Neo-structural economic sociology beyond embeddedness

Relational infrastructures and social processes in markets and market institutions

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"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.

Introduction

In the context of the sophisticated division of labor in contemporary economies, a majority of individuals, organizations, and institutions participating in economic production, exchange, and consumption are thrust into open forms of competition imposed by contemporary capitalisms; in other words, neoliberal public authorities and global companies shaping the contexts and lives of smaller, less powerful actors. To dominate and/or survive, all have strong incentivesto play complex games of cooperation among competitors. Along with capital, labor, and natural resources, cooperation among competitors is seen here as a "fourth factor of production." The research program focusing on this phenomenon combines White's (1981, 2001) perspective on production markets extended to the "Economie des Conventions" (Favereau, 1994, 2002) with a theory of collegiality as collective action among rival peers (Lazega, 2001), thus bringing together structure, culture, and agency (individual and collective) in a new way.[1] In order to accomplish this, we define markets as both bureaucratic and collegial (Lazega and Mounier, 2002), and socio-economic relationships both as channels for heterogeneous resources and as symbolic commitments that have to build their credibility. These commitments are equivalent to a promise, an obligation, or a convention introducing time into the exchange of resources. They rely on social control and conflict resolution to make such commitments credible.

Our work on cooperation among competitors assumes that we live in a stratified and multi-level organizational society (Perrow, 1991). With some exceptions, it looks mainly at intra-class cooperation among competitors. Class differences between small entrepreneurs and high-level executives in these systems matter enormously and are often more conducive to brute force exploitation and violence across levels than to cooperation. The kind of cooperation among competitors on which we work is usually within-class, between actors who tend to share the same position at the meso level of society, for example in the economic market in which they are players or in institutions of joint regulation of markets in which they acquire responsibilities. This, as we shall also see, does not preclude cross-level between-class interactions and activities that can be cooperative – but addressing systematically all the complexities of meso–macro relationships in society remains a future prospect of economic sociology in general, including ours.

This short presentation is a "go to" summary providing interested readers with indications of our development of this neo-structural economic sociology. The notion of a social discipline that is perceived as legitimate by members of a social milieu is an important notion for understanding the contemporary form of cooperation between competitors. This form of cooperation relies on two dimensions of 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 (Lazega, 1992), thanks to which they design common projects and invest in relationships to manage their interdependencies via multiplex social exchange. The second dimension of the notion of social discipline exists at the collective level, although it is also endogenized by individual members. We refer to this second dimension as relational infrastructures.[2] These infrastructures include horizontal and vertical differentiations in the social milieux of interdependent entrepreneurs. Horizontal differentiations correspond to systems of niches and vertical differentiations to heterogeneous forms of status. *Relational infrastructures* are crucial for the deployment and steering of key *social processes* usually associated with collective action among interdependent peers. We focus on such processes because they can help actors in managing the dilemmas of their collective actions: collective learning and socialization, bounded solidarity and exclusions, social control and conflict resolution, regulation and institutionalization. Our methodological contribution offers models of such processes using socio-economic network analyses mixed with other methods.

An entrepreneur's social niche can be defined as the subgroup of other entrepreneurs 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 privileged partners in the exchange of these resources, at the inter-organizational level. A niche makes sense only in a system of niches identifying a division of work based on the concept of structural equivalence (White *et al.* 1976) and social homophily. It can be detected in a social milieu by its strong relational cohesion and by the presence of some form of generalized exchange measured as relational cycles of direct and indirect reciprocity. The precise contours of a social niche as an empirical entity capable of organized collective agency are sometimes difficult to grasp, for its members as well as for the observer.

In addition to niche-seeking, the quest for status – that is, the "importance" of the individual in the collective – creates another relational infrastructure on which collective action among rival peers relies. The multiple exogenous dimensions of social status classically defined by Max Weber can be measured as concentrations of different kinds of resources (economic, political, and social). With more endogenous measures such as those offered by network analysis (essentially measures of centrality and prominence), additional and heterogeneous dimensions of status are brought into the picture. Exogenous and endogenous status competition gives access to a mandate to represent the collective, to gain authority, to control resources, and to the capacity of defining terms of social exchanges. This approach to status both relies on and reaches beyond Podolny's (2011) definition of status as indicative of quality and as criterion for the selection of exchange partners in situations of market uncertainty.

Also beyond Granovetter's (1985) embeddedness studies and critique of theories for which economic transactions are under-socialized or over-socialized, our neo-structural economic sociology focuses on modeling this social discipline, relational infrastructures, and social processes in collective action among entrepreneurs. From this perspective, cooperation among competitors – for example, in partnerships or joint ventures between companies and their subcontractors, in joint R&D programs, in industrial districts, and so on – is an oligopolistic game. Oligopolies emerge notably to protect entrepreneurs from merciless monopolistic competition, helping them impose jointly dictated or "suggested" prices and rules. Entrepreneurs may overtly or secretly look for opportunities to eliminate competitors. But as Adam Smith's words above indicate, in waiting for such opportunities, an intermediary objective is to collectively reproduce the market by maintaining common relational infrastructures and agreements for coordination and collective action. Markets with oligopolistic structures are therefore the rule more than the exception. Our methodological choice has been, over the years, to study "collegial oligarchies" or "collegial pockets" in market areas, thus examining articulations between strategies of elites and strategies of small and medium-size actors often struggling for survival.

Finally, managing cut-throat competition with durable cooperation based on relational infrastructures and social processes among competitors does not depend exclusively on shared varieties of such social disciplines. It also depends on the knowledge and recognition of that discipline by public authorities involved in social control and regulation of markets. New questions arise from shifting boundaries between private and public spheres in society. The growing privatization of public services, for example, increases the influence of business and cooperation among competitors on public policies (often open penetration – through governance – of the State apparatus by business), both economic and social policies. Under

Observatoire des Réseaux Intra- et Inter-Organisationnels (ORIO Network) is a research group that was created in 2003 with help from the Institut Universitaire de France *(http://www.iufrance.fr)* to develop neo-structural approaches in sociology and to research contemporary societies as organizational and market societies. Information about its membres and activities is available here: *http://blogs.sciences-po.fr/recherche-network-organization-institution-dynamics-multilevel*
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such conditions, one of the main tasks of neo-structural economic sociology is also to focus on (ethnographically observable) specialized social settings in which interdependent entrepreneurs carry out political work promoting their regulatory interests and specific designs for the organization of markets. By shedding light on their social discipline, this work offers new insights into public/private institutions and ecologies of institutions regulating markets –institutions often characterized by discretion and opaqueness. Such insights can also contribute to strengthening public interest in new and polynormative forms of "joint regulation" of markets (that is, by business itself and public authorities) that characterize Western forms of capitalism.

Multiplex social exchanges: 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 (Aldrich and Pfeffer 1976), which forces them to establish links of cooperation with other organizations. These relationships are expressed 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, consist of information, goods, and services that are not necessarily of a purely monetary or functional nature. Therefore, cooperation among competitors requires symbolic work and social exchanges establishing personalized relationships with competing peers, using both threats (for example, of open economic war and cut-throat practices) and promises (for example, of shared benefits).

Cooperation between competitors thus presupposes important relational and symbolic activities within social exchanges. Numerous studies of the complex, sometimes paradoxical relationship between the entrepreneur's relational capital and the various forms of economic performance (survival, profits, growth, and so on) (Burt 1992 2005; Ingram and Roberts 2000; Uzzi 1999) illustrate the importance of social exchange. For Burt (2005), a successful entrepreneur has a network that is dense within and sparse beyond the group or organization in which he belongs. Working beyond Burt's approach, Comet [2007] shows that craftspeople in the French construction industry need to juggle with several business models in order to survive: as subcontractors for large bureaucratic building companies; as individual craftspeople for personal clients; as contractors/subcontractors with their fellow craftspeople when their building sites are too large for a small individual business. Given the diversity of business models, the situation requires multiplex relationships and cooperation skills with fellow craftspeople. Comet's research shows the various ways in which multiplexity becomes a source of economic performance depending on each entrepreneur's variability of tasks and specific technical constraints in construction sites.

At the level of giant financial or industrial holdings as well, cooperation among competitors by building, maintaining, and dissolving relational infrastructures is part of complex adaptation to markets. Delarre (2005) has shown that, in France, holdings of French enterprises (1991–1999) tend to fit that model, too. These groups form new social entities characterized by dense and multiple exchanges between the enterprises that they cluster. The empirical phenomenon of strategic alliances offers the possibility of observing social niches founded on multiple exchanges between partners. Delarre describes different types of resources circulating within such business groups: capital, personnel, expertise, control, and so on. In spite of the crystallization of such a social entity, holding groups of enterprises remain flexible enough to last longer than might be expected. They notably do so by structuring group-level labor markets. By rapidly laying off and reshuffling members in the companies that they administer (15 percent turnover per year), these groups maintain a constant watch over the evolution of markets. They are thus capable of managing the fundamental problem of the "paradox of embeddedness": being neither too "embedded" (that is, immobilized in a collective, cohesive, and stable configuration), nor too "disembedded." They can find a balance and durability that explains their domination over the contemporary French economy. This does not stop them from encouraging their personnel to buy shares in group enterprises that are scheduled to be liquidated very quickly.

Relational infrastructures in social processes

Analytically speaking, relational and symbolic work creates relational infrastructures, and the latter trigger or facilitate, in turn, social processes in what Berkowitz (1988) calls "market areas." Reconstituting relational infrastructures – in particularistic forms of solidarity (and the discriminations and exclusions that come attached), in collective learning and socializations, in social control and conflict resolution, and in regulation and institutionalization of new norms – provides evidence of the existence, at the collective level, of the social discipline among competing entrepreneurs in which we are interested. The articulation between relational infrastructures and social processes in social discipline can be illustrated with examples of empirical research on these four generic processes. These processes are not mechanical in the sense that they would exist independently of individuals' intentional efforts. But they are social mechanisms on which individual actors are nevertheless embarked. They are triggered by relational work and eventually escape individuals' control in a Mertonian sense.

Collective learning

The first social process facilitating collective action between competitors is collective learning. In highly technological societies and economies, which value research and innovation exploiting this technology, collective learning in the exchange of tacit knowledge and sharing experience (Polanyi 1967) represents a crucial process. It has long been studied in management (Cohen and Levinthal 1990; Nonaka and Takeuchi, 1995) and a rich literature reports research on the process of learning in strategic alliances. Organizations seeking quantitative and qualitative competitive advantages mutually monitor one another (White, 1981). Enterprises establish alliances because they hope to benefit, among other purposes, from the learning resources to which such links give access. Companies are particularly attracted by new know-how, techniques, and competencies from alliances with other companies (Kogut and Zander 1996; Powell *et al.* 1996). 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. In this complex learning process, social interactions and informal relationships that are more or less collusive are decisive for social exchange of tacit knowledge. In particular, where entrepreneurs depend upon one another for unbillable exchanges of opinion and advice, the collective nature of production and certification of quality often corresponds to hidden costs carried by the milieu ("the profession"), its institutions, and its most important actors (colleagues with "reputation").

Examples of modeling collective learning among competing entrepreneurs based on information sharing and advice relationships are provided in research by Pina-Stranger (2008), Oubenal (2015), and Montes-Lihn (2017).

Pina-Stranger's (2008) studies collective learning between entrepreneurs in the French biotech industry. Entrepreneurs from this milieu face very high levels of risk: a product development timeframe is rarely shorter than ten years; capitalistic needs can be satisfied only by a small number of financial actors, notably venture capital; there are increasingly demanding regulatory constraints on product registration; and there are also difficulties related to the innovative and complex nature of activities linked to therapeutic prescriptions in life sciences. These entrepreneurs evolve in an environment in which competition is permanent: 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" ("*compétitivité*") to reach private investors or win a contract with a pharmaceutical company. In this context, Pina-Stranger examines advice, friendship, and business networks among the 140 biotech entrepreneurs specializing in human health in France. Analyses show that in the absence of any contractual relationship, scientific entrepreneurs in these diverse and small companies are involved in multiple, reciprocal relationships, building forms of bounded solidarity in specific social niches. 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, subcontractors, and so on), they often count on locally direct competitors to validate their choices, thus informally integrating the latter's judgments in their decisions. One of the outcomes of this research is to show that inter-organizational collective learning is different from the same process at the intra-organizational level (Pina-Stranger and Lazega, 2010). At the intra-organizational level, epistemic disagreements are solved by centralization and alignment on high-status opinion leaders. In this context, members tend not to seek advice from others "below" them in the organizational status hierarchy. At the inter-organizational level, absence of a formal hierarchy encourages entrepreneurs to invest heavily in relational activity. This behavior allows them to keep their status in a context in which epistemic conflicts become entrenched, following a polarization process, in different epistemic communities. This difference has implications for the way in which a collective solves the problems related to the creation of a hierarchy between different bodies of appropriate knowledge.

Montes-Lihn (2017) shows how wine producers manage the transition to organic and biodynamic farming by relying on networks of informal advice among competing peers. Farming based on ecological alternatives prohibits synthetic chemicals. This restriction represents a technical challenge and leads to the introduction of a new set of agronomic practices. The adoption of organic practices is seen by wine producers as a risky decision with strong economic and symbolic (prestige-related) consequences in case of failure. In that sense, information that they may share to make appropriate technical decisions through advice networks is key. Montes-Lihn shows that advice sharing and discussion among over 60 wine-producers in the Burgundy Region in France are part of a larger socialization process that requires a strong relational and ideological investment, signaling a commitment to shared ecological values. Adoption of green practices is far more than a mere technical issue. This study identifies two simultaneous learning processes. The first is based on homophily among wine producers within the boundaries of social niches. The social boundaries defining the profile of the participants in this specific learning process are determined by common values. In the second learning process, knowledge is shared beyond the boundaries of social niches. It maintains a ratchet effect in ecological transition. This learning process is coupled with a socialization mechanism because experienced wine producers tend to initiate novices into the implicit social norms on which the professional milieu is founded. Ethnographic work shows that this socialization mechanism (learning and reminders of social norms that come attached) present in the second process is led by the experienced wine producers. Socialization aims to preserve the collective, sometimes exclusive ways in which knowledge is shared and the values that have guided experienced producers' own ecological transition.

Oubenal (2015) looks at how information about new financial products is managed by market players promoting these products based on the idea that they are risk-free. This orchestration of the circulation of information about the products is examined in the network of social relationships between the players in this market. Promoters with specific forms of epistemic status in this community (in particular, university professors in key business schools) facilitate the diffusion of a positive and reassuring discourse in academia and the press, even if their financial products are complex and represent much riskier investments than acknowledged. Specialized journalists do not have access to actors who could provide them with relevant information about the riskiness of the products unless their articles contribute positively to the overall project. They are subjected to a form of social control that strengthens the social construction of ignorance of risks in this financial market.

Particularistic solidarities and discriminations

Echoing previous work in the literature, such as that of Ingram and Roberts (2000), a second social process facilitating collective action by interdependent but competing entrepreneurs is a form of particularistic, bounded solidarity. It is represented by the creation, often in social niches within the collective, of informal systems of multiplex generalized exchange, as already identified. Such a system helps members exchange several types of heterogeneous production-related resources, directly or indirectly, allowing for lasting circulation, while also partially suspending behavior perceived as opportunistic. As already discussed, the analysis of "complete" networks allows the observation, in and between organizations, of the presence of cyclical relational substructures characterizing indirect and deferred reciprocity, with their potential implications for direct or indirect forms of social exclusion and 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 based notably on the identities, boundaries and norms defined by the former.

Here the articulation between the search for social niches and status competition at the inter-organizational level deserves special attention. A striking example is provided by Eloire (2007) in his study of restaurant owners in the city of Lille. His analyses of social networks among more than 300 restaurateurs identify the coexistence of several Whitian markets varying along a culturally coded quality schedule. He detects a specific form of homophily in this network: restaurant owners seem to have a stronger propensity for exchanging with colleagues whose restaurants belong to the same type of sub-market. For example, owners in White's "paradoxical" sub-market (that of high-end restaurants of gastronomy chefs) are more central and strongly homophilous and exclusive. A central social niche that structures this milieu and in which high-end restaurant owners, far more relationally active than others, share interesting business information pertaining to subjects as varied as staff, suppliers, food, or overhead expenses. This central niche maintains social distances, in the friendship network, with a second social niche bringing together younger, yet to be consecrated chefs. Unlike general 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. Cooperation in this milieu is indeed driven by both status competition (for stars in famous guides) and niche homophily. Within social niches, Eloire clearly finds special forms of particularistic solidarity between these restaurateurs. The fact that these niches do not seem to bridge different kinds of sub-markets tends to reveal social class logics in this form of bounded solidarity: sub-markets in this milieu are stratified socially, economically, and culturally.

Bounded solidarity based on variable combinations of social niches and status competition have also been identified among corporate elites in France (Comet & Finez, 2010; Finez & Comet, 2011) and in Morocco (Oubenal 2016; Oubenal & Zeroual, 2017).

Social control and conflict resolution

This example stresses that the existence of social niches and the recognition and acquisition of various forms of status also facilitate a third process, that of social control in the business world (but also sometimes the deactivation of such relation-based controls). 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. However, 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). Relational processes prove necessary for treating questions of first- and second-order free-riding problems. This is not new because previous sociological approaches to social control in the business world insist on use by actors of ex ante methods based on reputation, considered by institutional economists to be a powerful governance mechanism (Macaulay 1963; Raub and Weesie 1993). Entrepreneurs who wish to maintain long-term economic relationships with partners worry about their reputations. But this reputation does not belong to them; it is the product of evaluations and critiques from their partners and the milieu of other entrepreneurs concerning their behavior, their reliability, their creditworthiness, and so on (Burt 2005).

One approach consists precisely in observing legal institutions used by entrepreneurs to solve their conflicts. A study of social control of business by lay "consular" commercial courts in France shows how competition for social status (among other mechanisms) has allowed such an institution to last for nearly five centuries. A longitudinal network study of 238 judges at the Commercial Court of Paris, an institution founded in the sixteenth century, exposes precisely that kind of process. Lay judges coopted into this court act as individual voluntary judges, as well as representatives (in theory without specific mandates) of the local business community. Observation of this organization shows that half of these judges 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) – especially in a jurisdiction handling bankruptcies, as well as ordinary contract-related commercial litigation. 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. Thus, their specific form of social status is used at the inter-organizational level, via this institution, to remote-control local business communities in a framework of joint regulation of their markets. Social niches also emerge within this institution, as in the conflict between, for example, a cluster of bankers with a law degree and another cluster of judges coming from the building industry: the two are strongly opposed on matters of punitivity and interventionism in markets and in 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 brand of pragmatism and criteria of commercial justice (Lazega and Mounier 2008). The question arises whether such mechanisms of social control of business and contractual activity actually increase unequal conflict resolution between small and large businesses, or between producers and consumers.

In the same spirit, Comet (2011) shows how a Ponzi scheme can be based on manipulation of lateral social control by con crews abusing solidary and trusting relationships, using their victim's social network to escape social controls usually at work around financial operations, allowing the deviant system to feed upon itself. In an extraordinarily rich and ongoing project on social control in the management of common pool resource institutions (CPRIs), Brailly and Faye (forthcoming) measure longitudinal social networks between households in seven villages in a region of Senegal where management of scarce water resources is both formally institutionalized and informally carried out by villagers themselves using these personal ties. Beyond Ostrom (1990), they use a sociological neo-structural approach to show that sanctions for members pumping more water than allowed can be less impersonal than expected by CPRI theory, more personalized and based on relational infrastructures found in the community. Social control in the commons is thus shown to be based on a combination of two mechanisms. The first mechanism allows the members of a community to lower the costs of exercising control by using their personal ties and low punitivity for that purpose, especially for targets of social control that are personally close to them. The second mechanism consists of using an executive committee ("the board") – that is, a more formal process – for more impersonal and more punitive sanctioning, for targets either very close to or socially distant from the respondent. Combining both mechanisms is meant to avoid oppositional solidarity between respondent, sanctioners, and targets.

To our knowledge, research only scratches the surface of all the ways in which relational infrastructures help interdependent entrepreneurs monitor and sanction each other before resorting to legal proceedings. Social studies of finance also show that financial actors exchange information and engage in collective actions among competitors (Abolafia 2001; Baker and Faulkner, 1993; Mackenzie and Millo, 2003). While financial markets are considered to be spaces of fierce competition, recent investigations related to the Libor and Euribor scandals have shown that they actually involve systematic collusion and conflicts of interest.

Regulation and institutionalization

The neo-structural approach has been particularly used to explore and model the fourth, most political process of regulation and institutionalization of new norms, namely the redefinition of the rules of the game between interdependent but competing entrepreneurs. Formation of norms and definition of standards stabilizing commitments and social exchanges in situations of uncertainty has long been an issue in institutional economics (for example, Commons 1924). This regulatory process is in fact one of institutional adaptation, as well as institutional change and redesign. Here again, competitors cooperate in order to establish a common language of reference and common norms. In this area, beyond neo-institutional culturalist and cognitivist approaches, neo-structural sociology often relies on conventionalist and regulationist economists, for whom the role of rules and institutions, whether formal or informal, is crucial in explaining entrepreneurs' cooperation and the performance of markets in general (Boyer, 2015; Favereau 1989, 2002; North 1991).

Public regulation of the economy using incentives is a traditional domain of political and institutional economics. Neo-structural sociology, in a Selznickian (1949) vein, has contributed insights into the efficiency of such incentives (Varanda, 2005). For example, in the case of the city-center commerce of a medium-size city in Portugal a network study using blockmodelling shows the existence of social niches and different forms of status among shopkeepers, creating particularistic forms of solidarity that encourage or undermine participation in a policy program, namely attempts to modernize tourism as an industry. One block, composed of the board of the trade association ("formal" leaders of city-center commerce) and those close to them, promotes participation and acceptance of an incentive program offered by the city, which does not disrupt the status quo. Another social niche is composed of the group of young shopkeepers who do not accept these incentives and build their social status by breaking with the status quo – for instance, by systematically opening their shops on weekends. No group wants to let go of their position. Status competition, age, and cultural homophily impede a broader solidarity and lead to the failure of modernization.

Business has always tried to participate in the regulation of its markets and create self-contained, autonomous, often public–private normative orders smoothing market operations. Status competition is an essential element of this 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 looks at how entrepreneurs become institutional entrepreneurs active in the regulation of their markets. Even in an egalitarian system, it can be observed that not everyone defends their regulatory interests with the same efficiency. It is not simply that the strongest impose their rules: rather, network analyses show that actors with multiple, heterogeneous, high and inconsistent (in the sense of socially uncorrelated) forms of status (Lazega 2001, 2016; Lazega and Mounier, 2002; Lazega *et al.*, 2016) are the most influential in this selection of priority norms. They punch above their weight in the regulatory process because they combine a form of legitimacy (an ability to speak on behalf of the collective in a credible manner, especially using the rhetoric of sacrifice of status) with 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. High status inconsistency combined with the right kind of rhetoric, in particular, is important: able to lose status on one dimension because they keep their status along other dimensions, institutional entrepreneurs succeed in buying enough legitimacy to sell stagnation or change to their entire system of actors. In this as well, a form of endogeneization of the structure helps catalyze a very complex process. In the business world, regulation of business is today openly characterized by a great polynormativity (Lazega and Mounier, 2009). The relative weight of the law versus other types of norms depends on the strength that the state and public institutions summon to influence this joint regulation in concrete situations of economic conflict. To contribute to a theory of institutionalization, it is useful to observe that the primacy of law with respect to other norms is not necessarily based on the primacy of the State. It be based on businesses' ability to participate in the definition and enforcement of the law via processes of lobbying and joint regulation (as, for example, in Edelman *et al.*'s [2011] "endogeneization" of law).

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 domains 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 operators. Penalva-Icher (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 promoting "ethical" funds. Actors involved in building this market – mainly trying to lure pension funds and savings institutions – are very heterogeneous. Nuns rub shoulders (and elbows) with bankers, asset managers, extra-financial analysts, union activists, university professors, regulators, and so on. Penalva-Icher 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 based not only on the financial performance of companies, but also on social, environmental, and ethical considerations. Analyses of the relational infrastructures of the milieu promoting this market reveal the social discipline that is mobilized to preselect operators allowed to participate in the regulatory process. 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-Icher, 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 to becoming a central actor, a true institutional entrepreneur (Penalva-Icher 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 develop personal relational work. At this stage friendship is used by actors as a utilitarian tie excluding many players from the regulatory process, thus allowing for a form of balance between collaboration for the collective construction of the market itself and social competition preserving self-interests. Because of the specific kind of relational infrastructures characterizing 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.

Social networks are also central in peers' use of their status to promote and institutionalize new norms at the transnational level. Their collective work is often collegial by construction (members of a parliament, for example, are all formally equal). For example, we find the same reliance on status inconsistency and rhetoric of sacrifice in transnational settings. A study of combined relational and cultural approaches to transnational institution-building –that of the European *Unified Patent Court* (Lazega, Quintane and Casenaz, 2016) – focused on a network analysis of a small collegial oligarchy with this high status inconsistency and this rhetoric of sacrifice for the collective good. The study of a field-configuring event – called a "conclave" by some of its members – namely the so-called Venice Forum that was central in creating and mobilizing a network of European patent judges for the construction of this new kind of European institution, tracked normative alignments in this collegial hierarchy of judges and their management of divergent interpretations of the contemporary European patent. Using personalized social networks among its members, this collegial oligarchy works on harmonizing European approaches to intellectual property by selecting its institutional leaders based on cultural and strategic calculations of the costs of alignments on these leaders' normative choices and judicial interpretations. Highlighting this underexamined articulation of relational structures and cultural framing in transnational institutionalization shows, for example, how Northern European forms of capitalism tend to dominate in this institutionalization process at the expense of other forms. It also helps us to reflect on the usefulness of analyses of small networks of powerful players in organizational societies, in which power and influence are highly concentrated, as already shown by Laumann and Knoke (1987).

Co-evolutions of social processes

Relational infrastructures and horizontal and vertical differentiations that constitute social niches and forms of social status facilitate cooperation between competitors. It is important for economic sociologists to be able to identify them because these forms are the means by which entrepreneurs seek to structure the contexts of their interactions and social and economic exchanges when they are thrust into open competition. The list of social processes facilitating this collective action between competitors – which can be modeled by network analysis – is indefinite (that is, there is no finite list of these processes) because there are 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 that 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. Together they contribute to make durable cooperation between competitors possible. They 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 that facilitate collective learning. They contribute to the endogenous formation of the constraints that actors can then consider legitimate or not, and to which they submit more or less "voluntarily." Research on the articulation between these processes is only beginning. Knowledge of the social discipline that they constitute together and that organizes the business world is necessary to reflect on issues of social control of business and markets.

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 that 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 develop methods combining the systematic study of longitudinal and multi-level data on identities, trajectories (in the long term), exchange networks, and representations (or controversies).

Developing this approach to cooperation between competitors leads to a re-evaluation of the role and organization of the State in its relationship to markets and the business world. This neo-structural theory offers an approach to this kind of cooperation that is useful for the protection of public interests 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" (*wirtschaftsregulierende Verbände*), economic sociology has, since its beginnings, been concerned with the creation, functioning, and evolution of institutions controlling market operations (Swedberg 1998; Steiner 1999). 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 (Berman 1983; Swedberg 2003). 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 work 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 and 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.

Towards dynamic multi-level network approaches to markets and market institutions

Social processes are highly dependent on the temporality of collective actions. For example, Montes-Lihn (2017) observes that the temporality of individual decisions is a key variable in understanding how relational infrastructures are endogenized by individuals in specific situations. He shows that, in order to make informed decisions, his wine producers rely, alternatively, and depending on the temporality of the technical decisions that they need to make, either on members of their social niche or on actors with much higher status. When they face an urgent, short-term decision, they tend to rely on individuals with high status (experienced pioneers, identified with centrality in multiplex networks). However, when they need to validate a non-urgent or ordinary decision they turn to peers of their social niche.

Thus dynamic dimension is made even more complex by the multi-level dimensions of collective action. Study of the regulatory process, in particular, has shown that competition between public authorities and private business to regulate markets and build market institutions intrinsically has multi-level and dynamic dimensions. Relational infrastructures are complex and also intrinsically multi-level. Institutional entrepreneurs with high status inconsistency, for example, can try to endogenize the structure by working simultaneously at several levels to seek to modify a normative order, and hence a given opportunity structure, to their advantage. A clear difference must be made, for example, between networks of individual entrepreneurs and inter-organizational networks of businesses, although both levels must also be linked in systematic ways by observation of cross-level interactions.

This insight about the multi-level dimension of markets and market institutions has been generalized. Economic sociology has established the interdependencies between economic and social structures using the notion of embeddedness of the former in the latter. However, research usually studies inter-organizational commercial networks and inter-individual informal networks separately. From a neo-structural perspective, economic activities and markets are influenced by both levels (Brailly, 2016). A deal between two companies, which is an inter-organizational tie, depends on inter-individual relationships, and vice versa. Economic relationships such as deals between two organizations and informal relationships between their members are interdependent. To explore this dual dimension, a multi-level social networks framework has been developed by Lazega *et al.* (2008). This approach is based on the study of multi-level networks observing two superposed and partially nested, interdependent levels of agency, an inter-organizational system of action, and an inter-individual one. Supposing that these levels are nested does not imply that they evolve symmetrically and in sync. The coevolution of two levels is complex, dynamic, and can be partly disconnected if not asynchronous, raising the issue of the costs of synchronization (Lazega, 2015). Different levels may not evolve and change simultaneously. The structural organization of each level and attributes or context explaining tie formation at each level can be different. Brailly *et al.* (2016) have argued that this is why a multi-level approach is an interesting point of departure for reframing the issue of embeddedness. The challenge is to understand how social systems at both levels co-evolve and how actors at both levels coordinate to generate the socio-economic structure of the market. What specific multi-level social processes construct and explain the structure of an economic milieu? As shown by recent work, this multi-level approach is crucial for understanding globalized markets that require long-distance partnerships between companies, "global pipelines" as Bathelt and Schuldt (2008) and Bathelt and Glückler (2010) call them.

Building on this framework Brailly *et al.* (2016) and Favre *et al.* (2016) have studied network formation at each level of specific markets; that is, trade fairs for television programs in Eastern Europe and in Africa. They show that inter-individual and inter-organizational networks are partly interdependent but also that different processes emerge at each level.

In the European trade fair sellers and buyers of TV programs (distributors and TV channels) meet once a year to discuss contracts, make deals, keep informed about new films, series and game shows, and observe market evolution. Brailly *et al.* (2016) study the informal exchange of information between trade-fair attendees and formal deal ties between their companies by examining network formation at each level. They find that these networks are heavily interdependent but that each level has its own specific processes. They emphasize that the contexts of tie formation between two organizations and two individuals are different in terms of temporality. In the case of the market for TV programs, ethnography suggests that tacit knowledge and private information are crucial for individuals to identify commercial opportunities. The best way is to attend many events during a short time period ("next time this year"). But in parallel, their organizations have to be reliable in participating over a long time period in successive events at the same place ("same time next year"). If deals are initiated by specific employees in an inter-organizational context, different temporalities overlap and interact in the system: inter-individual relationships change faster and inter-organizational relations change more slowly. Organizational relationships have a different time frame than interpersonal links. Some organizations develop specific mechanisms to cope with this a-synchrony. This underlines that the efficiency of the meta-unity individual/organization is a complex articulation between these two sets of actors, forever on the razor's edge. While each level has its own specific processes they are partly nested: levels of agency emerge in different contexts and in different temporalities. Multi-level temporalities should thus be considered in terms of understanding the complexity of economic performance in such multi-level settings: in spite of different temporalities, actors at each level manage these different temporalities and both levels co-evolve nevertheless.

Favre *et al.* (2016) study the process of integration of the African continent into the globalized TV program distribution markets by also focusing on trade fairs as multi-level settings. These settings bring together African TV channel directors and international TV program distributors from all parts of the world in the same place. During the post-colonial period, African TV channels used to acquire programs for free, but entering the global market led to new forms of acquisition of TV programs. Integrating the global market requires a learning process, away from former market practices, to adapt to this new context and define new ways of transferring copyrights in this region. In fact, only the African actors have to adapt to and learn the rules (formal and informal) of the international TV program distribution market (Favre and Brailly 2015a). This means, for example, joining social niches of international sellers that are based, for example, on linguistic homophily (francophone, Latin American, anglophone). Multi-level network analyses of the African trade fairs reveal a market segmented into groups with divergent interests and "visions" of how this market should be regulated. In particular, they show that only two groups are able to influence the evolution of this market by controlling the trade fairs' conferences. Favre *et al.* (2015) also give evidence of this adaptation as a synchronization process. Studying informal discussion networks among individual sellers and buyers and business ties between their companies, they show that while "long-terms" relationships are highly influenced by inter-organizational structure, the ties created during the events are not. This difference shows that during this kind of event individuals can break free from the influence of inter-organizational structure to create ties across borders, and show that the synchronization of levels could sometimes belong to the organization. However, only individuals well integrated in the market could do so. Understanding performance in a global market requires dual positioning of individuals and organizations and understanding of how actors build their relational infrastructures to control processes such as learning and regulation. This explains, in part, the spread and homogenization of audiovisual culture at the global level.

Conclusion

Thus, the emergence of cooperation in competitive economic environments depends on interdependent entrepreneurs' capacity to build this social discipline and to (self-)impose it collectively. This requires relational infrastructures and the deployment of social processes that these relational infrastructures facilitate. We have illustrated these articulations with several examples. Identifying such social niches and forms of status in various markets is an important step in neo-structural analyses of the economy. Both kinds of differentiations, horizontal and vertical, are modeled using social network analyses combined with information about actors' attributes and their organized collective action (division of work and authority/power rapports). Searching for a social niche corresponds to searching for multifunctional contexts in which these entrepreneurs can have access to resources at lower cost and protect their social relationships; status competition allows, for example, for concentrating these resources in order to achieve a dominant position in the definition of the terms of exchanges, in particular social exchanges.

This approach to cooperation between competitors can be termed "neo-structural" because it combines culture, structure, and agency, originally extending White's approach to markets to include, and bring to light, the social discipline (between interdependent entrepreneurs) and public–private economic order that is created by reliance on relational infrastructures and social processes. In particular, this social discipline, which succeeds in making competitors (through price and/or quality) cooperate, can be measured and modeled thanks to the analysis of social and economic, intra- and inter-organizational, networks, combined with data on culture and agency. It shows that innovations, in terms of production markets or market institutions, always emerge in multi-level settings: every innovation is both "networked" and controversial at all levels, separately and jointly.

This "go to" presentation provides a few leads and short illustrations for further exploration of the work and potential of neo-structural economic sociology. For the past twenty years, this approach has been using the sociology and ethnography of work and organizations, combined with network analyses, to develop a perspective on production markets and their joint regulation (by public authorities and private business). As shown by all these illustrations, there is a strong link between the ways in which cooperation among competitors works as a "fourth factor" of production and the creation/reproduction of social inequalities in contemporary capitalist societies. Neo-structural economic sociology increases sociological knowledge of how markets can be used as Selznickian organizational "tools with a life of their own" to increase inequalities. Whether in the restaurant industry, where multiplex relational life can be another source of inequality between restaurant owners locked in or out of market segments; or in trade fairs, for example, where relational infrastructures are used disproportionately by sales representatives of the largest companies; evidence abounds that mechanisms of cooperation among competitors are often too costly for many actors in the market, above all for individuals working in/as smaller organizations at the lowest levels of social stratification. In addition to these attribute-based inequalities, the capacity to act at several levels simultaneously is another discriminant factor of inequality that helps to reinforce the power of the stronger companies by helping their employees to obtain contextualized, private and strategic client-related resources and to hoard opportunities (Tilly, 1998) while desolidarizing smaller players and breaking down their capacity to cooperate.

In a context in which people are not equal in their capacity to defend their regulatory interests, the more private actors can promote private cooperation among competitors to shape public institutions (Lazega 2001, 2016; Lazega and Mounier, 2002; Lazega *et al.*, 2016), the more neo-structural work adds value by collecting live data on structure (including network patterns), culture and agency independently, based on own academic surveys and fieldwork; in other words, not just relying on secondary datasets derived from sources that are conveniently – and often misleadingly – made available one or two clicks away. Designing one's own surveys, collecting live academic datasets and carefully mixing methods will always permit a better understanding of actors, actions (including their meanings), infrastructures, and generic social processes, including combinations of State dirigism and/or laissez-faire in economic policies. This is especially the case when Big Tech private hegemons increasingly do the same with unprecedented levels of intrusiveness in monitoring both the private and public dimensions of these social realities. This is where neo-structural sociology more generally will always be pivotal in public research on the economy and on politics. This is how public social sciences can be critically relevant in the current era of momentous transitions.

Endnotes

1 This perspective was first introduced at the 1996 Summer School organized around the economic sociology of Harrison White, who was invited by LASMAS-CNRS to spend a sabbatical year in Paris. A collective book (Favereau and Lazega, 2002) brings together the contributions and debates that took place around this neo-structural approach to the economy.

2 We consider Simmel's "social forms" as both sources and expressions of these relational infrastructures.

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This being a short "go to" paper, we refer almost exclusively to a sample of work carried out from the neo-structural perspective. We also do not have room to include our methodological contributions. To contextualize it in dialogue with economic sociology, please look into the publications themselves. For a more complete list, see http://elazega.fr/?m=201709.

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