriate the quasi-rent ex-post and opportunistically. This kind of quasi-rent opportunistic appropriation gives rise to a strategic uncertainty called the "*hold-up problem*" (Klein et al., 1978; Klein, 1980; Bull, 1983) or "*interaction effects*" (Williamson, 1985). This phenomenon arises from a "*fundamental transformation*": transactions are no longer discrete when "*small-numbers competition*" appears, because a "*bilateral offer situation*" gives rise to ex-post opportunistic behavior (1985, p. 61-63). This kind of opportunistic behavior is all the more likely in that actors are rationally limited^v. Actors cannot write comprehensive contracts (Williamson, 1994, p. 102), or perform a "*complete presentation*" of the transaction (MacNeil, 1974, 1978). Hence, to appropriate opportunistically part of the quasi-rent (the motive), actors may take advantage of their partners' limited rationality (the means) (Klein, 1980, p. 357)^{vi}, or try to exploit the "*areas of contractual incompleteness*" (Crozier & Friedberg, 1977)^{vii}.

After this detailed examination of the attributes of transactions, Williamson proposes a typology of contracts and describes the different governance structures distributed along a "*continuum*"^{viii}. Like MacNeil (1974, 1978), he indicates a "*spectrum*" ranging from highly discrete transactions at one end to highly relational transactions at the other (1974, p. 736-737). Along this spectrum lies a "*class of contracts*", tools meant to solve coordination

problems among actors involved in economic activity. Williamson then links every class of contract to a type of transaction and to a type of governance structure^{ix}.

In particular, between the two extremes of the governance continuum^x lie occasional, possibly even recurrent transactions that involve mixed or highly specific assets. These transactions take place within a hybrid governance structure subject to neoclassical contracting to prevent ex-post quasi-rent opportunistic appropriation (Williamson, 1991; Ménard, 1997, 2000). Because they lack comprehensive contracts or complete presentation, individuals may use the neoclassical contract insofar as it tolerates “*the existence of gaps in their planning and the presence of a range of procedures and techniques used by contract planners to create flexibility instead of either leaving gaps or trying to plan rigidly*” (MacNeil, 1978, p. 865). This contract contains a “*tolerance zone*” (Williamson, 1991, p. 272) inside of which autonomous parties seek appropriate adaptations to price or quality considerations, for example^{xi}.

In addition, every actor has an interest in the duration of relation because it engages specific assets and contains quasi-rent to be shared ex-post. Thus, neoclassical contract provides for third-party assistance (an arbitrator) to endue flexibility and fill gaps, to solve any dispute. Courts do not intervene in dispute resolutions; litigation would signify the breaking-off of relations. Williamson argues that a “*private arrangement*” is finally reached (1985, p. 9-10)^{xii}.

Here some remarks may help to understand the use that Williamson makes of MacNeil’s typology. MacNeil lists the attributes of the discrete transaction paradigm of standard theory, before asserting that discrete transactions are relatively rare compared to relational transactions. He then argues for the capacity of relational contracting to govern complex transactions within specific hybrid forms (MacNeil, 1974, 1978; Ring and Van de Ven, 1992, 1994; Ring, 1997).

Hybrid forms and relational contracting

Interviewing 68 executives and lawyers from 43 companies and 6 law firms in Wisconsin, Macaulay (1963) studies their commercial practices. He shows that in dispute settlement these actors only rarely resort to courts or legal sanctions. As far as possible, they try to keep lawyers out of the dispute settlement process to avoid the relation termination perceived as detrimental for all parties. In this process, actors activate “*non legal sanctions*” or “*norms*” instead of settling disputes in the courts (1963, p. 63). Among these norms, reciprocity plays a

critical function: actors give and take, and are prepared to sanction any deviant behavior (ibid, p. 61, 63). Underlying these non-legal sanctions, Macaulay reveals the non-contractual nature of transactions among executives. They have ongoing exchanges, they know each other, and they prefer to rely on “*a man’s word*”. Therefore, there is a moral commitment symbolized by the “handshake” (ibid, p. 58).

Later, MacNeil drew on this work to assert that most transactions are quite different from the discrete transaction so widely studied in standard economics. There are transactions of significant duration, where ongoing relations are of great importance, but in which uncertainty is also noteworthy. For these transactions, actors may be reluctant and incapable of specifying all possible contingencies and obligations for all parties over the long term. Therefore, they assume contract incompleteness and promote flexibility in ongoing transactions. Finally, MacNeil emphasizes the relational nature of contracts.

In complex transactions (including specific assets), according to MacNeil, classical contracts cannot be used to solve the hold-up problem. Instead, cooperation among actors plays a critical role. Cooperation is viewed as the prerequisite for the efficient execution of transactions. Cooperation is based on norms such as solidarity. When actors trust each other and display solidarity, then transactions take place successfully and the quasi-rent is shared ex-post. In other words, because transactions are of a significant duration, the identity of the parties is important and personal relations are established. As a result, actors observe and expect others to observe norms that favor the enforcement of complex transactions and the effective share of quasi-rent (MacNeil, 1986). To sum up, the relational contract emphasizes the long-term tendency of the actors to be cooperative (MacNeil, 1983; Campbell, 2001).

For example, MacNeil states that transactional relations such as franchising occur on a relational contract basis: “*Close whole person relations form an integral aspect of the relation. (...). The entangling strings of friendship, reputation, interdependence, morality and altruistic desire are integral parts of the relation*”, “*common contract norms*” sustain the progress of complex transactions. Among other factors, these norms include “*integrity*”, “*reciprocity*”, “*consent*”, “*reliance*”, “*contractual solidarity*” and “*restraint of power*” (1983, p. 346-356).

Whereas NIE predicts opportunistic appropriation of quasi-rent, MacNeil describes the relational nature of contracts and suggests that actors make use of “*essential elements of contractual behavior*” (ibid, p. 346)^{xiii}. These norms accompany contractual relations and

influence the behavior of the parties so that these relations can last over time. Norms guide, control and regulate proper and acceptable behavior (MacNeil, 1980, p. 38).

Nevertheless, Macaulay and MacNeil's studies also examine the question of reputation. For some economists, this offers a useful means of explaining the cooperative behavior of actors. According to this argument, rational individuals, concerned for their reputation, restrain their opportunistic instincts and choose cooperative behavior: - considered more lucrative over the long term. Thus, theorists assert that a private arrangement capable of ensuring the progress of complex transactions is obtained. However, detailed study of a reputation model (Kreps, 1990) and the accurate analysis of its implicit content show that the self-enforcing arrangement is still far out of reach.

3. A second endeavor: dyadic relations and informal mechanisms in private arrangement

For transactions characterized by free rider behavior, game theory seeks to define the conditions required for the emergence of cooperative behavior: - the source of optimal social equilibrium. In particular, in repeated games between n players, Kreps (1990a, 1990b) asserts that repetition of transactions favors the introduction of a self-enforcing mechanism to establish trust and guarantee the progress of transactions within an efficient private arrangement following the NIE criteria. He argues that this mechanism is reputation. We believe that the mechanism of reputation is only valid within a structural context of economic action. On this note we leave the domain of private arrangement for that of social arrangement, in which trust plays an otherwise more crucial role.

Reputation and trust in the performance of transactions

Kreps analyses a very specific game. On first sight, it is a one-round game: an actor A_i must decide whether or not to trust an actor B . A_i knows that if he elects to interact with B , B can choose to act opportunistically, as a free rider. B may impose severe losses on A_i ^{xiv} and obtain maximum gains^{xv}. In fact, the game is repeated: B must successively decide to honor or abuse the trust of $A_1, A_2, A_3, \dots, A_n$ actors. The game thus begins with a single transaction between actors A_1 and B and continues with another transaction between A_2 and B , and so on. So, "*instead of having one individual offer trust and a second honor or abuse that trust, we have a sequence of individuals A who must choose whether or not to trust a single trading partner B* " (Kreps, 1990a, p. 106)^{xvi}. Kreps posits that the game is infinitely repeated: there is a 90 percent chance that another transaction will follow the present one.

Having posited these hypotheses, Kreps then defines reputation as the historical facts linked to an actor's behavior toward his previous partners (1990a, p. 106). Reputation conveys pertinent information about B's behavior in preceding transactions to partners that would like to trust him and exchange with him^{xvii}. B's reputation is intact as long as he has honored the trust of his partners in the past^{xviii}. However, if B abuses the trust of a single partner during these transactions, his reputation will be irremediably sullied.

Kreps then specifies the conditions that enable the transactions between actors A_i and B to take place. On one hand, any A_i will only trust B if B has not abused the trust of his previous partners. Thus, the past behavior or the reputation of B determines the choice of each A_i for the present round. On the other hand, B knows that if he wants to exchange with another A_i for the next round, he must preserve his reputation; in other words, he must honor his partner's trust in the present round. To sum up, B maintains his reputation unsullied by honoring A_i 's trust, and thus obtains the possibility of repeated transactions with them. In this way, B gains maximum profits through repeated rounds. He receives \$10 in each round, according to the Kreps' Trust game (1990a, p. 100). On the contrary, if B abuses the trust of the current A_i , his reputation is irremediably sullied. He gets the maximum pay-off resulting from defective behavior (\$15), but he can no longer transact with A_i . By choosing abusive behavior, B renounces the \$10 for each honest future transaction he would have had with A_i . B will therefore protect his reputation, an asset that will give him high levels of income in the future. Each A_i knows that B is rational and will keep his reputation unsullied by honoring the trust of his partners. For this reason, each A_i will decide to trust B and will choose to transact with him in order to receive ex-post a part of the quasi-rent when specific assets are engaged^{xix}.

It is important to note that Kreps' propositions satisfy certain theoretical objectives. For example, as an *informal self-enforcing mechanism*, reputation supports the enforcement of spot-market transactions. Reputation produces the trust necessary for the progress of transactions that contain a risk of opportunistic behavior. Thanks to reputation, a private arrangement can be found. There is no need for any third party involvement, or arbitration (Lester, 1980; Klein, 1980). Here we can observe a clear distinction between the private arrangement described by Williamson and that proposed by Kreps. Moreover, this private arrangement is efficient in the neo-institutional sense of the term. The informal self-enforcing mechanism explains how transactions take place without any complete contingent contract^{xx}.

To put it differently, trust based on reputation saves on transaction costs (Leibenstein, 1987; Kreps, 1990a; Sako, 1993; Guennif, 2000a, 2001b).

Despite these important theoretical points, the model displays certain limits. The reputation principle results in multiple equilibriums. In reality, actors may have some difficulties in observing B's past behavior. The 90% chance that the game will go on after the first round is questionable. Nevertheless, our objection lies on a different level. For us, Kreps' model claims to demonstrate how trust ensures the execution of transactions in the context of a private arrangement. However, a rereading of this model reveals a critical implicit content that significantly modifies Kreps' argument. Our argument is that this arrangement has nothing to do with a private arrangement; it actually appears to be a "*social arrangement*" (Uzzi, 1996).

A structural rereading of the reputation model

We believe that the argument is much more complex than Kreps' explanations suggest. Any transaction between A_1 and B occurs because of several multilateral links that reveal a social arrangement. In other words, we propose a rereading of Kreps' model that goes beyond its bilateral dimension and grasps its real structural dimension. To explain this point of view, let us consider a particular transaction: A_2 must decide to trust and trade with B.

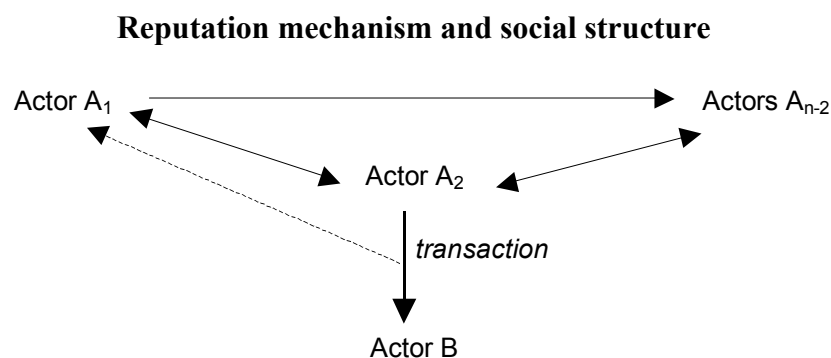
For reputation to become a self-enforcing mechanism, it is crucial that A_2 should be able to observe B's behavior during the previous transaction. However, one must acknowledge that an "*agent only observes the results of the trades he engages in*" (Kandori, 1992, p. 65). Therefore, A_2 must identify A_1 , request his "*private information*", and ask for his "*personal experience*" (Kandori, 1992; Williamson, 1985). Then, the decision whether to trust B depends on A_2 's access to the information A_1 holds and most of all on the credit A_2 gives to this information. Therefore, another trust link underlies the reputation argument: if A_2 trusts A_1 to communicate his private information without any distortion, and if A_1 claims that B acted honestly, then A_2 elects to trust B and exchange with him^{xxi}. If one of these conditions is not fulfilled, A_2 refuses to trust B and renounces trade with him^{xxii}.

The prime trust link that binds A_2 and A_1 is a necessary condition for the construction of trust between A_2 and B. A_1 is "*a trustworthy informant*" (Granovetter, 1985, p. 490), an "*intermediary in trust*" (Coleman, 1990, p. 180; Nooteboom, 1999, p. 350; Uzzi, 1996, p. 679), a "*third party*" (Burt, 1999, p. 6). The trust connecting A_2 and B is of a medial nature since it presupposes a former trust link between A_1 and A_2 .

Before trusting B, A_2 must be sure that any opportunistic behavior on the part of B will be punished by A_3 , i.e. the next individual who will have to decide whether to exchange with B. Introducing a doubt about B's next partner, it follows that the trust A_2 invests in B relies on the belief that any A_i will boycott transaction with an opportunist B. Thus, as illustrated in the diagram below, if A_2 trusts that A_i will ostracize^{xxiii} B if he defects, then A_2 will decide to trust B and exchange with him. The enforcement of the transaction presupposes social norms^{xxiv} such as solidarity and loyalty to which the actors must adhere.

Furthermore, to be able to ostracize B, all A_i must rely on the private information A_2 delivers. Therefore, A_i must trust A_2 . Thus, trust between A_2 and A_i is mutual.

In conclusion, the enforcement of any transaction between any A_i and B is not due to a single trust link between the two players, as Kreps supposes. We are not in the context of a simple “*relational embeddedness*” but in a “*structural embeddedness*” (Granovetter, 2002) which enables us to understand the progress of the transaction by going beyond an instrumental reductionism (Granovetter, 1990; Grahber, 1993). According to our rereading of Kreps' model, all transactions take place through multilateral links, which make up the “*chain of trust*” illustrated below. Thus, trust is indeed this “*important lubricant of social systems*” (Arrow, 1974, p. 23)^{xxv}.



In conclusion, it appears that the reputation mechanism is valid because transactions are embedded in social structures that influence actors' behavior. Trust, as an informal mechanism, does not support the performance of transactions within the context of a private arrangement, but within the context of a social arrangement characterized by multiple links between structurally embedded actors^{xxvi}.

4. From bilateral enforcement to structural enforcement: the network effect

Opportunist behavior, an endogenous variable

We have seen that the object of the NIE and NME work is to specify the conditions under which the supposed opportunism of the actors could be restrained to allow the accomplishment of transactions. Based on this strategic risk, which weighs on transactions when there is a harmful conjunction of asset specificity and limited rationality, the NIE evokes a "*fundamental transformation*" (Williamson, 1985, p. 61-63) that would tend to favor *ex post* opportunist behavior. As assets become more specific, the continuity of the relation and the identity of the actors grow in importance, shifting the transactions from the discrete mode to the relational mode. For the NIE, these transactions will be accomplished with difficulty on the market: actors must incur prohibitive transaction costs to guard against risks of opportunist appropriation by carrying out a complete presentation of the transaction. They must then reflect on the definition and use of a specialized governance structure to manage this permanent tension between the profits to be made from cooperative behavior and the costs caused by the potential opportunism of the partner.

It is true that internalization and contractual mechanisms offer undeniable means of guarding against opportunism. However, developing a pessimistic vision of the actors and making opportunism an almost inherent characteristic of human nature can only give us a partial and necessarily biased representation of these actors who, being wary if not feverish, would systematically try to protect themselves by resorting to a whole set of formal mechanisms. Rather than making opportunism a theoretical postulate, surely the real issue lies in defining that or those factors in function of which the supposed opportunism of the actors varies. We believe that opportunism is not valid as a basic hypothesis because it has an irreducibly contextual nature: the interests and motivations of the actors vary according to the parameters of the social structure in which they are embedded (Plociniczak, 2002b). More precisely, the bilateral relations of exchanges and the overall structure of the network bring out (or not) the tendency of an actor to act in an opportunist way. Insofar as opportunism is a *dependent variable* - dependent on the relations between the actors and on the network structure, - it is important to emphasize the contextual and essentially structural element of this opportunism. If the actors do not indulge in opportunism as often as the NIE and the NME would like, it is precisely because their exchanges are embedded within social structures where bilateral and structural enforcement acts in a satisfactory way. On the level of bilateral relations, repetition of the interactions establishes conditions favorable to the appearance of social mechanisms that help actors to coordinate, adapt and protect their transactions.

If the repetition of interactions constitutes one side of enforcement (its bilateral dimension), we have not yet defined its reverse side. To do so, we must re-insert bilateral enforcement within the relational networks in which the actors are immutably embedded. It is in fact impossible to examine bilateral relations in isolation, without "*embedding*" them inside these broader relational structures that are the networks of relations^{xxvii}. As we will see, taking into account the influence of this structural dimension of transaction enforcement radically modifies the theoretical results obtained by the NIE, and in particular the thesis of the "*fundamental transformation*".

The bilateral dimension of enforcement

At the bilateral level, repetition of the interactions transforms the behavioral orientation of the actors with respect to their partners. This encourages the creation of implicit obligations favorable to the reinforcement of cooperation and the introduction of non-contractual mechanisms. These mechanisms - formed, reinforced and modified through successive interactions - constitute a common framework making it possible to monitor behavior and to settle the disagreements of the actors in relation. Various studies suggest that frequent contacts between actors favor the sharing of information and the emergence of a set of behavioral norms, informal rules that make it possible to supervise and regulate behavior (Macaulay, 1963, 1985; Baker, 1981, 1984; Granovetter, 1985; Larson, 1992; Uzzi, 1996, 1997; Gulati, 1998). As Galaskiewicz and Zaheer summarize "*there are certain rules, norms, and assumptions that actors in relationships respect and honor*" (1999, p. 245). The continuous and long-term character of the transactions creates complex bonds, which makes it possible to manage the negotiations and the conflicts inherent in any durable relation. Macaulay (1963) observes that actors expect their counterparts to continue their business without putting temporal limits on it. Buyers and sellers consider that their colleagues will occupy their positions indefinitely. He suggests that over the years, a set of norms encourages an auto-execution of contracts and that recourse to the courts to solve conflicts is only effective for situations involving large monetary sums or when an actor wishes to put a term to his trade. Macaulay writes that conflicts between the actors are "*frequently settled without reference to the contract or potential or actual legal sanctions. There is a hesitancy to speak of legal rights or to threaten to sue in these negotiations (...) or as one businessman put it, 'You can settle any dispute if you keep the lawyers and accountants out of it. They just do not understand the give-and-take needed in business' (...) Law suits for breach of contract appear to be rare*" (1963, p. 61).

Although Williamson himself recognizes that “*repeated personal contacts across organizational boundaries support some minimum level of courtesy and consideration between the parties (and) discourage(s) efforts to seek a narrow advantage in any particular transaction*” (1975, p. 107), he does not study the evolution of the relations over time. He does not grasp, therefore, how the underlying, informal social mechanisms of coordination and control are built up during this relational evolution. As the temporal dimension is occulted by the transactional analysis, it becomes impossible to admit that repeated exchanges constitute one of the significant aspects of economic relations because they enable provision to be made against the problems of defection or free riders.

Berger, Noorderhaven and Nooteboom (1995) use the expression “*temporal embeddedness*” to describe the history of a bilateral relation and the influence of this common history on the expectations of the two actors concerning their future transactions. They assert that if the repetition - the accomplishment of past transactions - is satisfactory for both parties, then the expectations of the two actors will grow (i.e. the desire to work together in the future will grow). Just like Granovetter, these authors draw on the work of Berger and Luckman (1966) for whom the repetition of interactions forms and institutionalizes practices of behavior. They argue that this dimension subjectively reduces the level of dependence perceived for a given level of asset specificity, and so reduces the degree of uncertainty associated with the relation. In a study relating to a panel of 166 inter-organizational alliances in Japan, the United States and Europe, Gulati observes that actors who have previously formed an alliance subsequently engage in other partnerships, suggesting that “*over time, each firm acquires more information and builds greater confidence in the partnering firm*” (1995b, p. 644). He supports the idea that familiarity between actors, through repeated interactions, generates a reciprocal feeling of confidence that makes it possible to elicit positive behavior, favorable to the progressive replacement of formal or contractual relations by abstract relations. According to Ring and Van de Ven this dimension creates “*abstract psychological contracts*” based on confidence, which supplement or replace the formal safeguard clauses (1994, p. 105).

As Peter Blau observes, the relations between actors “*evolve in a slow process, starting with minor transactions in which little trust is required because little risk is involved (...)* Hence, processes of social exchange, which may originate in pure self-interest, generate trust in social relations through their recurrent and gradually expanding character ” (1964, p. 94). However, various studies reveal that the present intensity of exchange is positively associated

with the stability of the future exchange, suggesting that the methods of resolution of problems of coordination do not result in the delivery of hostages, nor in a vertical integration, but rather take the form of discussions: "*day-to-day exchanges*" (Larson, 1992, p. 88), "*joint problem-solving arrangements*" (Johanson & Mattson, 1987; Powell, 1990; Uzzi, 1996, 1997), or "*face-to-face*" (Nohria and Eccles, 1992). To sum up, actors use their "*voice*" rather than the "*exit*" (Hirschman, 1970) i.e. they demonstrate the wish to improve the situation rather than abandon their partner.

These mechanisms tend to personalize exchanges; they favor tacit knowledge and establish a common memory that increases the diffusion of routines favorable to the resolution of the problems encountered by actors in relation. From this point of view, Macaulay notes that "*top executives of the two firms may know each other. (...) They may know each other socially (...). Even where agreement can be reached at the negotiation stage, carefully planned arrangements may create undesirable exchange relationships between business units. Some businessmen object that in such a carefully work out relationship one gets performance only to the letter of the contract. Such planning indicates a lack of trust and blunts the demands of friendship, turning a cooperative venture into an antagonistic horse trade. (...) Threatening to turn matters over to an attorney may cost no more money than postage or a telephone call; yet few are so skilled in making such a threat that it will not cost some deterioration of the relationship between the firms*" (1963, p. 63-64).

Bilateral enforcement seems to mitigate the opportunism of the actors. For this reason, it should not be neglected. However, it would be equally unwise to exaggerate its role. Even if it appears to ensure satisfactory enforcement, it does have limits. It does not eradicate power relations or oppositions of potential interests between actors (Plociniczak, 2001). In the same way, it does not eliminate the risks of adverse selection and moral hazard. We must not fall into the trap of functionalism, for we cannot deny the existence of a dark side to bilateral relations nor the fact that the structural configuration of the relations can provide occasions for acting with opportunism.

The structural dimension of enforcement

Setting aside the bilateral framework of enforcement for an examination of the structural level, we must observe that network relations form channels that make it possible to spread out a set of both tangible and intangible resources: norms of behavior, informal rules, information, etc. Ronald Burt thus emphasizes the informational properties of network relations. He affirms that networks act as a filter that directs, concentrates and legitimizes the

information received through relations. He underlines the fact that they ensure "*access*", "*synchronization*" and "*referrals*" between its members (1992, p. 13-18). These interactions thus give access to a much greater quantity of information than one isolated actor could collect. Even more significantly, networks have the particular characteristic of circulating reliable information^{xxviii} that is available at the right time (Gulati & Gargiulo, 1999).

As Carruthers and Babb suggest, "*in the real world, markets often display a non-random structure in which transactions are repeatedly built around embedded ties and social relationships. Trading partners are not selected at random*". (2000, p. 53).

Nevertheless, as an agent of information about potential partners, the network is used as a map for future collaborations and makes it possible to reduce the costs of research as well as the uncertainty inherent in the selection of a partner (Gulati, 1995b; Gulati & Gargiulo, 1999; Powell and Al, 1996; Walker and Al, 1997). Discussions between members of a network provide information concerning the "*good behavior*" of an actor, his capacity to act in a cooperative way (Burt, 2001, 2002; Burt & Knetz, 1995). According to Brian Uzzi, these social structures ensure the circulation of "*fine-grained information*" - tacit, strategic and credible - between actors (1997, p. 45-47). Moreover, numerous links with third parties result in better access to information (Burt, 2001, 2002).

In the context of inter-organizational networks, Gulati thus notes that "*the social network of indirect ties is an effective referral mechanism for bringing firms together*" (1995b, p. 644). Through the obtainment of this information, via network relations, actors know who, in the past, has behaved well or not. They end up holding information on those with whom they can or cannot transact, in consideration of their past propensity to opportunism. On this subject, Macaulay writes: "*each has something to give the other. Salesmen have gossip about competitors, shortages and price increases to give purchasing agents who treat them well*" (1963, p. 63). In this way, the salesmen who do not satisfy their customers "*become the subject of discussion in the gossip exchanged by purchasing agents and salesmen, at meetings of purchasing agents associations and trade associations or even at country clubs or social gatherings*" (ibid., p. 64).

The flow of information is all the more abundant when the structural embeddedness is strong (Gulati, 1998)^{xxix}. Indeed, this latter enables "*the spreading of more efficient information about what actors in a bilateral relation are doing, and thus greater ability to shape behavior*" (Granovetter, 1992, p. 35). Thus, failure to respect certain rules within a given bilateral relation could be sanctioned by a loss of credibility or even certain ostracism

by the other actors in the network at the time of future exchanges (Larson, 1992). Sanctions may even go as far as exclusion from the network. Here again, Williamson agrees with this reasoning. He recognizes these “*informal group influences*” (1975, p. 99), and more specifically that “*individual aggressiveness is curbed by the prospect of ostracism among peers, in both trade and social circumstances*” (ibid., p. 107-108). However, he does not take these mechanisms into account in his analysis, in which the contract remains the only safeguard against potential opportunism.

On the contrary, we believe that it is not so much the establishment of strict mechanisms of incentive and monitoring on a contractual basis that minimize the opportunism of actors, but the effects induced by the structural embeddedness of the relations (i.e. *the social mechanisms of consultation and sanction*). In this perspective, Walter Powell notes that inside the networks the sanctions are rather of the normative type, the more so as these relations can take place outside any formal agreement (1990, p. 301). Faced with the opportunist behavior of an actor, members of the network thus take note of this attitude and can sanction it both individually and collectively without necessarily resorting to any contractual clause. These sanctions attenuate the opportunist temptations of the actors at least as much as contracts do, by “*making the total outcome of the opportunistic behavior undesirable*” (Jarillo, 1988, p. 37)^{xxx}.

From this point of view, a small number of actors with frequent relations does not lead to an increase in opportunist behavior, as the thesis of the fundamental transformation would have it. On the contrary, a small number of actors increases the frequency of the interactions, ensures the development of mutual knowledge and adaptation provides coordination that is more fluid and renders the justification of opportunist behavior more difficult. Jeffrey Dyer (1996) thus described the movement that led US car manufacturers to reduce the size of their network of suppliers and to increase the duration of the relations with those that remained. He argues that the effect of this strategy was to encourage the development of inter-organizational routines favorable to the coordination of efforts.

The fact that actors act on each other imposes *a structural constraint* on all of them. It results in the creation of a community of interests favorable to the emergence of “*strong ties*” which limit the costs involved in surveillance, in the implementation of incentives between actors, for “*actors who share direct connections with each other are likely to possess more common information and knowledge of each other*” (Gulati, 1998, p. 296)^{xxxi}. A vast, scattered relational structure, on the contrary, can encourage actors to act with opportunism

(Helper, 1990; Burt, 1992, 1993; Dyer, 1997). Because of their respective limits in terms of resources (time, energy, etc.), actors interact less frequently than they do within relational structures where their numbers are limited. The attention they focus on the respective identities of their contacts is therefore less sustained. As the actors have little knowledge of each other and share few experiences, opportunism is more easily practicable (Uzzi, 1997) and justifiable. In fact *"weak ties"* tend to be more numerous than strong ties, and as weak ties create *"local bridges"* between sectors of a network or between networks (Granovetter, 1973, 1982), there are then more opportunities for exploiting the vacuums offered by the structure (Baker, 1990; Helper, 1991), or by the *"structural holes"* (Burt, 1992).

Thus, contrary to the predictions of Williamson, it is large number behavior that leads actors to act opportunistically. A small number of actors interacting frequently on a long-term basis would tend on the contrary to structure coordination^{xxxii} and safeguard transactions by creating a community of interest favoring honest, loyal and cooperative behavior^{xxxiii}. Since networks facilitate the circulation of information concerning the behavior of actors and render effective the use of mechanisms of consultation and of sanction against opportunists, we agree with Granovetter when he affirms that *"one task of economic sociology is to lay bare the circumstances under which people may safely set aside the suspicion that rational action would require them to have"* (2002).

5. Conclusion

As Granovetter observes, *"the concept of embeddedness could easily be completely empty; it is easy to use it as nothing more than a tautology, a concept to explain everything"*. Embeddedness is in fact only *"an idea or means to start reflecting on economic facts and institutions. It is only a starting point, a kind of suggestion for a research program, research which deals with the complexity of the interactions between individuals"* (1995, p. 20). By highlighting the need to embrace the concept of embeddedness, our work attempts to give credit to *the endogenous nature of the social context* - the prism of social relations and relational structures -, to apprehend a major economic fact: the enforcement of transactions.

Based on a structural analysis, we have linked together different analytical levels considered by many researchers to be distinct and incompatible: action and structure, individual and collective actors, objective and subjective, micro and macro. By then focusing our analysis on the networks of relations, we have shown that they constitute the binder that transcends the dualism of these abstract dichotomies, to explain the enforcement of

transactions such as we believe it to occur in the real world. This attempt at conceptualization should not be seen as an amalgam of a series of social mechanisms whose purpose is the obstruction of economic exchange, but much more as essential elements in its construction and accomplishment. In no way would we claim that the idea of structural enforcement could determine the solution to the enforcement of transactions. It simply underlines the limits of a strictly bilateral analysis by showing how the influence of the social structure can fashion and direct the course and accomplishment of the transactions. There is thus neither determinism nor functionalism.

Furthermore, structural enforcement underlines two fundamental aspects of economic exchange: its located and relational character. Located, in the sense that each act of exchange is indissolubly associated with other actors, events and circumstances. Relational, in the sense that the actors *"do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations"* (Granovetter, 1985, p. 487). Structural enforcement thus goes no further than affirming that any transaction depends on the intrinsic characteristics of the social structure considered (i.e. the networks within which it takes place). The focus of the explanation of enforcement thus shifts from the isolated actor or the Williamsonian governance structure to *"a broader and more social framework of reference"* (Granovetter, 1994, p. 88): the network.

Finally, we would like to specify that as economists, we have deliberately drawn on sociological literature to build the arguments of our work. In trying to integrate sociological work into the field of economic study, we have endeavored to show how it is possible and desirable to treat economic facts - and more specifically of the execution and application of exchanges - sociologically. As George Akerlof observes: *"the boundaries between sociology and economics are by no means clear; if economic models can explain sociological phenomena, so also the process can work in reverse with sociological models describing economic phenomena"* (1984, p. 36). By positioning our work from the point of view of the New Economic Sociology, we wish to demonstrate our conviction that many economists would gain from collaboration with sociologists, in understanding reality such as it is. It is not by claiming to isolate the economic facts from the social facts that economists will be most capable of studying them.

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Notes

- ⁱ According to Commons, only transaction can enable the containment of conflict, order and dependence, those critical dimensions neglected by standard analysis (Commons, 1931, 1932; Praneuf, 1999; Bazzoli, 1999).
- ⁱⁱ Williamson has offered the following definition: "*A transaction occurs when a good or service is transferred across a technologically separable interface. One stage of activity terminates and another begins*" (1985, p. 1).
- ⁱⁱⁱ *Asset specificity refers "to durable investments that are undertaken in support of particular transactions"* (1985, p. 55). Williamson identifies six kinds of specific asset: site specificity, physical asset specificity, human-asset specificity, brand name capital, dedicated assets, temporal specificity (1991, p. 281-282).
- ^{iv} Opportunism is "*self-interest seeking with guile*" (Williamson, 1975, p. 26-37; 1985, p. 46-52). It refers to the "*incomplete or distorted disclosure of information, especially to calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse*" (Williamson, 1985, p. 47). In this

perspective “*Economic man, (...), is thus a more subtle and devious creature than the usual self-interest seeking assumption reveals*” (Williamson, 1975, p. 255).

^v In opposition to standard economics, Simon asserts that actors are “*intentionally rational, but only in a limited way*” because they possess neither extraordinary computational capacities, nor phenomenal access to information (1957, p. XXVI).

^{vi} “*The size of the hold-up is a multiplicative function of two factors: the presence of specific-capital, that is appropriable quasi-rents, and the costs of contractually specifying and enforcing delivery of the service in question -the incentive for contract violation and the ease of contract violation*” (Klein, 1980 p. 357).

^{vii} Moreover, being rationally limited, “*individuals are not always able to adjust and then carry out opportunistic actions*” because “*they do not always perceive opportunism as a globally beneficial strategy*” (Brousseau, 1996, p. 41).

^{viii} “*Suppose that transactions were to be classified in terms of the level of autonomy of each party. Discrete transactions would thus be located at the one extreme, highly centralized, hierarchical transactions would be at the other, and hybrid transactions (franchising, joint ventures, other forms of non-standard contracting) would be located in between*” (1985, p. 83).

^{ix} Governance structure is “*the means by which order is accomplished in a relation in which potential conflict threatens to undo or upset opportunities to realize mutual gains*” (Williamson, 1996). The aim is “*an effort to craft order, thereby to mitigate conflict and realize mutual gains*” (Williamson, 2000, p. 599).

^x At one end, “*market governance*” supports transactions that involve generic assets. At the other end, “*unified governance*” underlies transactions that include highly specific assets.

^{xi} This tolerance zone is a kind of “*confidence area*” into which actors enter because complete and contingent contracts are not feasible (Guennif, 2000a).

^{xii} This private arrangement is also called “*private ordering*” (Ménard, 2000).

^{xiii} As Emile Durkheim had already emphasized: “*in a contract, not all is contractual*” ([1893] 1978, p. 189).

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- ^{xiv} A_i trusts B because he takes a risk related to his partner's potentially injurious intentions (Luhmann, 1979; Coleman, 1990).
- ^{xv} This is "selfish temptation" (Axelrod, 1992).
- ^{xvi} Precisions about the construction of these games are useful for the reason that people confuse repeated games between two players and repeated games between n players. The former refers to those games studied by Axelrod within which reciprocity or a "tit-for-tat" strategy produces cooperative behavior. Only the latter enter that category of games that introduce a mechanism of reputation (Klein & Leffler, 1981; Kreps, 1990a, 1990b). Some authors mistake one game for the other.
- ^{xvii} For this reason, Uzzi is very skeptical about reputation. It is completely general information available in the market, a kind of questionable alternative to the price mechanism (1996, p. 680).
- ^{xviii} B's reputation is assumed unsullied for the first transaction.
- ^{xix} According to Zucker (1986), reputation is a "*process based*" mechanism: trust relies on past and anticipated transactions. Breton and Wintrobe (1984) also claim that trust results from belief formulations in repeated transactions.
- ^{xx} This is a critical point since actors are unable to write down contingent contracts; they face difficulties in measuring individual performance, in observing compliance (Alchian & Demsetz, 1972; Hart, 1996), and in predicting. Finally, bounded rationality impedes the writing of complete contracts (Simon, 1978). Moreover, these propositions are also valid for the performance of informal transactions (Coleman, 1990), social exchange (Blau, 1964) or illegal transactions (Guennif, 2000b).
- ^{xxi} In other words, to trust B, A_2 must have information about B's reputation (his past behavior), and A_1 's reputation (his capacity to give good information about his partners' behavior).
- ^{xxii} If the transaction between A_1 and B leads to a dispute, A_1 may declare that B has behaved opportunistically whereas B may assert that he has fulfilled his obligations, that A_1 was simply unlucky. Therefore, the question arises of the credit A_2 gives to the declaration of A_1 . A_1 may

declare that he has been abused to hide his inappropriate demands. In this case, B may legitimately refuse to put his reputation into the hands of A₁, and refuse to transact with him (Lorenz, 1988).

^{xxiii} According to Hirschman (1970), ostracism is “*an internal voice*” based on “*loyalty*” towards peers. For Kandori, ostracism is a “*social norm*” which brings about a “*community enforcement*” where “*dishonest behavior against one partner causes sanctions by others members in the society*” (1992, p. 63).

^{xxiv} In social science literature, social norms are considered as the proper and acceptable behavior one must observe towards other people, other members of a group (MacNeil, 1980; Elster, 1989a, 1989b; Kandori, 1992). Elster states that the “*norm of retribution*” is one of those “*social norms..., enforced by members of the general community*” (1989a, p. 100-101). According to Granovetter (1985), ostracism or solidarity towards peers are “*non-egoist motivations*”, which, together with “*egoist motivations*” (utility maximization) underlie the performance of transactions.

^{xxv} A discussion and demonstration of Arrow’s intuition are presented in Guennif (2001b).

^{xxvi} Elsewhere, this model is used to explain how ongoing collusive behavior occurred among market makers on the NASDAQ during the 90’s (Guennif & Revest, 2001).

^{xxvii} The structural dimension of embeddedness corresponds to “*mutual dyadic contacts (...) connected to others*” (Granovetter, 1992, p. 35), in other words to the fact that “*economic action and outcomes, like all social action and outcomes, are affected by actors’ dyadic (pairwise) relations and by the structure of the overall network of relations*” (ibid, p. 33). For a presentation of Granovetter’s thesis of embeddedness, see Plociniczak (2002b).

^{xxviii} “*The most useful information is rarely that which flows down the formal chain of command in an organization, or that which can inferred from shifting price signals*” (Powell, 1990, p. 304).

^{xxix} “*Structural embeddedness or positional perspectives on networks go beyond the immediate ties of firm and emphasize the informational value of the structural position these partners occupy in the network*” (Gulati, 1998, p. 296).

^{xxx} Gulati, Nohria and Zaheer write: *"networks can create strong disincentives for opportunistic behavior"* (2000, p. 209).

^{xxx}_i Thus *"densely knit networks of actors, (...) generate clearly defined standards of behavior easily policed by the quick spread of information about instances of malfeasance"* (Granovetter, 1985, p. 492). In their study of the US biotechnology industry, Walker et al. defend this idea and note : *"If all firms in an industry had relationships with each other, inter-firm information flows would lead quickly to established norms of cooperation. In such a dense network, information on deviant behavior would be readily disseminated and the behavior sanctioned"* (1997, p. 111).

^{xxx}_{ii} According to Giddens (1984), repetition is the fundamental concept underlying structuring.

^{xxx}_{iii} Quoting the example of subcontracting relations and the diamonds market based on work carried out respectively by Robert Eccles (1981) and Yan Ben-Porath (1980), Granovetter defends the idea that the relations of networks create the necessary but non-systemic conditions for the emergence of trust and the attenuation of malfeasance. With regard to subcontracting relations, Granovetter writes: *"the long-term relations of contractors and subcontractors, as well as the embeddedness of those relations in a community of construction personnel, generate standards of expected behavior that not only obviate the need for but are superior to pure authority relations in discouraging malfeasance"* (1985, p. 498). Taking the example of the diamonds market, Granovetter notes that exchanges are concluded most of the time by a handshake. According to him, the explanation of the possibility of such transactions is to be sought in the architecture of the diamond cutters' network of relations, *"because (they are) not atomized from other transactions but embedded in a close-knit community of diamonds merchants who monitor one another's behavior closely "* (ibid., p. 492). Likewise, Gulati suggests that *"dense co-location in an alliance network enhances mutual confidence as firms become aware of the possible negative reputational consequences of their own or other's opportunistic behavior"* (1995b, p. 644).