1.   Introduction

REDEFINING ORGANIZATION FOR THE COMING TRANSITIONS

How will contemporary societies transform themselves in the coming transitions (socioeconomic, political, ecological, demographic)? This book argues that to answer this question we need to look at contemporary societies as organizational societies (Perrow, 1991). Organizations are important because policy, whether public or private, is designed, implemented and evaluated through them. Organizations are thus tools, but "tools with a life of their own" (Selznick, 1949). Understanding how they operate is not trivial. Our organizational societies create a new kind of technocratic social order constructed through social engineering in which digital platforms – both private and public – increasingly engage, reformatting individual and collective activities. Large-scale changes and reorganizations are in the making by public authorities using digitalization of social control and efficiency afforded by hegemonic and private technology companies. To track these changes, it is important to better understand how these powers operate. This means taking into account the fact that our societies are in a contradictory situation: they have rationalized and bureaucratized themselves so much that power to steer these transformations is now concentrated in the hands of small elites of owners, managers, politicians and technocrats who control these large-scale organizations that were not meant to navigate such transitions. Short of a special kind of revolution, in which organizations carrying out routine tasks are themselves transformed, organizational societies will not be able to change. How to think about this special kind of revolution is the purpose of this book.

In an organizational society, whether through violent impositions or less violent negotiations, at some point social change requires what Reynaud (1989) called joint regulation. To understand joint regulation as negotiation between top-down and bottom-up muddling through the polynormativity of social settings, it is not sufficient to look at organizations as bureaucracies trying to flexibilize themselves. Joint regulation is not a bureaucratic process but a political one, whether micro-, meso- or macropolitical. We argue that, in order to understand joint regulation, we need to redefine organizations as political communities combining both bureaucracy and collegiality. Instead

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of proposing possible standalone alternatives to bureaucracy, a second and orthogonal, collegial ideal type must be acknowledged and combined with the first, well-known Weberian bureau-technocratic ideal type. Once this redefinition of organizations as combined bureaucracy and collegiality is accepted as a starting point, sociology of organizations provides a more accurate account of how actors activate collective agency – of coordination between routine work with innovative work, of organizational transformations trying to rethink joint regulation and to balance, for their members, both stability and innovation in social change and transitions.

To redefine organizations and steer the sociology of organizations in this direction, we first drastically simplify sociological knowledge on bureaucracy – often presented as the default model of organization in modern societies – and its critique, and on collegiality and its critique. The first carries out routine tasks, with hierarchical coordination and impersonal interactions; the second carries out non-routine tasks and develops innovation with coordination among peers based on deliberation, committee work and collective responsibility enforced with personalized relationships, forming relational infrastructures that peers use to navigate these deliberations. We then look at how the two ideal types combine in organizational "stratigraphies" – that is, in an already bureaucratized and centralized world where "collegial pockets" and strata always represent various forms of oppositional solidarity. Chapter 2 proposes a multilevel, stratigraphic approach to this combination, exploring how predominantly bureaucratic or predominantly collegial strata coordinate and synchronize across different timescales in order to increase their respective influence in joint regulation. This stratigraphic and multilevel coordination in joint regulation is further described with the concepts of bottom-up collegiality, top-down collegiality and, finally, inside-out collegiality. Social change is presented as the outcome of the permanent struggles between the two logics in joint regulation. In these dynamics, multilevel relational infrastructures and actors who build and personify them are shown to play a central role. Creating new stratigraphies must take such infrastructures into account.

Multilevel relational infrastructures redefine the notion of position by considering "pairs" of individuals/groups or individuals/organizations as a specific unit of analysis, thus specifying at least two kinds of patterns. The first is that of vertical linchpins – that is, individual actors who are present and active on at least two levels of collective action – tuning collective action at one level with action at another level. This position in the structure often involves leadership and managerial responsibilities, sometimes even embedded brokerage roles (Burt & Merluzzi, 2014) at each of the levels. This pattern creates an often relationally exhausting privilege for the individual, especially in polarized and conflictual strata or settings, but it concentrates enormous influence and mobilization capacity within and across levels. Vertical linch-

pins are not just horizontal brokers between individuals or even between two organizations; they are activators of multilevel collective agency and synchronizers between these levels of collective agency, often between two kinds of collective agency: one bureaucratic and one collegial. They can avoid the small but disabling bureaucratic knots or bottlenecks by short-circuiting obstruction with their spanning of strata. Being present and active as political managers at two levels simultaneously is an advantage in terms of capacity to manage and shape cross-level collective action, especially if one level is collegial. An example can be found, in science, in the case of the "big fish in the big pond" – that is, scientists who are both recognized as central individuals at the level of individual networks and as directors of their laboratory when the latter is a central organization in the interorganizational network of laboratories involved in scientific research in a given field – for example, cancer research (Lazega, Jourda, Mounier, & Stofer, 2008). Other examples are provided by supercentral actors who build coopetition when they are sought out for advice by many peers in a new market, and who are at the same time affiliated in organizations that can structure the market by shaping competing consortia and bundling contractual activities (Richard, Wang, & Lazega, forthcoming).

The second pattern is what we call multilevel social niches – that is, subsets of "pairs" of individuals/groups or individuals/organizations that occupy a common position in the division of work of at least two strata of collective agency. Structurally equivalent individuals (in the interindividual network) affiliated to structurally equivalent organizations (in the interorganizational network) concentrate resources and capacity of coopetition that others cannot reach. An example of this phenomenon is provided by the case, already mentioned above, of dense and multilevel blocks among cancer researchers. In this case, competing laboratories of hematologists-immunologists must share interorganizational resources (personnel, equipment, funding, tissues, etc.) and set up a social context in which individuals affiliated in them can both perceive each other as direct competitors and seek advice from each other (Lazega, Bar-Hen, Barbillon, & Donnet, 2016). This relationship between multilevel relational infrastructure and coopetition will return in most of our examples and in all chapters. Multilevel and multiplex, interactional and relational infrastructures are key for coopetition and its relational work because they make it possible for individuals to jointly manage, at their interindividual level, tensions and conflicts created by cut-throat competition at the interorganizational level, and the other way around. Interorganizational-level interactional structures can create a context in which destructive personal rivalries characterizing collegiality can be socially managed. Just as social network analysis was necessary to understand collegiality and its cooperation among rival peers, the analysis of multilevel networks is necessary to understand coopetition.

The concepts introduced to redefine organization as a stratigraphic combination of bureaucracy and collegiality are then used to revisit the theory of the rapports between the organization and its environment. They help to look at the nature of multilevel relational infrastructures between organizations to account for how joint regulations are affected by the co-constitution of organizations and their environment (Chapter 3). Especially across organizations, collaboration between members of different organizations allows members to access resources and skills in order to exploit opportunities. But this collaboration across organizations is often difficult because these organizations also compete and institutions supporting cooperation between them are not always sufficiently strong on their own to enforce their own norms. This is where such multilevel relational infrastructures are necessary as determinants of coopetition. Creating new stratigraphies requires taking into account the existence and forms of such multilevel relational infrastructures.

For example, if specific kinds of vertical linchpins at the interorganizational level can be identified as "big fish in big ponds", a form of social change can be presented as organized for the "little fish in big ponds", to catch up with them. A specific mechanism, "network lift from dual alters"[1] – that is, a multilevel extension of opportunity structures – is presented as a condition for such changes when they benefit from specific multilevel Matthew effects. We argue that sociology of organizations analyzing organizations in these terms strengthens and expands our knowledge of joint regulation as a set of social phenomena that should be taken into account in the current transitions.

The implications of this stratigraphic and multilevel approach to activation of organized collective agency are then explored in the fields of political economy (Chapter 4), social stratification (Chapter 5) and the current platform digitalization of society (Chapter 6). The latter further bureaucratizes the world by framing personalized relationships in the language of impersonal interactions and by parameterizing social processes in collegial settings, thus attempting to neutralize its many forms of oppositional solidarity and steer its innovative capacity. Focusing on this neutralization, a revisited organizational sociology should help explain the ways in which digitalization of relational life pushes technocratic bureaucratization of the world much further, with the risk of slowing down if not stifling innovation, neutralizing bottom-up institutional entrepreneurship (often driven by some form of oppositional solidarity) – thus shaping social changes and transitions without open deliberation, accountability and democracy. Beyond the workplace, this evolution extends to the community, a social change introducing "commons inside out" (Chapter 6). The key issue here is that this digitalization based on the use of big relational data can not only standardize individual behavior, but also social processes and collective life. The danger is that instead of helping organizations explore how to transform organized collective action in workplaces, markets, communities

and politics, this privatizes the knowledge extracted from testing new stratigraphies and understanding of their joint regulation.

Indeed, digitalization often triggers public debates that rightly focus on individual privacy issues and protections. For example, increasingly, the systematic knowledge of the private personal networks of interactions and relationships of billions of individuals can be merged with no less systematic information on these persons' attributes (i.e., psychological traits, socioprofessional characteristics, economic resources, career paths, tacit knowledge exchanges, work and leisure activities, consumption decisions, perplexity logs), and production outputs, since we upload them to "the cloud", making them available for higher-level strata to use. It is therefore also important to stress that the existence of this systematic knowledge base raises issues that go beyond individual privacy. It also concerns all forms of emergent collective agency and organization produced by combined bureaucracy and collegiality. In other words, these new platforms accumulating data based on traces left by everyone's digitalized activities also increasingly build models of society and private sociologies that facilitate new forms of social engineering and invisible change. They increasingly use knowledge of organizations, collective mobilizations and institutional entrepreneurship for political objectives – for example, building new institutions by concentrating powers in the hands of collegial oligarchies at the top of the bureaucratic pyramids – not just for building academic knowledge. We therefore focus in Chapter 7, the concluding chapter, on this form of digital bureaucratization as a major risk for joint regulation, undermining the capacity to create social innovations needed in contemporary transitions, and ultimately democracy itself. Chapter 6 shows that without new forms of joint regulation and stratigraphies at all levels and across levels, these transformations will only take into account the interests of the very few, not those of the many. For contemporary societies to be able to transform themselves differently – especially as democracies – the right combinations between bureaucracy and collegiality, policy field by policy field and across fields, will need to be created with new stratigraphies and underlying multilevel relational infrastructures.

TWO ORTHOGONAL ORGANIZATIONAL IDEAL TYPES: BUREAUCRACY AND COLLEGIALITY

Action, whether individual or collective, is always a form of work and production. A sociology of organizations is therefore based on a sociology of work, the latter being understood in a very broad sense (Durkheim, 1893 [1967]). Weber's *Economy and Society* (1920 [1978]) describes the genesis of the Western world's core political, social and economic institutions. For him, bureaucracy characterizes modernity as a type of *Arbeitsverfassung*, or social

order based on a "constitution of labor". It is a form of production based on the performance of routine tasks and representing more than just a technical organization. Indeed, it is a form of rationalization of action and domination that requires specific cultural and structural resources that are historically contingent, but also a logically coherent socioeconomic and political system. Indeed, collective action is based on management of cooperation dilemmas (Olson, 1965) using control regimes. This is not a purely microsociological perspective. This concept of *Arbeitsverfassung* encompasses labor relations as an organization of labor determined by or identified with "a particular configuration of material conditions, social structure, i.e., relation of social stratification, legal principles, and even psychological and ethical motivations – in short as an embodiment of a way of life or larger socioeconomic system" (Scaff, 1989, p. 45; see also Vatin, 2014 for a similarly broad view).

   Organizational analysis starts with work practices, both individual and collective, and continues with the puzzling out of interdependencies related to working together. This book takes as its subject the organization of these interdependencies. We argue that looking into their structure in formal and "concrete action systems" (Crozier & Friedberg, 1977, 1995) leads to two ideal types of organization, based on either bureaucratic or collegial principles, and most often on a combination of the two. Thousands of books and academic articles have been published by social scientists and management scholars on the organization of routine tasks (i.e., bureaucracy and its limits) – fewer about the collegial logic of collective agency, and even less on the combination of both logics, which is the purpose of the present book. We will argue that organizations and their concrete action system of organized collective action are generically multilevel in a stratigraphic sense combining both.

Bureaucracy for Routines

In terms of a sociology of work, bureaucracy is first based on regular activities, routinization of tasks and standardized processes as official duties. All its other characteristics are derived from the capacity to shape work as routine. In Weber's *Economy and Society* (1920 [1978], the edition established by Roth and Wittich), Chapter XI of Vol. II is called "Bureaucracy" and he uses the following notions to describe bureaucratic officialdom. It functions based on (1) the definition of rules (laws or administrative regulations) ordering activities in "jurisdictional areas"; (2) the principles of office hierarchy establishing a system of subordination and supervision; (3) management by written documents (which separates the bureau from the official's private domicile); (4) management by thorough training in a field of specialization; (5) the demand of the official's full working capacity; and (6) reliance on the knowledge of the general rules, a knowledge that is itself considered a special technical exper-

tise. In a way, Max Weber believed that bureaucracy was the only efficient way to create rational forms of government. By contrast, Karl Polanyi (1944), whose work describes the origins of economic rationalization and how this trend affected traditional social ties, downplayed the bureaucratic revolution compared with the rise of market fundamentalism, whereas Michel Foucault (1978 [1994]), who investigated various institutions created by bureaucratic states, highlighted the darker sides of bureaucracy by emphasizing the disciplinary mechanisms that sustain them. The development of bureaucracy, in the sense of industrial bureaucracy, was immediately criticized.

Any book on the sociology of organizations must rely on the theory of bureaucracy, its characteristics and its twentieth-century critique. This theory starts with Max Weber and Taylorian industrial bureaucracy, focusing on the main features of this ideal type: routine work, hierarchy, impersonal interactions between members, and many others discussed by this plethoric literature, including the fact that bureaucratic routinization of production began with deskilling craftspeople and social Darwinist ideology. This literature is imbued with the Weberian (2017 edition) perspective on the rise of bureaucracies from cottage industry to factories, with social control being a stronger determinant of this early emergence than economic efficiency. It is important to start with bureaucratization because it has driven both the rise of the modern state and the rise of the modern corporation, allowing them to promote mass production and consumption.

The critique of Weberian bureaucracy, as well as of Taylorism and social Darwinism that came attached, was based on different ideas and observation of the production process. For example, on the idea that workers are not atomized robots or automatons but have feelings and work better in groups (human relations model). Or on the idea that managers as leaders are not always perfectly rational in their multidimensional work and do not always make the one best decision (decision-making theories). Next, on theories of power, participation and coalition-building that relied on analyses of the complexity of resource dependencies and control of uncertainties to show that organizations are political arenas in which all members participate in the struggles and conflicts surrounding the organization of work. Finally, on the extension of the power approach for which, in the organization as a political community, members are socialized into cultural routines and conventions but also in the negotiation of precarious values and joint regulation.

This organizational form is characterized by a set of "vicious cycles" as well. As shown by Crozier (1963), centralization and impersonality prevent the bureaucratic organization from learning from its errors and successes. They create an inflation of abstract and impersonal formal rules due to lack of dialogue between strata and avoidance of face-to-face relationships to the point where hierarchical dynamics decline in importance and higher levels in

the bureaucracy lose the ability to govern the lower levels when each stratum tends to be isolated from the other strata, above and below. This has the effect that decision-makers have little, often no direct and substantive knowledge of the problems they are called upon to solve. They thus give priority to the resolution of internal political problems instead. Centralization of decisions is combined with loss of relevance in terms of task performance. Isolation of strata, and group pressure within each stratum, create a form of oppositional solidarity within each stratum – that is, strong peer pressure to conform to local group norms regardless of individual beliefs or the wider goals of the organization.

This converges with Merton's (1940) more social-psychological argument that the social discipline necessary for obtaining the standardized behavior required in a bureaucratic organization will bring about a displacement of goals (see also Selznick's, 1949 notion of "goal drift" from cooptation). Bureaucrats will show "ritualistic" attitudes that make them unable to adjust adequately to the problems they must solve. The pressure towards impersonality that pervades bureaucracy has paradoxically developed a "bureaucratic personality", which has been viewed as focused on ritualistic behavior (emphasizing institutional means, conforming to expectations) and retreatism (whereby individuals choose to reduce their involvement and to commit themselves as little as possible to the organization when confronted with an overly demanding situation with no expectation of reward) (Sainsaulieu, 1977). Bureaucratic rigidity strengthens the *esprit de corps* at the group/stratum level and – beyond the lack of adjustment to the environment due to parallel power relationships – increases the gap between bureaucracy and the public or the market.

The displacement of goals could not take place if it were not promoted by peer groups as a way of protecting themselves against the organization as a whole. Finally, as areas of uncertainty will always remain, they will be used by individuals or groups who control them to wield power and lead to the creation of parallel power structures around these zones of uncertainty, giving certain groups or individuals who happen to be at the right place at the right time disproportionate and sometimes unexpected power in an otherwise highly regulated formal organization. Parallel power relationships can thus lead to decisions being made based on factors separate from the overall goals of the organization. Because these vicious cycles prevent bureaucratic organizations from learning from their own experience, they are too rigid to adjust to the transformations of the environment, and more generally to contemporary societal challenges, without crisis. Crozier's critique of bureaucracy evolved into a more abstract open system approach to organizations' relationship to the environment (Crozier & Friedberg, 1977), which will be partly discussed in Chapter 3.

Bureaucracy is both an organizational logic that characterizes routine work and a more general societal context since power has become concentrated in the hands of elites at the top of formal organizations, a theme that can be tracked from Weber to Berle and Means (1932 [1968]) to Gouldner (1955), Coleman (1974, 1982), Perrow (1991), and many others, to contemporary work on elite self-segregation. It is not our purpose here to provide an overview of the enormous organizational literature that is generated by these issues – a very useful perspective is proposed by Charles Perrow in his *Complex Organizations: A Critical Essay* (Perrow, 1986; see also 1970, 1991). In our view, however, the ultimate critique of bureaucracy was already proposed by the theory of organization as an institution (Selznick, 1949) and by the derived theory of joint regulation (Reynaud, 1989), showing that negotiation of the rules of the game in bureaucracy cannot itself be a bureaucratic process. With rule-making in organizations and society understood as an innovative process, the theory of bureaucracy loses some of its explanatory force. Another logic of collective agency has to be at work in regulatory and joint regulatory work that is so central to organizations and that is never routine.

Collegiality for Innovation and Social Change

Negotiation of new rules brings together bottom-up and top-down regulation processes that bureaucracy cannot account for on its own because they are never routine and always political. Although most of the ingredients of a new theory of organized collective action are present in sociology at the end of the twentieth century, a new reframing – often inspired by the sociology of professional work and trade union negotiations – is needed to account for this joint regulation. This reframing is provided by recognizing the importance of another ideal-type form of organization, an ideal type that is, in theory, orthogonal to bureaucracy – the collegial form of non-routine, innovative collective work among peers. When work is non-routine, a different *Arbeitsverfassung* underlies the organization and its management of cooperation dilemmas. This new form was already present in the theory of organizations. Indeed, beyond the focus on professional expertise, complexity, uncertain outcomes, concern for quality and innovation, as well as high variability of tasks, were usually shown to lead to the right to participate in decision-making and to share economic returns (Woodward, 1965; but see also Burns & Stalker, 1966; Stinchcombe, 1959). This matters in a wide variety of non-professional settings such as cooperatives, associations, juries, and political councils and assemblies, including for civic culture and democratic institutions. Work on "plural" forms of organizations (see, e.g., Bradach & Eccles, 1989) shows that the issue of cooperation among peers is also relevant in countless collegial pockets that can be found in larger bureaucratic organizations (an issue that will be

systematically addressed in Chapter 2). In matrix (Davis & Lawrence, 1977) or project-based structures, for example, individual members must function with frequently changing task assignments and group attachments, to report to more than one superior, and to rely on the expertise of colleagues from other work units. Whenever members deal together with complex decisions that cannot be routinized and need collective creativity, this issue reappears.

Waters (1989) revisits the Weberian theory of collegiality to show that it is a full-fledged theory of collective action that did not receive enough attention (due to nineteenth-century social Darwinism and to Promethean promises of prosperity from routinized mass production). Weber himself mainly discusses collegiality as a means for hierarchy to control experts or as a way to restrain monocratic/autocratic control. In Waters's formal definition of collegial coordination, peers mobilize knowledge, work in formal and hierarchical systems of committees and deliberations operating under the control of the committee of the whole (general assembly), structure careers in two stages (apprentice and master), and select their own *primus/prima inter pares* (first among equals). Collective action is then based upon a different regime of social discipline and control. As a form of self-government among peers using specific formal structures, it also heavily relies on extracting collective responsibility from relational infrastructures (social niches measured with blockmodeling and heterogeneous forms of social status measured with centrality) as management tools (Lazega, 2001). In collegial settings, this is achieved not by creating routines but by managing uncertainties and innovating with preparation of meetings using these personalized relationships. Relationships being built by exchanges of resources and by commitments, collegiality represents a complex combination of resource interdependencies and relational scaffoldings, as well as symbolic rhetorics and conventional meanings associated with these relationships.

Because personal relationships and infrastructures matter so much to coordination in collegial settings, the development of social network analyses was useful in understanding this central dimension of collegiality. Network analyses help identify relational infrastructures to better understand collective agency among peers (Compagnone & Hellec, 2015; Lazega, 2001). They show how cultures of multiplexity, blending a variety of different personal relationships, develop among peers; how relational infrastructures are used to navigate collectively the social processes that help peers manage the dilemmas of their collective action: bounded solidarity, cultivation and mitigation of status competition, lateral control regimes and conflict resolution, collective learning and socialization and, most importantly, complex joint regulatory processes. The latter often mobilize members with high-status inconsistencies, using conflicts of interest to punch above their weight in institutionalization of (new) norms, using rhetorics of sacrifice to manage the losers of the process

(their sense of injustice from broken promises, their normative alignments, etc.). Both relational and cultural skills thus become crucial for holding one's own in the company of peers (Van Maanen & Schein, 1979; Breiger & Puetz, 2015) and participating in the specific coordination characterizing power among peers.

Collegiality is thus based on features different from bureaucracy: non-routine and innovative work, formal equality among heterogeneous members trying to self-govern by reaching agreements in committee work and – in the absence of true hierarchy – using personalized relationships to create various levels of collective responsibility and make this coordination work. Regularities in such relationships build relational infrastructures, and these relational infrastructures are key for peers to manage committee work, helping them prepare, if not make decisions upstream of the formal meetings. More generally, relational infrastructures help peers manage the dilemmas of their collective action by navigating its generic social processes (bounded solidarity and desolidarizations; social control and conflict resolution; regulation and institutionalization; learning and socialization). Relational infrastructures also explain how this form of organized collective action produces a specific form of social discipline that is different from the discipline imposed by hierarchy – it is a social discipline that requires social skills, in the company of peers, that are not inclusive and democratic, as well as the capacity to manage the gray areas of ethical issues such as the problems of conflicts of interest.

We thus look at collegiality through the nature of non-routine tasks and associated specific contexts as social disciplines based on the management of personalized relationships and use of relational infrastructures. Deliberations can be examined from a relational perspective because participants interact and exchange *in vivo* in meetings among peers that are not the same as meetings among superiors and subordinates in bureaucracies (Gibson, 2012), but also because members of organizations find ways of managing deliberations ex ante. Members' problem with deliberation is how to stop it when actors do not reach shared understanding and "rational" agreements, decisions and "consensus" transcending social forces involved in the political negotiations. This problem brings back the more general Weberian issues of domination, power and legitimacy, even where members are, and act as if, they were formally equal. Power among peers can never be reduced to a phone call from higher up in the bureaucratic hierarchy, even less so among peers where some are "more equal than others". If actors politicize their exchanges and controls (Wittek, 1999a; Wittek, Van Duijn, & Snijders, 2003) they must be assumed to have a trained capacity to perceive interactions and relationships among others, and to manipulate these resource interdependencies. This is well researched in bureaucracies, but personalized social relations, relational infrastructures and the resources that they concentrate matter much more among peers. The

legitimacy of the commons – that is, of the committee of the whole, boosted by rational expertise – has always been criticized for being hostage to particularistic, private interests potentially undermining the public interest, with many loopholes and ways out. As will be shown in our discussion of digitalization and artificial intelligence applied to big relational data, it is when this private agency is exposed and weakened by concentration, in private hands, of relational data, that this type of legitimacy becomes more visible.

This organizational form is characterized by a set of "vicious cycles" as well. Collegiality is often presented as a guarantee of virtues associated with deliberation, collective innovation and creativity, or collective responsibility and respect for ethical concerns under peer evaluation and emulation. But collegiality can be used to produce exactly the opposite outcomes as well. Permanently screening for friends can eventually create, over time and with the help of a few relinkings (White & Harary, 2001), forms of elitist closure, inertia, self-segregation and opportunity hoarding often represented as smoke-filled rooms in old-boys private clubs. Exclusivity and exclusion can be synonymous of patronage and extend clientelistic forms of solidarity and surveillance, also promoting creative ways of building inertia, ignorance and groupthink, or eventually lead to systematic use of conflicts of interest (while claiming to try to avoid them), institutional capture, corruption and piracy. Using conflicts of interest as an analyzer for collegiality (Lazega, 1994, 2012a) is particularly useful when collegial organizations and their social discipline represent both innovation capacity and contradictions for traditional ethical rules of professions involved, ones that were thought – paradoxically – to find in collegiality a guarantee of professionalism and ethical commitment. Such an issue belongs to the more general reflection on social control of organizational life (Reiss, 1984, 1987; Vaughan, 1999), on the balance between external and self-regulation of all sorts of knowledge-intensive and professional services firms. When it reaches the level of a full-fledged organizational form, collegial self-regulation can also bring together, in many ways, innovation and corruption. Personalization of relationships can be used, upstream of formal meetings, to decide without saying so; to preselect for recruitment; to create artificially positive reputations or destroy reputations by marginalizing, harassing, bullying.

Thus, contrary to frequent misconceptions of collegiality, collegial relationships are rarely congenial and synonymous with "nice". Rather, they are often characterized by status competition, from friendly to cut-throat, and deep rivalries. When work is not routine, there are many dimensions and criteria to evaluate its quality, and very rarely do committees agree easily – if at all – on the criteria that should have priority. Peers can accuse each other of mediocrity, bad faith, particularistic favoritism and cronyism when the committees make decisions that do not correspond to their own preferences or

criteria. Because personal relationships are so important to collective agency among peers, and because personal relationships often touch deep into actors' private lives, collective agency based on such relationships often depends on individual egos – especially when they are big – and their epidermic emotional reactions. Such reactions are easily triggered when strategic behavior and coalition-building move established symbolic boundaries and loyalties. Strategic behavior involving personal ties can then be resented as symbolically violent betrayal, triggering further feelings of anger, contempt, humiliation or shame, soon leading to personalized conflict, withdrawal and the unravelling of the collegium. Social niches can put strong, if not destructive, relational pressures on their members. Peers often manage some of their personalized interdependencies using forms of symbolic violence that can become so ordinary that members turn to depersonalized interactions of bureaucracy as a form of emancipation, as they did in the nineteenth century.

Because collegiality is less recognized as an ideal type, it is worth expanding a little longer on its logic. At a very high level of generality, from Tocqueville's (1835) description of the link between local communities and associations and democracy to Habermas's (1984) theory of communicative action, deliberation has long been considered central to civic culture, democratic institutions, social emancipation and social ethics (see Schneiderhan & Khan, 2018 for a review). However, an organizational approach to social life has to acknowledge, following Weber, that collegiality and democracy are politically very different: "There is absolutely nothing 'democratic' about collegiality. When the privileged classes had to guard themselves against the threat of those who were negatively privileged, they were always obliged to avoid, in this way [i.e., collegiality], allowing any monocratic, seigneurial power that might count on those strata to arise" (Weber, 1920 [1978], p. 362). Thus, Weber understands the social and political world as an organizational space. In his view of collegiality, he considers it an attempt to guarantee respect of deontological rules, but not in a social vacuum – that is, inside bureaucratized settings where hierarchy, power differentials and domination represent a micropolitical reality with which deliberative bodies must contend. We extend this perspective by arguing that in such an organizational space, organized collective actions can be characterized by diverse levels of power asymmetry between members: when power differentials are high, hierarchical interactional infrastructures are used to manage cooperation dilemmas and conflicts; when power differentials are low, relational infrastructures are used for that purpose.

Deliberative assemblies and committees cannot perform their non-routine and creative work based on purely formal rules. They become involved in endless communication that cannot focus and reach agreements without relational infrastructures that prepare and structure deliberations in private and informal ways, upstream of the meetings. Rational choice research on

context-transcending decision-making by individual-level actors participating in formally organized deliberation following proper rules has not reached many strong conclusions (Pellizzoni, 2001). Political scientists, philosophers and legal scholars also often reduce collegiality to formal mechanisms of deliberation and decision-making, insisting on the necessity of what John Rawls (1993), in his *Political Liberalism*, calls "public reason". This public reason is based on providing informed compromise arguments that members of the collegium can either approve or pretend to approve as common opinion, or good reason to make a decision that can be accepted by others, thus reaching "universal" status. This universal status assumes that participants have been able to distance themselves from their personal, social or fractious interest and avoid a final "yes or no" decision based on the aggregation of votes without deliberation – no matter which voting procedures. From this perspective, collegiality belongs to the institutional landscapes and organizational forces that use it as simple procedure; it produces coordination and cooperation in complex and uncertain decision-making when routinized work, categories and norms cannot handle said decision-making with enough legitimacy or efficiency. Collegiality brings together not only a diversity of competencies but also personal experiences and judgments that build a collective basis for further decisions. Here consensus-building is based on attempts to focus and "harmonize" different points of view, to make them converge towards a single perspective thanks to debate and discussion, provided consensus is not idealized as adhesion but defined as an initial and temporary fiction serving as basis for cooperation (Urfalino, 2007), remaining challengeable and revisable. Focus is thus exclusively on the dialectics of argumentation/deliberation and vote in collective decision-making that binds all members of the collective. These members may or may not be "representative" of other communities or constituencies. This opens the way to the creation, as often, for example, in the judiciary, of collegial oligarchies of competent and committed actors who, although unelected, are promoted as institutional entrepreneurs building agreements that claim to represent uniform consensus (Wang, Robins, Pattison, & Lazega, 2015).

From our perspective, collegiality as an ideal-typical organizational form includes relational infrastructures in the very definition of its deliberative, and thus cultural and normative, reality: "reason" is insufficient to create collective responsibility. Only the use of these personal relationships (mostly in social niches) can enforce this social discipline in the absence of hierarchy. This is where collegial and public diverge: they do not have the same background relational environments. Public meetings are by definition open and characterized by interactions that most often do not last –although they might become a starting point for building new personalized relational infrastructures. Collegial meetings are usually closed deliberation (limited to small commu-

nities or more or less representative individuals who can get to know and select each other for personalized relationships); the central question is how this closure is created. A debate on the public place is not collegial, unless it has already been invisibly appropriated by organized forces bringing together people already in agreement. In turn, relational infrastructures are built in the long run, in a temporality that is characterized by social entities such as kinship and class. We will come back to this issue of organization and social stratification in Chapter 5.

Collegial bodies such as councils, where a number of peers (i.e., more or less formally equal individuals) share authority in common and exercise collegial leadership, are found in all societies, in both public and private organizations, because they represent an efficient way of dealing with a range of complex policy issues (Baylis, 1989). Government by committee has often been dismissed as a way of governing that is too slow and complex for modern societies. Not so if cabinet government is depicted as the answer to the quest for coherence and control, but also as a "government against sub-governments" (Rose, 1980).

However, as shown by Musselin (1990), institutions that systematically use collegial bodies for their integration and performance, such as universities, depend in part on the architecture of committee systems, and therefore on how their collegial decision-making processes actually operate in context. Comparing French and German universities, Musselin shows that the former are less cohesive and integrated than the latter, in part because their collegial bodies make decisions in fragmented and discontinuous ways, whereas the latter do so in iterative and continuous ways. Collegiality and its variable characteristics thus depend on the crucial context and features of the bureaucratic organizations that use them. Similarly, our approach relies on a definition of collegiality that goes beyond comitology. For this we first look at the organizational context of such deliberations by relying on Waters's (1989) general reconstitution of the Weberian approach to formal collegiality. Within such contexts, we then take what we call "relational infrastructures" as the background of deliberations that help them muster enough collective responsibility to reach conclusions. Indeed, government by committee is also government by relationships and relational infrastructures. This means taking into account more systematically the relational context of collegial deliberations within the wider, more encompassing context of the bureaucratized organizational society.

Combining Bureaucracy and Collegiality

In terms of ambiance, bureaucratic meetings are different from collegial meetings. In a bureaucratic context, meetings are for impersonal reporting

upwards and giving orders and instructions downwards. In a collegial meeting, members take turns and participate in decision-making (at least in appearance), then personalize their interactions, get angry, joke and conflict openly. It is also important to avoid the misconception that collegiality is the informal side of formal bureaucracy. The main issue is not interplay between formal and informal structures in organizations, but the interplay of two organizational logics, each with its formal and informal dimensions, when they are activated together in everyday collective agency. This shifts the focus of research towards the kinds of articulations or "multilevel compounds" of bureaucracy and collegiality in already highly bureaucratized but also knowledge-intensive societies, with all the social problems that come attached to such combinations. The added value of the present book, compared to a theory and analysis of collegiality, is in explorations of organization as such multilevel compounds or stratigraphies of bureaucracy and collegiality.

Indeed, the first organizational and institutional context for collegial settings and their personalized social networks is the bureaucracy in which they are embedded. We argue, from this perspective, that the study of bureaucracy and collegiality are complementary: the collegial form spells out the relational dimension of joint regulation that was presented as the ultimate critique of the bureaucratic model (Reynaud, 1989). For example, the process of concentrating power by cumulating multipositional, heterogeneous and inconsistent forms of status and by managing the losers with rhetorics of sacrifice, spells out one aspect of the relational dynamics of joint regulatory negotiations, regardless of where they take place in the organization, at the top or in other quarters, as will be shown in Chapter 2.

All regulatory activity is collegial, whether in incorporated firms, partnerships, cooperatives, or public administrations. This helps create a theoretical continuum between bureaucracy and collegiality on which empirical organizations of any kind can be situated. For example, the divide between public and private is based much more on goals of collective action (public good or private profit) and origin of resources invested in this collective action, rather than in the collective work-related difference between bureaucracy and collegiality. In Chapter 2, we introduce this approach at the level of intraorganizational political negotiation (taking, e.g., the case of a Catholic diocese) and at the interorganizational level (taking, for e.g., the case of a scientific discipline). We argue that the multilevel dimension of organized collective activity needs to be recognized and understood as key to the combination of the two different ideal-typical logics of collective action. The political and regulatory activity that Merton and his students as well as Crozier and colleagues have described and theorized needs to be reframed from that dual perspective of bureaucracy and collegiality coexisting and co-constituting each other in every organization that recognizes itself as a stratified political community

embedded in an environment that is in itself also a set of larger-scale political communities (the "public").

Redefining organization in this way clearly raises very general questions with respect to much needed exploratory, creative, innovative collective work among peers in modern societies. Having proposed this redefinition, we posit two claims. First, without relational infrastructures, collective innovation remains a fantasy: social capital of the collective cannot operate as a form of social discipline and at the same time be recognized as legitimate by members navigating social processes on which they have no control. Second, there is a theoretical continuum between bureaucracy and collegiality on which empirical organizations can be placed. After two centuries of Western bureaucratization of the world, a collegial organization is more or less bureaucratic depending on how it is managed. Since we frame the issue of the combination of both ideal-typical forms of coordination in stratigraphic, multilevel terms, we also assume that, in this stratigraphy, each level is a part of the context for the other, which makes context a dynamic multilevel reality.

Notice that this approach does not contradict the idea that bureaucratic organizations can open up to demands for better representation of the public in their personnel – for example, in terms of equality based on gender or minority composition (Dolan & Rosenbloom, 2003; Meier, 1975; Mosher, 1968). Such "representative bureaucracies" can be compatible with the logic of routine work, impersonal relationships and hierarchy. But our approach differs from theories of "deliberative bureaucracy" and "democratic bureaucracy". As Weber saw from the outset, deliberation is not necessarily democratic. In fact, deliberative bodies such as councils or committees, even when embedded in bureaucracies, operate based on principles and mechanisms that are neither bureaucratic nor democratic, but collegial. This is not to deny the reality of managerial attempts to intensify the use of deliberation, such as quality circles and other heterogeneous clustering techniques (Segrestin, 2004), but these attempts of "deliberative bureaucracies" (Benamouzig & Besançon, 2005; Boswell & Corbett, 2018) or "participatory bureaucracy" (Kranz, 1976) remain fragile because they do not take into account the full requirements of the other organizational ideal type. Deliberative bodies that have been construed as representing deliberative democracy should be re-examined from the perspective of a more encompassing approach to the organization, one that includes the ideal type of collegiality and its dependence upon closure and personalized/private relationships between heterogeneous and autonomous members carrying out innovative work together, and who are nevertheless meant to reach agreements in decision-making.

We therefore propose a stratigraphic and multilevel network approach that looks at real-life combinations of bureaucracy and collegiality in ways that recognize the radical difference between the two models while still exploring

the great empirical diversity of these combinations. The latter include, for example, old and more contemporary practices of cooptation and "governance" bringing external stakeholders into public bureaucracies for policy design implementation and evaluation (Reynaud, 1989; Selznick, 1949), a form of cooptation that can hollow out state capacities. At stake in this reframing is understanding the capacity of members of complex organizations to manage the dilemmas of their collective actions from the perspective of both logics, but also the capacity of organizations to innovate under the pressure of the urgent transitions with which contemporary societies are faced. The concepts and methods for such a stratigraphic approach are explored in this book, including the perspective of Big Relational Tech (BRT) digital bureaucracies potentially undermining current combinations of the two models.

In this book, this combination of the two models is called joint regulation (Reynaud, 1989), using, as further specifications, concepts such as "bottom-up collegiality" (an organizational form of subsidiarity) and "top-down collegiality". We also argue that bureaucratization through digitalization creates a new form of joint regulation in which collegiality is not discarded but zombified through "inside-out collegiality". This combination is used to manage and neutralize various forms of oppositional solidarity in a society that, more generally, increasingly weakens privacy, makes personal relationships bureaucratically/digitally exploitable and uses these changes to create new forms of subordinations, social disciplines and collective responsibility that can easily fit in with totalitarian regimes (Al Amoudi & Lazega, 2019). Our point is not that formal and informal dimensions of the organization jointly regulate one another and that joint regulation might temper elite power. Since bureaucratic vs collegial is not equivalent to formal vs informal (or nasty vs nice), and having explored how the two formal logics of bureaucracy and collegiality combine, we look at implications of this new reality (managerialization of collegiality by its inside-out reversal) in different domains of the organizational society at large. This exploration stresses the added value of research using this perspective for understanding contemporary social changes and transitions, for example bureaucratization of society through digitalization and its creation of a new form of joint regulation.

A NEO-STRUCTURAL, STRATIGRAPHIC AND MULTILEVEL APPROACH

For this redefinition of organization and reframing of the sociology of organizations, a neo-structural approach is needed. This approach uses social network data and analyses to revisit sociological knowledge on solidarity and exclusions, social control and conflict resolution, learning and socialization, regulation and institutionalization – in particular, to understand the extent to

which individuals and organizations navigate these core social processes of life by building relational infrastructures (Lazega, 2012b, 2020).

Minimally, a few basic elements of this neo-structural approach are needed to steer research on the specific processes characterizing management of cooperation dilemmas in combined bureaucratic and collegial settings in the organizational society. In the following, structure is defined as a multilevel pattern of relationships built and used by members of organized settings to manage their cooperation dilemmas and navigate the social processes of their collective agency. This structure is more or less (de)stabilized by the efforts of its conflicting and interdependent members using, or trying to use, organizations as "tools with a life of their own". Interdependencies are both economic and symbolic/cultural – that is, inextricably combining resources and commitments. Culture will be defined as a set of languages and norms that help actors make sense of, stabilize, or destabilize prior structures when trying to give meaning and relevance to actions and to defend their political/regulatory interests. Agency will be defined as action based on recognition, mobilization and combination of both culture and structure for goal attainment in the context of activation of collective action. It relies on a form of social rationality based on "appropriateness judgments" helping actors share understandings and mindsets, thus steering behavior.

Neo-structuralism and its microfoundations are presented in detail in a forthcoming companion book, *Neo-structural Sociology*. They are based on a structural brand of symbolic interactionism that stresses endogenization of structure, identity criteria, precarious values and status as combined elements of a theory of appropriateness judgments guiding agency (Lazega, 1992). This companion book considers proximity between this approach and several other theories echoing shared concerns. For example, the theory of social morphogenesis (Archer, 1982, 2014) and contemporary neo-structuralism together help understand these intertwined and emerging processes. The morphogenetic approach uses an analytical framework that emphasizes the interplay between three dimensions always at work in any social transformation: structure, culture and agency as the basis for explaining stability or change (see also Wittek, 1999b). Neo-structural sociology is defined here as an approach that makes the same analytical distinctions while using network analyses, combined with other methods, to enrich theories of individual and collective action. It does so by modeling the generic social processes listed above, based on specific definitions of reflexivity, contextualization and judgments of appropriateness. This formulation is also close to Lindenberg's sophisticated theory of framing (1992, 1997, 2004; Lindenberg & Foss, 2016; Wittek & Van Witteloosteijn, 2013), although it does not refer to the same notion of appropriateness. It tries to understand how individual actors themselves combine their interests with those of their organization as a whole by endogenizing the structure to bridge

levels, activate collective action, manage opportunity structures and build organizations to hoard these opportunities (Tilly, 1998).

This approach relies on combining qualitative and quantitative datasets for the sociology of organizations, particularly interactional and relational datasets contextualized in multilevel, nested social contexts. Traditionally, organizational sociology starts, in any given social setting requiring collective agency, with in-depth qualitative description of the nature of tasks performed by actors involved, and the formal division of work imposed upon members for control and efficiency. This sociology of work is then used to focus on tasks that require exchanges with others, whether in impersonal interactions or personalized relationships, for task performance or redefinition. For this focus, a neo-structural approach elicits from members – for example, sociometrically – an identification of alters to whom they resort to find the resources needed to carry out these tasks.

The difference between bureaucracy and collegiality is important for a sociological understanding of interactional and relational infrastructures that are necessary for organized collective action and management of this cooperation. To capture the difference between the two ideal types requires developing the toolkit of organizational sociology – in particular, multilevel social network analysis focusing on networks of impersonal interactions in bureaucracy and networks of personalized relationships in collegiality, and the socially organized mix of both. It should be acknowledged from the outset that our knowledge of this mix is rather sketchy and a matter for further research. Further specifying our earlier definition, the term structural refers here to regularities observed in multiple impersonal interactions or personalized relationships between members – for example, strongly personalized coworkers' ties, or advice ties, or even friendship ties. Such ties provide access to key production-related resources such as coworkers' goodwill or advice, or to resources that are not directly connected with the production process but rather to the regulatory process, such as emotional support. In an organization, stable interactions or durable relationships represent multilateral resource interdependencies. They aggregate and combine into a pattern of interdependencies called "structure" because it captures many kinds of opportunities and constraints for members in their attempts to manage such resources.

Social and organizational network analyses is a method for looking at these patterns of interactions, patterns of relationships, relational infrastructures, and modeling social processes, and their consequences. When differentiating between bureaucracy and collegiality requires differentiating between impersonal interactions and personalized relationships, network analytical tools can be used for both. Networks of impersonal interactions are often analyzed by identifying predefined groups of members based on ex ante attributes derived from formal hierarchy or division of work and working on their global

attitudes towards each other. Networks of personalized relationships tend to start with inductively defined clusters of members based on a combination of dyadic, triadic and higher-order relational substructures, until the analysis reaches relational infrastructures at the morphological level (based on cohesion or on structural equivalence as defined in particular by White, Boorman, & Breiger, 1976 – that is, by emergent similarities between relational profiles of actors), which are then ex post interpreted in terms of attributes. Combining both requires extracting new information from using multiplex and multilevel analyses of networks in the study of organized collective action. It is not social network analysis per se that differentiates between networks of impersonal interactions and personal relationships. It is the nature of the tasks carried out collectively – that is, routine or innovative – associated with the presence or absence of moral and symbolic commitment.

Indeed the system of interdependencies that is thus reconstituted (consider White, 1970 and White et al., 1976 as the starting point for this reconstitution) is first functional and task related, then extended to more broadly social – that is, epistemic and emotional – interdependencies among members. In particular, a relationship is defined here as an indicator of such interdependencies. Beyond its always specific history, it has at least two dimensions: first an economic dimension (it is a pipeline for transfers, exchanges and circulation of resources); and second a symbolic and moral dimension as a commitment to the exchange partners, a commitment produced in discourse and culturally codified practices that are necessarily observed with qualitative data. Ethnography and discourse analyses are required to understand the meaning of interactions and relationships, as well as the project expressed for the collective action shaped by, and encompassing, the system of interdependencies (Breiger, 2010). This system of interdependencies is thus enriched by "upstream" data (any characteristics of actors such as attributes, careers, etc. that can serve as explanatory variables for these observed systems of interdependencies) and by "downstream" data (behavior, opinions and representations expressed in discourse, performances, etc. that can serve as dependent variables explained in part by the same observed system of interdependencies and upstream data). When datasets are longitudinal, a dynamic perspective on the evolution of these interdependencies can transform explanatory variables into explananda, and the other way around. The coevolution of these phenomena and the epistemology of these recursive dynamics have been developed based on new formalizations (Snijders, 1996; Snijders & Steglich, forthcoming). Formalization is indeed required to handle the complexity of networks of interactions or relationships that are used to understand the connection between task performance, interdependencies and context, but also the coevolution and co-constitutions of behaviors, interdependencies and outcomes.

At this stage, we can characterize functional interactions either with collective attitudes, as in the Mertonian school of organizational analyses, or with analyses of social networks of personalized exchanges and relationships in which functional interactions may be "embedded" (Granovetter, 1985) and with which they coevolve. From multiplex network analyses (i.e., compounding several appropriate resources exchanged and circulating in single relationships; see Giordano, Ragozini, & Vitale, 2019), a neo-structural approach identifies regularities in these exchanges and commitments. From their regularities it reconstitutes relational infrastructures perceived by members who endogenize them and may use them for coordination. Relational infrastructures, including multilevel, thus identified by collective actors do not have any absolute meaning on their own. They need to be interpreted by and with help from interviewees, much in the same way as in "strategic analyses" of organizations: from feelings to games, from games to the structure (Crozier & Friedberg, 1977). But they also need to be recognized, as only neo-structural sociology does today, as crucial in the next steps of the analysis: from relational infrastructures to the navigation of social processes and from this navigation to the management of cooperation dilemmas in joint regulation – especially when this management seeks to combine both stability and innovation. Identifying multilevel and dynamic relational infrastructures steers the analyses of collective action towards how members use these relational infrastructures to navigate together social processes (solidarities and exclusions, controls and conflict resolutions, learning and socializations, regulation and institutionalizations) in order to manage these dilemmas of collective action. Combined quantitative and qualitative methods are thus needed in a neo-structural approach to reconstitute and interpret this navigation and its reliance on these relational infrastructures for management of these dilemmas within and across levels of collective agency.

To observe regulation (broadly understood as defining the rules of the game) and joint regulation as the most central processes on which this book is focused, neo-structural sociology needs to reconstitute normative controversies and political debates that divide and oppose the observed social settings that we examine with Selznick's (1949) approach to institutions: as different things to different people trying to use them as "tools with a life of their own". In his institutional conception of the regulatory process, Selznick illustrates the entanglement of structure and culture with the concept of precarious value in "dynamic configuring fields". A value is precarious because it is always in danger of losing its flag carriers and representatives – that is, the active support by organized interest groups and elites that help preserve it as a candidate for top priority on the list of all competing values. This connection between structure and culture is useful, because any joint regulatory process is a form of change that involves broken promises in the redistribution of resources

(Reynaud & Reynaud, 1996). When the rules of the game are changed, some parties emerge as losing resources and others as winning resources compared to the previous distribution. This is why, in organizations, regulatory changes need the support of members with oppositional solidarity, power and legitimacy to push for changes. Specific members, those with multiple and loosely connected forms of status, are the key in such changes, because they can use such dependencies and legitimacy in the regulatory process.

In particular, neo-structural sociology is concerned with understanding the concept of social capital as encompassing these social processes and helping collective actors manage the dilemmas confronting their collective actions. Social capital can be considered to be a collective asset different from the relational capital of individuals because relational infrastructures and social processes are a form of social discipline helping the collective with its cooperation dilemmas. For example, observing that a group is characterized by a particularly high level of varieties of indirect reciprocity (among its members) raises the question of what makes such a form of solidarity possible. The answer to this question is to be found by looking at the economic and symbolic characters of relationships that are mobilized in processes of generalized exchange: at the boundaries that the group has established for itself, based, for example, on exclusion(s), and at the norms that its members are called upon to define and apply (Favereau & Lazega, 2002; Ferrand, 1997). A group's social capital may therefore be conceived as a product of members' "political" activity in combining structure, culture and agency. Contrary to the idea that the social order only "emerges" from interactions between members of a group (Strauss, 1978; and a critique of this approach by Dingwall & Strong, 1985), it is not merely the by-product of interactions among actors who instrumentalize their relations in order to accumulate resources of the sort individuals can appropriate.

Social discipline characterizes both the individual and the collective levels of agency. From the point of view of the individual, social discipline is the ability of actors to self-restrict in the course of their negotiation with others, in the definition of their own individual interest and the scope of its claims, and in the exercise of their own individual power (particularly their power to exploit). This self-restriction is an outcome of the politicization of exchanges in the relational infrastructures. Social niches and endogenous forms of status are relational infrastructures – that is, structural forms that directly contribute to the management of interdependencies, thus facilitating mechanisms that help members manage the dilemmas of their collective actions in the organizational society. But they also facilitate hoarding opportunities and the durability of inequality (Tilly, 1998). It is important to note that the creation and the maintenance of relational infrastructures (niches and status) trigger changes in social processes downstream, including in regulation and institutionalization. Network analysis, as necessarily combined with other

methods, is thus particularly well suited here, because it analyses systematically the ways in which members politicize their exchanges and controls of production-related resources, and the resulting social discipline and management of interdependencies.

In particular, disentangling the social mechanisms and their interplay helps combine network modeling of relational infrastructures and social processes with recent advances in the "analysis of multilevel networks" (AMN) and in the study of multilevel social network dynamics (see Lazega & Snijders, 2016). They consider several interconnected and superposed systems of collective agency in the organizational stratigraphy. Following Wasserman and Iacobucci (1991), for cross-sectional data this can be expressed by the multilevel exponential random graph modeling (ERGM) approach of Wang et al. (2013, 2015). Each "level" here is a self-contained set of actors, or agents, with collective agency, and the levels are interdependent with respect to the conditions for action and/or outcomes. Clean hierarchical nesting between the levels, which was the traditional basis of statistical multilevel analysis, can exist but is not required for the data structure of multilevel networks. AMN thus means analyzing separately, then jointly, several coevolving levels of collective agency.

The controversies mentioned earlier are initially reconstituted mainly with qualitative data (discourse on competing and controversial rules, reconstitution of the normative ambiguities). They are then observed in the collective formulation of projects and roles that will be crucial for joint regulation, then for the interpretations and selection of priority norms and expectations in necessarily polynormative contexts. Reconstituting and modeling these processes, and the social capital of the collective that the set of processes represents together, requires mixed, rigorous and complex methods. In short, there is no neo-structural approach without sociology of work, ethnography, discourse and strategic analyses, and neo-structural models of relational infrastructures – if possible, multilevel and over time.

Introducing dynamics into the study of different and superposed systems of interdependencies and collective agency means observing the recursivity and co-constitution of levels in the multilevel dynamics. This in turn brings back multilevel relational infrastructures such as collegial oligarchies or more intermediary-level positions (i.e., specific forms of social niches), vertical linchpins (i.e., individuals active at several levels simultaneously), as well as the combinations of both. For example, intermediary-level relational infrastructures can be defined as new social niches and new forms of status that are on the verge of changing the system of niches at the next, higher level in the stratigraphy. More generally, these dynamics raise the issue of "synchronization costs" between the different temporalities that characterize the different levels. These specific social costs are related to carrying out collective action

in the organizational society – that is, a society in which multilevel structures, defined as superposed levels of collective agency, make cross-level social processes increasingly visible. Synchronization costs are associated with recognized schedules, anticipations, on-time deliveries that sometimes represent uphill battles for subordinated members, but also with building and maintaining specific relational infrastructures – in particular, social status and social niches – as intermediary relational infrastructure that helps individuals and groups manage their complex multilevel interdependencies and the dilemmas of their multilevel collective action. It is suggested that the energy for creating and managing multilevel relational infrastructure comes from normative controversies in joint regulation and from catching-up dynamics between levels, where collective actors operate in different temporalities while under pressure to coordinate and stabilize this synchronization. Catching-up dynamics are associated with organized mobility of actors and relational turnover in their respective networks, a perspective combining White's (1970), Snijders's (1996) and Snijders, Lomi and Torló's (2013) approaches. In this context, specific dimensions of social inequalities also become visible since actors who manage these relational infrastructures are in a position to benefit from their investments in synchronization costs as they become productive – in particular, in terms of reshaping their mesolevel opportunity structure – whereas others, with networks to nowhere (Schneider, Teske, Toch, & Marschall, 1997), are likely to see their own investments in synchronization be lost, providing no returns.

These methods thus allow a broadly conceived neo-structural approach to bridge superposed levels of collective agency. Such contexts superpose stratas of bureaucratic and collegial forms of organized agency, with their respective patterns of interdependencies, social processes and temporalities. In particular, this emphasis on social and organizational network analyses is needed to look at the relationship, for example, between organization and social stratification that often gets in the way of innovation. This book argues that organizations as "tools with a life of their own" promote systematically, with their multiple, heterogeneous and superposed levels of collective agency, increased organized mobility and relational turnover for entire populations, with different effects of such dynamics at different levels of society. The image of a multilevel spinning top provides first intuitions for the dynamics of this stratigraphy: it is about elites climbing the socioeconomic status ladder up the shaft; middle and working classes that are able to rotate across places, jobs and positions; and excluded classes for which this rotation is equivalent to giant musical chairs, leaving many behind without place or role. It is also important to acknowledge that little is known about these dynamics of multilevel organized settings over time, especially about the integration of organized mobilities and relational turnover used to synchronize the different and superposed temporalities of all

the levels of collective agency in the organizational stratigraphy, and the social costs of such mobilities and synchronizations in social life. As will be argued in Chapter 7, the concluding chapter, this is the next frontier for knowledge in the sociology of organizations. This issue needs to be dealt with by open and public science, not just by already increasingly privatized science focused on profit and power extracted from social engineering. Steering public sociology of organizations in the direction of solving some of these puzzles can provide helpful insights for freer actors involved in new collegial forms of collective agency engaged in alternative paths, as well as for public authorities still committed to both democracy and social cohesion.

OVERVIEW

Since bureaucracy and collegiality are ideal types, real-life contemporary organizations combine both models in various ways, often as managerialization understood as bureaucratization forced on largely non-routinizable activities, as shown by early theories and observations of "bureau-professional" organizations (Dingwall & Strong, 1985). Chapter 2 theorizes this combination of models by looking at the organization as multilevel – that is, as superposition of stratas of different types of collective agency (bureaucratic or collegial, in a great variety of combinations) – what we called an intraorganizational stratigraphy as indicator of joint regulation. In the predominantly bureaucratized contexts of contemporary societies, collegiality is transformed by its embeddedness in this stratigraphy and subsequent managerialization. This chapter provides observations of how both models can complement and co-constitute each other in the sense that they drive each other's evolution.

For example, when they are themselves professionals who came up through the ranks (as often in hospitals, or universities, or professional partnerships, etc.), bureaucratic rulers know how to use joint regulation with top-down selection of multistatus oligarchs and vertical linchpins who will provide legitimacy to (the rulers') specific policy preferences. The "chosen" may try to promote their own, heterogeneous interests and norms. This is why the negotiation of precarious values in ordinary situations of polynormativity depends heavily on pre-existing relational infrastructures, and on the feeling of belonging to the executive suite – that is, to the select few who actually run the organization. In addition, sophisticated use of social status and knowledge of personalized relationships helps to select acceptable "levers" who are able to use a subtle mix of impersonal incentives or threats with personalized ties to exercise "lateral control", and thus, to muster collective responsibility and enforce this choices of norms. Personal relationships among heterogeneous collegial oligarchs help them lower mutual criticisms and reach agreements

with diplomatic efforts that are then rhetorically dramatized to legitimize the process with the lower levels of the organization.

Focus on bureaucratic rotation of peers, a process that helps bureaucracies achieve stability from internal movement, provides an additional empirical illustration of this combination (the case of a corporate law firm rotating associates among partners to achieve a balance of powers between finders and minders, rainmakers and schedulers). The notion of "top-down collegiality", a general form of patronage and clientelism, is illustrated by a second case of more complex superposition, in the organization of a diocese in the Catholic Church.

These theories and examples help redefine the bureaucratic organization as a multilevel and stratified entity in which each level is a self-contained form of collective agency stabilized with movement – that is, thanks to rotation and top-down collegiality as structural dynamic invariants. Social and organizational stratigraphy shows that each level can be bureaucratic or collegial depending on the intensity of its centralization of controls and routinization of tasks. Levels necessarily interact, conflict and rely on their interdependencies, but they are superposed forms of collective agency, nevertheless. However, in a bureaucratized "society of organizations and markets" based on capitalistic productivism and extractive models of development, the triumph of bureaucracy has increasingly limited the scope and constrained the reach of collegiality. A multilevel approach to organized settings shows that "collegial pockets" as social niches capable of collective agency, although with very unequal levels of power, still remain in dominant bureaucracies: executive suites, professional departments, and workers' trade unionism and oppositional solidarities at the bottom of the hierarchy. These collegial levels exist and operate in large and complex organizations because their members come together and learn to defend their regulatory interests in this bureaucratic context.

Depending on members' respective involvement, it is in this regulatory process that both models truly combine. Each complex organization combines superposed levels of bureaucracy and collegiality in specific ways – a specific superposition that can disentangle multilevel participatory processes producing more or less satisfactory or disappointing outcomes in terms of joint regulation and institutionalization, but also in terms of innovation. Indeed, introducing a multilevel approach to the articulation of bureaucracy and collegiality leads to the discovery of multilevel relational infrastructures, including multilevel forms of socio-organizational status, called vertical linchpins – that is, actors who are active at both interindividual levels and interorganizational levels at the same time and who play a powerful role in the joint regulatory processes.

We argue in Chapter 2 that a top-down collegial setting is often set up because bottom-up collegial social niches with oppositional solidarity are in fact intermediary-level relational infrastructures that, in different contexts,

would be stepping stones for changing the structure higher up at the next level in the organizational stratigraphy, and thus for changing the distribution of power. We return to such intermediary-level relational infrastructures in Chapter 3. Intermediary-level relational infrastructures (ILRIs) – in particular, multilevel status and intermediary-level social niches – can be seen as produced by bottom-up collegial settings in an interorganizational context itself composed of collegial or bureaucratic entities. These ILRIs represent a synchronizing step in the dynamics of multilevel networks, or, in other words, a visible moment in a synchronization process across different timescales that is hard to measure.

The purpose of Chapter 3 is to show that multilevel relational infrastructures exist at the interorganizational level and that they are important for success in innovation and social change that requires social processes such as collective learning. As already specified, multilevel relational infrastructures include multilevel status and multilevel social niches. Multilevel status of the "big fish in the big pond", for example, characterizes the position of vertical linchpins present and active at both levels of collective agency: interindividual across organizational boundaries and interorganizational at a higher level of the mesosocial structure.

Given the contemporary limits placed on intraorganizational collegiality, it is important to look at how members of different collegial levels of collective agency look for peers and collegiality across the boundaries of their bureaucratic organization; in other words, to explore the co-constitution of bureaucracy and collegiality not only across levels but also across boundaries. Chapter 3 shows that this is equivalent to taking into account the relationship between bureaucratic organizations and their environment, as the sociology of organizations has always done when considering the influence of technology, professions and markets. But here this relationship is presented in a new way that focuses on how more freedom for members to create collegial pockets and oligarchies across the boundaries of bureaucratic organizations actually does promote innovation and social change. This is where the analysis of multilevel networks (Snijders, 2016, pp. 36–41) is most useful from a neo-structural perspective because it accounts for contextualization of networks that are cross-boundary.

An empirical example in the organizational sociology of science reports results on how hematologists were able to constitute an interorganizational collegial entity and dominate cancer research in France for almost two generations, making sure that their "little fish in the big ponds" catch up with the "big fish in the big ponds" in their respective field. Here we explore the cross-level, cross-boundary processes by looking at various processes. For example, we measured the "direct competition" network of these researchers and noticed that when they belong to the same social niche, they can then seek

advice from, and share experience with, peers who they consider to be direct competitors in different laboratories (Lazega, Bar-Hen, Barbillon, & Donnet, 2016). Intermediary-level relational infrastructures help professional peers manage to join forces across the boundaries of their bureaucratic organizations to cooperate even as direct competitors, thus transforming cut-throat rivalry into more manageable, if not really friendly, competition. Indeed, a significant way in which interorganizational strata and stratigraphy can be important to members is by providing social discipline across organizational boundaries under specific conditions.

In particular, some intermediary-level relational infrastructures at that level are identified by Žiberna (2014) in multilevel blockmodeling. This helps explore the changes that these intermediary-level relational infrastructures attempt, or are about to attempt, to introduce higher up in the interorganizational division of work. In many ways, these changes represent synchronizing steps between levels. In order to understand how, we add further insights into why such intermediary-level social niches built on cross-boundary extensions of social exchanges to "dual alters" with complementary resources work better for some actors than for others – to the point that they are able to change the direction of collective action and social change by creating, over time, a multilevel position that allows agency at several levels simultaneously. How is it that interorganizational ties are so important, for example, to members' multilevel status? While it is no surprise that organizations provide resources and coordination, interorganizational ties can multiply the value of resources accessed through the organization. We found that this kind of facilitation can be offered to members by Breiger's (1974) duality; this is not simply due to a principle of "If I do well, you do well too", but also because interorganizational ties provide "extended opportunity structures" – that is, "network lift" from "dual alters" with complementary resources (Lazega, Jourda, & Mounier, 2013) – when induced relational capital is accessed thanks to managers or directors closing multilevel three-paths and bringing together their subordinates with such "dual alters". This mechanism results in making the rich even richer (i.e., a three-level Matthew effect; Lazega & Jourda, 2016) and raises the issue of why managers and directors, who often compete with their subordinates, do not close such multilevel three-paths more often.

Indeed, intraorganizational collegial pockets have, by construction of organizations as tools with a life of their own, a relationship to their environment – that is, other collective actors across boundaries. Executive collegial oligarchies are officially in charge of managing the relationship to the environment. But professional collegial pockets of experts below the executive collegial oligarchy are also tied to external professional bodies providing resources, and thus participate in the management of the relationship to the environment. Collegial pockets of workers are sometimes initiated, then supported, by trade

unions. Collegial pockets have cross-border activities as part of broader institutional forces. Each more or less intraorganizational collegial level leverages an exogenous source of resources that leads to, and redefines, this classical issue of the relationship of the organization to the environment in multilevel network terms.

This mechanism of extension of opportunity structures is also at work in the multilevel management of markets from the production side and in the management of companies' main regulator, the state. As will be shown in Chapter 5, managing the environment also means maintaining or reinforcing the kind of social stratification that both reflects the superposition of stratas internally and the capacity of members of each strata to self-organize and use the joint regulatory process to hoard opportunities (in Tilly's, 1998 sense) outside of the organization, in society at large.

There are even broader implications of redefining organization and introducing a stratigraphic, multilevel and dynamic perspective in the analysis of organized collective action. We argue that the role of collegial oligarchies, top-down collegiality, multilevel relational infrastructures, for example, may be underestimated as organizational characteristics of societies. This approach changes our understanding of the organizational society – that is, society at large, particularly politics, social stratification and inequalities. Without any claim to exhaustivity, it helps revisit some of the issues that have been at the core of contemporary sociology of organizations, economic sociology and political sociology. This includes topics such as institutional entrepreneurship at the national and international levels; reshaping and reproduction of core dimensions of social stratification (e.g., how collegiality helps create closure at the top when democracies open at the bottom); organizational violence as undermining of the relational infrastructures and oppositional solidarities of collegial pockets at the bottom of hierarchies; the special effects of digitalization of relational data for societies and concentration of public and private control of large social networks databases on political life.

How multilevel relational infrastructures at the intra- and interorganizational levels have an effect on social change in the organizational society is therefore explored next in the last three chapters. They are focused on political economy, social stratification and digitalization of the commons, with the question of the ability of decentralized local communities to self-organize and innovate for the transitions without losing these capacities to inside-out collegiality.

Having explored the co-constitution of bureaucracy and collegiality across levels and across boundaries, it is important to acknowledge that little is known about the dynamics of multilevel organized settings over time, especially about the synchronization of temporalities of all levels, which is the next frontier of knowledge for the sociology of organizations and collective action. For example, very few datasets actually look into these dynamics. Chapter 4

provides empirical cases illustrating how this would be a useful approach to the functioning of transnational institutions and transnational markets seen as combined, multilevel bureaucratic and collegial settings. Top-down collegiality and collegial oligarchies operate in the construction of markets and in the construction of transnational public institutions (here a transnational collegial oligarchy of judges building a transnational jurisdiction) as well. Because collegiality relies heavily on personalized relational infrastructures, this approach shows that constructions of new markets and new transnational public institutions, for example, heavily depend on privatized, exclusive, collegial pockets of institutional entrepreneurs who operate at several levels simultaneously as multilevel linchpins, often as both public and private agents or by mixing the two. The point is not just to look at the "embeddedness" of such work in personal relationships; it is to show that the relational infrastructures of collegiality are built and mobilized to achieve these outcomes in the economy and in politics as multilevel contexts.

These empirical examples thus show promising results and extend the perspective to issues central to political sociology and economic sociology (Brailly et al., 2018) by focusing on collegial oligarchies in markets and in transnational institutions, and on the dynamics of their multilevel networks that are not yet very well understood. These dynamics of multilevel collective agency require that we revisit our understanding of politics more generally. The capacity of civil society to force organizations to keep their lowest stratas in the loop of the joint regulatory process is presented as one of the key social and political challenges today for contemporary societies. Additional exploration of this combination in civil society shows that blooming cooperatives and associations mobilize for survival based on combined bureaucracy and collegiality across levels and boundaries as well (Sanchez-Hernández, 2016). Making cooperative work for worker-managers or building wealth for communities in the contemporary global value chains of neoliberal capitalism requires the awareness of the organizational, multilevel interactional/relational mechanisms described here because dynamic processes of centralization and decentralization of the economy relies on them.

Looking at actors at work (routine vs innovative) leads to differentiations between forms of organized collective agency, but also to revisiting the issue of the articulation of the sociology of organizations and the sociology of social stratification (see, e.g., Baron & Bielby, 1980; Davis & McAdam, 2000; Stinchcombe, 1986; Tilly, 1998; Tomaskovic-Devey & Avent-Holt, 2019). Indeed, scholars need to revisit the theory and methods that are used to study organized collective action by focusing exclusively on bureaucracy and its limitations and critiques. To track the new form of social discipline and digitalized social engineering that is currently developing, it is important to understand organizations and their weight in contemporary "organizational

societies" (Perrow, 1991; Presthus, 1962; Wittek & Van de Bunt, 2004) in new ways. The term "organizational society" has several dimensions. As Perrow (1991) puts it, it means that large-scale, but also smaller, public or private organizations "absorb" societal functions that were/could be fulfilled by communities. It also expresses the fact that power is concentrated in the hands of individuals who operate at several – at least 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" (Selznick, 1949). It also means that a system of interdependent organizations, which are interlinked at the meso level in a multilevel network, shapes the opportunity structure of citizens and social stratification by coordinating various forms of "opportunity hoarding" (Tilly, 1998).

Organizations being the main mechanism for concentration of power and wealth in society, their contribution to social stratification is well documented. However, the respective, compared and combined importance of bureaucracy and collegiality to this effect (production and reproduction of inequalities) is less explored. Production and distribution of "organizational inequalities", in the sense of unequal capacities to mobilize – for example, to render a public service, to seek profits, to struggle against injustices – can be examined from the perspective of the co-constitution of bureaucracy and collegiality. Chapter 5 looks at how the use of collegiality in organizations shapes social stratification beyond well-known mechanisms, for example, of specialization segregation. Organizational stratigraphy as introduced above inevitably meets with the parallel between working classes, middle classes and upper classes on the one hand, and workers, management and owners on the other. But when position in the structure is construed in more complex, organizational and multilevel ways identified in Chapters 2 and 3, actors' attempts to reshape collectively their opportunity structure and promote their regulatory interests become part of reproducing inequalities. Position in the multilevel structure empowers or weakens them collectively.

Social structural approaches have emphasized the role of contextual factors in shaping organizations, creating conflicts and fostering cooperation (Selznick, 1949). Looking at organizations as stratigraphic combinations of bureaucracy and collegiality helps revisit the issue of how they (are used to) shape the environment at large – in particular, how organizations and social stratification and inequalities co-constitute each other. Here position in the multilevel structure and combination of bureaucracy and collegiality add a "relational" dimension to this co-constitution of organization and stratification. In Chapter 5, we show that organizations help elites self-segregate and close access to the top of social stratification by using top-down collegiality. Organizations, especially collegial ones with their relational infrastructures, are presented as opportunity hoarding (Tilly, 1998) and relational ratchet mechanisms for high-level strata

in the social hierarchy and system of inequalities. A multilevel approach shows that organizations are thus the ratchets of social stratification with top-down collegiality in fact increasing gender and minority discrimination.

Second, however, organizational strata coordinate, and this coordination requires participation from weaker actors. An organizational analysis of participation as a three-player "game", again from the perspective of top-down collegiality, shows that social stratification also maintains itself by dealing with lower levels as much as possible through vertical intermediaries, and as little as possible with vertical linchpins acting at several levels simultaneously. Outside intermediaries such as the professions (including consultants and priests) can provide lower levels with negotiation experience and networks, language and knowledge of the actors with whom they negotiate. But their loyalties are often divided.

Finally, this organizational approach to social inequalities helps identify sources of social inequalities that are often overlooked. When stratified organizations superpose collegial and bureaucratic levels, synchronization costs for coordination of temporalities across levels is linked to the capacity to build, over time, relational infrastructures at intermediary levels (called ILRIs above), then relational infrastructures at the next higher levels. This means that organizational mobility for groups plays an important role in terms of making synchronized collective agency possible across levels. Indeed, actors already endowed with collegial relational infrastructures at the next level have a competitive advantage in terms of participating in joint regulation. For those without such intermediary level relational infrastructures, synchronization costs weaken the collective agency that they need to succeed in creating a new position in the division of work of the system at the level above. It is thus much more difficult to create individual upward mobility than collective upward mobility. Measuring such costs hidden in multilevel dynamics helps, for example, to monitor collective opportunity hoarding (Tilly, 1998) in the organizational society. These costs may also explain the level of robustness and resilience of organizations as multilevel structures, as well as inertia and inefficiency of oppositional solidarities carrying alternative interests and policies.

Organizational ratchets and inertia are important to understanding the difficulty of contemporary social change. They make introducing social change and transitions in the organizational society a quasi intractable problem. For example, abandoning social organization to short-sighted bureaucratic markets thus raises the issue of organizational inequalities between members trying to promote innovations and new conceptions of social change. This constitutes a structural problem that can only be further understood by designing and mobilizing methods able to measure hidden social costs of synchronization between stratified and heterogeneous levels of collective agency. Accounting

for these costs may explain stabilization and resilience of existing multi-level networks, but also less visible organizational roots of durable social inequalities.

As Weber saw it, the problem that the winners have (in relationally homophilous collegial oligarchies) is to try to avoid a system in which the losers of the system make a paradoxical alliance with a tyrant to destroy their collegial oligarchy and the subordination and domination that it imposes in everyday life. Inside the collegial oligarchies, homophily (in terms, e.g., of class, gender and exclusion of minorities) is used to control cut-throat competition between oligarchs, which excludes many people from these collegial oligarchies. The strategy of dominated parties is often to try to penetrate the collegial oligarchies of joint regulation. For example, the risk of exclusion and insularity outside of these oligarchies is dealt with by the dominated gender and by dominated minorities with what Marry (2004) has called the "respectful revolution" approach, in particular trying to disable the male homophilous mechanism in the bunkerized collegial oligarchies, but without questioning the use of exclusion relying on homophily based on different criteria (class and race/ethnicity).

In sum, the complexity of organizations as such tools, however, shows that their unequal use generates macrolevel dynamics that are not a simple and static consequence of macrolevel realities. When used by bureaucracy, collegial settings can have macrolevel effects, especially through mechanisms presented in this chapter, such as "organized mobility and relational turnover", as well as imposition of "synchronization costs" between the different temporalities of multiple levels of collective agency. Combined with what this chapter calls "pitfalls of participation", these mechanisms can create discrete but systematic exclusions and, at the same time, barriers to entry into collegial oligarchies – for example, in terms of gender and ethnicity/minorities. They align "organizational inequalities" with a prior system of socioeconomic inequalities. Indeed, when theorizing and modeling the dynamics of multilevel networks and superposed forms of organized collective agency, a process well known to sociologists of social mobility and stratification emerges at the meso level as well, that of "segmented democratization": the more a democratic regime opens up at the bottom of social stratification, the more it tends to bureaucratize below and impose impersonal and open competition at the bottom; and the more it closes at the top by using personalized relationships – sometimes without much innovation. Thus, mesolevel dynamics are not a simple translation of a macrolevel reality. This use of organizations as complex ratcheting tools with a life of their own creates organizational inequalities that are engines of more general dynamics of social stratification. Looking at organizations as combining bureaucracy and collegiality helps revisit the issue of how organizations (are used to) shape the environment at large – in particular, shape and reproduce social stratification and inequalities. Much remains to be understood

and tested with respect to the role of organizations, organizational inequalities and joint regulation in the wider system of inequalities.

This approach and applications show that they are important not only to understand the dilemmas of cooperation and collective action from an academic perspective, by contextualizing collegiality and multilevel networks. They are also important for analyzing private or public institutions and how they operate. Questions that were beyond the scope of previous perspectives mobilized by earlier generations of researchers are now accessible to new kinds of research – although mostly closed and private research with access to data on online relational profiles.

Indeed in these dynamics of multilevel forms of organized collective agency, one particular and contemporary technological evolution with its social implications deserves special attention. One of the most dramatic contemporary innovations is the digitalization of interactional and relational life with online social networks. This strengthens bureaucratization with the capacity to monitor systematically, reshape and routinize the very core make-up of collegiality: personalized relational activity and relational infrastructures. In previous chapters, several analytical steps were distinguished in articulations of routines and personalized relationships – that is, three models of the use of relationships for collective action. First, relationships are used as tools of collegial self-management, as in partnerships. Second, they are used in collegial pockets in contexts that are nevertheless bureau-collegial contexts (see Chapters 2 and 3), and in markets as well (Chapter 4) without being depersonalized. Third, bureaucracy reaches a level of sophistication in which it no longer needs to depersonalize relationships for collective action because it can parameterize them digitally and unobtrusively – and thus remote control social processes (solidarity, control, regulation and learning) based on multilevel relational infrastructures. Even if there are social costs that come attached, digitalized relationships emerge as a template attempting to format personalized relationships and make them manageable bureaucratically without depersonalizing them (both within the organization and outside the organization – for example, with "independent" subcontractors or partners, upstream providers, downstream clients, etc.).

Therefore, Chapter 6 on what we called inside-out collegiality looks at how bureaucratic framing, parameterizing and control of personal relationships, actions and culture by platform capitalism promise collegiality but deliver the opposite. We speculate that contemporary digitalization allows Tech hegemons to try to turn collegiality inside out and control some of the last social processes that were not yet entirely centralized and parameterized by bureaucracy: policy design, institutionalization and enforcement of new norms for society at local, national and international levels.

Social digitalization, as an indicator and substantive part of contemporary social morphogenesis (Archer, 2014), takes complex forms. Part of this social change can perhaps be called "organizational morphogenesis" – that is, a new co-constitution and coevolution of our ideal-typical models of organization, bureaucracy and collegiality in organized collective agency. The technological revolution brought about by the creation of digitalization, with its capacity to invent new kinds of routines, strengthens the centuries-old process of bureaucratization theorized by Max Weber as the "polar night of icy darkness". With the new industrial revolution driven by digitalization, bureaucracy drives a new wave of social development and is increasingly taking over in news ways (Rosenblat, 2018).

The struggle and co-constitution between the two ideal types thus take a dramatic turn, illustrated here with the use of knowledge of interactions and relationships in the military. Digitalization as contemporary bureaucratization turns the collegial model "inside out", deepening routinization of collective action along swarm templates designed to shape teamwork for army units on the ground. Collegiality (and its oppositional solidarity) is being turned inside out in this kind of social innovation in control and efficiency. What digitalization has introduced very quickly and unobtrusively is the capacity to identify personalized relationships and to force members of collegial stratas to use them not so much for coordination in joint regulation but as instruments of depersonalized interactions. This both neutralizes traditional forms of oppositional solidarities but also the capacity of collective innovation – be it social, technical or market-related innovation. Swarms represent the social imaginary behind collective action as represented by the digitalized organization and society, but also a new form of collective responsibility that can be spread to institutions other than military.

Indeed, with the new digitalization of organizations as a new wave of bureaucratization, management can undermine professional and trade union forms of collegiality, collegial pockets with oppositional solidarity at the bottom and mid-level of social stratification, with new digital technology and its own use of analyses of interactional and relational data. If inside-out collegiality is the model for combined bureaucracy and collegiality that is being designed by contemporary powers as a template for adaptation in the face of transitions with a risk of extinction, then both privacy and justice disappear with the multilevel dimension of joint regulation, as in the fantasy of swarms scaling up linearly, without relational infrastructures whatsoever. Collective freedoms and capacity to innovate are deeply threatened by what amounts to using organizations as tools for imposing these new forms of collective responsibility and social order in the management of future transitions, with the danger of dividing humanity into the categories of *Über-* and *Untermenschen* (superhumans and subhumans).

In sum, it is thus useful to add to a century of criticism of bureaucracy another dimension questioning this organizational logic. To the critique of Taylorism and social Darwinism, of the human relations approach, of decision-making theories, of power-based approaches of organizations (Perrow, 1986), it is important to add the critique of digitalization as a new level of bureaucratization. Bureaucratic efficiency for routine work is one of the bases of its triumph and ubiquity in mass production, in spite of the extraordinary social costs for society. But the special combination of bureaucracy and collegiality that we call here "inside-out collegiality" reaches a level of threat to society, democracy and innovation capacity that requires and leads to new critique and social change. This can help grasp the extent to which the digital revolution reorders societies and their necessary transitions due to several emergencies (socioeconomic inequalities, migratory, demographic, climate-related, etc.), selecting unobtrusively between forms of collective action.

Unless the social sciences master and share these skills, the struggles that redefine joint regulation will increasingly be shaped by the private/public powers that control – in addition to many other socioeconomic resources – the special tools of multilevel, stratigraphic network analyses. If democracies let platform capitalism and concentration of unchecked state powers develop, totalitarian regimes will increasingly rely on inside-out collegiality, transforming joint regulation into new forms of digitalized social Darwinism (Bendix, 1956), letting "organizational morphogenesis" drift towards destructive organizational totalitarianism (Al-Amoudi & Lazega, 2019). Today, strong institutional frameworks in several democracies do not seem entirely sufficient to protect them against authoritarianism, and to uphold, for example, rights of citizens against rights of corporations. Redefining organization thus requires further development and sharing of new data and methodologies, but also new political work: laws, regulations and institutions that truly protect the value and specificity of relational data, and regulatory frameworks that create and strengthen counterpowers and forms of joint regulation where bottom-up collegiality is as strong as, if not stronger than other forms of joint regulation.

The concluding chapter, Chapter 7, summarizes the argument of the book and argues that extending our capacity to analyze organizations and steering the sociology of organizations in the direction of these explorations is important and timely. Throughout this exploration, several issues raise critical concerns for contemporary organizational societies, and thus for further research by the social sciences. Whether it is about redefining work, commons, collective responsibility, coopetition, government, or even social stratification, exploring dynamic multilevel networks exposes social (in)capacities to build new laboratories for social change, including the issue of privatization of knowledge and the social (in)capacities to steer social change that come attached, much remains to be done for public sociology of organizations if it is to be relevant

for societies navigation of the coming transitions. Sociologically, the toolbox that organizational approaches to collective action in society have built in the twentieth century is already very impressive, but still insufficient today. This book is an introduction to new sociological thinking and research extending these approaches conceptually and methodologically.

Knowledge of the dynamic and multilevel combinations of bureaucracy and collegiality in which we are embarked, as well as their consequences for social change, including reduction of social inequalities and strengthening democracy, are important in that respect and need to be developed. Hopefully, this book contributes to this better understanding of the society of organizations, and thus of the new kind of social engineering that increasingly transforms contemporary societies beyond Weber's nightmare of "polar night of icy darkness". In bureaucratized, parameterized commons turning collegiality "inside out", organizational societies risk lacking the drive for collective innovation and creativity that is needed for social change and contemporary transitions preserving institutional entrepreneurship and democracy. The book ends by arguing that, in the forthcoming social and political changes that will characterize this organizational society, much remains to be done to develop this intelligibility with a struggle for truly open science.

NOTE

1. By convention, an alter is defined as "any other person" in a subject's (ego) personal network.