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(doi: 10.2383/29560)

Sociologica (ISSN 1971-8853)

Fascicolo 1, gennaio-aprile 2009

Ente di afferenza:

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Cooperation among Competitors

Its Social Mechanisms through Network Analyses

by Emmanuel Lazega

doi: 10.2383/29560

“Whoever imagines that masters rarely combine is as ignorant of the world as of the subject. Masters are always and every where in a sort of tacit, but constant and uniform combination.”

Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*.

Merciless competition and its avoidance

In the context of the sophisticated division of labor in contemporary economies, a majority of individuals and organizations who participate in the efforts of the system of production are thrust into increasingly more open competition. This competition has a paradoxical effect: in one sense, it individualizes economic actors; in another sense, it creates interdependencies of unheard of complexity between them (functional, cognitive, relational, etc.). In order to accomplish their tasks, actors at work, individual or collective, effectively need multiple and heterogeneous resources and exchange partners – the sources of these resources – themselves increasingly numerous and heterogeneous. In an uncertain context, these actors – whom François Bourricaud [1961] used to call “associés-rivaux condamnés à vivre ensemble,” echoing Raymond Aron’s [1962] “adversaires-partenaires” – frequently cooperate on certain projects while remaining competitors on others.¹

The entrepreneur, at once an eponymous and anonymous actor in the capitalist economy, is strongly incited to play the complex game of this cooperation between competitors. One crucial part of his work consists in seizing business opportunities which allow him to avoid being put into open competition by his partners, while

¹ In this text, I extend to the inter-organizational level a theory and a methodology (social mechanisms modeled by social network analysis) that I developed at the intra-organizational level [Lazega, 2001]. A first extension was presented in Lazega and Mounier [2002].

placing them in open competition themselves. But such opportunities are difficult to capture; their lifespan, from the individual actor's point of view, is often short. The only way to have a chance of seizing a few among a discontinuous flow of opportunities is to be assured of some sort of staying capacity at the crossroads of these fluctuations. The necessity of staying capacity creates the first incentive, and the first room, for cooperation between potential competitors and for the micro- and macro-political organization of markets.

To this first incentive are added others, in particular the danger threatening the profitability of a business in a market economy: the declaration of open economic war, which lowers prices and undermines competitors' positions. When such a war endures, competitors are forced to concentrate their attention on defensive measures to ward off the threat of bankruptcy. Oligopolies emerge notably in order to protect entrepreneurs from this merciless competition which imposes dictated or "suggested" prices. As long as the monopolist strategy fails, entrepreneurs maintain their agreement, implicit or explicit, on a common price considerably superior to fees and cost price, and therefore on a shared profit. Markets with oligopolistic structures are therefore the rule more than the exception.

Beyond these defensive strategies, the entrepreneur-come-oligopolist, each on his own scale, may overtly or secretly look for an opportunity to eliminate competitors. But in waiting for such opportunities, themselves rather rare, his intermediary objective is to reproduce the market in cooperating with his competitors. With that objective in mind, he may play with the quality/price relationship [White 1981, Karpik 2007].

The affinities between White's [2001] theory and market model and the analysis of oligopolistic markets are obvious. White starts from producers' efforts to build viable markets. This model is not based on a law of supply and demand, but rather on the notion that a market's viability derives from the fact that producers position themselves on a scale of quality and differentiate their products from what competitors offer [Favereau *et al.* 2002]. A producer's market is originally composed of competing, interdependent competitors. Their interdependency results from their common interest in keeping alive a series of markets that are differentiated above all by the level of quality of products offered to the consumer. White proposes a typology of markets (for example "paradoxical," "ordinary," "advanced") within which competing enterprises are structurally equivalent in the sense that they have approximately similar characteristics, relational or other. The formal and informal relationships between producers, who mutually monitor one another, build the relational structures which characterize each of these types of markets. Other bases of similarity stem from these producers' efforts to find a "niche" (particular combination of product quality,

sales volume, and profit) which allows them to adapt their offer, often locally, and to distinguish themselves. Markets are then composed of niche-seekers and tend to be segmented in as many niches as there are distinctions on the scale of quality/ price relationships specific to the sector in question.

In the variety of possible markets that White defines, all are not necessarily viable. Enterprises do not necessarily succeed in establishing a stable combination of competition and cooperation, in getting along for the sake of the market's survival. Furthermore, the asymmetries and discontinuities within the structure that emerges from producers' relationships can create systematic competitive advantages for some. Power relationships and the constraints they impose on negotiations are therefore crucial to this model. By definition, in this type of model, exchange is never bilateral, but always multilateral and strategic.

The same holds true for competition through quality, which presupposes seeking to discover at least what the competition knows and is preparing, in order to anticipate and counter the effects of their strategies. This also leads to proximity between entrepreneurs, particularly in a highly technological economy which relies on permanently changing technical and scientific knowledge. Competition through quality does not necessarily seek an "ideal" quality. Research and development [R&D] or the intensive use of publicity, for example, can increase competition through quality. R&D can produce a technological change by redefining standards that label a specific market segment's products as obsolete. Over the course of the end of the 20th century, this R&D activity was nevertheless the catalyst for waves of strategic alliances and the progressive weakening of antitrust laws – before such laws were reconsidered in the interest of a more financial logic.

By means of pricing arrangements or alliances targeting innovation (ecological, legal, or other), cooperation between competitors has become – after capital, labor, and natural resources – a "fourth factor" of production [Cordonnier and Grass 2008]. In the writings of management professors and theoretical market economists, this phenomenon has since been known as "coopetition" [Nalebuff and Brandenburger 1996] or as "collective strategies" [Bresser and Harl 1986] led by competing enterprises, particularly in knowledge-intensive sectors [Von Hippel 1987; Hamel *et al.* 1989; Lado *et al.* 1997]. Increasingly, this literature uses the sociological approach of embeddedness in social networks to identify "informal and non economic" relational strategies necessary for the stabilization of oligopolistic competition [Astley and Fombrun 1984; Contractor and Lorange 2002; Levinson and Asahi 1995; Bengtsson and Kock 1999 2000; Tsai 2002; Chien and Peng 2005; Ibert 2004; Dumez and Jeunemaître 2005; Perret and Josserand 2003]. The goal of these management

theories is then to find out when and how managers should enter into partial or localized competition in the least risky manner.

At the level of nation-states, this cooperation between competitors has been the object of classical works. The history of different ways in which competition has been regulated in various countries [Chandler 1990] shows, for example, that cartels have been more easily accepted in Germany [a large exporter who accepted cooperation between competitors within its borders while also encouraging aggressive competition outside the national territory] than in the United States (a country where enterprises long focused on their own gigantic national market), at least officially. Gerlach [1992] applies this perspective to the case of Japan, where, in the context of what he calls alliance capitalism, networks of enterprises replace cartels but exert the same regulatory function of competition.

The differences between institutional forms of capitalism show that the balance between cooperation and competition results from negotiations between political forces. Factors such as the high concentration of ownership; the existence of a center-periphery structure bringing together in one central clique the largest enterprises in the network of interlock ties; the systematic integration of the banking and financial sector in boards of directors; the board of directors elites' accumulation of appointments in employers' unions; all these factors facilitate cooperation between competing enterprises and therefore the existence of a form of capitalism that is as much cooperative as it is competitive (see Windolf and Beyer [1996] for a summary of this literature).

The negotiated, political, and temporary nature of this balance implies that participation in collective action between competitors on the inter-organizational scale – for example in partnerships or joint ventures between companies and their subcontractors, in joint R&D programs, in industrial districts or in “poles of competitiveness” – requires complex forms of coordination. In this chapter we propose a sociological theory of cooperation between competitors and of these complex forms of coordination based on a neo-structural approach and modeling. “Neo-structural” can be defined here as the result of a synthesis between a theory of action (absent from early structuralist theories, notably in the 1960s) and a theory of relational opportunity structures. We start from the principle that this coordination requires from the entrepreneur both relational and symbolic investments. Selection of exchange partners is not a rational choice in the strict sense of the term. It holds a symbolic dimension residing in the definition of priority identities; in the construction of complex language and criteria for the evaluation of activities; in the recourse to institutions capable of promoting or eliminating, including or excluding; and finally in the attribution of variable levels of trust in the exchange. In this notion of trust we see a very general indicator

of the symbolic dimension of all relationships and all exchanges. Since a relationship is dually defined as a channel for the circulation of resources and as a commitment toward an exchange partner [Lazega 2003], trust in various degrees characterizes the quality of this commitment. This approach accepts the possibility of “forced” exchanges, without trust. Without this relational and symbolic dimension, the entrepreneur could not use his most basic tactics: promises and threats [Villette 2006].

Such work and relational investments rely on relational structures which, in turn, facilitate the characteristic processes of cooperation between competitors – even when they wait for opportunities to rid themselves of the constraints imposed by their more or less forced cooperation. Our theory is that without certain relational structures which rely on personalized social exchange, complex coordination and collective action between competitors would be far more costly, if not impossible. To strengthen this theory, we draw on research using the analysis of social and organizational networks in business. These relational structures are complex. They are, for example, intrinsically multi-level. A clear difference must be made between networks of entrepreneurs and inter-organizational networks of businesses. The two levels must also be linked in a systematic way [Lazega *et al.* 2007 2008]. Relational structures at the inter-organizational level exist because they are built by competing and interdependent actors belonging to ethnographically observable social milieux.

This approach to cooperation between competitors can be called a neo-structural approach. In describing the relational and symbolic work accomplished by the entrepreneur, it also brings to light the social discipline (between interdependent entrepreneurs) that such work instills, often along with the oligopolistic equilibria and in a less temporary manner than simpler contractual agreements. By thus exposing the relational and symbolic dimension of such discipline, this approach allows for observing and modeling the interdependencies between actors; the manner in which they manage these interdependencies through relational investments and social exchanges; the structural forms that these investments and exchanges create; and finally the social processes that they catalyze or facilitate [Hedström and Swedberg 1998]. Social discipline, which succeeds in making competitors (through price and/or quality) cooperate, can be measured and modeled thanks to the analysis of intra- and inter-organizational networks.

Thus, the emergence of cooperation in competitive economic environments is not simply a mechanical consequence of oligarchic instability. If entrepreneurs’ strategies include relational and symbolic investments, the result at the collective level is the construction of a social discipline itself dependent on the social processes that such investments trigger. In economic sociology, over the course of the past thirty years, the description of this social discipline has taken the form of embeddedness

studies of economic transactions in relationships and social norms (whereas these economic transactions were previously assumed to have acquired a strictly maximizing life of their own). We propose moving beyond this embeddedness studies (and even beyond the dialectic of embeddedness and disembeddedness of transactions) to the study of social discipline and social processes. In order to accomplish this, it is necessary to return to the definition of the socio-economic relationship as both channel for heterogeneous resources and commitment. The latter is equivalent to a promise, an obligation, or a moral convention introducing time in the exchange of resources and presupposing a system of social control and conflict resolution making such a promise credible. We will illustrate this articulation between social discipline and social processes through several examples (learning, solidarity, control, and regulation).

Finally, if durable cooperation between competitors depends first on various forms of social discipline between them, it also depends on the knowledge and recognition of that discipline by public authorities in their strategies of social control of markets. Effectively, these forms of cooperation between competitors beg new political questions in contemporary societies. These questions result from the shifting of the boundaries between merchant and non-merchant, between private and public. The growing privatization of public services, for example, and the growing influence of markets and business on public policies (if not the entrance of business into the State apparatus), render these boundaries more porous and instable. Under such conditions, the task of neo-structural economic sociology, as we see it, is also to offer, by shedding light on this social discipline, new insights into business, usually characterized by discretion and opaqueness. Such insights contribute to the study of the complex forms of coordination between interdependent entrepreneurs. It can also contribute to the protection of public interest in new and polynormative forms of “joint regulation” of markets. These forms require a social control that is itself increasingly more sophisticated in its knowledge of interdependencies between competing entrepreneurs.²

Social exchange: The entrepreneur’s relational and symbolic work

Organizations in general, be they public administrations or private enterprises, individual or multinational, do not conduct their business in isolation. They are necessarily resource-dependent [Salanick and Pfeffer 1977], which forces them to establish links of cooperation with other organizations. These relationships are ex-

² This text was written before the current 2008 global financial crisis, which will certainly focus many researchers’ minds on many of these issues.

pressed within a more or less defined legal and social framework. Levine and White [1961] already laid down the foundation for an analysis of inter-organizational relationships in terms of exchanges and resource-dependencies [Aldrich and Marsden 1988]. These inter-organizational resources, exchanged through multiplex links, and potentially consisting of learning, goods, and services, are not necessarily of a purely monetary or purely functional nature.

One could believe that relationships and social exchanges do not matter in the rough universe of companies using subcontractors like slaves to “create value;” where financiers collectively agree to devalue companies they wish to buy back at a low price and to control at the expense of the entrepreneur; where coalitions of patent- and license-holders end up preventing the emergence of innovative markets. But it is precisely from the now standard analysis of the conditions under which social relationships count in the economy that neo-structural economic sociology starts [Granovetter 1985; Swedberg 1994; Steiner 1999]. In the following sections, we first describe the relational and symbolic work of the entrepreneur who seeks to reinforce these oligopolistic equilibria, and then the social processes that this work triggers and allows for. Multiple forms of cooperation between competitors and the resulting modes of complex coordination are analyzed via the illustration of the social processes facilitating them.

Whether in his search for clientele or with his peers, the entrepreneur works to establish personalized relationships providing him with one form or another of staying capacity. This work is composed of “relational investments” [Coleman 1990] and of the management of interdependencies following a form of social rationality [Lindenberg 1995; 2006; Lazega 1992]. We use the concept of social rationality in a broad sense and attribute it to entrepreneurs who attempt to manage their relational interdependencies. It is then a form of social exchange [Blau 1964; Steiner 1999]. For example, studying power and dependency in financial markets, Baker [1990] empirically examined enterprises’ relationships with their banks as indicators of an enterprise’s relationship to the market. He shows that we are in this case closer to a model which he calls “relational” and personalized than to an impersonal model.

Cooperation between competitors thus presupposes an important relational and symbolic work within social exchanges. Enterprises also use these socially rational behaviors to ends that are not immediately and directly focused on purely productive activities. Although formally and mechanically carried out, in such situations cost-benefit calculation has an artificial dimension. For an enterprise A, precisely estimating the cost of a limited collaborative operation between scientists in its own R & D service and those of an enterprise B is a formally conceivable exercise; but this exercise is a gamble that will never clearly define the costs of this operation nor

the market value of its outcome. For the same enterprises, investing in support of a political campaign is also a measurable expense in monetary terms, but the total cost of this form of investment cannot be reduced to a price as it is usually determined in a market (a rational value that can be associated with an established revenue).

Numerous studies of the complex, sometimes paradoxical relationship between the entrepreneur's "social capital" and the various forms of economic performance (survival, growth, profits, etc) [Burt 1992 2005; Comet 2005 2007; Delarre 2005; Flap *et al.* 1998; Ingram and Roberts 2000; Uzzi 1999], illustrate the importance of social exchange. In particular, for Burt [1992], an actor is all the more successful when he has a wide and disconnected network at his disposal, i.e. a network rich in structural holes (absence of direct relationship amongst his contacts). Enriching Burt's analysis, Comet [2007] shows that craftsmen in the construction industry depend on their competitors – alternating subcontracting and ordering parties – for a considerable proportion of their markets. Her theory notably shows the importance of the socio-technical characteristics of enterprises for the explanation of the creation and returns of their social capital. In a socio-technical context, interdependences in the process of production are linked to the degree of variability of tasks carried out by these entrepreneurs. Whether in terms of profit margins or in terms of productive efficiency, the yield of their social capital is explained by different social mechanisms that are linked as much to the constraints of the construction site as to the type of social relationship maintained with "peers." Most expenses or relational and symbolic investments cannot be translated into a specific calculation of costs and benefits. The price of attempting to structure one's environment towards to achieve "Pareto protection" is not exclusively commercial.

Another example is provided by Pina-Stranger's [2008] study of the informal relationships between scientific entrepreneurs in the French biotechnical industry. Entrepreneurs from this milieu face very high levels of risk: increasingly more demanding regulatory constraints for the registration of products; a product development timeframe rarely shorter than 10 years; capitalistic needs which can only be satisfied by a reduced number of financial actors, notably venture capital; not to mention difficulties related to the innovative and complex nature of activities linked to therapeutic prescriptions in life sciences. These entrepreneurs evolve in an environment where competition is omnipresent: they fight to obtain grants and subsidies from the State, to be granted use of an incubator or to be admitted into a "pole of competitiveness" in order to reach private investors or to win a contract with a pharmaceutical company. In this context, Pina-Stranger examines three advice networks among 140 biotech entrepreneurs. Analyses show that in the absence of any contractual relationship, heads of different companies are involved in multiple, often reciprocal

relationships, thus building forms of direct and indirect solidarity characterizing a cohesive social milieu. In very “open” *business models*, based on the maintenance of a multiplicity of contracts with various partners (direct investors, investment banks, suppliers, notation agencies, public institutions, etc.), the entrepreneur often does not rely solely on his peers, because theirs are the same experiences and equivalent interests. These scientific entrepreneurs count on competitors to validate their choices, thus informally integrating the latter’s judgments in their decisions.

Social discipline between competitors

The necessity of acquiring *staying capacity*, as well as relational and symbolic work, lead the entrepreneur to attempt to structure his contexts of interaction and negotiation. Such structuration seeks to protect relational investments and make them profitable. At the same time, it prompts the entrepreneur to restrain himself, when selecting exchange partners and over the course of negotiations with others. This self-restraint covers the definition of one’s own individual interests and the exercise of one’s individual power – notably one’s power of exploitation. As evident in the case of oligopolistic entrepreneurs, this self-restraint is not necessarily permanent and is only valid under limited conditions, but it is synonymous with a capacity for politicization which prompts the actor to introduce duration in his exchanges. Social exchange thus leads the entrepreneur to a form of social self-discipline that is supported by an endogeneization of relational structures. I argue that this endogeneization takes the form of the maintenance or building of social niches as well as that of participation in status competition, both modeled by networks analysis.

The notion of a social discipline that is perceived as legitimate by members of a social milieu is important for understanding the contemporary form of cooperation between competitors. This cooperation stems neither from the “pure” market of the neo-classical economists, nor from the “pure” domination of orthodox sociologists. The neo-structural theory of this form of coordination sees two dimensions in the very general notion of social discipline. A first dimension is located at the individual level and can be observed in the relational and symbolic work previously discussed. Actors are equipped with a social rationality thanks to which they design common projects and invest in relationships to manage their interdependencies via multiplex social exchange. Social rationality, in its dimensions most closely linked to authority relationships, leads to the creation of structural forms helping actors protect their relational investments (and whose modeling necessarily depends on the analysis of “complete” networks). Among these forms, the creation or maintenance of social niches as well

as the engagement (voluntary or forced) in status competition are activities that are at once socially disciplining and socially rational for the management of social exchanges. This is particularly the case with potential or real competitors through volumes or quality. From the individual perspective, this social discipline is much more of a self-discipline considered legitimate than a social order arbitrarily imposed.

The second dimension to the notion of social discipline exists at the collective level. Relational investments and the creation of these structural forms trigger or facilitate social processes in the collective. We consider that particularistic solidarity (and the discriminations that come attached), collective learning, social control and conflict resolution, regulation and many other social processes fundamental to social life – thanks to which coordination between competitors is possible – give evidence of the existence, at the collective level, of this social discipline. These processes are not mechanical in the sense that they exist independently of individuals' intentional efforts. But they are social mechanisms in Hedström and Swedberg's [1998] sense since they are triggered by relational investments and eventually escape individuals' control and are facilitated by the same structural forms created to organize social exchanges. This social discipline allows for coordination with potential competitors at the collective level, notably in reducing its costs.

This definition of social discipline does not mean, for instance, that there is necessarily a mechanical link between the existence of these forms (systems of social niches, heterogeneous types of status) and the improvement of any organization's performance or chances of survival or growth. Using the notion of social discipline does not necessarily lead to functionalist reasoning, because politicization of exchanges always rests on the definition of interests, and these definitions are not necessarily convergent in any collective. On the contrary: politicization of exchanges is often supported by re-hierarchizations of allegiances (or identity recompositions) whose violence is too often ignored by theories of socialization. Insofar as the existence of this social discipline is based on social rationality of actors attempting to structure their contexts of interaction, to modify – as much as possible – their opportunity structure, politicization of exchanges does not necessarily have predictable effects, neither for the actor nor for the observer, on economic performance.

This social discipline and these attempts at structuration correspond to a form of politicization of social and market exchanges. They proceed from socially rational action in the face of open competition. Systems of niches and heterogeneous forms of status have been modeled using social network analyses. Each structural form refers to elementary behaviors of interdependent entrepreneurs: the search for a social niche corresponds to the search for multifunctional contexts in which these entrepreneurs can have access to resources at less cost; status competition allows for concentrating

these resources in order to be in a position to define the terms of exchanges, in particular social exchanges.

Socially rational action and endogeneization of structures

The selection of exchange partners not being a rational choice in the strict economic sense, the neo-structural approach presupposes a form of social rationality supporting both social and market exchanges. As mentioned above, social exchange includes calculation (in all its forms) but also symbolic activities such as judgments of appropriateness, commitments, relational investments (based on the management of boundaries and identifications) and value judgments (negotiation of precarious values) which allow actors to contextualize and politicize their exchanges and even their calculations. Appropriateness judgments are the kernel of social rationality; they are based on selecting reference groups, norms of legitimacy, and personalized authorities [Lazega 1992; 2003]. There is no form of coordination of economic actions without the coordination of appropriateness judgments passed on these actions. As in the economics of conventions [Favereau 1994], language, social representations and capacity of interpretation of rules are conceived here as inherent to *homo oeconomicus* – who is not just a simple calculation machine. The definition of quality, for example, relies on this type of judgment. What is relevant or socially “appropriate” conforms not only to a norm, but to a norm shared by all those who recognize themselves as sharing a common identity and the sense of belonging to a collective represented (in the political sense) by members with status.

From this point of view, actors invest in relationships to act at the meso level in order to gain mobility within a given opportunity structure or to try to modify their opportunity structure, i.e. to restructure their context of interaction and exchanges. These selections are not random, neither entirely free, nor entirely determined. They are themselves subject to normative constraints and pre-existing relationships. But they reflect the idea that actors invest in relationships and that they believe (rightly or wrongly) that these investments will be better protected by social status and in social niches where others share common identities and rules of exclusivity. Social rationality is not separable, from a neo-structural point of view, from these processes characterizing social exchange. Moreover, relational investments are not independent from status comparisons. In effect, actors must define the terms of their social exchanges, and social status offers an enviable position from which to negotiate these terms. Through the notion of opportunity structure and the observation of actors’ (more or less costly or effective) efforts to modify it, neo-structuralism goes back to a

relational and processual approach of social stratification and reproduction of social inequalities [Breiger 1990; Tilly 1999].

Judgments of appropriateness thus lead to the perception and recognition of forms – inherited from earlier management of relationships – which we call endogeneization.

Systems of inter-organizational social niches

The search for, construction, or maintenance of social niches is a first way of seeking to modify a structure of opportunity to one's advantage. Interdependent entrepreneurs must have access to various resources associated with their production. An entrepreneur's *social niche* can be defined as the subgroup of the colleagues with whom he or she has particularly dense, multi-functional, and durable relationships linked, directly or indirectly, with his or her production activities. It then constitutes a pool of partners privileged in the exchange of these resources, on the intra- or inter-organizational level. This niche makes sense only in a system of niches that is identified with models using structural equivalence [White *et al.* 1976]. It can be detected in a social milieu by its strong relational cohesion, or even by the presence of generalized exchange. A system of generalized exchange goes back to the existence of deferred and indirect reciprocity in the milieu observed. The relational cycles which represent this form of indirect reciprocity are indicators of a form of solidarity and of social discipline that is rarer and more difficult to build than restricted exchange, based on a more frequent but purely direct and dyadic reciprocity. Nonetheless, a social niche is an entity whose precise contours are sometimes difficult to grasp, for its members as well as the observer.

If the sociologist deduces its existence based on the level of relational cohesion observed, the actors, for their part, tend to use the criteria of homogeneity and social homophily. The use of similarities (for example working in the same office, having the same area of specialization, sometimes a same hierarchical status) often provides identity criteria for actors in search of exchange partners. Corporate managers can seek social niches by using membership in ethnic groups [Saxenian 1994], even if this does not predispose them for altruism when survival is at stake. Strong density and relative social homogeneity then constitute characteristic traits of the social niche that the entrepreneur seeks to integrate or to build for cooperation.

The multi-functional nature of a niche means that its members can exchange several resources. Indeed, such a space is built to allow multiplex barter without general equivalent, i.e. exchanges of resources which are not evaluated in a purely calcu-

lating and short-term manner. The identification of social niches has implications for the understanding of economic activity. The building of niches is thus strategic; but once established, they allow their members, even if they are potential competitors, to suspend short-term economic calculation and opportunistic behavior temporarily, and to cooperate. This can be observed at the contractual level [Favereau 1997]. It serves to diminish the costs of transaction but also is a means of partially resisting being thrust into open competition from “above.”

Status heterogeneity and consistency at the inter-organizational level

The quest for status, the “importance” of the individual in the collective, which presupposes participation in status competition, is another method for seeking to modify one’s opportunity structure to one’s advantage. Social status is an unavoidable basis for strategies trying to modify opportunity structures. Effectively, the multiple dimensions of social status defined by Max Weber can be measured as concentrations of different kinds of resources. With measures such as those offered by network analysis (essentially measures of centrality and prominence), heterogeneous forms of status are identified endogenously (and not simply exogenously as in Weber). Status competition gives access to a mandate to represent the collective, to control resources, to gain authority, and to define the terms of social exchanges, but also to protect one’s and partially resist being thrust from “above” into overt competition.

The sociologist thus identifies and localizes variable forms of power and status in organizations and markets, as well as a hierarchy between heterogeneous and interdependent forms of status. The hypothesis can be made, for example, that the measures of consistency and/or inconsistency of these forms of status, with their effects on actors’ motivation and on the allocation of resources, are crucial to understanding the processes of balancing powers within oligopolies. The oligopoly can only proceed with maintaining a form of integration between entrepreneurs by using this heterogeneity and interdependency of status forms. This is often the condition by which rivalries between oligarchs lead to equilibrium.

The concept of heterogeneity of forms of status has only partially been used in the neo-structural approach to markets. Podolny [1993 1994; Podolny and Stuart 1995] shows that enterprises use status evaluations as indicative of quality and as criteria for the selection of exchange partners in situations of market uncertainty. An entrepreneur with a strong reputation works less with an entrepreneur who has no reputation. Actors with status inspire trust, attracting consumers seeking security, and are able to define terms of exchange in their favor with those who inspire less

confidence. Nevertheless, despite the interest it initially inspired in the development of structural approaches to markets, the concept remains vague because these approaches do not clearly define and compare the various dimensions of status, while the power generated by the concentration of different kinds of social resources is neglected.

Status competition is all the more significant at the inter-organizational level insofar as economic competition is oligopolistic. Without this heterogeneity and consistency (or inconsistency) of forms of status, the importance of “small” actors in the system cannot be understood. For example, corporate attorneys have always been intermediaries facilitating commerce. Large law firms specializing in business law are “small” actors in the globalization of markets. Their disproportionate influence in the business world at this level (big international business) favors a form of centrality which itself stems from the fact that they are permanently in the position of mediators benefiting from conflicts of interest. Their important power of mediation in commercial contracts between multinational corporations [they hold crucial information about all parties] also helps in eventual renegotiations of these contracts. This role of mediation is all the more important in international commercial contracts in the absence of real international business law and stabilized market rules. Conflicts of interest are then, in such a case, indicators of accumulation of heterogeneous forms of status that are considered ethically inconsistent. Punching above one’s weight in this fashion leads to great freedom in interpretation of existing international regulation, and in pricing of one’s services which can reach the highest levels (relative to the price of services in firms that do not provide such a mediation).

Competition for status thus has an obvious significance for cooperation between economic competitors. In oligopolies where social exchange contributes to the maintenance of unstable balances by quantities, status is a form of advantage acceptable in the definition of the terms of social exchanges. But the competition for status is also simultaneously a manifestation and an instrument of competition by qualities. In effect social status is acquired via the definition of a criterion of quality and the ability to impose it on the given industry. When oligopolists claim that they belong to a universe of competition by quality, they are engaged in a competition of status aiming to define what quality is.

Social niches and social status at the inter-organizational level

Structural forms and horizontal and vertical differentiations that constitute social niches and forms of social statuses facilitate cooperation between competitors.

It is important for economic sociologists to be able to identify them because these forms are the means by which socially rational actors seek to structure the contexts of their interactions and social and economic exchanges when they are thrust into open competition. It must be noted here that interdependent entrepreneurs' efforts to structure the context of exchanges evidenced in these forms do not mean that actors are unaware that this context is already legally structured. Even within a legal order, structuration remains political and variable in many respects, particularly in the domain of competition where the administrative or judicial system, not to mention private arbitration, command a strong sovereign power of assessment and interpretation [Ost and Van der Kerkhove 2000].

Let us clarify that it is the articulation between the search for both niches and status at the inter-organizational level which deserves special attention. Entrepreneurs continually group themselves into social niches, which are rooms for the rational suspension of market rationality, where members know how to obtain the qualitative and quantitative resources they need in order to be productive at a reduced cost. Nonetheless this tendency inherent to the work of entrepreneurs produces a fragmentation which is not without risks; hence the interest of status competition. Status is dual notion: it is the authority bestowed by collective recognition of the importance of individual contribution to the collective; but it also represents the power or influence derived from concentration of resources. Entrepreneurs are engaged in this competition because status allows them to be in a position of strength in negotiations (internal or external to their niche). It can recreate cohesion when the system of niches has a centrifugal effect. For example, it is sometimes essential for large enterprises in oligopolistic markets to agree in order to impose a common technological standard, without which entire markets in their sector would crumble; this agreement is often the result of alignment on the solution provided by one of the oligarchs.

Endogeneization of fundamental social structures, social processes, and network analyses

As long as it focuses only on strategies of private actors, individual or collective, can this theorization of social self-discipline explain cooperation between competitors? Social rationality in the face of open competition, based on the endogeneization of the structure by independent entrepreneurs, is not sufficient for proposing an explanation of the stabilization of oligarchic structures and of the efficiency of cooperation between competitors. This efficiency stems from relational investments

that are driven by this social rationality: in turn these investments catalyze and maintain fundamental social processes which facilitate cooperation between competitors. It is through this relationship with processes, or mechanisms, that structuration of the contexts of social and economic exchanges facilitates cooperation. To strengthen this argument, it is therefore important now to show that such structural forms serve as much to facilitate the processes underlying cooperation between competitors and modes of complex coordination, as to protect the individual investments.

This is precisely what neo-structural research articulates more analytically by modeling distinct processes using network analysis. The articulation between social discipline and social processes can be illustrated with four generic examples of processes.

Learning

The first social process which facilitates collective action between competitors is learning. In highly technologized societies and economies, which valorize the research and creativity exploiting this technology, collective learning represents a crucial process. It is much studied in the domain of management, notably in the exchange of tacit knowledge [Polanyi 1967; Cohen and Levinthal 1990; Nonaka 1994] between competing firms. A rich literature reports research on the process of learning in strategic alliances and the importance of social exchange for learning. Enterprises establish alliances because they hope to benefit from the resources to which such links are meant to give access. Enterprises are particularly attracted by new know-how, techniques and competencies from alliances with other enterprises [Kogut and Zander 1996; Powell *et al.* 1996].

Thus organizations seeking quantitative and qualitative competitive advantages mutually monitor one another [White 1981]. But at the level of sophistication reached by contemporary technology, these enterprises seek to learn from each other while at the same time trying to compete on strategic aspects such as market distribution [Von Hippel 1987; Kogut 1988; Hamel *et al.* 1989; Hamel 1991; Khanna, Gulati and Nohria 1994; Hamel *et al.* 1989; D'Aveni 1994; Young *et al.* 1996]. In this learning process, social interactions and informal relationships [Larson 1992; Gulati 1995; Tsai 2002], that are more or less collusive [Lado *et al.* 1997], are decisive for social exchange of tacit knowledge.

One example is provided by Lomi and Pattison [2006], who propose an empirical study of the organization of production in the industrial “partnership” between enterprises in the sector of “motor vehicle production” in southern Italy at the

beginning of the 1990s. The transportation sector represents an industry in which production processes cut across organizational boundaries in a very obvious way. As in the case of Japanese *keiretsus* or Korean *chaebols*, the principal actors of this industry are unambiguously known in advance. Exchanges of resources can therefore be examined by means of the analysis of complete and multiplex networks. The relationships examined are those which organize the transfers or exchanges of three resources between “partners” (focal companies and subcontractors, if not between subcontractors, although this terminology may not always be well-perceived by all of the protagonists themselves): the supply of components, technology transfers, and financial investments (initial participation in the capital of a “partner”). Supply of components represents major stakes for these producers, whose main industrial activity is the assembly of a final complex product (a car or an airplane). The transfer of technology, a source of learning, is a pragmatic practice increasingly more common in this domain: the lead firm provides its suppliers with the technological know-how, equipment, and training necessary to produce the components it needs with sophisticated specifications. Financial relationships reflect the degree of the industry’s vertical integration; they measure the organization of activities within (rather than between) the enterprise’s boundaries. These three relationships exchanged in this organizational field [DiMaggio 1986] are essential for any enterprise externalizing a portion of its production, indeed the design, of its components or its functions.

Lomi and Patterson find regularities in the local sub-structures of networks of multiple relationships observed between these enterprises. The configuration in which financial interdependencies, mutual technology transfers, and supply ties link the suppliers of one organization is a very likely configuration in this system. In other words, suppliers of components or services for the same organization have a tendency to develop multiplex exchanges between themselves (even though the focal company makes considerable efforts to divide its subcontractors in order to control them better). This means, for example, that learning depends on supply relationships, which in fact represent more than simple supply relationships. This analysis reveals a clear tendency toward co-occurrence of technology transfer and financial investments; combining both relationships is standard practice for managers of inter-organizational interdependencies (whereas they could have been supposed to be disentangled). The formation of small inter-organizational niches based on, among others, technology transfer, then plays an essential role in the process of learning on the inter-organizational level.

Finally, status competition plays a fundamental role in these processes in domains where entrepreneurs invest more in competition through quality, for example in the professions [Lazega 2001; Karpik 2007]. Where actors are dependent on

one another for unbillable exchanges of opinions and advice, the collective nature of the production and certification of quality thus corresponds to hidden costs carried by the milieu (“the profession”), its institutions, and its most important actors (colleagues with “reputation”). Such is the case in scientific research on the national and international level, where collective learning based on the circulation of informal advice strongly depends on the internal social stratification of the milieu and therefore on a small oligarchy of colleagues with strong and multiple forms of social status.

Particularistic solidarities and discriminations

A second social process which facilitates collective action between interdependent but competing entrepreneurs stems from particularistic solidarity. It is represented by the creation, often in social niches within the collective, of an informal system of multiplex generalized exchange. Such a system helps members exchange several types of heterogeneous production-related resources, directly or indirectly, allowing for a lasting circulation while also partially suspending behavior perceived as opportunistic. As already discussed, the analysis of “complete” networks allows for the observation, in and between organizations, of the presence of cyclical relational sub-structures characterizing indirect and deferred reciprocity – and their potential implications for direct or indirect forms of social discrimination. The analytical connection between the notion of social niche and that of particularistic solidarity, measured by the existence of indirect reciprocity, requires that the latter be notably based in the boundaries and norms defined by the former.

Neo-structural studies based on the observation of multiplex links in inter-organizational fields are still too rare because data of this type are sensitive, strategic, hard to access. Obvious links between important families among the elites, for example, no longer form (probably) a solid foundation for the analysis of social discipline within the business world, as has perhaps been the case for 19th century capitalism in its various forms [Berle and Means 1932; Chandler 1977]. The study of enterprise groups is equally difficult: the resources circulating amongst them must be sharable and appropriable, at both the national and international levels. Unpredictability and uncertainty are transferred to subcontractors or towards certain categories of employees; those who find themselves at the lowest end in the chain (whose contracts are becoming increasingly more “flexible”) incur the majority of risks and costs. Social structure is then the key which reveals the process of repartition, of risk delegation, but also of exploitation.

Despite difficult access, classical examples of the existence of solidary processes in markets are increasingly more numerous, even when they are distinguished from simple descriptions of the embeddedness of economic transactions in dyadic social relationships. Distinguishing between relationships of “pure” friendship and relationships of “business” friendship, Ingram and Roberts [2000] show for instance that the existence of friendly relationships between managers in the upscale hotel industry in Sidney – a context of competition by quality more than by price – increases the performance of their competing hotels. Networks friendship among managers in this market area are efficient when they are cohesive and when they allow favors (in referring clients), exchanges of information and general advice, softening competition by setting ceiling prices, banding together against overly aggressive competitive behavior, helping each other in terms of careers, or indeed hiring one another. Ingram and Roberts explain this result by the idea that friendly relationships stabilize the norms of exchange between managers. Performance, in their case, is measured by the rates of rented hotel rooms, sales, and average room price.

Another example is that of the groups of French enterprises (1991-1999) studied by Delarre [2005]. These groups form new social entities characterized by dense and multiple exchanges between the enterprises they cluster. The empirical phenomenon of strategic alliances offers the possibility to observe niches founded on multiple exchanges between partners. Delarre describes different types of resources circulating within such business groups: capital, staff, expertise, control, etc. Nonetheless, in spite of the crystallization of such a social entity, groups of enterprises remain flexible enough to last in the long term. By rapidly renewing the members of the holdings they administer (15% turnover per year), the groups maintain a constant watch over the evolutions of markets. They are thus capable of managing the fundamental problem of the “paradox of embeddedness:” being neither too “embedded” (i.e. immobilized in a collective, cohesive, and stable configuration), nor too little. They can find a balance and durability that explains their domination over contemporary French economy. This does not stop them from encouraging their staff to buy shares in the group’s enterprises that are scheduled to be resold or liquidated very quickly.

A third example of French network study identifying forms of solidarity based on the existence of social niches in a economic sector is that of Eloire [2007] on the restaurant owners of the city of Lille. Eloire finds an unusual, but generalizable, combination of horizontal differentiation in terms of social niches and vertical stratification of the profession in terms of social status of the owners. His analyses of social networks among approximately three hundred restaurateurs explore forms of bounded solidarity allowing for cooperation between competitors. For example, the

discussion network between these restaurateurs is one of the elements of their mutual observation in the Whittian sense. Eloire thus detects a specific form of homophily in this network: restaurant owners seem to have a stronger propensity for citing and for being cited by colleagues whose establishments belong to the same type of sub-market. For example, owners in the “paradoxical” sub-market (that of high-end restaurants) are more central and strongly homophilous and exclusive. An overlap can thus be identified here between economic and social structures, as well as the existence of a central social niche that structures this milieu and in which high-end restaurants also share interesting business information pertaining to subjects as varied as staff, suppliers, food, or overhead expenses. Unlike simple discussion networks, networks focused on transfer or exchange of interesting business tips are much more confidential and selective. Indegree centralities in the latter network show that strategic information is very unequally distributed between the members of this occupation; in addition owners in the “paradoxical” sub-market are relationally more active. The two networks show that cooperation in this milieu is indeed driven by status competition and niche homophily. Within such social niches, Eloire finds a tendency towards direct reciprocity as well as a trend towards indirect reciprocity when restaurateurs are not direct competitors, clearly indicating the existence of special forms of particularistic solidarity between these restaurateurs. The fact that these niches do not seem to bridge across kinds of sub-markets tends to reveal the strategic nature of this form of bounded solidarity. It tends to emerge with sub-markets in a system in which these sub-markets are stratified socially, economically and culturally.

Social control and conflict resolution

The existence of social niches and the recognition and acquisition of various forms of status seem to facilitate a third process, that of social control in the business world. It must nonetheless be noted that few neo-structural studies examine the importance of niches and of status competition for control and rule enforcement. At the inter-organizational level, social niches are far more often identified as sources of deviance or corruption, or considered infractions of antitrust laws. Yet, much more than at the intra-organizational level, organizations’ selective relational investments in each other raise the problem of sunk costs (when partners behave in an opportunistic way). Social processes, as well as legal mechanisms, prove necessary for treating questions of first- and second-order free riding.

A first sociological approach to social control in the business world insists on use by actors of *ex ante* methods based on reputation, considered by institutional econo-

mists as a powerful mechanism of governance [Macaulay 1963; Raub and Weesie 1993; Williamson 1996]. The entrepreneur who wishes to maintain long-term economic relationships with partners worries about his reputation. But this reputation does not belong to him; it is the product of evaluations and critiques from his partners and the milieu of other entrepreneurs concerning his behavior, his reliability, his creditworthiness, etc [Burt 2005]. To our knowledge, the formation of reputations in markets has not been examined by network studies; research only scratches the surface of all the processes which help interdependent economic actors to monitor and mutually sanction each other before resorting to legal proceedings.

Another approach consists precisely in observing legal institutions used by entrepreneurs to solve their conflicts [Cheit and Gersen 2000; Dunworth and Rogers 1996]. A study of social control of business by lay commercial courts in France shows how competition for social status has allowed such an institution to endure for nearly five centuries. Investigations and analyses led by Lazega and Mounier [2007] on data from longitudinal networks gathered from approximately two hundred thirty judges of the Commercial Court of Paris, an institution founded in the 16th century, exposes precisely that kind of process. Lay judges of this court act as individual judges as well as representatives (in theory without specific mandates) of the local business community. Observation of this organization shows that judges are not paid, but voluntary; they are elected / coopted by sitting judges and by the members of the Chamber of Commerce of their district, for a maximum term of fourteen years. Half of them have a legal background. Twenty-nine percent (between 2000 and 2005) among them come from the banking and finance sector, an obvious overrepresentation which, in most European and Anglo-Saxon countries, would raise questions about impartiality and conflicts of interest (or at least the appearance of conflicts). Analysis of the dynamics of advice networks between these magistrates shows that the bankers with law degree have a very high “epistemic” social status in the court; over time they tend to become increasingly influential among their colleagues, for example in issues related to contract breach, assessment of damages, unfair competition, conflicts between boards and minority shareholders, etc.

Thus, a specific form of social status, that of lay “consular” judges, was created at the inter-organizational level in order to remote-control the social control over local business communities in a framework of “joint governance” of their markets. Social niches also emerge within this institution, as in the conflict between, for example, a clique of banker-jurist judges and that of judges coming from the building industry: the two are strongly opposed on matters of punitivity and interventionism in markets and boards. This articulation between niches and statuses seems to facilitate the social control of markets, but at the price of domination of the court by the banking industry

and its criteria of commercial justice [Lazega and Mounier 2008]. The question arises whether this mechanism actually facilitates conflict resolution between small and large businesses, or between producers and consumers.

Regulation and institutionalisation

The neo-structural approach allows for modeling and exploring a fourth process, the “regulatory” mechanism, i.e. the redefinition of the rules of the game between interdependent but competing entrepreneurs; the formation of norms; and the definition of the standards which stabilize their commitments and social exchanges [Commons 1924]. This regulatory process is in fact a process of institutionalisation, of institutional adaptation, and institutional redesign. Here again, competitors cooperate in order to establish a common language of reference and common rules. In this area, neo-structural sociology often relies on conventionalist, regulationist, and institutional economists for whom the role of rules and institutions, whether formal or informal, is crucial in explaining entrepreneurs’ cooperation and performance of markets in general [Boyer and Saillard 1995; Favereau 1994; North 1990].

Status competition is an essential element of the regulatory process, whether leading to real changes or to resistance to change. Special dynamics characterize regulation: that of oligarchic negotiation of precarious values [Lazega 2001]. The regulatory process for markets shows that entrepreneurs can become “institutional entrepreneurs” active in the social construction of their markets. Even in an egalitarian system, it can be observed that everyone does not defend their regulatory interests with the same efficiency. It is not simply a question of stating that the strongest impose their rules: rather, network analysis shows that it actors with multiple and inconsistent forms of social status who are the most influential in this definition of the hierarchy of rules because they combine a form of legitimacy (an ability to speak on behalf of the collective in a credible manner) with their power (the control of resources others need). This approach establishes a link between norms and values on one side, and interests, power, and structure on the other.

As the above example of the Commercial Court of Paris shows, business intervention in the regulatory process has always existed. But it is becoming increasingly more systematic today, as the so-called “regulatory” State tends to establish – in all the domain of public policy – general and vague legal frameworks, leaving the task of defining the substance of the rules to stakeholders contributing to governance, in our case market actors. In this regard, Penalva [2007] offers an excellent example of this type of regulatory process by examining the social construction, in France,

of a financial market, the so-called “socially responsible” market promoted by “ethical” funds. Actors involved in building this market are very heterogeneous. They believe that they will be able to find their clients among pension-funds and savings institutions. Religious nuns rub shoulders [and elbows] with bankers, asset managers, extra-financial analysts, union activists, etc. Penalva examines an intermediate step in the construction of this market, the cooperation between “institutional entrepreneurs” seeking to impose their concept of “social responsibility” on everyone else. Effectively, in this market, investment vehicles such as shares are selected not only based on the financial performance of companies, but also in function of social, environmental, and ethical considerations.

Analysis of the relational structure of this milieu reveals its social discipline. On the market of socially responsible investments (SRI), ethnographic observation identifies two kinds of important relationships: collaboration and friendship. The analysis of networks of collaboration and friendship between the principal institutional entrepreneurs in this market in 2005 shows that, at its construction stage observed by Penalva, the market relies on a balance between heavy economic cooperation and heavy social competition. Even if there are no entry barriers in this market, social and informal barriers do exist for becoming a central actor, a true institutional entrepreneur [Penalva 2008]. These social barriers also separate actors with different notions of “social responsibility,” thus linking structure and the idea actors hold of their product’s quality. If access to the market is free, regulatory activity is “costly” in the sense that, in order to become an important actor in the process, it is necessary to make the necessary personal relational investments. At this stage friendship can be seen as a utilitarian tie allowing for a form of balance between collaboration for “the common good” (the collective construction of the market itself) and social competition preserving self-interests. Because of the specific kind of status competition that characterizes this milieu, certain actors have the means to become successful entrepreneurs in the social construction of their market in more than one way: they have different economic, relational, and symbolic resources at their disposal, allowing them to influence regulation. Thus, after having emerged from action carried out by agencies of extra-financial rating pushing for technical norms, the market and its rules are redefined by financiers who impose their own view of SRI and take control of the market through complex strategies of cooptation.

The meeting of entrepreneurs with politics does not necessarily accomplish this regulation of the business world. As we saw above, private professions such as business lawyers, investment bankers, or consultants play a role of mediation that is significant from a regulatory point of view, especially at the international level. This mediation role is all the more important in international commercial contracts in the ab-

sence of stabilized market rules [Flood 2007]. Through lobbyists, enterprises greatly contribute to the campaigns of political parties in Anglo-saxon countries [Useem 1984; Mizruchi 2007; Carruthers 1998] in exchange for specific public policies. In France, Kramarz *et al.* [2006] examined exchanges of “favors” between corporate managers and French politicians from the same elite schools. Their work shows, for example, that when layoffs conflict with the calendar of public elections, industrialists announce them after the elections, even if it is very costly to the business. In exchange, companies run by top management well-known to political personnel simply pay less taxes and receive more subsidies.

Status competition and the multi-dimensionality of status thus allow certain institutional entrepreneurs in the business world to maintain inertia and blockages in order to change to the rules of the game; or, on the contrary, to overcome these blockages. Status inconsistency, in particular, is important: able to lose status on one dimension because they keep their status along other dimensions, they succeed in selling stagnation or change to the entire system of actors. In this as well, a form of endogeneization of the structure helps catalyze a very complex process.

Regulation of business is today openly characterized by a great polynormativity [Lazega and Mounier, forthcoming 2009]. Faced with quantities, coordination in a market involves prices and qualities. It is notably through competition by quantities that a plurality of partially autonomous normative orders provides the business world with numerous sources of regulation. The relative weight of the law versus other types of norms depends on the force that the State and public institutions summon to influence this joint regulation in concrete situations of economic action. In the business world, the law occupies a position of primacy with respect to other norms not only because of the primacy of the State, but because the economy’s actors, especially business, have the ability to participate in the definition of the law via the processes of lobbying and joint regulation.

Interdependencies of social processes and their modeling

The list of social processes facilitating collective action between competitors and which can be modeled by network analysis is indefinite (i.e. there is no finite list of these processes) because there exist no social processes without a relational dimension. With help from creative statisticians, the neo-structural approach is not limited to these four generic processes, or mechanisms. Other relational and informal processes which characterize collective action between interdependent entrepreneurs have been the object of neo-structural formalizations: integration; assimilation;

cooptation; balance of powers; evaluation of production quality; extraction of surprising economic performances and exploitation; discrimination; and desolidarization. These processes remain separate only analytically.

Such processes, which together contribute to make cooperation between competitors possible, are linked in a dynamic way, for example by retroaction effects. The redefinition of rules can engender new solidarities. Normative beliefs produced by the regulatory process influence, for example, choices of advisors and therefore learning. Controversies in part energize the evolution of structures which facilitate collective learning. They contribute to the endogenous formation of the constraints that actors can then consider as legitimate or not, and to which they submit more or less “voluntarily.” Research on the articulation between these processes is only beginning. Its contribution to a form of social discipline that organizes the business world depends on the specific mode of coordination observed between the entrepreneurs of a market area [Berkowitz 1988].

The articulation of interdependent processes also has an effect on the structural forms reconstituted by the observer and endogenized by the actors. These effects are at the origin of the dynamics of relational structures: new rules can reconfigure a system of niches; exercise of social control can encourage the emergence of new forms of social status and modify principles of status consistency. In turn, the new processes which result from these changes make possible new modes of coordination between interdependent competitors. In order to better understand what it means to be in business in this interpersonal, inter-organizational, and dynamic context, neo-structural economic sociology must yet develop methods combining the systematic study of longitudinal and multilevel data on identities, trajectories (in the long term), exchange networks, and representations (or controversies).

Developing this approach to cooperation between competitors leads to a reevaluation of the role and organization of the State in its relationship to markets and the business world. This neo-structural theory offers an approach of this kind of cooperation that is useful for the protection of public interest through social control of business because it is adapted to the latter’s complexity. Drawing from Weberian theories concerning the “organizations of regulation of the economy” (*wirtschaftsregulierenden Verbände*), economic sociology has, since its beginnings, been concerned with the creation, functioning, and evolution of institutions controlling market operations [Swedberg 1998; Steiner 1999; Gislain et Steiner 1995]. The State and public authorities have traditionally provided such institutions, notably allowing the business world to manage the risks and problems that competition and contractual activity raise. But business has also participated, from the beginning, in building these institutions, as well as in the legal infrastructure of its markets [Berger 1999; Berman 1983;

Djelick and Quack 2002; Dezalay and Garth 1996; Fligstein 2002; Flood 1993 2001 2002; Milgrom *et al.* 1990; Swedberg 2003; Volckart and Mangels 1999]. Through their efforts for cooperation between competitors, as previously outlined, entrepreneurs have always sought to define the context of their exchanges, their opportunity structure.

Today, these forms of cooperation between competitors confront public authorities with new problems of social control over markets and business. When individual and corporate actors are thrust into increasingly more open competition, cooperation also becomes, paradoxically, the “fourth factor” of production. The examination of social discipline and cooperation between competitors in the organizational and market society offers new insights into contemporary forms of protection of the general interest. What exemptions should be granted by competition policies when competition is also a matter of delivering quality in public services? In case of financial crisis, which bank should be saved from bankruptcy with taxpayers’ money? How should incentives for R&D be designed in a given market area? Old questions can be reassessed using insights from neo-structural sociology on systems of interdependencies, relational investments and social mechanisms facilitating cooperation among competitors.

Using network analyses in this way to model social mechanisms is a useful for understanding cooperation between interdependent competitors. There is a chance that this approach to coordination between interdependent and competing entrepreneurs develops because it seems to be in the best interest of both business and public authorities. The former within the framework of strategy, but also in its efforts to “capture” regulatory institutions or participate in the definition of social and economic policies. The latter in order to carry out its role as a “regulator” in more sophisticated ways in increasingly complex contexts. However, in this domain as in many others, expertise is still rarely on the side of public authorities and the general interest.

Paper presented at the conference on “Social mechanisms and analytical sociology” organized by Pierre Demeulenaere and Gianluca Manzo, Université de Paris-Sorbonne, October 17-18 2008. I thank Germain Barré, Fabien Eloire, Noël Jubert, Elise Penalva, Alvaro Pina-Stranger, Philippe Steiner and François Vatin for their comments and suggestions.

References

- Aldrich, H.E., and Marsden, P.M.
1988 "Environments and Organizations." In *Handbook of Sociology*, edited by N.J. Smelser. Beverly Hills: Sage.
- Aron, R.
1962 *Paix et guerre entre les nations*. Paris: Calmann-Lévy.
- Baker, W.E.
1990 "Market Networks and Corporate Behaviour." *American Journal of Sociology* 96: 589-625.
- Bengtsson, M., and Kock, S.
2000. "Coopetition in Business Networks – to Cooperate and Compete Simultaneously." *Industrial Marketing Management*, 29 (5): 411-426.
- Berle, A.A., and Means, G.C.
1932 *The Modern Corporation and Private Property*, revised edition [1969]. New York: Harcourt, Brace & World.
- Berkowitz, S.D.
1988 "Market-areas." In *Social Structures: A Network Approach*, edited by B. Wellman and S.D. Berkowitz. Cambridge: Cambridge University Press.
- Bourricaud, F.
1961 *Esquisse d'une théorie de l'autorité*. Paris: Plon.
- Blau, P.M.
1964 *Exchange and Power in Social Life*. New York: John Wiley.
- Boyer, R., and Saillard, Y.
1995 *Théorie de la régulation. L'état des savoirs*. Paris: La Découverte.
- Breiger, R.L.
1990 "On the Structural Analysis of Social Mobility." Pp. 1-23 in *Social Mobility and Social Structure*, edited by R. Breiger. Cambridge: Cambridge University Press.
- Bresser, R., and Harl, J.E.,
1986 "Collective Strategy: Vice or Virtue?" *Academy of Management Review* 11: 408-427.
- Burt, R.
1992 *Structural Holes: the Social Structure of Competition*. Cambridge: Harvard University Press.
2005 *Brokerage and Closure: An introduction to Social Capital*. New York: Oxford University Press.
- Carruthers, B.G.
1998 *City of Capital: Politics and Markets in the English Financial Revolution*. Princeton: Princeton University Press.
- Chandler, A.D.
1977 *The Visible Hand. the Managerial Revolution in American Business*. Cambridge, MA: Harvard University Press.

Chandler, A.

1990 *Scale and Scope*. Cambridge: Harvard University Press.

Chaserant, C.

2000 *Rationalité et gestion de l'incomplétude dans les relations contractuelles*. Thèse de doctorat, Université Paris X.

Cheit, R.E., and Jacob E.G.

2000 "When Businesses Sue Each Other: An Empirical Study of State Court Litigation." *Law & Social Inquiry* 25: 789-816.

Chiffolleau, Y., Dreyfus, F., Stofer, R., and Touzard, J.-M.

2006 "Networks, innovation and Performance: Evidence From A Cluster of Wine Cooperatives (Languedoc, South of France)." Pp. 37-61 in *Vertical Markets and Cooperative Hierarchies: the Role of Cooperatives in the Agri-Food Industry*, edited by K. Karantininis and J. Nilsson. Berlin-Heidelberg: Springer.

Cohen, W.M., and Levinthal, D.A.

1990 "Absorptive Capacity: A New Perspective on Learning and Innovation." *Administrative Science Quarterly* 35 (1): 28-152.

Coleman, J.S.

1990 *Foundations of Social theory*. Cambridge, MA: Harvard University Press.

Comet, C.

2007 "Capital social et profits des artisans du bâtiment: le poids des incertitudes sociotechniques." *Revue française de sociologie* 48: 67-91.

Cordonnier, L., and Grass, G.

2008 "Mission d'enquête sur les finalités de l'intervention publique dans le domaine de l'Economie." Conférence permanente du SRDE-Nord Pas de Calais, Rapport final, April, 63 pp.

Crozier, M., and Friedberg, E.

1977 *L'Acteur et le système*. Paris: Seuil.

Delarre, S.

2005 "La reproduction des groupes d'entreprises comme entités socio-économiques stables." *Revue française de sociologie* 46: 115-150.

DiMaggio, P.

1986 "Structural Analysis of Organizational Fields." Pp. 335-370 in *Research in Organizational Behavior, Vol. 8*, edited by B. Staw and L.L. Cummings. Greenwich, CT: JAI Press.

Doz, Y.L.

1996 "The Evolution of Cooperation in Strategic Alliances: initial Conditions Or Learning Processes." *Strategic Management Journal* 17: 55-83.

Dumez, H., and Jeunemaître, A.

2005 "Concurrence et coopération entre firmes: Les séquences stratégiques multidimensionnelles comme programme de recherche." *Revue Finance Contrôle Stratégie* 8 (1): 27-48.

Dunworth, T., and Joel, R.

1996 "Corporations in Court: Big Business Litigation in U.S. Federal Courts: 1971-1991." *Law & Social Inquiry* 21: 497-592.

- Eloire, F.
2008 "Les dynamiques de l'échange social sur un marché de producteurs." Pp. 67-77 in *Management et réseaux sociaux: Ressource ou outil de gestion?*, edited by M. Lecoutre and P. Lievre. Paris: Hermes-Lavoisier.
- Favereau, O.
1994 "Règles, organisation et apprentissage collectif: un paradigme non standard pour trois théories hétérodoxes." in *Analyse économique des conventions*, edited by A. Orléans. Paris: Presses universitaires de France.
1997 "L'incomplétude n'est pas le problème, c'est la solution." Pp. 219-234 in *Les limites de la rationalité: II*, edited by R. Bénédicte. Paris: La Découverte.
- Favereau, O., Biencourt, O., and Eymard-Duvernay, F.
2002 "Where Do Markets Come From? From Quality Conventions!" Chap. 8 of *Conventions and Structures in Economic Organization*. Cheltenham, UK: Edward Elgar.
- Favereau, O., and Lazega, E. (eds.)
2002 *Conventions and Structures in Economic Organization*. Cheltenham, UK: Edward Elgar.
- Flap, H., Bulder, B., and Völker, B.
1998 "Intra-organizational Networks and Performance: A Review, Computational and Mathematical." *Organization theory* 4: 1-39.
- Fligstein, N.
2002 *The Architecture of Markets: An Economic Sociology of Capitalist Societies*. Princeton: Princeton University Press.
- Flood, J.
2007 "Lawyers As Sanctifiers: the Role of Elite Law Firms in International Business Transactions." *Indiana Journal of Global Legal Studies* 14: 35-66.
- Frank, R.H.
1985 *Choosing the Right Pond. Human Behaviour and the Quest for Status*. Oxford: Oxford University Press.
- Gerlach, M.
1992 *Alliance Capitalism: The Social Organization of Japanese Business*. Berkeley: University of California Press.
- Gislain, J.-J., and Steiner, P.
1995 *La sociologie économique (1890-1920): Durkheim, Pareto, Schumpeter, Simiand, Veblen, et Weber*. Paris: Presses Universitaires de France.
- Granovetter, M.
1985 "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology* 91: 481-510.
- Gulati, R.
1995 "Social Structure and Alliance formation Patterns: A Longitudinal Analysis." *Administrative Science Quarterly* 40 (4): 619-652.
- Hamel, G., Doz, Y., and Prahalad, C.K.
1989 "Collaborate with Your Competitors and Win." *Harvard Business Review* 67 (1): 133-139.

Hedström, P., and Swedberg, R.

1997 *Social Mechanisms: An Analytical Approach to Social Theory*. Cambridge: Cambridge University Press.

Ibert, J.

2004 "La gestion des relations entre firmes concurrentes." *Revue Française de Gestion* 30 (148): 153-177.

Ingram, P., and Roberts, P.W.

2000 "Friendship Among Competitors in the Sydney Hotel industry." *American Journal of Sociology* 106: 387-423.

Karpik, L.

2007 *L'économie des singularités*, Paris: Gallimard.

Khanna, T., Gulati, R. and Nohria, N.

1998 "The Dynamic of Learning Alliances: Competition, Cooperation, and Relative Scope." *Strategic Management Journal* 19 (3): 193-210.

Kogut, B., and Zander, U.B.

1996 "What Firms Do: Coordination, Identity and Learning." *Organization Studies* 7: 502-518.

Lado, A., Boyd, N.G., and Hanlon S.C.

1997 "Competition, Cooperation, and the Search for Economic Rents: A Syncretic Model." *the Academy of Management Review* 22 (1): 110-141.

Larson, A.

1992 "Network Dyads in Entrepreneurial Settings: A Study of the Governance of Exchange Relationships." *Administrative Science Quarterly* 37: 76-104.

Lazega, E.

1992 *Micropolitics of Knowledge: Communication and indirect Control in Workgroups*. Aldine de Gruyter: New-York.

2001 *The Collegial Phenomenon: the Social Mechanisms of Cooperation Among Peers in A Corporate Law Partnership*. Oxford: Oxford University Press.

2003a "Networks in Legal Organizations: On the Protection of Public interest in Joint Regulation of Markets." Wiarda Chair inaugural Address 2003, Wiarda institute Publications, Faculty of Law, Utrecht University.

2003b "Rationalité, discipline sociale et structure." *Revue française de sociologie* 44: 305-330.

forth. "Théorie de la coopération entre concurrents: Organisation, marché et analyse de réseaux." In *Sociologie et économie*, edited by P. Steiner and F. Vatin. Paris: Presses Universitaires de France.

Lazega, E., and Mounier, L.

2002 "Interdependent Entrepreneurs and the Social Discipline of their Cooperation: the Research Program of Structural Economic Sociology for A Society of Organizations." Pp. 147-199 in *Conventions and Structures in Economic Organization: Markets, Networks, and Hierarchies*, edited by C.O. Favereau and E. Lazega. Cheltenham, UK: Edward Elgar.

2003 "Interlocking Judges: On Joint External and Self-Governance of Markets." Pp. 267-296 in *Research in the Sociology of Organizations* (20), edited by V. Buskens, W. Raub and C. Snijders, Amsterdam: Elsevier.

forth. "Polynormativité et contrôle social du monde des affaires: le cas de l'interventionnisme et de la punitivité des juges du Tribunal de Commerce de Paris," *Droit et Société*.

- Lazega, E., Mounier, L., Snijders, T., and Tubaro, P.
2008 "Réseaux et controverses: De l'effet des normes sur la dynamique des structures." *Revue française de sociologie* 49: 467-498.
- Lazega, E., Mounier, L., Jourda, M.-T., and Stofer, R.
2008 "Catching up with Big Fish in the Big Pond? Multi-Level Network Analysis through Linked Design" *Social Networks* 30: 157-176.
- Levine, S., and White, P.E.
1961 "Exchange As A Conceptual Framework for the Study of interorganizational Relationships." *Administrative Science Quarterly* 5: 583-601.
- Lindenberg, S.
1995 "Complex Constraint Modeling (CCM): A Bridge Between Rational Choice and Structuralism." *Journal of institutional and theoretical Economics* 151: 80-88.
2006 "Social Rationality." Pp. 616-618 in *International Encyclopedia of Economic Sociology*, edited by J. Beckert and M. Zafirovski. New York: Routledge.
- Lomi, A., and Pattison, P.
2006 "Manufacturing Relations: An Empirical Study of the Organization of Production Across Multiple Networks." *Organization Science* 17: 313-332.
- Macauley, S.
1963 "Non-Contractual Relations in Business: A Preliminary Study." *American Sociological Review* 28: 55-67.
- Mizruchi, M.S.
2007 "Political Economy and Network Analysis: An Untapped Convergence." *Sociologica* 2. [doi:10.2383/24765](https://doi.org/10.2383/24765).
- Nalebuff, B., and Brandenburger, A.
1996 *La co-opétition, une révolution dans la manière de jouer concurrence et coopération*. Paris: Village Mondial.
- Nonaka, I.
1994 "A Dynamic theory of Organizational Knowledge Creation." *Organization Science* 5 (1): 14-38.
- Ost, F., and Van der Kerkhove, M.
2000 "De la pyramide au réseau? Vers un nouveau mode de production du droit?" *Revue internationale d'études juridiques* 44: 1-92.
- Penalva, E.
2007 *Réseaux et régulation d'un marché financier: En attendant la concurrence*. Thèse de l'Université de Lille 1.
- Perret, V., and Josserand, E.
2003 *Le paradoxe: Penser et gérer autrement les organisations*. Paris: Ellipses.
- Pina-Stranger, A.
2008 *La structure sociale de l'industrie des Biotechnologies en France*, unpublished manuscript.
- Podolny, J.M.
1993 "A Status-Based Model of Market Competition." *American Journal of Sociology* 98: 829-872.

Polanyi, M.

1967 *Tacit knowing, the Tacit Dimension*. London: Routledge & Kegan Paul.

Powell, W.W., White, D.R., Koput, K.W., and Owen-Smith, J.

2005 "Network Dynamics and Field Evolution: the Growth of inter-organizational Collaboration in the Life Sciences." *American Journal of Sociology* 110: 1132-1205.

Raub, W., and Weesie, J.

1993 "Symbiotic Arrangements: A Sociological Perspective." *Journal of institutional and theoretical Economics* 149: 716-24.

Reynaud, J.-D.

1989 *Les règles du jeu*. Paris: Armand Colin.

Sainsaulieu, R.

1977 *L'Identité au travail*. Paris: Presses de la Fondation des sciences politiques.

Salancik, G.R., and Pfeffer, J.

1977 "Who Gets Power – and How they Hold Onto It: A Strategic Contingency Model of Power." *Organizational Dynamics* 5: 3-21.

Saxenian, A.

1994 [*Regional Advantage: Culture and Competition in Silicon Valley and Route 128*](#). Boston: Harvard University Press.

Steiner, P.

1999 *La sociologie économique*. Repères: La Découverte.

Swedberg, R.

1994 "Markets as Social Structures." in *Handbook of Economic Sociology*, edited by N. Smelser and R. Swedberg. Princeton, NJ: Princeton University Press – New York: Russell Sage Foundation.

1998 *Max Weber and the Idea of Economic Sociology*. Princeton: Princeton University Press.

2003 "The Case for an Economic Sociology of Law." *Theory and Society* 32: 1-37.

Thévenot, L.

1985 "Les investissements de forme." Pp. 21-71 in *Conventions économiques*, Cahiers du CEE, Paris: PUF.

Tsai, W.

2002 "Social Structure of 'Coopetition' within a Multiunit Organization." *Organization Science* 13 (2): 179-190.

Tilly, C.

1999 *Durable Inequality*. Berkeley: University of California Press.

Useem, M.

1984 *The inner Circle: Large Corporations and the Rise of Business Political Activity in the US and UK*. Oxford: Oxford University Press.

Uzzi, B.

1997 "Social Structure and Competition in Interfirm Networks. The Paradox of Embeddedness." *Administrative Science Quarterly* 42: 35-67.

Varanda, M.

2005 "La réorganisation du petit commerce en centre-ville. L'échec d'une action collective." *Revue française de sociologie* 46: 325-350.

Villette, M., and Vuillermot, C.

2005 *Portrait de l'homme d'affaires en prédateur*. Paris: La Découverte.

Von Hippel, E.,

1987 "Cooperation Between Rivals: informal Know-How Trading." *Research Policy* 16 (6): 291-303.

Weber, M.

1978 *Economy and Society*. Berkeley: University of California Press.

White, H.C.

1981 "Where Do Markets Come From?" *American Journal of Sociology* 87: 517-547.

White, H. avec la collaboration de Bothner, M.S.

2001 *Markets from Networks: Socioeconomic Models of Production*. Princeton: Princeton University Press.

White, H.C., Scott, C.B., and Breiger, R.L.

1976 "Social Structure from Multiple Networks I. Blockmodels of Roles and Positions." *American Journal of Sociology* 81: 730-780.

Windolf, P., and Beyer, J.

1996 "Cooperative Capitalism: Corporate Networks in Germany and Britain." *The British Journal of Sociology* 47: 205-231.

Cooperation among Competitors

Its Social Mechanisms through Network Analyses

Abstract: This paper argues that cooperation among competitors is facilitated by social processes (among others: learning, bounded solidarity, social control, regulation) that can be modelled using network analyses. Entrepreneurs get involved in social exchanges and these exchanges require relational investments, protection of these investments, social niche seeking and status competition – which trigger and drive these social processes. To illustrate this theory, I draw on sociological research using the analysis of social and organizational networks in business. These analyses model and substantiate the complex social discipline that helps interdependent, but competing entrepreneurs cooperate. Finally, I speculate about the implications of this knowledge of complex interdependencies and coordination, social discipline and social processes among entrepreneurs for public authorities involved in social control of markets.

Keywords: cooperation, competition, neo-structuralism, social processes, social exchange, network analysis.

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