Chapter 3
Synchronization Costs in the Organizational Society: Intermediary Relational Infrastructures in the Dynamics of Multilevel Networks

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The Meso Level in Organizational Societies, Relational Infrastructure and Synchronization Costs

Sociologically, the organizational society is a class society in which the distribution of resources has to be specified at the meso level, where individual destinies depend in part on their capacities to use organizations as "tools with a life of their own" (Selznick 1949). This specification is necessary because, especially after two centuries of bureaucratization, i.e. "rationalization" of social and economic life associated with modernity, variations in (and coevolution of) individual and collective behavior cannot be understood exclusively in macro terms. They also depend on the distribution of control, efficiency, opportunities and constraints that are organizationally and institutionally shaped, with large variations in such shapes. For social scientists, finding position and structure in society is therefore still a complex task if it has to be carried out in a meaningful way, i.e. in a way that makes conflicts more intelligible.

Over two centuries, Weberian bureaucratization has begun to construct societies that Charles Perrow (1991) calls "organizational" and Ronald Breiger (1974) "dual".

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Duality points to at least two levels of collective agency that co-constitute each other: an inter-individual level and an inter-organizational level (between collective entities of all kinds including families, companies, non-profit organizations, or public administrations). In this context, the rationalization of agency in terms of control and efficiency imposes strong multilevel interdependencies and simultaneously requires unprecedented amounts of coordination among actors, within and between levels. Actors think in multilevel terms ("this person is a big fish in a big pond") and are required to manage these exceptionally complex interdependencies (functional, epistemic, normative, emotional, etc.) in increasingly sophisticated ways at different levels simultaneously, thus facing multiple dilemmas of collective action. Identifying some of the social realities at stake in multilevel networks leads to the notions of overlap and complementarity between levels (Lazega et al. 2008, 2013) and shows that they co-constitute each other through vertical differentiations between members and relational strategies that are important for their achievements. Without this multilevel coordination, both between individuals, between organizations, and cross-level between individuals and organizations, neither individuals nor organizations can access or mobilize on their own all the resources that are needed to produce, compete and survive (Brailly et al. Chap. 10, in this volume; Brennecke and Rank 2015, Chap. 11, in this volume; Favre et al. 2015, Chap. 12, in this volume; Hollway and Koskinen 2015, Chap. 13, in this volume).

Here the term multilevel refers to the fact that in a stratified society, there are many superimposed levels of agency, each of them characterized by horizontal interdependencies that sociologists can examine as sets of 'local' social systems. Individuals acting on their own behalf in a highly personalized inter-individual system of interdependencies constitute a specific level of agency, with its own resources, commitments and rules. Interpersonal interdependencies consist of individuals tied together within or across organizations through cowork, advice, and friendship relationships (among others), as well as the rules that organize their social exchanges. The content of these relationships varies. This level of agency is different from that of the organizations to which these same individuals are affiliated. Interorganizational interdependencies are created most often by contractual agreements between organizations specifying the contributions, rights, and responsibilities of each organization in the pursuit of a particular objective; but they also depend on the existence of institutions that guarantee the credibility of these contractual agreements. Organizations, in which hierarchy reflects wider societal stratification,[1] are represented by their managers, who interact with other

[1]The term 'organizational society' has several dimensions. As Perrow (1991) puts it, it means that large-scale public or private organizations "absorb" societal functions that were/could be fulfilled by communities. It also means that a system of interdependent organizations, that are interlinked at the meso-level in a multi-level network, shapes the opportunity structure of citizens by coordinating various forms of "opportunity hoarding" (Tilly 1998). Finally it is also a metaphor to express that all individuals today play at both – individual and organizational – levels simultaneously and that domination in the Weberian sense is linked to the control of organizations as "tools with a life of their own".

managers from different organizations at this inter-organizational level of agency. At that level, interdependencies are much less personalized. Resources, commitments and rules are different in nature from those characterizing the inter-individual level of agency. This approach to the multilevel dimension of society is called the 'linked design' (Lazega et al. 2008), where the link between distinct but interdependent levels of collective agency is created by affiliation of members of one level in members of another level (typically individuals in organizations).

The boundaries of interorganizational and interpersonal networks are defined by the relevance of each kind of relationship in facilitating access to resources and coordinate collective action in the pursuit of particular objectives; but also by the social space in which the specific social processes driven by these relationships take place in a meaningful way (Lazega and Pattison 1999, 2001). Generic social processes (solidarities and discriminations, collective learning and socializations, social controls and conflict resolution, regulation and institutionalization, etc.) are, in part, the product of the regularities and relational infrastructures constructed in the management of interdependencies between actors in conflict or in cooperation. These processes facilitate the management of the dilemmas of collective action at each level of agency (Lazega 2001).

Multilevel Networks of Collective Action and Intermediary-Level Relational Infrastructure

It is useful to further elaborate the connection between the management of dilemmas of collective action and its multi-level dimension. At each level of collective agency (inter-individual or inter-organizational), individual or organizational actors have both convergent and divergent interests. Within organizations, interests are divergent between stakeholders, whether employees, owners or representatives of the owners (managers). The extent to which individuals sharing a common organizational interest nevertheless find it in their interest to free ride instead of bearing their share of the organizational effort, is a crucial issue for the success of collective action (Olson 1965). All try to promote their respective interests by using the organization as a "tool with a life of its own" (Selznick 1949). Divergent interests between stakeholders mean that collective action requires interest alignments to take place in negotiation. As political and strategic actors trying to promote their special interests and define priorities for the collective (Merton 1957; Crozier 1963; Krackhardt, 1990), members identify other members with common interests, build ties with each other (sharing resources and commitments in a reference group), and select representatives to promote their interests in negotiations. Alignment of interests between stakeholders in this negotiation can be relatively temporary and frequently renegotiated.

At each level of collective agency, relative success requires both social and political organization for each kind of stakeholder. With hierarchy derived from property rights, expertise, and control of resources in "the environment" (including

outside networks), owners and management usually have disproportionately more means than employees to coordinate their efforts and to shape collective action. With asymmetrical power distribution coming from "exogenous," higher-level sources in the social stratification, they can force their subordinates to bear relatively higher costs of organizing with less gains per capita from successful collective action. Competition and collaboration take place both within and between organizations. Within and between levels of collective action, work for powerful stakeholders/principals is what triggers the negotiations for control of an actor's own sphere of work and protection of his or her own interests in individual/organizational competition. This is where the construction and/or maintenance of "social forms", i.e. relational infrastructure, becomes a step towards coordination within and between levels.

The same is true at the interorganizational level, where organizations as agents face similar dilemmas. Willingness and capacity to coordinate and align are crucial at that level too (Granovetter 1994; Lazega 1996). As theorized by Lazega and Mounier (2002) and shown by Brailly et al. (Chap. 10, in this volume), Comet (2007), Delarre (2005), Eloire (2010), Favre et al. (2015, Chap. 12, in this volume), Montes (2014), Oubenal (2013), Penalva (2010), Pina-Stranger and Lazega (2011), Varanda (2005), social processes also facilitate the management of the dilemmas of collective action at the inter-organizational level, especially by lowering the costs of coordination and cooperation among competitors in industries and markets (Lazega 2009).

Since control of "the environment" is crucial in the use of the organization as a "tool with a life of its own" to serve a stakeholder's view of collective interests, any kind of alignment of interests has both an intra-level dimension and a cross-level dimension. Controlling outcomes at one level increases the capacity to control outcomes at another level, usually downwards. From this perspective, a social phenomenon must be observed at several different levels of collective action, separately and jointly. Superposed levels of agency are diachronically related, although they do not often evolve in sync. For example, in a global market, inter-organizational ties can be arms-length long-distance relationships and deals between two companies dependent on (or are embedded in) inter-individual social relationships (Brailly et al. Chap. 10, in this volume; Favre et al. 2015, Chap. 12, in this volume).

Dynamics of such multilevel systems of collective agency assume, as also suggested by Berends et al. (2011) or Grossetti (2011), that the evolution of networks at one level of collective action is influenced by that of another level of collective action, and the other way around in recursive ways. Such dynamics can be considered to be the outcome of a meta-process bringing together both individuals and organizations, in which the evolution of one level explains in part (in causal terms) the evolution of the other. Level 1 relationships can emerge as a result of the emergence of level 2 relationships. Actors of level 1 may be able under certain circumstances to change the structure of level 2, especially by bringing an intermediary level into the picture, a substructure such as workgroups between which individuals move. Such substructures include individuals and are

capable of collective action. They are included in the organization, and therefore in the inter-orgnizational level of collective action. This kind of intermediary level substructure – including social forms such as status and niches – represent a lever and the locus of co-constitution between levels.

To take into account this vertical complexity of the social world, it is necessary to differentiate and articulate these levels, and their respective dynamics, in measurements and models. This not only makes the analysis of individual goals, relations and conflicts inseparable, but distinct, from that of organizational goals, relations and conflicts. It also adds a problem that we will call a problem of "synchronization" between levels (Lazega and Penalva 2011). Synchronization is a task of scheduling and coordinating individual and collective efforts over time. Social sciences are currently struggling to combine multilevel and dynamic approaches to social phenomena at the meso-level. A first step in the study of the systems dynamics of multi-layered interdependencies was to propose a structural form for articulating these levels that examines separately the oppositions and interdependences at each level; and that articulates them based on the systematic information on the affiliation of each individual at the first level (inter-individual) to one of the organizations of the second level (inter-organizational).

Synchronization of Temporalities Within and Across Different Levels of Collective Agency

From the perspective of a theory of collective action that takes time into account in a systematic way, synchronization takes place when individuals who perform their tasks need to reorganize their activities in order to coordinate and keep in pace with each other, while at the same time coordinating across levels with the ongoing demands of the various organizations in which they are respectively affiliated. Synchronization refers to coordination of different temporalities (short term and long term for example) and rhythms characterizing collective activities at each level separately and at both levels jointly.[2] It is carried out through investments in resources (of all kinds, including time and energy, for example) in activities, relationships and affiliations when trying to stabilize these rhythms.

These investments are made by actors who try to keep or reshape their opportunity structure. Indeed synchronization as stabilization or as inducement of change at one's own level or across levels, below or above, depends on the capacity of individuals to maintain/build a relational infrastructure made of social forms at an intermediary level. Relational infrastructure refers to regularities in relationships that make sense from the perspective of both the individual and from the perspective

[2]Each level in multilevel systems of collective agency has its own temporalities: rhythms of self-maintenance and rhythms of actions. In fact one could argue that a level of collective agency exists because it has its own temporality. I thank David Chavalarias for this insight.

of the group: it includes in particular vertical and horizontal social differentiations such as social status and social niches. Relationships are defined as both channels in which resources flow between exchange partners (economic dimension), and commitments between these exchange partners (moral and symbolic dimension). Relational definition of social status refers, for example, to kinds of centrality in the networks of these actors. Relational definition of social niches refers to close relationships with actors similar in terms of relational profiles, i.e. (approximately) structurally equivalent actors. A social niche makes sense in a system of niches reflecting a role system, i.e. a form of division of work at the collective level (White et al. 1976) in which individuals think that they know their place. As defined here, such social forms represent the intermediary level between collective agency at the inter-individual level and collective agency at the inter-organizational level.

Saying that synchronization depends on a relational infrastructure at an intermediary level is equivalent to saying that actors coordinate across levels by creating and maintaining a structure that helps them filter and transform opportunities into locally available and appropriate resources. The presence and use of the right horizontal differentiations (a system of social niches) and vertical differentiations (heterogeneous forms of status) improves actors' chances of stabilizing this synchronization between levels and thus diminish its costs, for individuals and for collectives. Their absence increases the costs of synchronization at both levels. Members of niches share resources that are needed to keep pace and manage the intensity of change. Status helps in defining the rhythm at both levels. Social forms are attempts to structure the context in one's interactions, gaining power, shaping structure, organizing serendipity in a Mertonian sense. Relational infrastructure is made, among other ingredients, of relationships and can be identified using network analyses.

Multilevel forms of agency thus depend on synchronizations at the meso level, and stabilization of synchronization is made easier when actors invest in relationships as resources and commitments needed to build or maintain this relational infrastructure of social forms. The latter can help combine different temporalities, such as long term and short term. Many unsuccessful investments in relationships are "sunk" costs of synchronization. For others they are boosting or lifting in the sense that they help create or use these relational infrastructures; the latter become intermediary level entities providing leverage: they can later become full-fledged formal organizations combining short and long term decisions so as to harness the benefits of both opportunism and staying capacity for actors who control them as tools. Dynamics of multilevel networks help track these efforts and their outcomes. For example in trade fairs such as that examined by Brailly et al. (Chap. 10, in this volume) or by Favre et al. (2015, Chap. 12, in this volume), sales representatives in a trade fair need to create social ties to each other in order to transform the opportunities that come attached into contracts that will be signed by their respective companies. The temporalities of creation or maintenance of steady social ties with sales representatives from other companies and that of signing contracts between companies are not the same. Synchronizing the temporalities of creation of new personal professional contacts (short term in the trade fair, long term over many

trade fairs the same year) with the temporality of signature and enforcement of contracts (longer term depending on organizational procedures that are triggered in trade fairs but become independent of them) is an issue of synchronization between levels of collective agency. Status and niches are key relational infrastructures helping competing sales representatives selecting each other for cooperation in finding exchange partners and sign contracts (Brailly et al. 2015). Over time, interpersonal relations in such niches can become stronger and more durable than affiliations, leading for example to mobility of members from one firm to another (Lazega 1996).

When society depends on short-sighted markets that are built and dominated by gigantic and well-coordinated organizations (private and public), social ties that are needed to stabilize synchronization (and reduce transaction costs) can only be built by individuals already strongly endowed with relational capital that is well managed in such relational infrastructures; while individuals without much relational capital and infrastructure are kept out of contracting until/unless they make successful efforts to integrate socially in the organized system supporting the market. Either way, companies usually have the power to dump these social costs of stabilizing synchronization on their individual members and on society at large – that is expected to take care of the victims of the system. From the individual perspective, incurring the social costs of stabilizing synchronization (without a strong relational infrastructure providing leverage) is equivalent to making huge efforts that will end up being sunk costs. Thus abandoning social organization to short-sighted markets raises the issue of inequalities in the face of dumping such costs of synchronization on individuals. This constitutes an important and not so visible societal problem that can only be further understood by designing and mobilizing methods able to account for the dynamics of multilevel networks and to measure hidden social costs of stabilization of synchronization between stratified levels of collective agency. This chapter is a very initial and exploratory framing of the study of these dynamics of co-evolving levels and synchronization with intermediary level relational infrastructures.[3]

There are many levels in actors' contexts, beyond the organizational one. However for the purpose of this chapter it is sufficient to consider two plus the intermediary level of relational infrastructures. The intermediary level is created by actors who establish new relationships and social forms, new groups and new hierarchies within or beyond the boundaries of an organization in which they are affiliated, thus trying to reshape and expand their opportunity structure beyond the limitation imposed upon them by pre-existing structures of collective action. In an illustration below, half of the observed population of highly competitive scientists deploy "independentist" strategies, i.e. all their new personal ties are beyond the constraining perimeter predefined by their organization's inter-organizational network, with no overlap between the two levels. If/when successful, the kind of

[3]There is some analogy here with the vision outlined by Courgeau (2003, 2004) on the joint importance of dynamics (in his case, represented by event history) and multilevel approaches.

new organization that they might create by transforming their social niche into a new laboratory (thus restructuring the inter-organizational level) would not establish easy inter-organizational ties with their previous laboratory. In addition, observations suggest that this "independence" takes them, over time, close to nowhere in terms of further achievements.

In this chapter, I first look at basic characteristics of superposed levels of collective action as approached by the linked design in network analysis. I then argue that efforts to synchronize the temporalities of these levels create the energy for intra- and inter-organizational mobility as possible emancipation from constraints imposed by one's prior affiliations. This mobility in turn produces relational turnover for these members and this turnover is managed by the creation of the new relational infrastructure, i.e. a specific form of social status. Indeed, actors can experience organizational mobility and relational turnover (OMRT) as constraints and opportunities; to some extent they attempt to use OMRT to reshape this structure using such social forms and relational infrastructure. Using the energy created by multilevel structures requires attempts to use these social forms and relational infrastructure to challenge and change existing organizational structures. This chapter assumes that some uses of social forms such as niches and status are both instruments of restructuration attempts across levels and building blocks for cross-level synchronization. In the example of the construction or emergence of status as a social form in the dynamics of an intra-organizational advice network, provided in a case study, producing status for selected actors also allows the latter to reshape a system of places in this organization via the creation of new social "positions." Thus movement is shown to lead to a reshuffling of members of the organization across a new set of places and to a new kind of stability.

Finally OMRT created by multilevel structures and the synchronization of their different temporalities is construed as context for social processes helping members manage the dilemmas of collective action that characterizes the organizational society. It is important to mention that as costs of creation and maintenance of social forms (niches and status as relational infrastructure), synchronization costs will thus include human and social resources invested in adapting the social processes of one level to those at levels above and below. In particular examples will be provided of social processes such as collective learning or regulation using the metaphor of the 'multilevel spinning top' applied to institutional change and emergence. In addition, as already mentioned, incurring synchronization costs will be rewarding (in terms of managing constraints, learning and regulation) for some players; for others, they will be sunk costs. Such differences are only slightly visible in current studies of social inequalities. A dynamic and multilevel network approach to social life changes the measurements of these socio-economic costs and inequalities precisely by introducing systematic positioning, mobility, and relational turnover into the picture. Combining the work of Harrison White (1970) and Tom Snijders (1996, 2005) helps make these synchronization costs measurable and more generally redefine the social costs of living in an organizational and market society.

Multilevel Structures: Superposed Levels of Collective Agency

The multi-level dimension of social phenomena can be approached as the superposition of two systems of interdependencies, one inter-organizational, the other inter-individual. Attempts at solving this problem of joint examination include Breiger's "dual" approach (1974) of bipartite or two-mode networks. When a fixed set of actors belongs to a fixed set of organizations, it is possible to derive multiple memberships from inter-individual networks (assuming that a connection exists between two individuals because they belong to the same organization), and from inter-organizational networks (assuming that a connection exists between two organizations because they share common members). The typical example is that of "interlocking" directorates, i.e. connections created between two companies when one or multiple individuals simultaneously belong to the boards of both companies. The networks, derived at two different levels, can also be reconstituted in a multilevel structure. However, this structure provides relatively poor insights into social phenomena because relationships are assumed and are symmetrical by construction.

A second important contribution in multilevel network analysis is that of Fararo and Doreian (1980). They generalize Breiger's (1974) and Wilson's (1982) formalisms in order to craft a "formal theory of interpenetration" of distinct entities such as individuals and groups. Seen from the perspective of their tripartite structural analysis our approach uses a network (call it P) of relations among persons, a network (call it G) of relation among groups, and a network (call it A) of affiliations of persons to groups. Unlike in Breiger's (1974) approach, only A is an affiliation network; P and G are networks of social relations and interdependencies (such as getting advice from a colleague, or agreements among organizations to share equipment, respectively). Fararo and Doreian's article points out many kinds of relations among levels (consider, for example, AGAT, the network of ties between people whose organizations have agreements to share equipment). Similar ideas are extended and used below, in particular to identify "overlaps" between the two kinds of networks (P and G via A) and reconstitute individual strategies of management of resources originating from both levels. Articulation of distinct levels of action can thus be partly accounted for, beyond bipartite structures, using a method called *structural linked design* (Lazega et al. 2008) that brings together networks of different levels using individuals' (mono or multiple) affiliation ties. Statistical analysis of such datasets pioneered by Wasserman and Iacobucci (1991) has reached a high level of sophistication (Wang et al. 2013), with multiple examples provided in this volume.

An Empirical Case of Co-constitution Without Conflation

In this approach, each complete network is examined separately, and then combined with that of the other level thanks to information about the membership of each individual in the first network (inter-individual) to one of the organizations in the second

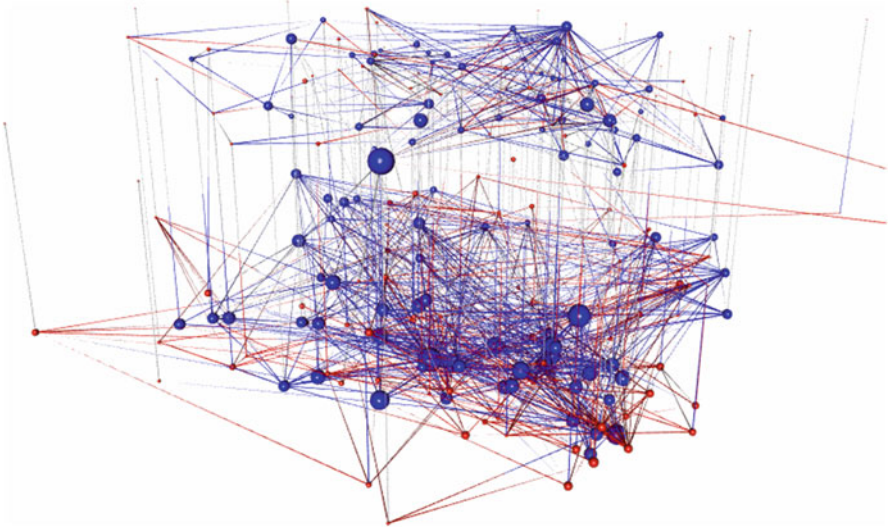


Fig. 3.1 Real-life multilevel network (Lazega et al. 2008) based on a linked-design approach studying an inter-individual network (*bottom* of the figure), an inter-organizational network (*top* of the figure) and vertical affiliation ties for the individuals in the organizations

network (inter-organizational). Work undertaken until now within this framework shows that dual/multiple positioning in superimposed systems of interdependencies makes it possible to formulate precise hypotheses about the relationship between members' complex positions in the structure and their achievements (measured at the individual level). It is especially the case when this positioning is articulated with the strategies of the actors. In this structural contextualization of action, the two levels of collective agency (one inter-individual and one inter-organizational) are in co-constitution of each other, but without being conflated (Archer 1982).

This approach can be illustrated using a case study in the sociology of science. In this case, the "elite" of French cancer researchers in 1999 was examined at both the inter-individual and the inter-organizational levels (Lazega et al. 2004, 2008, 2013; Barbillon et al. 2015). Figure 3.1 provides a graphical illustration of the structural linked design method.

In this context, we identified the systems of superimposed interdependencies, of the strategies of the actors who manage these interdependencies, and of their achievements measured at the individual level. No deterministic order is presupposed between position, strategy, and achievements, only an analytic one. This approach is particularly sensitive to the existence of inequalities between competing actors because these inequalities can render a given strategy more or less effective or "rewarding," depending on dual positioning as measurement of opportunity structure. This principle of dual-positioning individual actors (in the network of their inter-individual relationships and in the network of relationships between the organizations to which they belong) has two advantages.

Affiliations, Overlaps and Fish/Pond Relative Status

Firstly, dual positioning helps to construct new typologies of positions in the system, allowing for the characterization of individuals and the organizations in which they work in the same "dual entity." Dual positioning can correspond, for example, to a form of relative status, or double structural characteristics of the individual. It can be constructed, for example, by measuring both the centrality of the individual (in the inter-individual networks) and the centrality of the organization (in the inter-organizational networks) to which he or she belongs. Here the status of an actor is measured by his/her indegree centrality in the advice network of these researchers.

In metaphorical terms, members are identified, thanks to centrality scores, as big or little "fish"; organizations are identified likewise as big or small "ponds." This produces an endogenous partition of the population into four classes that are baptized, for a more intuitive understanding of this dual positioning, big fish in a big pond, big fish in a small pond, little fish in a big pond and little fish in a small pond (BFBP, BFSP, LFBP and LFSP). Belonging to one of the four categories locates actors in a meso-social space of opportunity structures, simultaneously inter-individual and inter-organizational. Measuring relative status of members and organizations in those terms provides a uniform basis for the interpretation of our results in the reconstitution of strategies of mobilization and articulation of heterogeneous resources at different levels.

Relational Strategies in Cross-Level Interdependencies

Secondly, this localization identifies strategies that individuals use to appropriate, to accumulate, and to manage both their own resources and the resources of their organizations. Actors vary in their capacity to use organizations as "tools with a life of their own". Some use a great deal of the resources of their organization, others much less. In particular, systems of interdependencies at different levels are controlled by actors of different hierarchical levels. Likewise, we can measure the overlap of relationships between individuals by those of their organizations. Information about in-degrees and out-degrees can also be used because incoming and outgoing ties are important in measurement of overlap between the relationships of the individual and that of organizations. It then becomes possible to articulate these relational strategies to the achievements of actors. It is in this respect that the contribution of a structural linked design is most original. As information about the relative status and relational strategies of individuals are used concurrently, we can eventually examine the achievement of individuals with explanatory variables different from those used in classic ecological analysis – which, to our knowledge, rarely measures the position of an actor in superposed systems of interdependencies and derived dual systems.

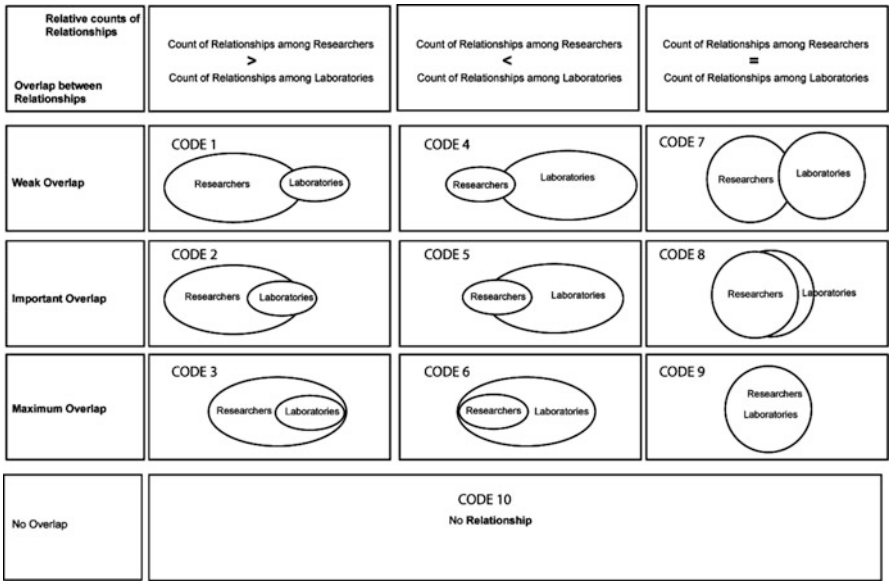


Fig. 3.2 Ten types of situations of overlap between ties of researchers and ties of their respective laboratories

In our case in point, all the researchers in this elite population are high performers in terms of the number of published articles. However when looking at their ways of managing their resource interdependencies at two different levels, especially by actors in categories other than the BFBP (i.e. the BFSP and all the Little Fish) we identify different relational strategies. The connection existing between membership in a class and strategies can be read in the level of overlap between the researcher's relationships and those of his/her laboratory, for outgoing as well as incoming ties. Figure 3.2 illustrates ten types of situations of overlap between ties of researchers and ties of their respective laboratories. Members' relational strategies are identified by types of overlap between interpersonal and inter-organizational networks.

A researcher may be cited (in these advice networks) by colleagues belonging to a laboratory that may or may not have inter-organizational ties with his/her own laboratory. The comparison of differences between these two types of relationships provides indications about the level of overlap between the two kinds of networks and about the behavior of actors in their organizations, thus offering insight into their strategies. In this case, we interpret incoming choices as indicators, for the laboratories, of their importance from a functional point of view, and, for researchers, of their prestige in terms of professional authority. We interpret outgoing ties as indicators of access. In the case of the laboratories, outgoing ties can be read as measures of access to exterior resources; for the researchers, they measure access to sources of learning and of personal support.

Overlaps, Relational Infrastructures, Entrapment or Emancipation

Using this typology, we can establish a correspondence between fish/pond category (BFBP, etc.), level of overlap understood as strategy, and achievement. Results show, firstly, that there are combinations that articulate little (or no) common prestige and little (or no) joint access to the same organizational resources. One could call these combinations "independent" strategies. It is not difficult to imagine concrete examples of behavior that reflects independent strategies. For example, a researcher representing an entire discipline in a scientific council might negotiate, in the name of the collective interest that he/she represents, to obtain resources for his/her own individual projects. Second, there are combinations that articulate little (or no) shared prestige but many of the common resources. One could call these combinations "individualist" strategies (benefiting from common resources but not sharing their prestige). Third, there are combinations that articulate a great deal of shared prestige but little (or no) common organizational resources. One could call these combinations "collectivist" strategies (constructing common prestige by using resources different from those of one's colleagues). Finally, there are combinations that articulate a great deal of shared prestige and common organizational resources. One could call these combinations "fusionist" strategies. The reconstitution of this typology of strategies yields insights into the relationship between position, strategy, and achievement.

Our analyses show that collectivist strategies are used by the big fish more often than by the little fish. In other words, the bigger the fish, the greater the overlap between the relationships of researchers and the relationships of their respective laboratories. Big fish know how, and are able, to use patronage to accumulate resources in their laboratory. Among the LFBP, the majority have strongly individualist strategies. The LFSP have no fusionist strategies and a very high proportion of independent strategies. Among this group, one finds a nearly complete separation between the relationships of researchers and those of laboratories, whether for outgoing or incoming ties. Their laboratories may also offer resources to which they do not have direct access or that they do not use. The LFSP often find themselves, relationally speaking, "trapped outside" their own organization, unable to build new relational infrastructures using this organization's resources. Following an independent strategy does not seem to benefit anyone, especially not the junior researchers who use it quite often.

Big fish do not seem more prone to use individualist strategies than the little fish. The only marked difference is the more frequent use of collectivist strategies, but also of fusionist strategies (although in very small numbers). The difference in the use of independent strategies is between the little and the big fish. Little fish – perhaps because of lower access to laboratory/organizational resources – follow an independent strategy much more often than big fish (66 % compared to 34 %). Also it is not the BFBP that most often use collectivist and fusionist strategies, but the BFSP; the latter are more often directors who can easily "sacrifice" their resources for the collective or, on the contrary, use the resources of the laboratory for their

own interest, sometimes, for example, taking credit for other members' work. But due to the scarcity of resources of their smaller organization (sometimes combined with their own seniority), they find themselves "trapped inside" and also unable to build new relational infrastructures outside (if this is a goal of theirs at all).

Finally, one can measure the way in which actors' strategies are associated with achievement levels for researchers who are not BFBP, i.e. who are endowed with less social resources. Among researchers with increasing impact factor scores who were LF, the individualist strategy is by far the most efficient, especially for those in a big pond, in order to have a chance to catch up. One may explain this catching up by the fact that some LF, whether in big or small ponds, have learned, over time, to use the resources of their organization more efficiently to start building new relational infrastructures. This means that the LF benefit from building an individual network outside of the domain established by the network of their boss or laboratory. The same individualist strategy is counterproductive for the BFSP. The latter can attain very high levels of achievement (measured at the individual level) if he/she is the only one in the little pond to be able to appropriate the necessary resources and enter competition with the BFBP.

Dual Opportunity Structures, Asynchronies and "Emergence"

This specific result deserves to be highlighted. In this particular population, many junior members try to create ties outside the relational "territory" of their organization (and outside the network of their boss) in order to gain autonomy in their work. Here individualist strategies are rewarding in terms of achievement for actors who are not BFBP. They help them manage organizational constraints to try to reshape their opportunity structure. Of course actors do not always have an interest in leaving to create new collectives because support from their own current organizational environment can enrich them considerably with all sorts of resources. This is the case for example for members who benefit from a "network lift from dual alters" (as defined in Lazega et al. 2013).

If synchronization is necessary for the organization to benefit from the individual actions of its members, especially from individual actions that take place outside the organization, creating asynchronies is sometimes what helps individuals break free from patronage. Thus collective action at two vertically interdependent levels of agency can also be a story of "emancipation" from the influence of the other level, whether by catching up with this other level as it stands, or by creating a new emergent relational infrastructure (or sometimes more modestly, a new relational sub-structure) by investing in social forms, whether niches or status. The lag between the two can be considered the main source of change at both levels: structuration at one level drives structuration at the other in mostly conflicting, chaotic, and unequal ways. Time to adjust and adapt is not always available; enormous waste and disorganization may characterize the multilevel structuration process. When agents with status or entire niches "emancipate" and create their own organizations at the inter-organizational level, they try to take advantage of spatial

and temporal gaps between agency at different levels. In the culture of our empirical case, structure and agency work together because some (young) members try to challenge the vested interests of their seniors or colleagues. In the example of 'field-configuring events' such as trade fairs (Favre et al. 2015, Chap. 12, in this volume), firms try to create or maintain themselves in socio-economic niches in their industry. Inter-organizational networks strongly influence inter-individual networks but not equally across all kinds of ties: long-term ties between individual members are influenced by the inter-organizational structure, while short-term ties much less so.

Emergent Corporate Entities: The Energy for/from Organized Mobility and Relational Turnover

Multilevel networks with collective agency at each level measure the meso-social order and the behavioral consequences and performance outcomes of actors (in the previous case, individual actors) in such superimposed systems of interdependencies. They show how, and the extent to which, new collective actors can be brought together (as a social construction, as opposed to just "emerging") out of previously existing ones, via relational and entrepreneurial emancipation from patronage beyond the boundaries of preexisting organizations.

Building and maintaining social forms as relational infrastructures is not an investment that takes place in a vacuum. Therefore synchronization costs must also include efforts that are spent to position oneself in the social space so as to be able to build or maintain these social forms. This positioning can be very complex. For example, creating ties to others beyond or outside the domain of one's organization can be a preparation for mobility (Lazega 2000). Indeed movements following paths that Harrison White (1970) calls "vacancy chains" can be seen as forms of rotation across systems of places that are often socially organized circuits, themselves constitutive of mobility. White calls such movements "mobility in loops" (1970:380). From his structural perspective, loops or systems of places are not all necessarily visible to actors involved, or even to managers of organizations who track, measure and sometimes steer other people's careers.

Internal or external labor markets were the first contexts identified by White for such circuits. The latter are also the focus of attention of citizens and professional observers daily: revolving doors for high status actors circulating from government to business, or the other way around, for example from investment banks to the Treasury; workers subjected to employment "flexibility" struggling to make such moves a reality step by step, and to keep limbos between jobs as short as possible; managers rotating their employees and themselves from one service to the other in the company, as in the case of associates assigned to different partners and clients of the firm in successive and heterogeneous task forces; directors moving from one corporate board to the other in a closed chain, or managers from one firm to the other (Checkley and Steglich 2007); sales representatives participating each year in dozens of similar and recurrent trade fairs of their industry (Brailly et al., forthcoming, 2015; Chap. 10; Favre et al., Chap 12, in this volume), or artists and

gallery owners in the global art fairs circuit (Yogev and Grund 2012); or maids in the international labor markets (Gatmaytan 1997).

Around and beyond labor markets, there are also many such circuits: migrants in richer countries attract people from the same place of origin and sometimes return back to these places once they have acquired some status or once they have been overused sweeping floors and digging holes; students can spend semesters as part of their curriculum in universities of different countries before they come back to their alma mater; wider residential forms of mobility of individuals and their entire communities can be looked at, by geographers and sociologists, in the long run, as "mobility in loops" of neighborhoods, not to mention life cycle-related mobility when young adults move together into new places, then to bigger places when they have children, then to smaller ones when the children leave.[4]

The sociological and network literature has also looked, independently, at turnover in personal relational networks. An increasingly rich body of literature describes and models relational turnover using statistical tools designed for understanding network dynamics (Snijders 1996, 2005). Relational turnover is defined here as the set of changes observed in an actor's relationships between two moments in time (addition of new relationships, disappearance of previous relationships, maintenance of relationships, etc.). Dynamic models of co-evolution of behaviour and networks are based on analyses of this relational turnover in members' profiles and in the composition and structure of the collective. When we close our eyes and ignore conflicts of interests, is it because we became friends with people who tend to do the same thing and influence us in that direction, or is it because we chose, to begin with, friends among people who, like us, close their eyes when confronted with such a situation? It is often both, but each effect has a relative weight that can only be measured by observing and analysing behavioural changes and relational turnover over time. Without such analyses of relational turnover, explanations of concerted ignorance as social process remain untested.[5] Changing structural forms trigger changes in social processes downstream. All the main social phenomena – such as solidarity and exclusions, social control and conflict resolution, learning and socialization, regulation and institutionalization – have a dynamic relational dimension, depend on relational infrastructures, established or emergent, and reshape opportunity structures.

[4]The term "place" is used here in a general sense to refer to a location that can be occupied by a single person in any formally organized circuit that can be geographical and/or organizational. It is to be distinguished from the term "position" (White et al. 1977), i.e. a set of structurally equivalent actors that we call a social niche (Lazega 2001) when the ties between actors in the position are dense. A position makes sense in a system of positions (or niches when the positions are dense) that differs from the system of places while always combined and coevolving with it (Lazega forthcoming). Space (contiguity) and network (connectivity), for example, are both different and related.

[5]Snijders' work in many ways inaugurates a new epistemology in the social sciences, whereby research measures, formalizes, and models the co-evolution between behaviour and interdependencies, between interdependencies and conflicts between actors, individual and collective, an approach in which one confronts models with reality and its measurements, i.e. where models, measurements and problematics truly co-evolve.

Thinking of actors as mobile suggests again that building social forms in (spite of) relational turnover increases the costs of synchronization for some actors more than for others. Once the social forms have been created, actors are in a better position to reshape their opportunity structure and reduce the costs of mobility across a new set of places. This is easier to see at the intra-organizational level, as exemplified below in a situation where centrality is synonymous of stability as in the eye of a storm. Synchronization costs must therefore be defined as efforts to build or maintain social forms, but measurements of such efforts must contextualize them, and keep track of and weigh the differential effect of socio-economic positions and mobilities on the outcomes of very different efforts invested by heterogeneous and unequal actors.

Often overlooked in the literature is the systematic, recursive, and transformative link between the two realities (mobility across systems of places and relational turnover) and its implications for social life. There are connections between these movements, as actors switch places in these circuits, and change, at least in part, in their respective sets of relationships, that can be called their respective relational capital. There is also an effect of the latter change on the evolution of the system of places itself, an evolution that is only visible if places are not considered as purely contextual and exogenous, but as endogenized by members and thus as endogenous to the mechanisms under examination. The connection between movement and relational capital is often explored in part and in depth in specific areas of social life. Migration networks are, for example, prototypical: because separations of movers and stayers in migrations across continents are often devastating for individuals and social communities, the focus in such studies is rightly on coping with costs of leaving families behind, marginality, loneliness, creation and management of new relationships by individuals striving for social mobility and assimilation, their own or that of their children. Synchronization costs are then measured at the individual level. But the mechanics of this link and the effects of such movements on the system of places itself, its structure and governance, i.e. on the stability and change of the system and the opportunity structure that it represents for its members, also deserve to be explored, along with their social costs. Hence the measurement of synchronization costs at the level of emergent relational infrastructures.

"OMRT structuration" or transformation is a possible label for the complex dynamics that drive actors – individual and organizational – to change part of their relational and social capital as they switch places in such relatively closed, partly overlapping loops, whether formally institutionalized or still emergent, thus triggering social processes that may, under specific circumstances, reshape the initial opportunity structure of some, but not all, members of the setting. Each domain of social and economic life, and every corresponding field of research in the social sciences, has its OMRT structuration processes. We define OMRT structuration as the dynamic link between places and positions. We use the label "organized" to qualify mobility because both social actors and the social system create paths and rules for movements that are not allowed to be random.

Whether physical or social or both, these articulated movements and changes represent an important basis of social structure, order and inequalities in the

organizational society. They are created by the social organization of these *milieux* and end up, under conditions that remain to be spelled out, restructuring these *milieux*, taking some members Somewhere and others Nowhere. This is not simply a recursive movement between two separate poles influencing each other because they compete in doing the same thing. OMRT dynamics involve more complex evolutions because they impact fundamental social processes (such as socialization, particularistic solidarity and discrimination, social control and conflict resolution, regulation and institutionalization, etc.). Indeed these processes all have a relational dimension and all depend on structural forms that facilitate their deployment (Lazega 2001, 2003, 2012).

As seen in the previous section, the energy for OMRT comes from multilevel structures to begin with. If organizations are open systems, then they are part of inter-organizational systems of interdependencies (observed as networks) and as such have dynamics with a certain level of closure. Movement makes sense from below and from above: from the perspective of individual actors who orient their actions to multiple levels when trying to reshape their opportunity structure, but also as driven by the fact that meso-social agency takes place in superimposed systems of interdependencies and collective agency. In such systems, the temporalities of each level are different. Actors try to take advantage of spatial and temporal gaps between agency at different levels. Each level must adjust and adapt to the evolution of the other level. Synchronization efforts, however, are more costly for one level than for the other, i.e. for actors without relational infrastructures than for actors who managed to build them. The level that is dominated will be forced to pay for the costs of synchronization. This can take the form of extra expenses of resources in catching up efforts.

In the organizational society, much energy is indeed spent catching up in status competitions imposed from above and/or self-imposed from below. Catching up with what? The answer is as much with catching up with the Joneses next door, as with keeping pace and adjusting to constraints coming from above to keep one's status. The power differentials generated by the multilevel structure of the organizational society are used as a source of energy through the promise of sharing of power and status. Each step of these catching up actions is what produces the energy for OMRT structuration.

From Place to Position to a New System of Places: A Spinning Top Model of Synchronization Benefits in Collective Learning

A second empirical illustration[6] can be useful to understand the necessity of looking at the dynamics of the network at each level in order to explore synchronization costs via relational infrastructure in an organizational context. This is a case study

[6]For a detailed presentation of the qualitative and quantitative study of this institution and its results, see Lazega et al. (2006, 2011, 2012; Lazega and Mounier 2009).

used to explore an intra-organizational relational turnover created by mobility. It is based on an organizational and longitudinal network study of advice-seeking among judges at a courthouse in a jurisdiction dealing with commercial litigation and bankruptcies in the French economy. These judges are elected with 14-years term limits. The court is composed of 20 (then 21 right after the second measurement of the network) specialized and generalist Chambers dealing with very heterogeneous forms of commercial litigation (company law, European community law, international law, unfair competition, multimedia and new technologies, etc.) and bankruptcies. Judges follow a work schedule that rotates them, on a yearly basis, from one Chamber to another. The rotation policy of judges across Chambers is meant to prevent corruption or conflicts of interests.

Tasks are complex and judges have discretion in many areas of business law. Disagreements abound about solutions for many legal problems. Commercial litigation is very diverse and conflict resolution often depends on knowledge of the specific industry and business in which the conflict takes place. These judges thus use each other for advice intensively in order to manage these uncertainties intra-organizationally, by tapping into the expertise and experience of their diverse set of colleagues.

In this study, 240 judges (all lay, voluntary and elected judges coming from the local business community) were interviewed altogether about their advice-seeking relationships within the court. Three measurements of this complete network were obtained over 5 years. Longitudinal analyses of the advice network among these lay judges, using Snijders' (1996, 2005) models, tease out a cyclical process of centralization, decentralization and recentralization of the network over time. Analyses and ethnography show that movements in this organizational system of places create forms of status that are used by specific members to change the system of places itself. It is useful to represent the dynamics of advice networks and of collective learning with the image of a spinning top. The metaphor represents cyclical dynamics through which individuals attain epistemic status over time to displace incumbent status holders at the top of the hierarchy and reproduce the persistent hierarchical organizational structure, while modifying the system of places.

In many organizations examined by researchers,[7] advice-seeking converges towards senior and recognized members and reflects a process of epistemic alignment on such members who gained the "authority to know," who provide social approval for specific decisions, and who contribute to the integration of the organization because they link the individual, group and organizational levels. This alignment is a key ingredient of intra-organizational collective learning. A status hierarchy provides a social incentive for actors to share their knowledge and experience with others, thus helping to explain the social organization of the learning process. Because advice networks are shaped by such status issues, they are

[7]For a review of the literature on advice seeking as social exchange, see Lazega (2014a).

usually highly centralized. They exhibit a pecking order that often closely follows the hierarchical structure of the organization. Members of formal organizations rarely declare that they seek advice from "people below" in this pecking order.

A spinning top model accounts for the dynamics of advice networks in organizations by providing a guiding metaphor for understanding intra-organizational collective learning: this process depends on the capacity of the organization to generate the pecking order that manages to remain stable while advice ties among other members of the organization are subject to rapid turnover – for example because of the rotation policy, because of career movement, because of the need to find new knowledge that old advisors cannot provide (Ortega 2001; Argote et al. 2005).

This spinning top heuristic brings together at least three components: a rotating body, a rotation axis, and a fragile equilibrium that depends, in parts, on characteristics of the previous components.[8] Time is taken into account through rotation movement and speed. We think of the rotating body as the learning organization. The rotation axis can represent the pecking order, i.e. the emergent hierarchy of members with epistemic status. These members have the "authority to know" in the organization. Rotation rules across intra-organizational boundaries and through status differences summarize formal structure. The fragile equilibrium created by the rotation movement represents the structural condition for learning collectively in the organization. This equilibrium itself depends on the stability of the rotation axis and the shape of the organization.

The endogenous evolution of advice networks is characterized by three interrelated moments (Lazega et al. 2006, 2011). Firstly, the centrality of members with high epistemic status varies over time. At first, it tends to be reinforced. Central members become increasingly central, in a Mertonian Matthew effect close to "preferential attachment": those who are sought out become increasingly sought out because they have built a reputation. Members who seek advice are increasingly under the impression that selecting these sources of advice is safe and legitimizes their knowledge claims, and that this choice signals an increase in relative status. Concentration of epistemic authority increases with the centralization of advice networks: learning becomes increasingly dependent on a smaller and smaller number of sources of authorized knowledge.

Secondly, however, in real life organizations, this centralization creates an overload for members with high epistemic status. They therefore tend to manage this overload by sharing a part of their epistemic status – through recommendations,

[8] We define these terms metaphorically and loosely: the rotating body represents the population of judges switching places once a year in a circular system of places as in a carrousel or in White's (1970) "mobility in loops." The rotation axis represents metaphorically a pecking order, i.e. a vertical differentiation between the judges and a form of epistemic status reached by the most central "epistemic leaders". This rotation axis can be pictured as the shaft of the spinning top providing the angular momentum thanks to which the spinning top stays up and represents vertical differentiation helping learning take place in a system where stability comes from movement.

i.e. by redirecting advice seekers to other sources. When advice provided by the very few super-central advisors becomes inaccessible or very rare, members turn to these other advisers, creating new epistemic stars. Sharing epistemic status, a form of delegation, increases the number of central advisers and decreases the centralization of the network. Thirdly, however, the increase in the number of central members with high epistemic status in the organization creates a problem of epistemic conflicts, consensus and coordination among epistemic authorities. If their co-orientation is easy, equilibrium is established. If not, conflicts between epistemic authorities trigger a reverse process of re-centralization. When the danger for collective action is that there are "too many chefs," i.e. epistemic leaders, some withdraw or retire, others are sidelined by one form or another of disqualification. As their numbers decrease, it becomes easier at the top to recreate consensus around a common definition of the situation, to provide coherent social benchmarks for homogeneous judgments of appropriateness and coordination.

These dynamics of centralization and decentralization in advice networks may not be purely endogenous (in the sense that overload through centralization leads to the super-central advisors creating new epistemic stars by redirecting advice requests to surrogates): indeed the patterning of advice relations can be influenced by the content of what one is seeking advice about, and by external events that may make one potential advisor a better source of advice than another. However the existence of this endogenous dimension of the process provides at least one mechanism explaining (see below) how a category of super-central elites is able to stabilize its position and stay at the top of the structure thanks to strong competition for epistemic authority and status.

This picture is heuristic for several reasons. First, it shows that time is important in allowing organizations to select members with epistemic status. Epistemic status builds up by reputation for expertise, by the capacity to provide quality control without raising too many controversies or conflicts of definition, by the trained capacity to speak legitimately on behalf of the collective. Acquiring this status takes effort and time. The authority to know is produced by long-term individual and collective investments that can be ruined if members with epistemic status leave or behave too opportunistically. The equilibrium reached by the spinning top thus suggests that members with status and epistemic authority in the organization have a strong incentive to keep their status and authority over time, even at some extra expense, to avoid the loss of the advantages attached to their relative standing.[9]

Second, this heuristic also suggests that the stability reached by the spinning top is fragile. The number of members with epistemic status varies over time. As already mentioned, we can think of several reasons why this number increases and decreases. One reason is that members tend to choose advisors that they perceive to

[9] About the costs of acquiring and maintaining status in organizations, see Frank (1985).

be the most popular (i.e. already chosen by a large number of colleagues). Members sought out by many other members tend to build a reputation; selecting them is perceived to be safe and legitimate. As emphasized by a micropolitical perspective, everyone seeks status and believes that they will reach a higher status; access to advisors higher up in the ladder becomes in itself a sign of relative status. This triggers the Matthew effect in which a member highly sought out in time t1 becomes even more intensively sought out in time t2.

Another reason is that this behavior creates an overload of requests for advice from a small number of highly central advisors with high epistemic status. Highly sought out advisors often manage this overload by delegating, i.e. referring the advice seeker to other advisors. This management of overload threatens the stability of the pecking order in the sense that it brings in new central advisors and requires coordination among the elites in order to avoid destructive status competition and definition conflicts between too many chefs. In turn, this strategy triggers either formal efforts of coordination among the elites or a new reduction in the number of advisors with high epistemic status through withdrawal of central advisors who become unavailable (due to retirement or delegitimization). This oscillation threatens the stability of the pecking order, with both positive and negative effects on intra-organizational learning.

Centralization of the advice network increases then decreases over time, as members with epistemic status try to avoid overload at the risk of accepting conflicts with other elite advisors. The existence of this oscillation was established using dynamic analyses of the evolution of this network. Figure 3.3 visualizes the evolution of this network using comparative statics.

An important outcome of these dynamics becomes apparent in this Figure. Highly central judges belonging to the core managed to use their relational infrastructure to create a new chamber for themselves in the chamber carrousel of this court, and to modify the division of work between chambers. Using both their formal and informal position and status, they manage to stay on top of the cyclical movement and to create a new formal place. This process suggests that when turnover is organized systematically in an organization, actors in a position to increase their status (thanks to an increase in stability paradoxically due to the movement itself) may also change the architecture of the whole organisation, i.e. create new places and new collective actors. OMRT processes have thus led some of these actors to reshape their setting as well as everyone else's opportunity structure in it. This reshaping may not be spectacular, but it is real and related to the fact that positions are not places and that the system of places can evolve.

Finally, the reasoning applied to examine a process of collective learning can also be applied to a process of regulation and to provide a new approach to the emergence of new institutions, for example a multilevel spinning top model of institutional emergence.

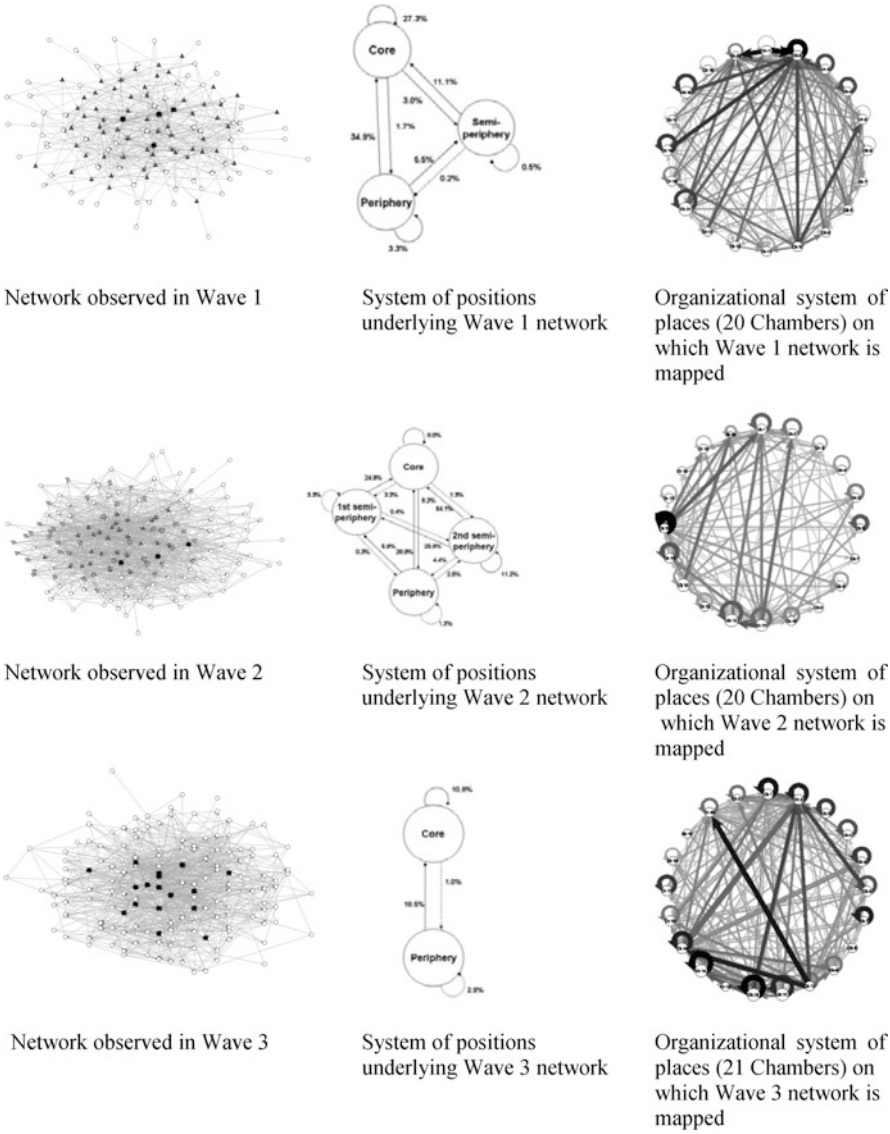
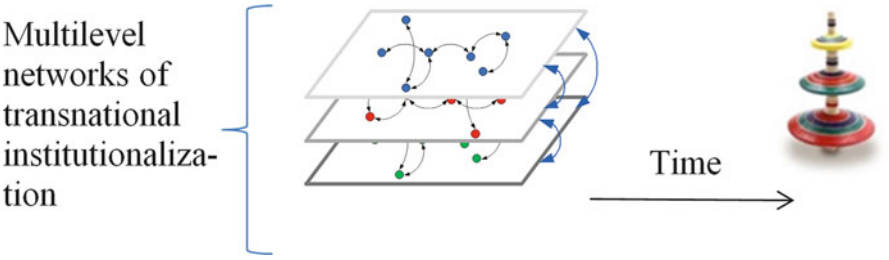


Fig. 3.3 Dynamics of networks, places and positions. Legend: Visualization of observed networks during the three waves of a longitudinal survey, the structure of blocks or system of positions underlying the network, and the carrousel of Chambers on which the network has been mapped with ties received. Thanks to Martin Mader for mapping the network on the system of chambers. Stochastic blockmodels (Snijders and Nowicki 2004) are taken from Lazega et al. (2011). They represent cyclical dynamics (centralisation – decentralisation – recentralisation) of change in a core-periphery structure characterizing the collective learning process in this organization. Network Wave 1, 3 blocks: 'Core' (4 *black squares*), 'semi-periphery' (*grey triangle*), and 'periphery' (*white circles*). Reduced graph three blocks, with intra- and inter-block densities. Network Wave 2, four blocks, 'core' (3 *black squares*), 'first semi-periphery' (*upward grey triangles*), 'second semi-periphery' (*downward grey triangles*), and 'periphery' (*white circles*). Reduced graph, four blocks, with intra- and inter-block densities. Network Wave 3, two blocks, 'Core' (17 *black squares*), 'Periphery' (*white circles*). Reduced graph, two blocks, with intra- and inter-block densities

It is indeed useful to frame a complex social phenomenon such as the emergence or the social construction of a new institution by taking into account that it takes place at several levels simultaneously. For example, the emergence of a judicial institution, the Unified Patent Court in Europe (Lazega 2012b), is an application of this multilevel spinning top model. It helps explain how a small network of institutional entrepreneurs with multiple and inconsistent forms of status uses, in its lobbying activity, multilevel networks and their dynamics to acquire the staying capacity and subsequent influence that is needed to frame, build and entrench a transnational institution. The image of a spinning top represents this process heuristically.



This image of a multilevel spinning top combines dynamic and multilevel perspectives on social phenomena such as the definition and institutionalization of new norms. It is possible to find in this metaphor mobility over time in a system of places and more or less supervised circulations between places at this intermediary level (as in many labor markets in which competition is made increasingly open as one goes down the social stratification); but also changing relationships between these intermediary levels as themselves driven by relational turnover created by mobilities (Lazega et al. 2006). This set of processes brings together networks of different levels in which individuals' affiliations are thus dependent of mobilities in loops. Evolution in a multilevel social space means that, from this perspective, dynamics are related to the third, intermediary level. To understand the dynamics of coevolution between collective action at two levels, it is necessary to bring in an intermediary – but nevertheless, in our view, generic third level.

In the case of this judicial institution, the main idea of this mechanism is that when such individual, oligarchic and dynamic positions of institutional entrepreneurs are stabilized by a supportive inter-organizational network (hence the crucial dynamics of the multilevel dimension of the process), these entrepreneurs are able to maintain their centrality and interactions long enough to surf on – if not to avoid altogether – the unpredictable and conflictual politics of an electoral process. This mechanism thus helps them succeed in their institutionalization efforts in spite of being a small collegial oligarchy – a process that may characterize the contemporary European 'democratic deficit': the multilevel structure helps actors keep their initial advantage of institutional entrepreneurs in selecting rules that will become priority rules for this institution. Here dynamics of multilevel networks

represent a mechanism that mobilizes superposed levels of collective agency, interpersonal and inter-organizational at least, i.e. two meso levels that are added to the traditional national and international levels of agency and complexity.

Using these insights it is now possible to come back to the meaning of dynamics of multilevel networks and synchronization costs at the macro level.

Dynamics of Multilevel Networks, Synchronization Costs and Social Inequalities

Cross-level interaction between individuals and organizations is vital in the organizational society. This chapter first looked at basic characteristics of superposed levels of collective action as approached by linked design network analysis. Synchronization refers here to social coordination between the dynamics of each level in which actors are positioned. The issue of synchronization in the dynamics of such multilevel structures arises permanently, for example when individual and/or collective actors attempt to restructure the contexts of their interactions and manage the constraints that these contexts impose upon them through new efforts to redesign their opportunity structures at both levels simultaneously.

In a multilevel context where each level has its own temporality, synchronization costs are efforts – made by individuals and by organizations, in very asymmetrical ways – to keep in pace with each other by reshaping a structure of opportunity and constraints. To specify the nature of these costs, the Simmelian notion of 'social form' is a good approximation, i.e. a sedimented vertical or horizontal differentiation of the social world at the intermediary level. Such forms create a relational infrastructure that helps individual members or categories of stakeholders with coordination of their actions, with identification of their common interests, with selection of strategies and representatives. Social forms also help collectives with driving social processes that facilitate the management of dilemmas of collective action. In a Mertonian perspective (1957), social status and social niches can be identified as the main social forms that filter individual actions into social processes making collective action possible.

From a bottom-up perspective, social forms built or maintained at the lower level are also intermediary structures that can help actors create new organizations at the next, upper level in the hope to manage the constraints that this upper level imposes upon them. Thus intermediary levels between generic levels of collective agency are also generic, but as levers. Synchronization costs that are not part of such leverage efforts are usually sunk. Creating and maintaining such forms can transform these synchronization costs – as incurred by individuals and collectives in the organizational society – into rewarding investments. Status and organization provide a presence and staying capacity, if not necessarily a "seat at the table," at the higher level of collective agency: a chance to format collective action and benefit from investments in the political process.

Structuration at one level drives structuration at the other, often in conflicting and unequal ways. Time to adjust and adapt is available to some, but not to others; waste and disorganization may characterize the multilevel structuration process.[10] In organizational societies, management practices based on time pressure can marginalize or exclude, make or break careers, open or lose markets, determine the distribution of power and status, influence the social processes that create innovations, strengthen or weaken inequalities, introduce or prevent change. Synchronization between levels by building and maintaining social forms to reshape one's opportunity structure is much more costly for some than for others, especially for actors who are forced to be mobile – unless they can use this mobility to create new advantageous social forms. Stabilizing synchronization costs is rewarding for actors with a strong relational infrastructure when these costs are either shared or dumped on others.

The organizational society is characterized by complex multilevel governance systems and rapid forms of collective action at the meso-social level that "absorb society" and externalize social costs (Perrow 1991). Supposing that multiple levels of collective action are nested does not imply that they evolve symmetrically and in stable sync. High costs of synchronization (building social forms to create new corporate entities) can be transferred to the other level when one level has the power to do so, which is the most frequent situation. The co-evolution of two levels is complex, partly disconnected and asynchronous, raising the issue of who will incur these costs of synchronization. Measuring such costs hidden in these dynamics will help monitor opportunity hoarding (Tilly 1998) in the organizational society and perhaps explain the robustness and resilience of such multilevel structures.

Reasoning in terms of OMRT dynamics is important at this stage because it helps understand how both stability and change in the system are created precisely by the movement that it organizes, directly or indirectly. Our purpose is not to argue that there is more such mobility now than in the past, but to argue that much of the effect of such mobility on the structuring of collectives has not been measured, particularly in terms of social inequality. The new attention to these OMRT dynamics is needed because these processes take new forms in contemporary society (Archer 2013, 2014; Lazega 2014b) and involve hidden costs. Intensity and speed of change matter more in everything; members are exposed to increasingly

[10]Since this creates dynamics of multilevel networks with different levels of agency, a new family of models is needed to account for such dynamics. This family of models can be a multilevel extension of Snijders (1996) model of dynamics of networks, using characteristics of level 2 network as set of exogenous factors in the evolution of level 1 network, and the other way around. Intermediary level relational infrastructures can be modelled as niches and status, but also using affiliation two-mode data, based on exogenously defined groups. The co-evolution of both level networks is added to the co-evolution of behavior and relational choices. In terms of model specification, new 'independent' variables from inter-organizational networks operate at the inter-individual level, and vice-versa. It is also worth proposing a multilevel version of Snijders' model of dynamics of networks, for example by introducing dual alters or induced potentials, i.e. extended opportunity structures (Lazega et al. 2013), into this formalism.

open competition as they go down the social hierarchy; forms of social control become increasingly intrusive.

OMRT transformation can in turn further change the social processes that help members use other levels of agency to manage the dilemmas of collective action at their own level. Synchronization has costs of adaptation to the other level and the costs of adjustments in dual and asynchronous opportunity structures can be shifted or dumped "downwards", on the weakest parts of the system (Lazega 2013). The metaphor of the spinning top used above to combine organized mobility, relational turnover and the emergence of status, is heuristic because it expresses the fact that some actors' movements and mobility often contribute to (re)create the stability and wealth of other actors, including the latters' capacity to acquire and capitalize resources (including accumulating status). When various forms of mobility slow down or accelerate, new people are left behind and distanced from multiple perspectives, reproducing or creating new social inequalities and hierarchies. Those in better positions in these hierarchies, who know how to use organizations as tools with lives of their own, do better than others because they can use social forms to navigate or even reshape the prior system of places to their advantage.

Relational capital of individuals and social capital of organizations have always been important determinants of inequalities (Breiger 1990), but they become even stronger determinants when the capacity of societies to adapt to changes and environments that they themselves have created depends on their OMRT dynamics. In this context, the dynamics produced by multilevel structures lead to new forms of stability and inequalities at the meso-level of society. Some are able to benefit from OMRT and obtain returns on their investments in synchronization, while others face forms of individual or collective insecurity that is increased by their relative weakness in controlling the multilevel dynamics of collective action, and are thus led to invest in synchronization costs without returns. Measuring hidden and relative costs of synchronization in these dynamics is equivalent to monitoring opportunity hoarding in the organizational society and providing an organizational view of inequality-generating mechanisms (Tilly 1998). Understanding how OMRT dynamics accomplish the recursivity of the structural transformations that they create at several levels requires understanding how social forms (status sets and systems of niches) are used strategically to transform investments in synchronization into benefits – or are not used in this way, leading to further costs. In short, measuring synchronization costs will help redefine the social costs of living in an organizational and market society, especially in relational, structural and political terms.

Looking at the changes in a system of places itself as driven by OMRT, and as an inequality-generating mechanism, means that places are no longer considered exogenous in the social sciences.[11] Changes in social processes that help members manage the dilemmas of collective action also take place in contexts, for example

[11] Although institutional locations may seem more important than geographical ones, the social sciences may only be able to endogenize systems of places, i.e. these forms of division of work,

of governance, increasingly defined by OMRT dynamics and (de)structuration that can be driven by residential, educational, professional forms of mobility. These dynamics can transform collective learning and regulation, as seen in the examples above, into secondary socialization (Brailly 2014; Favre 2014; Montes 2014) that helps members of society deal with these dilemmas (Lazega 2003, 2012). Contemporary public statistical datasets are ill-suited for the measurement of OMRT dynamics, relational infrastructure and synchronization costs in interaction with social stratification in the organizational society. Without a better knowledge of the meso-social level, individual meso-level profiles and meso-level inequalities and mechanisms, sociology is at risk of becoming socially irrelevant, unable to deal with the complexity of institutional changes triggered by many contemporary challenges. In this respect, much remains to be done.

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with the help of specialists of spatial and organizational movement, i.e. geographers (Bathelt and Glückler 2011; Glückler 2012, 2013; Glückler and Hammer, 2012, forthcoming).

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