INSTITUTIONAL DIVERSITY and POLITICAL ECONOMY

The Ostroms and Beyond

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Institutionalism and Polycentricity

IN DEALING WITH the challenge of heterogeneity and pluralism as irreducible and permanent features of the social world, institutional theory has moved on a twofold pathway: The first is better known and has been to study the problems and dysfunctions created by heterogeneity as well as the mechanisms by which people try to solve these problems. The emphasis in this case is on the difficulties of cooperation and coordination generated by diversity. The second has been as important, although usually overshadowed by the first: the study of how heterogeneity and diversity are, not just a source of problems and dysfunctions, but, in fact, a resource. The emphasis in this case is on diversity as a factor helping people to solve problems and better coordinate and cooperate.

The fact that the side focused on difficulties is more salient shouldn't be a surprise. Most of the traditional political economy and constitutional studies literature is dedicated to it. Scott Page himself, the influential student and supporter of diversity as a resource, acknowledges nonetheless that heterogeneity "leads to some sobering observations." His list is hefty: "More diverse fundamental preferences should result in fewer resources allocated to collective goods and projects." Moreover "individuals with diverse preference can form collections that, formally speaking, are not rational." Even when formal social choice procedures are introduced, "the results of votes can be somewhat arbitrary when preferences are diverse." Knowing that "no procedures work perfectly; individuals have incentives to misrepresent their preferences and to manipulate the agenda." All these are amplified when to the diversity of preferences one adds diverse perspectives and heuristics. "Too many solutions combined with diverse preferences can be a lethal combination. When people have diverse preferences, each solution has multiple values, one for each problem solver. This can result in preference cycles, manipulation, and misrepresentation" (Page 2009, 283, 294–95).

Given the fact that heterogeneity is a fact of life, these and similar problems are inescapable. Utopian formulas of homogenization and consensus aside,

one has to deal with them at both theoretical and practical levels. Like it or not, the heterogeneity of views and preferences (not to speak of that of endowments) and their impact on the emergence, choice, and change of institutional arrangements require a high level of effort invested in both positive and normative approaches. One may want to avoid a revamped confrontation with the basic problems of social choice, public choice, and constitutional political economy, but they are forcefully reemerging at the very cutting edge of the agenda, even if one insists on the strictest terms of positive institutional analysis.

That being said, it is important to stress that the full relevance and distinctiveness of heterogeneity-and-diversity institutionalism is not entirely appreciated without understanding the second dimension in play. This approach to institutionalism not only acknowledges the reality of diversity and tries to cope with its challenge, but does that by seeing it as a potential resource, exploring the ways to capture and employ it. What is distinctive about the Ostromian proposition is that it does not theorize institutions as mere remedies to problems of coordination, cooperation, or perverse incentives created by heterogeneity, interdependence, and information asymmetries. It also tries to look at heterogeneity and pluralism and their institutional consequences from a more hopeful and constructive angle.

In this respect, the Bloomington perspective dovetails with significant developments in political economy and political philosophy, developments that all try to reconsider traditional problems of social and public choice from a novel angle. One simple way of presenting the substance of this convergence is to see the various problems of collective action institutional theory is called to deal with (be they at the local or global level) as optimization problems. Each institutional arrangement has a certain potential: it could maximize or minimize some values, preferences, or options from a given heterogeneous set existing in a given society. The potential to minimize as well as to maximize is part of the same institutional package. The optimization model thus allows a unified approach to the problem of institutional choice, combining the "challenge/problem" side and the "opportunity/resource" side of diversity. Obviously, it is difficult to optimize when you have different values, preferences, and perspectives. Total social satisfaction is a bundle of values, and the values are not additive. Moreover, the preferred solutions or institutional arrangements differ. Total social satisfaction varies from institutional arrangement to institutional arrangement. A variety of combinations is possible. This creates a rugged landscape of options. On each segment of the landscape there are local optima that dominate each other, and each such optimum could be achieved through at least one institutional arrangement. And there is at least one general optimum point. How does one find out the optimal when in most

cases there is no Archimedean perspective from outside the social system? Is it possible to optimize over all the dimensions of the common solution (i.e., all the fundamental interests involved)? How does one improve the total social satisfaction when the agents are bounded rational actors with imperfect knowledge and subjective preferences? How does one move society in the direction of optima that dominate the current one, even if that optimal point is not the general optimum? These questions are truly crucial and have substantial consequences at the applied level, as they lead to the pivotal problem of institutional choice, the core of political economy.

Our problem, writes Gaus (2010, 3), a major contributor to this emerging literature, "is that we are trying to find the global optimum in a rugged landscape. If we all had a God's eye perspective, and so could scan the entire landscape, we may know what to do, but boundedly rational individuals cannot survey all possibilities." Institutional choice is a lot harder in such conditions. Is institutional arrangement A or institutional arrangement B the optimal (or optimizing) solution in this or that specific area of the landscape? How could one determine that? The solution cannot be a priori. Identifying and moving toward (local) optima cannot be other than contextual and determined by the social, cognitive, and institutional parameters of the specific segment of the landscape in which the decisional and institutional processes are taking place. What authors like Gaus are doing is to build one end of a theoretical bridge from political philosophy toward the Ostroms' type of institutionalism. On it the institutionalism and social philosophy sides converge in an attempt to show how and why people may be able to endogenously overcome, as a group, the predicament of uncertainty and heterogeneity and produce institutional arrangements able to find solutions and generate improvements in given circumstances.

As mentioned, the noteworthy fact in this convergence is that diversity is indeed a problem to be accommodated but also a resource to be exploited. Developing an argument whose logical complement seems naturally to be a theory of institutional diversity and institutional selection, Gaus demonstrates that "rigid normalization so that all *really* share the same perspective" it is almost certain to ensure "that we will be caught at a local optimum that falls short of the global optimum." Cognitive homogeneity or preference homogeneity has a blinding and narrowing-down effect. However, in a realistic vein, the downside should be acknowledged too. There is always the problem that, warns Gaus, "if we allow diversity, whatever benefits it may produce will be swamped by . . . dispute in which each party vetoes the favored social worlds of others, leaving us with an empty set of mutually acceptable social worlds" (Gaus 2010, 9–11). All depends on the ways the interaction and interdependence

between the parties is set up to take place in specific circumstances, between given agents, with given beliefs, values, preferences, and perspectives.

One way or another, the discussion leads to the notion that governance and the institutional choice principles implied in it are both in their will and substance "the outcome of a social process, partly a process of discovery and partly an outcome of social choice." The link with the Ostromian brand of institutionalism is obvious. The accent is moved from grand principles and general designs to social processes and contextual analysis. Institutional arrangements grow out of a real social processes: "it is not a social contract in the form of an imaginary agreement, but a dynamic process of social discovery and choice that creates an actual social and moral fact" (Gaus 2010, 17). We are increasingly taking distance from the Rawlsian and Habermasian hypothetical arrangements or the neoclassical economics models and their assumptions. A unique combination of social philosophy and social science is starting to crystallize.

The "Second-Order Task" of Institutions: The Institutionalization of Institutional Assessment and Change

The perspective outlined above puts us in a position to take a step further in depicting how Ostrom-inspired institutionalism is positioned in the emerging research program exploring methodically the consequences of heterogeneity and pluralism. We have established that increasing attention is being given to (real, historical, empirical) social process associated with institutional choice, or to put it another way, institutional choice as a social and institutional process. This theme marks the point where another strand of the innovative institutionalism literature becomes relevant for the current argument. Having identified the move from an ideal, principles-based, and acontextual view of institutional assessment and choice, toward a contextual approach based in social processes, we are now in the position to use one of the most constructive and challenging modes of conceptualizing the issue in the current literature.

In *The Priority of Democracy* (2011), Jack Knight and James Johnson integrate the new pluralist theme of the social process approach to institutional assessment and selection, into the older literature, while at the same time creating the conditions for the transition to a novel, upgraded framework. Their effort systematizes and redefines in several critical ways institutional theory as the capstone of modern political economy—the overarching framework that encompasses both traditional economics and political science. Part and parcel

of this strategy is their elaboration of the distinction between the "first-order functions" and the "second-order functions" of institutions.

The "first-order task" of institutions refers to the ways in which a specific institution solves the particular economic, social, and political problems it is meant to solve as its primary function. For instance, in the case of democracy, its first-order function is the facilitation of collective action regarding substantive policy issues, the capacity to bring people together in pursuit of common projects and to generate if not consensus at least commonalities, while legitimizing the decisions taken. Democracy is in this respect one among many institutional forms that help social actors to coordinate their activities. In a similar way, one may look at market arrangements, courts, and so on, through the lens of their first-order functions.

"Second-order tasks" are different, in the sense that they are meta-level phenomena. They concern the monitoring and management of the entire institutional set of a society. This involves an "ongoing process of selecting, implementing and maintaining effective institutional arrangements," in brief, the institutionalization of the process of evaluation and institutional choice in identifying failures, dysfunctions, externalities, and coordination problems as well as remedies to them (Knight and Johnson 2011, 19). A strong feedback function, monitoring the performance of the institutional mix defining a certain society at a certain moment is required, as well as capacities to influence its workings. An institution may be effective as a first-order mechanism but dysfunctional as a second-order one. Needless to say, the effectiveness of first-order mechanisms is structurally enhanced by a effective second-order mechanism. The role of the second order for the overall performance of an institutional system can hardly be overestimated.

Setting up the discussion in these terms, Knight and Johnson put on the table a key question: What is the institutional form(s) best suited for second-order tasks? (and by implication, what are the functional, structural, and normative criteria that need to be satisfied by such an institution?). A large part of their book is dedicated to answering these questions, arguing that "the set of institutions" called "democracy" has "an important priority among the available institutional alternatives." Hence the title of the book. Through an impressive tour de force through political science, economics, and institutional theory, they try to demonstrate that although in a world of heterogeneity and pluralism one cannot claim that democracy (or for that matter any institutional arrangement) is the best first-order way to coordinate all social interactions, democracy comes to fore as a second-order facilitator of effective institutional choice. This suggests a shift from seeing democracy as a mechanism of consensus and commonality to seeing it as an institutional

mode of "addressing the ongoing conflict that exists in modern society," a mechanism of accommodating "tensions that in any event do not lend themselves to any principled and lasting resolutions," and a social instrument able to "decide in any particular moment how best to resolve specific problems and issues" (Knight and Johnson 1996; 2011, 20).

While making their case for democracy, Knight and Johnson outline the features that should be used to describe, analyze, and assess second-order institutional arrangements. Given the importance their approach has in understanding the Ostromian contribution to the new institutionalism of diversity and pluralism, it is necessary to briefly delve into them. The features identified by Knight and Johnson (2011, 169) cluster around the notion of "reflexivity." More specifically, three functions are central: "(1) to coordinate effective institutional experimentation, (2) to monitor and assess effective institutional performance for the range of institutions available in any society, and most importantly, (3) to monitor and assess its own ongoing performance." These are institutional functions that require mechanisms through which members of a society "can collectively assess the interrelationship of conditions and consequences over time." Their systemic tasks are greatly assisted by establishing and maintaining "an experimental environment that can enhance our knowledge of the relationship between different institutional forms and the conditions under which they produce good consequences." All this leads to the normative priority of democracy over alternative institutional forms, both decentralized and centralized: the reflexive structure of democratic decision-making is "the distinctive benefit of this centralized form of coordination." The Knight and Johnson case for the second-order priority of democracy rests thus "on the comparative claim that democratic decision making has properties other institutional forms either lack or possess to a lesser degree." Precisely because of "its emphasis on reflexivity, democracy is uniquely structured to provide, under the proper conditions, an effective framework for these complex and often contentious tasks" (Knight and Johnson 2011, 20).

The dismissal of the market and all decentralized mechanisms as possible contenders to the position of primacy is an important element of the argument. Knight and Johnson consider their interpretationcontrary to more prevalent views (although this prevalence may be debatable when one goes beyond the boundaries of mainstream economics and political economy). In any case, they challenge what is generally considered to be the current default presumption in political economy: the priority of the market, the market as the ultimate reference point and mechanism for institutional effectiveness. A comparative analysis, they write, shows that "democratic institutions are most effective

when decision making is properly strategic and reflective." Markets "do not facilitate the types of communication necessary for the tasks of institutional assessment and monitoring."It is first of all a market failure argument. More precisely, a failure of markets to provide the much needed reflexivity. In markets, "communication between actors is about particular exchanges and not about the general functioning of the market itself." As communication extends to other types of issues, markets tend toward imperfection and inefficiency. This and other similar lines of comparative criticism are extended to all decentralized mechanisms (Coasian bargains, community-based cooperation, technocracy, incentive-compatible rules). The primacy currently given by scholars to decentralization among the available institutional alternatives is not warranted. Centralized democratic mechanisms "will do a better job of facilitating the various tasks of institutional choice than will decentralized mechanisms" (Knight and Johnson 2011, 52).

Setting aside possible diverging interpretations and claims of primacy, the vital point is that in articulating the problem of the second-order institutional arrangements, Knight and Johnson draw attention to one of the most important and most neglected issues in institutional analysis. Institutionalism is not only about this or that specific institution and its specific functions and performance. It is also about the overall capacity of a human society to monitor, assess, calibrate, adjust, and change, via institutional tools, the diverse set of institutional arrangements defining it. This is an institutional function in itself. To discuss it in mere theoretical terms is unproductive. It would mean remaining blocked at the level of analytical and ideal theory. To escape that predicament, we need to ask important questions: What devices do social agents and their societies have available to evaluate, design, and optimize their institutions? What are the conditions in which the mechanisms of institutional emergence and change operate? What is the relationship between spontaneous and designed change? How are preferences, relative power, and principles reflected in the process of change of institutions? What processes define the institutional structures involved in change? Are there systemic features that make one society more prone than others to adaptive institutional improvement? Knight and Johnson not only raise such questions but also advance the discussion, exploring the institutionalization of institutional choice in modern complex societies defined by diversity and pluralism. They favor democracy as the primary institution in this respect, but they favor it based on clear criteria and a comparative analysis.

All these points are relevant for the current discussion because only when we understand the stakes of the "second-order task" theme do we have a grasp of the context in which the Ostroms' perspective should be seen. The question

is: Is decentralization indeed a dead end and is democratic centralization the institutional formula able to fulfill the crucial functions identified by the authors of *The Priority of Democracy*? Are there alternative ways to respond to the challenge they identify? Bloomington institutionalism might offer such an alternative.

At this juncture it is important to highlight what probably has already become apparent: an outcome of the Knight and Johnson project is an ingenious redefinition of the traditional political economy debate between centralization and decentralization. They do not deny the merits of decentralized arrangements. They not only allow but encourage decentralization and institutional pluralism as a first-order best in certain areas. However, on the bottom line, they reassert the overall primacy of centralization, via "the set of institutions" called "democracy." Thus they create a conceptual and thematic framework for the future debates on traditional themes of markets versus the state, and on decentralization versus centralizationx. It is in this framework, and under a certain interpretation, that the preeminence of democratic centralization is reestablished. This is a powerful argument, especially if seen from a perspective that still operates under the spell of what James C. Scott (1998) has called "seeing like a state." But if one turns to the Bloomington side and uses the Ostroms' theoretical lenses, a different perspective opens up. Without denying the merit of democracy (agreeing, in fact, with many of the qualities identified and emphasized by Knight and Johnson), Ostromian institutionalism develops a distinct angle in the light of which the case for decentralization gets restated. This is not a return to a version of older arguments, but an innovative view.

The idea of polycentricity (tentatively defined as a social system of many decision centers having limited and autonomous prerogatives and operating under an overarching set of rules) developed and explored by the Ostroms and considered to be pivotal to their work, can be seen as a response to the sophisticated anti-decentralization challenge on the lines advanced by the authors of *The Priority of Democracy*. It is important to remind readers that the debate in this case is not part of the cycle of conventional disputes between elementary theories of centralism and elementary theories of decentralized spontaneous order, or of the "markets versus states" literature preceding the institutional revolution, but it is an argument between two perspective that are inspired by and define the most up-to-date thinking in the field. We are talking about versions of centralism and decentralism that have incorporated the problems of heterogeneity, pluralism, and institutional diversity (both centralization- and decentralization-based) as well as most of the theoretical and empirical discussions in the relevant disciplines.

That being said, the Bloomington school reaction to the Knight and Johnson thesis has to be based on three elements: first, to acknowledge and embrace the general conceptual framework Knight and Johnson develop, as well as the basic agenda-driving questions they frame; second, to applaud the analysis of (and the emphasis on) democracy and especially its pluralist, epistemic-communicative and coexistence-against-conflict functions; third, to note that given that framework and the very institutional functionality criteria the authors outline, democracy fares less well than they claim. The major issue is that their assessment of democracy as an institutional form and its conditions of operation does not recognize the public choice problems identified by the Buchanan and Tullock Virgina school of public choice (Brenner and Lomasky 1989). While social choice problems are preeminent in the Knight and Johnson discussion, the structural dysfunctions of democracy discussed in the public choice literature are absent. But these are exactly the type of dysfunctions that raise serious doubts about democratic institutions' ability "to coordinate effective institutional experimentation," to monitor and assess "the effective institutional performance for the other institutions," and democracy's ability "to monitor and assess its own ongoing performance." For that matter, neither Mancur Olson's doubts about the structural dynamics of democratic systems and their flexibility are considered, although they are extremely relevant for an argument that makes reflexivity and flexibility the pivot of its case. The vulnerabilities of democracy, the topic of Vincent Ostrom's last book, deserve to be confronted up to the end. These observations in themselves are a powerful invitation to reconsider democracy's merits as a second-order institution, and they deserve a separate discussion.

However, our attention will be dedicated to a fourth element of the Bloomington reaction, the most important in the context of this book: advancing a theory of polycentricity. When it comes to decentralized, federalized, multijurisdictional governance structures Knight and Johnson's argument neglects the insights resulting from the Ostroms' investigations on polycentric orders. The Ostroms' insights regarding community-based cooperation have led to broader observations regarding the nature of governance in conditions of diversity, heterogeneity, and pluralism. These insights orbit around the notion of polycentricity. In other words, the Ostroms' variety of public choice and institutionalism leads to an alternative response to the challenge identified by Knight and Johnson under the label of the second-order tasks of institutional arrangements. Thus, a close overview of the notion of polycentricity and the research program associated with it at Bloomington becomes mandatory. Only in the light of such a close review can one assess its potential and limits as a solution to the problem of "second-order tasks" as well as its

relationship with other central institutional arrangements such as those of the market and democracy. In doing that, we also better and clearer establish the place that Ostromian institutionalism occupies in the current landscape.

Polycentricity: Initial Developments

The concept of polycentricity was first envisaged by Michael Polanyi in *The Logic of Liberty* (1951). From there it diffused to law studies, thanks to Lon Fuller (1978) and others (Chayes 1976; Horowitz 1977), to urban networks studies (Davoudi 2002; Hague & Kirk 2003), and, even more importantly, to governance studies, thanks to the Bloomington school of institutional analysis (McGinnis 1999a,b, 2000; Wagner 2005; Sabetti et al. 2009; Aligica & Boettke 2009; Toonen 2010). Although the concept is often recognized as important, not much has been done to clarify and elaborate it, beyond the work of the aforementioned authors. This is why we'll start by introducing the concept as advanced by Polanyi and developed by Elinor and Vincent Ostrom, then continue by introducing possible instances of polycentricity and related notions, elaborating the concept through a concept design approach that systematically applies the logic of necessary and sufficient conditions. Based on that, we'll be able to return to the problem of institutional assessment and selection and its institutionalization through the second-order function of institutions.

Michael Polanyi's original development of the concept of polycentricity was the outcome of his interest in the social conditions preserving freedom of expression and the rule of law (Prosch 1986, 178). His approach was original in that he based his social analysis on an analogy to the organization of the scientific community. This was facilitated by his antipositivist approach to the philosophy of science, as he considered the success of science to be the outcome of a certain kind of social organization, rather than of scientists following a rigidly defined "scientific method" (Polanyi 1951, 1962).

Polanyi argued that the success of science was mainly due to its "polycentric organization." In such organizational systems, participants enjoy the freedom to make individual and personal contributions, and to structure their research activities in the way they consider fit. Researchers' efforts don't usually dissipate in unproductive directions because they share a common ideal, that is, their freedom is utilized to search for an abstract end goal (objective truth). Polanyi's key point is that such an abstract and underoperationalized ideal cannot be imposed on the participants by an overarching authority. Thus, the authority structure has to allow a multitude of opinions to exist, and to allow them not just as hypotheticals, but as ideas actually implemented in practice. The attempt to impose progress toward an abstract ideal is doomed to

failure, as progress is the outcome of a trial-and-error evolutionary process of many agents interacting freely. Polanyi argued that the same analysis applies to art, religion, or the law, because these other activities are also polycentric in nature and driven by certain ideals (beauty, transcendent truth, and justice).

Polanyi did not stop at these observations. He used the concept of polycentricity as a tool particularly well suited for addressing the well-known socialist calculation problem (Mises [1922] 1981; Lange 1938). His arguments about the impossibility of economic calculation in a socialist system were closely related to Hayek's, yet they also benefited from the more general perspective provided by the concept of polycentricity. The market, he wrote, should be seen as approximating a polycentric system involving many agents who constantly adjust their behavior to the decisions made by others. Socialism implies the transformation of the system into a monocentric one. To make his point, Polanyi draws an analogy between scientists trying to discover the truth and entrepreneurs trying to discover the best way to make a profit. In some sense, the market can also be said to have an ideal, namely to deliver the optimal distribution of goods and the optimal production processes (i.e., to reach a Pareto equilibrium), and real markets always fall short of this ideal, as agents lack perfect information and human activities often involve externalities.

The socialist system is an attempt to reach (Pareto) economic optimum states faster and better than the market by means of a command-and-control strategy. That is supposed to reduce the misallocation of resources, something supposedly inherent and unavoidable in a polycentric market system. In other words, centralized socialism was expected to work better than the free market and to deliver faster economic growth. However, the Pareto equilibrium ideal is not easy to operationalize. First of all, preferences are subjective, and thus the demand for any good or service cannot be guessed from an outside vantage point. It is only revealed by the actual behavior of agents. Second, the amount of information required to manage all the production processes is enormous and cannot possibly be gathered and analyzed in a centralized fashion.

Consequently, in a monocentric-socialist system, the economic ideal can neither be derived nor imposed by central authorities. The system has to be allowed to move toward the "optimum" (ideal) by trial and error. In the same way that scientific progress cannot be guided by an authority (or by some rigid method), economic growth cannot be delivered using a command-and-control strategy.

> [S]elf-coordination of independent initiatives leads to a joint result which is unpremeditated by any of those who bring it about. Their coordination is guided as by an "invisible hand" towards the joint discovery

> of a hidden system of things. Since its end-result is unknown, this kind of co-operation can only advance stepwise, and the total performance will be the best possible if each consecutive step is decided upon by the person most competent to do so.... Any attempt to organize the group... under a single authority would eliminate their independent initiatives and thus reduce their joint effectiveness to that of the single person directing them from the centre. It would, in effect, paralyze their cooperation. (Polanyi 1962, 62)

This argument is obviously related to Hayek's, but Polanyi parted ways with Hayek in regard to one important aspect, namely, social justice. The difference is important for our current understanding of polycentricism. While Hayek (1976) argued that the concept of social justice is literally meaningless, Polanyi was concerned that the market system comes into conflict with certain religious or secular moral values and that it may actually generate incentives undermining moral behavior (Polanyi & Prosch 1975). This way of reframing the issue of market and morality by reference to individual behavior avoids the types of collectivist arguments that Hayek tried to debunk, while keeping the issue of morality on the table.

Nonetheless, Polanyi's epistemic brand of moral relativism also meant that he believed that any attempt to impose morality by a central authority was not likely to succeed. Moreover, as a side effect of centralized enforcement, such attempts would only diminish freedom. In this regard, Polanyi argued that socialism was not an economic theory, but a moral system and that its claims to scientific status were a rhetorical device meant to facilitate the spread of the system. To his economic critique of socialism Polanyi added the argument of moral relativism, that is, the idea that justice itself is an ideal one can only hope to approach by means of a gradual trial-and-error process. This idea, and Polanyi's concept of polycentricity in general, proved to be an inspiration in legal studies.

Lon Fuller (1978) remarked that many problems that judges are called to settle are polycentric in the sense that disputes often involve many decision centers and the network of cause-and-effect relationships is not understood very well. This makes any decision not only more difficult but also a source of unintended consequences. Therefore, attaining justice can be a remote ideal. Fuller argues that when problems appear in polycentric systems, many of the affected parties are not called to express their point of view in court.

> Many unrepresented parties are affected by the most conventional forms of litigation. Significant losses under a contract can close businesses. A criminal conviction can wreak havoc on an entire town.

> A finding of negligence, products liability or fraud can bankrupt a business and send shock waves throughout a large network of contracts. Likewise, a contractual dispute concerning the management of a city's water and sewage system could affect millions of people, without the justifiability of any issue being called into question. Constitutional law questions, human rights, and statutory interpretation routinely involve settling legal questions with incalculable implications for unrepresented parties. Furthermore, the fact that judicial decisions affect the rights of parties not before the court is not only a collateral effect, but a fundamental responsibility of the courts. They are to clarify the applicable law for all to follow. (King 2006)

Given this existing complexity, Fuller (1978, 354–55) asked the following question: Which issues should be settled in court, which should be settled by political means, and which should be left to the market? As a general rule of thumb, Fuller argued that when there are many parties affected by an issue, the probability of judicial error increases because of the impossibility of avoiding unintended consequences. For that reason, there should be a threshold, defined by the level of polycentricity in a system, beyond which courts should not rule, but leave the matter instead either to markets or to the political process. Polycentric nonjuridical processes could offer better solutions (Fuller 1978; King 2006).

In other words, Fuller makes out of polycentricity a key element (i.e., an operational criterion) in his system of justice. Both Polanyi's and Fuller's approaches highlight the contours and relevance of the concept. However, the work of Vincent and Elinor Ostrom that operationalized it and gave it empirical substance.

Political Economy, Polycentricity, and the Metropolitan Reform Debate

The Ostroms became interested in polycentricity in the 1960, in the midst of a heated debate on the nature and objectives of the public administration reform in American metropolitan areas. However, their work transcended the "metropolitan governance" debate and evolved in two directions: The first was foundational—a social theory or social philosophy of social order built around the concept of polycentricism. The second was empirical and applied, focusing on case studies that acquired new relevance once seen through the lense of polycentricity.

The conventional wisdom in the 1960s was that in order to be organized optimally a metropolitan region should be one large community, functionally integrated by economic and social relationships through a centralized administrative system. However, despite this normative ideal the functional unity of these regions was artificially divided administratively by what many authors considered to be ad hoc governmental units. A metropolitan region had, thus, no unitary administrative identity. Instead, there were many state and federal governmental agencies, special districts, counties, and cities. Each had its separate jurisdiction, in most cases overlapping and subverting other jurisdictions. Mainstream authors argued that such a state of affairs made efficient administration impossible. The disparate units acted autarchically and were thus unable to perform the functions they were meant to perform. Deprived of an overarching coordination center, each unit of local government acted in its own interest, with no regard for the public interest of the rest of the metropolitan community (E. Ostrom [1972] in McGinnis 1999b; Institute for Local Self-Government 1970). Out of this diagnostic grew an entire literature converging around the idea that the "problem of metropolitan government" was that "the multiplicity of political units" made governance in metropolitan areas "a pathological phenomenon." There were "too many governments and not enough government" and as a result, a "duplication of functions" with confusing "overlapping jurisdictions"—in brief, an "organized chaos." Interestingly enough, these arguments were, at a deeper level, similar to the traditional claims for the economic superiority of central planning over free markets.

Vincent and Elinor Ostrom and their associates responded by challenging one of the basic theoretical tenets of the "reformers." (For an extended discussion, see Aligica and Boettke (2009)—on which this section is based.) Their main argument pointed to the fact that the optimum scale of production is not the same for all urban public goods and services. That is to say, some services may be produced "more efficiently on a large scale while other services may be produced more efficiently on a small scale" (E. Ostrom [1972] in McGinnis 1999b; Oakerson 1999; Ostrom, Bish, & Ostrom 1988). Therefore, the emergence and persistence of multiple agencies interacting and overlapping, far from being a pathological situation, "may be in fact a natural and healthy one." This duplication is a natural expression of the fact that different services requires different scales to be efficiently provisioned and that principles of division of labor (such as cooperation and exchange) function in the public sector, too.

> Duplication of functions is assumed to be wasteful and inefficient. Presumably efficiency can be increased by eliminating "duplication of

> services" and "overlapping jurisdictions." Yet we know that efficiency can be realized in a market economy only if multiple firms serve the same market. Overlapping service areas and duplicate facilities are necessary conditions for the maintenance of competition in a market economy. Can we expect similar forces to operate in a public economy? (Ostrom and Ostrom 1965, 135–36)

The Ostroms explained that the variety of relationships between governmental units, public agencies, and private businesses, emerging, coexisting, and functioning in a public economy, "can be coordinated through patterns of interorganizational arrangements."

> Interorganizational arrangements, in that case, would manifest market-like characteristics and display both efficiency-inducing and error-correcting behavior. Coordination in the public sector need not, in those circumstances, rely exclusively upon bureaucratic command structures controlled by chief executives. Instead, the structure of interorganizational arrangements may create important economic opportunities and evoke self-regulating tendencies. (Ostrom and Ostrom 1965, 135–36)

The insights produced by applying the standard political economy perspective were remarkable and illuminating. Yet they were not considered analytically sufficient. In order to be adapted to a phenomenon that was, in the end, quite different from standard market-based phenomena, the political economy conceptual framework needed several adjustments. Certain concepts and insights derived from the private economy had a direct application. Others needed further adjustments. But one idea was clear: Once things are seen from the political economy perspective, there is no reason to assume a priori that competition among public agencies is necessarily inefficient (Ostrom, Tiebout, & Warren 1961; Wagner & Warren 1975; Bish 1971).

To advance in in the analysis it was not sufficient to note the differences between the metropolitan reform and political economy approaches to metropolitan governance and to suggest that one is better than the other:

> With basic differences in theoretical perspectives, scholars will adopt quite different orientations to their subject matter, will use different concepts and languages, and will pursue their inquiries in quite different ways. These differences will not be resolved by discussion and deliberation alone. Instead, . . . we can attempt to undertake critical tests

> where divergent theories imply contradictory conclusions. The theory that has the weaker explanatory capability presumably would give way in the course of time. (Ostrom and Ostrom 1965, 135–36)

The Ostroms suggested having an empirically grounded debate that went beyond ideological and theoretical parameters. What was required was to specify in empirical form the claims that otherwise remain implicit in the literature on metropolitan reform. Once the key propositions under consideration became plain, empirical analysis was possible. The strategy was then simple—pairing up propositions such as (1a) "Urban public goods and services are relatively homogeneous and similarly affect all neighborhoods within a metropolitan area" versus (1b) "Urban public goods and services differ substantially in regard to their production functions and their scale of effects." Or, (2.a.), "Urban voters share relatively similar preferences for urban goods and services" versus (2.b.) "Individuals with relatively similar preferences for public goods and services tend to cluster in neighborhoods; preferences will tend to be more homogeneous within neighborhoods than across an entire metropolitan area." It was a two-step approach. First, two sets of propositions were created. Second, the two parallel sets of propositions were matched, taking advantage of the empiric comparisons thus made possible (E. Ostrom [1972] in McGinnis 1999b, 148).

To explore the issues, a concrete empirical agenda was put together by the Ostroms and their team. One key theme of the metropolitan debate focused on how the size of the governmental unit affects the output and efficiency of service provision—that is, the impact of the size of a government producing a service. The Ostroms' team decided that instead of speculating, they should get out into the field and collect the data needed to measure the relationship. They attempted, first, to test the opposed theories of urban governance focused on the size of governmental units and, second, to focus on the number of such units in a metropolitan area.

Their studies on police services are in these respects exemplary. They began in Indianapolis, with a comparative analysis of independent, small police departments that served neighborhoods adjacent to and similar to those served by the larger Indianapolis City Police Department. The Ostroms then extended the study to the Chicago Police Department; the St. Louis metropolitan area; Grand Rapids, Michigan; and the Nashville–Davidson County area of Tennessee; and then replicated it in Indianapolis. They also tested for external validity, using a large survey of citizens living in 109 cities with populations of more than 10,000. The findings challenged the notion that larger urban governments produced superior public services: "The presumption

that economies of scale were prevalent was wrong; the presumption that you needed a single police department was wrong; and the presumption that individual departments wouldn't be smart enough to work out ways of coordinating was wrong," Ostrom wrote. On the whole, "polycentric arrangements with small, medium, and large departmental systems generally outperformed cities that had only one or two large departments" (E. Ostrom [1972] in McGinnis 1999b, 148; Ostrom, Parks, and Whitaker 1973c; 1978; Ostrom and Parks 1973a; 1973b; Bish 1999).

The result of all these efforts was not only solid empirical research but an entire new domain. It is in this context that the outstanding work on common pool resources was later to emerge, as well as the tools of institutional analysis that have become well known and a trademark of the Bloomington school (Sabetti 2011; Vanberg 2011; Kliemt 2011). But the most important thing for this discussion is that the inquiry into the two models of metropolitan governance and their policy recommendations revealed that the differences between the two were not simply theoretical and methodological. A deeper and more profound difference of vision (political economy vs. traditional public administration theory; individualism vs. holism) was revealed. The competing vision seemed to be defined by a paradigmatic pair of correlate concepts: "polycentricism" and "monocentrism." Exploring and understanding their nature and the differences between them emerged as crucial for the debate. Even more important, developing them and their implications was not a task of "normal science"—that is, an effort to apply an existing model or concept to an additional domain. Instead, the research required a change of paradigm. In following and articulating the Ostroms' logic, a new domain was to be defined. That required an new conceptual framework.

> By conceptualizing metropolitan areas as polycentric political systems, we were suggesting that a system of ordered relationships underlies the fragmentation of authority and overlapping jurisdictions that had frequently been identified as "chaotic" and as the principal source of institutional failure in the government of metropolitan areas. We identified a polycentric political system as having many centers of decision making that were formally independent of each other. A "system" was viewed as a set of ordered relationships that persists through time. (V. Ostrom [1972] in McGinnis 1999b, 53)

It is significant that the two notions defining the conceptual space are interlinked. That is to say, any approach to the study of polycentricity is also a study of monocentricity. Moreover, the relation is not only logical—the two being

logically correlated—but also empirical. "A predominantly monocentric political system need not preclude the possibility that elements of polycentricity may exist in the organization of such a system." Conversely, "the existence of a predominantly polycentric political system need not preclude elements of monocentricity from existing in such a system" (V. Ostrom [1972] in McGinnis 1999b, 52).

It was clear that reformers and the mainstream political scientists were missing something important by insisting that the fragmentation of authority and overlapping generated chaos. Patterns of order were present, and that become clear once appropriate theoretical lenses were used. The problem of polycentricity and chaos (defined as lack of order) and more precisely its elucidation was thus central to advancing the Ostroms' agenda. The challenge was to identify, chart, and analyze the patterns of order underneath the apparent chaos associated with polycentricity as a social phenomenon.

It became clear that at stake was nothing less than a theory of hidden order, a theory of an "invisible hand" directing the "social mechanism." If articulated, such a theory might be applicable to many instances of social order, in different arenas and at different social levels. The fact that polycentricity was applicable to a large range of social phenomena was foreseen by Michael Polanyi. That is to say, a discussion of polycentrism in political-administrative systems was only out of many possible ways to approach the issue, using an empirical example as a vehicle. If polycentric systems of government in metropolitan areas are just one case of polycentricism, if metropolitan areas are just one instance in which polycentric order may be detected, then that specific case could be used for a working definition or general account of the phenomenon. That is to say, polycentricity raises fundamental theoretical, empirical, and normative challenges that have ramifications well beyond the governance of metropolitan areas.

Specifying the Concept: The Ostroms' Perspective

In specifying the concept of polycentricity, the issue of power, more specifically its use and its monopoly, is a major element. One of the key features in defining a polycentric—or for that matter, a monocentric—order is the legitimate exercise of coercive capabilities. On the one hand, in a monocentric political system the prerogatives for determining and enforcing the rules are "vested in a single decision structure that has an ultimate monopoly over the legitimate exercise of coercive capabilities." On the other hand, in a polycentric political system "many officials and decision structures are assigned limited and relatively autonomous prerogatives to determine, enforce and alter legal

relationships" (V. Ostrom [1972] in McGinnis 1999b, 55–56). In a polycentric system no one has an ultimate monopoly over the legitimate use of force. The "rulers" are constrained by a system of rules whose ideal expression is the "rule of law." The factors creating and maintaining the system of rules may be wide-ranging, from cultural to a balance of power, from power bargaining and (self-)interest to norms and moral codes. Significantly, such factors may not be independent of the nature and function of the other elements defining the polycentric system.

The bottom line is that polycentric systems function under something close to (or tending toward) a "rule of law." That is why in defining a polycentric system the notion of "rule" is as important as "legitimacy," "power," or multiplicity of "decision centers." Ostrom, Tiebout, and Warren (1961) considered it the major functional principle behind the phenomenon. The multiplicity of decision centers was a meaningful way of defining polycentricity only under the assumption that a broad set of rules (even if informal and tacit) was in operation. There are many forms of organization that might seem analogous to a polycentric order. Yet they did not have the attributes associated with polycentricity if they lacked an encompassing system of rules that had substantial sway over the decision centers.

While exploring the meaning and conditions of polycentricity, Vincent Ostrom and his associates realized that the study of polycentricity (and even more precisely the problem of whether the government of a political system can be organized in a polycentric manner) had a considerable history. It was no historical accident that Alexis de Tocqueville made his observations about democracy and the invisible mechanisms of social order while studying America. According to Ostrom, the American Constitution could be viewed as an experiment leading to polycentricity. At he same time, federalism could be seen as one way to capture the meaning and to operationalize one aspect of this type of order. And, in light of that insight, polycentricity seems to be a necessary condition for achieving "political objectives" such as liberty and justice. The dispersion of decision-making capabilities associated with polycentricity, wrote Ostrom, "allows for substantial discretion or freedom to individuals and for effective and regular constraint upon the actions of governmental officials." As such, it is an essential characteristic of democratic societies (Ostrom 1972).

The historical and normative note is important. It suggests that if one is interested in the conditions preserving and enhancing the aforementioned "political objectives," one needs to better understand what makes polycentric systems so special. The conclusion was that a polycentric arrangement has a built-in mechanism of self-correction. Self-correction is the crucial functional

or operational feature of polycentricity that explains an important part of its performance.

> While all institutions are subject to takeover by opportunistic individuals and to the potential for perverse dynamics, a system that has multiple centers of power at differing scales provides more opportunity for citizens and their officials to innovate and to intervene so as to correct maldistributions of authority and outcomes. Thus, polycentric systems are more likely than monocentric systems to provide incentives leading to self-organized, self-corrective institutional change. (E. Ostrom 1998)

The study of the US constitutional experiment as an experiment in polycentricity leads to other interesting insights. For instance: if polycentric systems depend on the value and culture of the individuals creating them, then whether or not a significant number of individuals share or aspire to those values is critical for the operation of the system. Thus, the Ostroms' exploration led to the conclusion that the discussion on polycentricity is not just about multiple decision-making centers and monopolies of power. Such a discussion has unavoidably to deal with rules, constitutions, fundamental political values, and cultural adaptability in maintaining them.

Discussing polycentricity leads sooner or later to the issue of the spontaneous processes and spontaneous order. From the very beginning Polanyi used the term *spontaneous* as synonymous with polycentric. He implied that the attribute of spontaneity is, in a deeper sense, an additional defining characteristic of polycentricity (or at least something that is hypothetically related to it). In his attempt to advance a more robust concept of polycentricity, Vincent Ostrom ([1972] in McGinnis 1999b, 60) elaborated Polanyi's point. He explained, for instance, that spontaneity means that "patterns of organization within a polycentric system will be self-generating or self-organizing" in the sense that "individuals acting at all levels will have the incentives to create or institute appropriate patterns of ordered relationships." In a polycentric system, "spontaneity" is a function of self-organizing tendencies occurring, under specific conditions, at several different levels. Outlining these conditions is a further step in specifying polycentricity as seen from the Ostromian perspective.

The first condition for "spontaneous self-organization" is freedom of exit and entry in a particular system. The establishment of new decision centers under the existing rules must be easy to accomplish. If such nodes are blocked, then one cannot expect a polycentric order to emerge. Freedom of entry ensures the spontaneous development of the system (V. Ostrom [1972]

in McGinnis 1999b, 60). The second necessary condition is related to the enforcement of general rules of conduct. These are the rules that provide the legal framework for a polycentric order. "If individuals or units operating in a polycentric order have incentives to take actions to enforce general rules of conduct, then polycentricity will become an increasingly viable form of organization" (V. Ostrom [1972] in McGinnis 1999b, 60). Finally, the third condition is that spontaneity should be manifested as the revision of the basic rules that define the framework of a specific order. Individuals must be free not only to play the game within the given rules and have incentives to enforce those rules but also to change them. That alteration, however, should take place in an orderly way.

These three conditions imply two prerequisites. One is procedural. There should be rules on changing rules. The other is cognitive: a specific understanding of the relationship between particular rules and their consequences under given conditions. "If conditions were to change and a particular set of rules failed to evoke an appropriate set of responses, rules could then be altered to evoke appropriate responses" (V. Ostrom [1972] in McGinnis 1999b, 60). This has important implications for the relationship between spontaneous order and design. Learning from experience and the enhanced understanding that comes with it are the vectors of an ongoing process of knowledge integration in the institutional system and the prerequisites for adaptations to the changing environment. In other words, institutional design (seen as the application of our understanding of rules and consequences and the conditions that determine their interplay) is part and parcel of spontaneous order and not inimical to it. That is, design and spontaneous order are not irreconcilable. Design is possible (and takes place overwhelmingly) within the overarching rules and within the broader process of the ever-evolving spontaneous order. The connection between the two is given by the notion of knowledge and an entire set of correlate concepts such as learning (V. Ostrom [1972] in McGinnis 1999,b 60).

Finally, one of Ostrom's most interesting conjectures was that the structure and dynamics of a polycentric system is a function of polycentrism in the governance of the other adjoined systems. The basic social functions and institutional domains of a society can be organized in various degrees under a polycentric order: polycentricity in the structure of governmental arrangements, in economic affairs, in political processes, in judicial affairs, and in constitutional rule (V. Ostrom [1972] in McGinnis 1999b, 56; McGinnis 2005). The relationship between these domains is important for descriptive, analytical, and normative reasons, but one has to keep in mind a multiplicity of angles in approaching the issue. McGinnis's (2011) inventory of levels and

domains as seen from various angles is telling for the polymorphism of both the phenomenon and possible conceptual approaches:

> Multi-Level: Local, provincial, national, regional, global units of governance; Multi-Type: general purpose nested jurisdictions (as in traditional federalism) and specialized, cross-jurisdictional political units (such as special districts; Multi-Sectoral: public, private, voluntary, community-based and hybrid kinds of organizations; Multi-Functional: incorporates specialized units for provision (selection of goals), production (or co-production), financing (taxes, donors), coordination, monitoring, sanctioning, and dispute resolution. (McGinnis 2011, 171–72)

Ostrom thought that studying the cases of polycentric order (in economy, law, and politics) reveals that a polycentric order is more than just a series of different centers of decision operating in competition with each other in a specific domain or area. Polycentricity is a complex system of powers, incentives, rules, values, and individual attitudes, all combined in a complex system of relationships at different levels. One may detect very interesting dynamics at work. Market polycentricism seems to entail judicial polycentricism. Judicial polycentricism entails political polycentricism, and in its turn political polycentricism entails constitutional polycentricism. Accepting the existence of such a systemic logic, one may visualize the entire social system as defined by underlying currents originating in pulsating polycentric domains. Polycentric order in one area entails and produces polycentricism in other areas. A tension is created, pushing change in the direction of more nodes of decision-making.

However, at the same time, one can imagine monocentricity operating under a similar pattern. The result of the ongoing tension between the two principles is a dynamic, unstable coexistence. One area or domain opened to polycentricity encourages polycentricity in another area. One area or domain under monocentricity drives monocentricity in other domains. Capturing, conceptualizing, and analyzing the entire dynamics of the field of tensions and friction between monocentrism and polycentricity becomes important analytically. Thus, it is easy to understand why building the proper conceptual apparatus for this task was declared the priority of polycentricity scholarship. As Vincent Ostrom put it:

> Penetrating an illusion of chaos and discerning regularities that appear to be created by an "invisible hand" imply that the tasks of scholarship . . . will be presented with serious difficulties. Relevant events may

> occur without the appropriate proper names being attached to them. Presumably events implicated by definitions used in scholarship may deviate from conventions that apply to the use of proper names. Patterns and regularities which occur under an illusion of chaos may involve an order of complexity that is counterintuitive. (V. Ostrom 1972, 20)

Ostrom argued that the monocentric vision dominated political sciences for such an extended time because scholars missed the correlation between the concepts of polycentricity and monocentricity. A proper language and concepts needed to map, describe, and analyze polycentric systems were lacking, but even worse, the existent language in political science was embedded with a monocentric vision. Perceiving polycentricity through the conceptual lenses of a monocentric vision, using a vocabulary growing out of that vision, was doomed to distort and mislead the analysis. The conclusion was straightforward: the existent conceptual frameworks, and the associated vocabulary, and theories based on them needed to be reconfigured in ways that would make their limits and preconceptions explicit.

At the same time, the Ostroms were aware that conceptual development alone wouldn't lead far without an expansion of the empirical agenda. There was a tension and a trade-off between these two desiderata. The result was that the much-needed elaboration of a conceptual framework was stalled. And thus, although the point to which the concept was brought had considerable potential, it has yet to be theoretically explored. "Polycentricity" as developed by the Bloomington researchers is no longer a mere mixture of intuitions and functionalist descriptions. The Ostroms' work offers a clearly articulated reference point for further developments (Sabetti 2008; Sproule-Jones et al. 2008; McGinnis 2011). Mike McGinnis has recently synthesized the topic as follows: polycentricity is "a system of governance in which authorities from overlapping jurisdictions (or centers of authority) interact to determine the conditions under which these authorities, as well as the citizens subject to these jurisdictional units, are authorized to act as well as the constraints put upon their activities for public purposes." Based on that summary, let's take as a starting point the notion of polycentricity as developed by the Ostroms and try to take several steps further in exploring its conceptual space.

Related Concepts and Further Elaborations

Before any attempt to elaborate the concept of polycentricity, it is useful to revisit examples that illustrate the notion. While we consider these examples we also need to look at some references that, although they don't use

the term "polycentricity," do illuminate or emphasize phenomena akin to polycentricity.

Any list of real-world examples used at one point or another to exemplify or to illuminate polycentricity cannot omit the following: science (Polanyi 1951; Feyerabend 1975), representative constitutional democracy (V. Ostrom 1972; Wagner 2002), free markets (Polanyi 1951), and common law (Hayek 1973; Fuller 1978; King 2006). (It is noteworthy that the high regards Knight and Johnson have for democracy are vindicated from an Ostromian perspective, except that democracy in the latter view is worthy to the degree that it is an instantiation of polycentrism). The diversity of the phenomena on the list is evident. For instance, in some cases the decision centers are nonterritorial (they have overlapping jurisdictions), in some cases they are territorially delimitated, and in some cases they are both. Hence the underlying crucial question: Do all these phenomena indeed share some feature? Is that common element really something called "polycentricity"? Or are we talking about a series of overlapping "family resemblances"? Either way, even a mere list of phenomena that are suspected of polycentrism makes for a challenging research agenda.

To this list we should add examples of notions that are related, in the sense that they point to processes related to polycentrism as defined in the Polanyi-Ostrom tradition. These are notions that, once defined and elaborated, display many features associated with polycentricity (but also some significant differences): polyarchy (Dahl 1971), multiplism (Lindblom & Woodhouse 1993), market-preserving federalism (Weingast 1995), and federation of liberty (Kukathas 2009).

A final item on the list of phenomena and notions that are (or could be) associated with the themes of polycentricity and which deserve a special note is anarchy as a social phenomenon (Tullock 1972; Stringham 2005; Powell & Stringham 2009). This attention is needed because there is a potential for confusion between the two ideas. The best-known literature on anarchism (from Godwin to Rothbard) is *normative*. These normative theories have been accused of being impossible to realize in practice (Nozick 1974; Buchanan 1975). The field of *positive* anarchy (as opposed to the normative strand) emerged with the goal of testing scientifically the validity of Nozick-and Buchanan-like intuitions and, consequently, gauging the general importance of institutional enforcement for the creation and maintenance of social order in large groups of quasi strangers, as opposed to the culturally mediated spontaneous order (Boettke 2005; Coyne and Lemke 2011).

The preliminary conclusions of such "positive anarchy studies," especially the empirical efforts, are threefold. First, just as there are many varieties of

states, there are also many possible varieties of anarchic systems, based on different rules and modes of enforcement of those rules, and these varieties are widely divergent in terms of peacefulness and security. Second, there are cases in which the Hobbes and Buchanan form of pessimism about peaceful anarchy is unjustified, as the emergent social order is preserved in the absence of a monopoly of force or even, in certain cases, *despite* the existence of a monopoly of force acting contrary to the preservation of peace and failing to promote prosperity. Third, not all anarchic organizations are peaceful and promote prosperity; in certain cases the Hobbes-Buchanan intuition proves entirely correct (Aligica and Boettke 2009).

Positive anarchy studies overlap to a certain extent with the literature on polycentricity, as anarchism involves by definition multiple centers of decision-making. The connection between the two fields has two aspects. On one hand, one can view some of the positive anarchy studies as studies of the dangers of polycentricity, of how multiple centers of decision-making can degenerate into social chaos. Although anarchy presupposes multiple centers of decision-making, not all anarchic systems are instances of polycentricity. It is important to keep in mind that polycentricity involves multiple centers of decision-making *within an accepted set of rules*. In other words, only certain variants of anarchy are polycentric, as these variants are peaceful precisely because rules exist and function (albeit in the absence of a single enforcer having a monopoly on force). In turn, the concept of polycentricity provides the theoretical branch of positive anarchy studies a comprehensive way of modeling the boundary between peaceful anarchy (i.e., polycentricity) and chaotic and violent anarchy.

On the other hand, one can see positive anarchy studies as studies of the most fundamental aspects of polycentricity, namely, how social order originally emerges out of the interactions of individuals. While one can, of course, study polycentric institutions that are already strongly embedded in a system of rules, the analysis is not really pushed to its natural end unless we understand how and why these systems of rules came about. Moreover, and most importantly, such understanding is not just of historic interest. Just as in biology ontogenesis is not just the process by which an adult living being develops from a single cell, but also the day-by-day process at cellular the level by means of which the living beings maintains their structural integrity by being constantly rebuilt, positive anarchy studies describe a form of social ontogenesis—the historic process by which the complex social order of contemporary societies developed is also an ongoing, pervasive process responsible for the day-by-day functioning of those complex social orders. These original social forces are still present, and they constitute the raw material out of which the

complex social order is built, and they are merely constrained and modeled by modern culture and institutions. For these reasons, positive anarchy studies provide important data for understanding contemporary social phenomena.

All of the above points allow a better understanding of polycentricity. Polycentricity emerges as a nonhierarchical institutional and cultural framework that makes possible the coexistence of multiple centers of decision-making with different objectives and values, and which sets the stage for an evolutionary competition between the complementary ideas and methods of these different decision centers. The multiple, overlapping centers of decision-making may act on the same territory or may be territorially delimited in a mutually agreed fashion. With the above overview in place, we are now in a position to restate an important point. Implied in the effort to elaborate the concept of polycentricity is the crucial assumption and expectation that it provides a unified conceptual framework for analyzing and comparing different forms of social self-organization as special cases of a more general evolutionary phenomenon. This phenomenon is manifested in social groups and networks made up of different kinds of actors (from scientists to entrepreneurs to politicians to judges to urban planners to military leaders) and relative to different kinds of overarching goals (such as truth-seeking, maximizing economic profits, gaining and maintaining political power, seeking justice, or maintaining social order). Understanding these social phenomena as special cases of polycentricity may make it easier to draw informed analogies from one field to another.

Moreover, it may be the case that, as the Ostroms' conjecture suggests, in the real world many of these different cases of polycentricity are not independent of each other but in constant interaction. Thus, the concept of polycentricity may provide a better foundation for understanding the interactions between, say, economic order and democratic order, and for analyzing possible social changes (such as the possible transition from a market-based democracy to a centrally planned dictatorship, Hayek's well-known "road to serfdom"). Thus, Polanyi's and the Ostroms' original goal in defining the concept—the facilitation of useful and productive analogies among various cases of spontaneous order—can be extended. In the end, whether or not all or only some of the above examples, and others like them, will be accepted as instances of polycentricity depends in large measure on (*a*) whether the polycentric conceptual framework provides useful insights about their functioning and, conversely, (*b*) whether they in turn provide useful insights into other already accepted cases of polycentric phenomena. The bottom line is that, at this point, the literature has not yet reached a sufficiently robust and rigorous level of analytical development for such questions to be constructively

addressed. This is the context in which one should consider our subsequent goal, that is, to move closer to an analytical development of the concept able to serve such investigations.

Polycentricity: Conceptual Structure and Boundaries

The preceding brief overview of potential examples of polycentrism, as well as of related notions, leaves us in the position to ask again whether it is possible to identify a core common element. The end of the preceding section outlined a basic conceptualization of polycentricity as it emerges from the assumption that the examples provided do indeed share common features. Let's push the matter further. Although several directions of development are possible, it is natural to use the one outlined by the Ostromian perspective.

The fundamental dilemma in elaborating a concept for operational and analytical purposes is whether one is dealing with "core elements" or with "family resemblances" or with neither. In most cases involving complex notions, such as those used to address problems in social science, it is difficult to define a concept in the traditional Aristotelian genus-differentia fashion. On the other hand, Wittgenstein's "family resemblance" approach ([1953] 1999), based on the idea that various empiric instances of a concept may not all share a set of fundamental "essential" properties, offers no intrinsic criterion for establishing a concept's border, a criterion for keeping the concept from becoming utterly vague. This is when the solutions offered by Gerring (2001) and Goertz (2007) become important. First of all, they provide a formalized approach to the issue of family resemblances, allowing researchers to map exactly how various instances of a concept morph from one to another as certain attributes change. Second, Gerring (2001) provides several pragmatic criteria for establishing the legitimate boundaries of a concept: resonance and relevance, parsimony, coherence and boundedness, commensurability, and operationalization.

Goertz (2007) develops a simple, yet powerful, framework for refocusing the analysis from difficult–to-measure attributes toward more clear-cut indicators. A concept is defined by means of its attributes (basic features), and those attributes are further explicated by means of more detailed empiric indicators. Goertz thus proposes a three-level framework for concepts (2007, 50–53). At the first level is the *concept* we are trying to define, in our case polycentricity. The second level contains the *attributes* in terms of which we are defining the concept. In our case, these are the basic features of polycentricity outlined by the definition in the preceding section, features emphasized by the Bloomington school, namely (1) many overlapping centers for decision-making, (2) a single

system of rules (be they institutionally or otherwise enforced), and (3) a spontaneous social order as the outcome of an evolutionary competition between different ideas, methods, and ways of life. The third level contains *indicators* with which we make the definition more operational and empirically powerful. The possible values of those indicators are incorporated in a general logical formula involving both conjunctions and disjunctions. (The traditional Aristotelian approach allows only the conjunction of attributes/indicators, hence its limitation.) This logical formula opens the path to an analytic, rigorous definition of the concept.

We may now make a step further and try to determine the logical structure of polycentricity in terms of deeper indicators, rather than just in terms of the three basic attributes. The output of this logical analysis is the ability to map the conceptual space of different kinds of (hypothetical or real) polycentric systems. In order to accomplish this step, we need to perform an initial analysis of the candidate cases for polycentricity, based on the conceptual guidelines emerging in the previous discussion. The following set of features summarizes the Bloomington school's perspective on polycentricity (note that this delineation is tentative and that alternatives are possible): many centers of decision-making; ordered relationships that persist in time; many legitimate enforcers of rules; an over-arching system of rules; overlapping centers of power at different organizational levels; spontaneous order resulting from free entry and exit; an alignment between rules and incentives (rules are considered useful); and public involvement in rule design (rules about changing rules, connection between rules and consequences relatively transparent). In order to encompass a more general perspective, one needs to further elaborate the concept.

As far as our analysis of polycentricity is concerned, we have to decide whether the candidates for polycentricity mentioned in the previous section (municipal governments and urban networks, science, representative constitutional democracy, free markets, common law) should indeed be classified as such. The only way to approach this determination is treat the examples *as if* they truly are cases of polycentricity and see what happens. In other words, we should see (1) whether the resulting concept has counterintuitive or objectionable consequences and (2) whether it provides us with useful insights into the workings of the phenomena it is meant to capture. As we shall see, the resulting concept does indeed offer intriguing insights, for instance, into the conditions under which polycentric order breaks down (into either authoritarianism or violent chaos). Moreover, it allows us to better understand the manner in which spontaneous order phenomena fit within the larger framework of social order, that is, how such phenomena interact with other social phenomena (be they polycentric or monocentric). Thus, there are solid grounds

to consider that the examples are indeed different manifestations of the same general phenomenon of polycentricity. Finally, there are other potential examples, such as international law, which have not been considered, but which nonetheless seem to fit the definition of polycentricity. Thus, the resulting concept seems to have traction outside the original empiric cases used in its creation.

The first step in concept design is to map more explicitly the detailed attributes and indicators characterizing the different paradigmatic cases of the phenomenon (Gerring 2001; Goertz 2007). This allows us to determine the necessary and sufficient conditions for polycentricity and to detail the family resemblances. In the previous sections we have already presented insights about what attributes are relevant and why. We are now building on these insights. Analyzing the real-world possible examples of polycentricity mentioned in the previous section according to those attributes leads to a tentative synthetic picture of the cases.

The result of this analysis can be summed up as follows. Polycentricity has three basic features that are to be explored in more detail in the following way: (1) The *multiplicity of decision centers* is analyzed in terms of those centers' ability to implement their different methods in practice (what we call the "active exercise of different opinions"), in terms of the presence of autonomous decision-making layers, and in terms of the existence of a set of common/shared goals. (2) The institutional and cultural framework that provides *the overarching system of rules* defining the polycentric system is analyzed in terms of whether the jurisdiction of decision centers is territory-based or superimposing, in terms of whether the decision centers are involved in drafting the overarching rules, in terms of whether the rules are seen as useful by the decision centers (regardless of whether they are involved in their drafting—i.e., the alignment between rules and incentives), and in terms of the nature of the collective choice aggregating mechanism (market, consensus, or majority rule). (The idea is that the general rules cover all subunits within a polycentric system. But that does not mean that the many subunits in a polycentric system all have the same rules regarding the relevant action situations.) (3) Finally, the spontaneous order generated by evolutionary competition between the different decision centers' ideas, methods. and ways of doing things is analyzed in terms of whether there exists free exit, in terms of whether the relevant information for decision-making is public (available to all decision centers equally) or secret, and, finally, in terms of the nature of entry in the polycentric system—free, meritocratic, or spontaneous. That is to say, in case of "free entry" a decision center can *decide* to enter the polycentric system, and existing decision centers cannot prevent it from doing so, while

in case of the "spontaneous entry" no formal decision is involved—either on the part of the newcomer or of the existing decision centers—but the entry happens naturally and more or less unavoidably).

The idea of "an overarching system of rules" deserves further clarification. We have already summarized in the previous section the Ostroms' analysis of the system of rules, an analysis elaborated in the context of the debate about the meaning of federalism and the nature of metropolitan governance. At this juncture, another point should be added. The idea of an "overarching system of rules" has the function of an operational criterion that distinguishes between the members of a polycentric system and its outsiders. Outsiders are agents who are not subjected to the same system of rules as insiders. This might be the case by design, with a clear functional role in mind (e.g., it creates the possibility of impartial arbiters), or it may be the result of failure and systemic imperfections (e.g., due to outsiders' lack of commitment and will, their institutional inability to integrate, or the inability of enforcers to integrate them). The outsider might have additional rights (as in the case of an arbiter) or fewer rights than the members (as in the case of an agent that fails to integrate and commit to the system of rules, which can bring various disadvantages). In a polycentric system one may be a outsider to an unit but insider to another and thus ultimately part of the overarching system.

This idea of identifying the members of a polycentric system based on the broad system of rules to which they are subjected should be seen in direct relationship with the Institutional Analysis and Development (IAD) framework (Ostrom 1990; 2005; see chapter 3). According to the "institutional factors" component of this framework, the institutional positions (or roles) can be identified by looking at how the rules regulate access and other rights to resources and information. That process not only creates structures of authority but at the most basic level separates insiders from outsiders. In addition, one of the important tasks in such an approach is to identify nested structures of authority. These nested structures correspond to the relationships between different polycentric systems that coexist and interact. Thus, when one identifies the outsiders of a polycentric system, especially those that act as outsiders because they have additional rights, one often identifies the connection points between different polycentric systems. For example, the judge in a commercial dispute can be seen as the connection point between two polycentric systems: the market and the juridical system. Last but not least, it is also important to mention that when we refer to the members of a polycentric system, we mean not flesh-and-blood individuals but institutional roles within the system (i.e., the institutional rules consisting of a bundle of rights and obligations attached to an individual). This is noteworthy because the same

individual may act in different circumstances and at different moments as part of different polycentric systems.

With this catalogue of relevant attributes and indicators in place, we are in the position to analyze each candidate for polycentricity to see how it fares in terms of each characteristic. The most important task is to define tentatively the necessary conditions for polycentricity, that is, indicators that are found in all cases:

- Active exercise of diverse opinions and preferences (denoted "P_1" below). "Active exercise" means that the opinions (methods or ideas about how to carry out an action) are implemented by at least one decision center, rather than just being announced (i.e., existing merely as a proposal or a hypothesis).
- Incentives compatibility, the alignment between rules and incentives (P_3). The rules are considered useful by the agents subjected to them, and the consequences of the rules are relatively transparent. If the alignment between rules and incentives is very limited, the case is less likely to be an instance of polycentricity, even if a multiplicity of decision centers actively exercise their opinions and preferences (as we shall see below, this corresponds to a case of polycentricity degenerating into violent anarchy).

These two essential conditions for polycentricity are in line with the Ostromian, Bloomington school definition we have already presented in a previous section. In other words, although the Ostroms focused on a rather small number of cases, they developed a definition that is of far greater generality than one might expect.

An important aspect of defining polycentricity is the problem of decision-making levels. One could easily make a distinction between hierarchical and nonhierarchical cases, that is, structures in which *prima facie* there are multiple layers of decision-makers and structures in which there is a loose ensemble of decision-makers. In this vein, one could legitimately view a supposedly hierarchical polycentric system as a bundle of two or more nonhierarchical polycentric systems. Here the concept of "subsidiarity" may provide help. Thus, we suggest that autonomous decision-making layers are also part of the essential attributes of polycentricity:

- Autonomous decision-making layers (P_2). The different overlapping decision centers make operational decisions autonomously from the higher level.

Hierarchy in polycentricity is definitely more complex than this (see, for instance, the problem of overlapping and nestedness in Sproule-Jones 1993). However, the lack of steep and intrusive hierarchies coupled with "subsidiarity"

rings truer than potential alternatives. But one should recognize the ambiguities and complexities involved, especially because an intriguing point about polycentric systems is the fact that rule enforcers are in many cases outsiders (a different type of agent), and thus a polycentric (sub)system depends either on the functioning of another system or on recognized mutual interest.

Once the core area has been outlined, we move to the differences between the various instances of polycentricity. A tentative list such as the following advances the argument by highlighting nonnecessary conditions and thus maps varieties of polycentricity. First, related to *decision centers and how they work*:

(A_1) Common/shared goals and (A_2) individual goals.

To these conditions one should add P_1 and P_2 conditions:

(P_1) Active exercise of diverse opinions and preferences and (P_2) autonomous decision-making layers.

Second, related to *the characteristics of the institutional/cultural framework (the overarching system of rules)*:

(B_1) Territorial jurisdiction of decision centers or (B_2) nonterritorial jurisdiction of decision centers.
(C_1) Agents directly involved in rule design or (C_2) rules designed by outsiders.
(D_1) Consensus or (D_2) individual decisions or (D_3) majority rule

To these conditions one should add the P3 condition:

(P_3) Incentives compatibility: alignment between rules and incentives

Last but not least, *related to the spontaneous order process—how the mutual adjustments and evolutionary competition works, and how information flows in the process*:

(E_1) Free entry or (E_2) merit-based entry or (E_3) spontaneous entry.
(F_1) Free exit or (F_2) constrained exit.
(G_1) Public information or (G_2) private information.

We have now the elements needed to articulate a logical structure of polycentricity (fig. 2.1).

$\underbrace{P_1 \,\&\, P_2 \,\&\, (A_1 \# A_2)}_{\text{multiplicity of decision centers}} \,\&\, \underbrace{P_3 \,\&\, (B_1 \# B_2) \,\&\, (C_1 \# C_2) \,\&\, (D_1 \# D_2 \# D_3)}_{\text{insitutional/cultural framework (overarching system of rules)}} \,\&\, \underbrace{(E_1 \# E_2 \# E_3) \,\&\, (F_1 \# F_2) \,\&\, (G_1 \# G_2)}_{\text{spontanous order, evolutionary competition}}$

FIGURE 2.1 The logical structure of polycentricity

Symbols key:
= Or (Exclusive)
& = And

If one takes as parameters the features used in our tentative analysis, the logical structure derived from the paradigmatic cases considered allows for 288 possible types of polycentric systems (there are 288 possible combinations of the basic indicators permitted by the above logical formula). Needless to say, as in any formal typology, some of combinations exist, while others are purely conceptual and hypothetical. As is true in any typology of this sort, it remains open to readings in which the accent is put on the *degree* in which polycentricity is present, as opposed to absolute presence versus absolute absence. In addition, it is important to remind readers that even if one does not subscribe to the approach outlined (be it on logical grounds or because of the key attributes and indicators selected), any alternative will come sooner or later to deal with the same descriptive and analytical structure. One cannot avoid the selection of certain attributes from a rather well-defined set and cannot avoid the logic of necessary and sufficient conditions. When all's said and done, the current exercise retains its illustrative and propaedeutic virtues even if elements of the construction or the use of logical operators may be a matter of debate.

One of the most interesting applications of this approach is to explore the pathologies and breakdown of polycentric systems. If one accepts outline of conditions presented above, there are nine fundamental ways in which polycentricity may break down:

- Multiplicity of decision centers breakdown:
  - Non-P_1: active exercise of diverse opinions eliminated
  - Non-P_2: the system becomes hierarchical
  - Non-(A_1 or A_2): the activity becomes considered meaningless (the goals disappear; the polycentric system disappears because it no longer serves a function)
- Overarching system of rules breakdown:
  - Non-P_3: rules no longer considered useful by agents
  - Non-(B_1 or B_2): agreement about territoriality disappears (decision centers fight over territorial authority)

- Non-(C_1 or C_2): no agreement about rule design (rules are no longer considered legitimate, and their enforcement becomes difficult or impossible)
- Non-(D_1 or D_2 or D_3): the rule of law breaks down into power-based decisions (authority rule)

- Spontaneous order breakdown:
  - Non-(E_1 or E_2 or E_3): no entry (monopoly)
  - Non-(F_1 or F_2): the constituency of the system is unclear (some decision centers accept X as part of the system while others do not)
  - Non-(G_1 or G_2): no available information relevant to decision-making (random decisions, relation between consequences and rules unclear, spontaneous order turns into drift).

Polycentricity may give way either to a monocentric system (authoritarian or not) or to chaotic, violent anarchy. It is clear that certain versions of polycentricity are more vulnerable to these breakdown conditions than others. It appears that the following attributes make the polycentric system more vulnerable: A_1, B_1, C_2, D_3, E_2, F_2, G_2. These attributes are closest to the corresponding breakdown condition described above. For example, if rules are designed by outsiders (C_2), it is more likely that they will be seen as illegitimate. Likewise, majority rule (D_3) is closer to power-based decisions than consensus or individual decisions; a system based on shared goals (A_1) can lose meaning (if the sense of common purpose is lost) more easily than one based on individual goals. Needless to say, differences in the relative robustness of systems may prove important for the field of positive anarchy studies, as peaceful anarchy may come about from violent anarchy via the same attributes. For example, peaceful anarchy may appear as interacting agents develop a sense that certain rules are mutually useful (Leeson 2005; 2009).

The implications of this analysis go even further. Proposed reforms of existing polycentric systems often involve changing the value of one of the six nonnecessary attributes. For example, critics of the free market system often argue that in the case of certain goods or services (such as education or healthcare) the D attribute should be changed from D_2 to D_3 (i.e., individual decision-making should be replaced by majority rule). Similarly, in regard to other issues such as banking, libertarians argue that the existing D_3 attribute should be changed to D_2 (i.e., interest rates should be determined not by the central bank but by individual banks). Advocates of market regulations, such as licensing, propose that the E_1 attribute of the market be changed to E_2 (i.e., free entry should be replaced by merit-based entry). As yet another example, advocates of human rights propose that the B_1 attribute of international law

be changed to B_2 in certain instances (i.e., that certain rights should be independent of territory). Finally, there has been a historic transition of the juridical system from C_1 to C_2, marking a separation between the juridical power and the legislative and executive powers (i.e., ideally, the rules that constrain executive power are no longer designed by the executive itself), and the separation between constitutional rules and common law. Similarly, it is usually considered undesirable when firms and corporations determine, mainly via lobbying, market regulations; that is, the C_2 attribute of the market (agents are not involved in rule design) is considered desirable, and, historically, the transition from mercantilism to modern capitalism may be seen as a transition from C_1 to C_2. However, in the case of democracy, the transition from C_2 to C_1 was of crucial importance (citizens are no longer completely separated from the process of rule design), and C_1 can be considered the essential attribute of a democratic system (and, as a parenthesis, a key element in the Knight-Johnson interpretation of democracy).

To sum up, the framework provided by a conceptualization and analysis on the lines introduced above has the potential to illuminate not only polycentric systems but also the design of social systems in general. The concept of polycentricity, as developed in the Polanyi-Ostrom tradition and elaborated above, is not only useful as an analytical framework but also for drawing analogies between different complex systems. At the same time, it makes possible interesting analytical and normative speculations based on the comparative analysis of different forms of polycentric arrangements and governance systems.

Thus, a polycentricity framework of description and analysis on the lines defined above provides the beginning of an analytical structure for the study of complex social phenomena. However, there is more to it: it provides a method for drawing *analogies that are not ad hoc* between different forms of self-organizing, complex social systems, as well as a means to bolster our institutional imagination. These analogical insights have to be tested, and *if* many of them turn out to be correct, *then* the concept of polycentricity is indeed useful in additional ways. In light of previous work by the Bloomington scholars and others, it seems likely that it can generate interesting new lines of inquiry, as well as shed new light on existing debates. In the end, if this approach is correct, one can identify not one but many multifaceted forms of polycentricity. A goal of this approach is improve the functioning of different configurations and complex social systems by means of drawing analogies between them. Different complex systems have weak and strong points. The challenge is how to transfer the strengths from one area into another in order to bolster its weak points. The classic approaches have usually drawn upon analogies with markets (a technique criticized by Knight and Johnson); for example,

the Ostroms' idea of market-like interorganizational arrangements or of public entrepreneurship brings market-like attributes to public administration; Hayek's emphasis on common law and Weingast's market-preserving federalism bring market-like attributes to the evolution of legal systems. On the other hand, most advocates of market regulation propose to make the market more like democracy. Unfortunately, most of these arguments lack an overall supporting conceptual framework. At minimum one needs a more systematic approach to drawing analogies between complex institutional systems. Polycentricity can be utilized as a conceptual framework not only for drawing inspiration from the market, but also from democracy or any other complex institutional arrangement incorporating the simultaneous functioning of multiple centers of governance and decision-making with different interests, perspectives, and values.

The "Second-Order Task" Revisited

An analogical and comparative look at democracy and markets as coexisting and competing institutions marks our return to the origins of the present discussion. As a reminder, the preceding overview of polycentrism has as a background the Knight and Johnson–inspired (2011) framing of the "second-order tasks" of institutional arrangements. The question, however, is neither conceptual framing nor general research directions emerging from it. The question is in what measure Knight and Johnson's assessment of democracy and, implicitly, of decentralization is warranted. The preceding discussion of polycentrism suggests that a decentralized formula, on the lines sketched by the Ostroms, may be an alternative, an encompassing solution that better satisfies the criteria articulated in *The Priority of Democracy*.

Such a thesis, assuming that is valid, doesn't detract from the merits of democracy and what Knight and Johnson (2011) have written on it. The issue is whether democracy has the priority granted by the Knight and Johnson thesis. Is it indeed an institution uniquely able to coordinate "the ongoing process of selecting, implementing and maintaining effective institutional arrangements"? Is it an unparalleled institutional arrangement able to "establish and maintain an experimental environment that can enhance our knowledge of the relationship between different institutional forms and the conditions under which they produce good consequences"? (Knight and Johnson 2011, 19). Or are there are other ways of conceptualizing the structures and processes by which second-order problems can be responded to? Knight and Johnson assert that reflexivity is the most important element in the normative priority of democracy. The reflexive structure of democratic decision-making

is, they write, "the distinctive benefit of this centralized form of coordination." They reject alternative institutional forms both decentralized and centralized because they lack precisely this feature (or they do not have it sufficiently). Yet the account given in this chapter indicates that the decentralized system of polycentricity has the features needed to carry out second-order tasks.

First of all, a polycentric system is the embodiment of institutional pluralism. Although it is essentially a decentralized structure, it doesn't preclude elements of centralization. The two principles operate in tension, but one does not exclude the other. In a polycentric system diverse institutions, decision centers, and units coexist in dynamic, interdependent (both competitive and cooperative) ways. The strengths and limits, the advantages and disadvantages of each institutional arrangement (be they centralized or decentralized) are tested, captured, channeled, moderated, reinforced, and so on, by an unending and mostly spontaneous process of reciprocal counterbalancing. Ongoing adjustment, bargaining, and communication take place between the diverse units and decision centers, at various levels and scales. Polycentricity is thus intrinsically dynamic and pluralist.

The pluralism of institutional forms ensures a variety of responses to a variety of circumstances. If experimentalism is a central issue, as Knight and Johnson (2011, 6) argue, and if "institutional experimentation is a useful instrument for generating knowledge about the effectiveness of institutions in various contexts," then one can hardly think of a better arena for experimentation than polycentricity. It is a system of reciprocal monitoring and assessment in dynamic interdependence. The various units and decision-making centers depend on each other or compete with each other or both. They must stay informed about (and to be prepared to adjust to) the evolutions of other units. A system of "reciprocal monitoring and assessment for the range of institutions available in society" is thus put spontaneously in place, but in addition a system of broad checks and balances emerges. The viability of institutional choices is constantly checked by the very mechanics of competition and cooperation operating naturally within a polycentric system. Deliberation and assessment are reinforced by a wide range of paraphernalia: price signals, voice, individual exit, Tiebout effects, secession, loyalty, contestation, and so on. In brief, reflexivity is a systemic feature in a more diverse, broad, intense, and complex way than in any possible form of democracy (and for that matter, market), and a strong feedback function is ensured via multiple and diverse channels.

In addition, in a polycentric system democracy is always at home, and a polycentric is able to retain all the major features of democracy as described and praised by Knight and Johnson. Democracy may function as a part of

polycentric system in the typical form or as a principle induced in the internal operations of units, institutional domains, and decision centers (Wagner 2011; 2007). It may also operate at various levels and between various units and decision centers. Democratic institutional arrangements can better monitor and assess their own performance when they are part of a polycentric system. Other institutions, such as markets, provide signals, checks, and balances that shape the dynamics, deliberation, and decision-making in the overall adjustment of democratic centers' operation and structures. Similar considerations apply to markets. If one of the intrinsic problems of the market is its lack of reflexivity regarding the very institutional structure needed to support its effective functioning—or as Knight and Johnson put it, "the communication between actors is about particular exchanges and not about the general functioning of the market itself"—then polycentricity offers more robust and reliable meta-level mechanisms to maintain and enhance markets. In brief, it seems that by all accounts, polycentricity retains the value of democratic feedback, coordination and legitimization, and even more, it enhances them.

The Knight and Johnson argument brings to the fore the essential but underexamined matter of the conditions required for institutional performance. Many institutional analyses, they warn, focus exclusively on the structure and operations of the institution of interest (or its ideal model), neglecting the fact that "any form of institution will operate effectively and will generate normatively attractive outcomes only under particular . . . conditions." However, the effectiveness of institutions is "a function of the extent to which these conditions in fact obtain" and "may well be a function of social and cultural norms that characterize any particular society" Knight and Johnson 2011, 6). Therefore, a systematic analysis of the preconditions of effective performance of an institution should be mandatory in any institutional analysis. Accordingly, Knight and Johnson investigate the conditions required by both markets and democracies for their effective performance in first- and second-order tasks. Their assessment of second-order tasks makes possible a comparison with the conditions revealed in our overview of polycentricity.

Prima facie observation leads to the conclusion that the sheer combinatorial number of features makes polycentricity look flexible, adaptable, and viable, requiring a less stringent environment for effective functioning. The preconditions for a functional polycentricity appear to obtain more easily than the preconditions for functional markets and democracy. A functional polycentric system can grow and persist within a larger range of options and scenarios than efficient markets or a fully functional democracy. Moreover, one cannot avoid the insight that our success in creating markets and democracies may be in large part conditioned by the degree of polycentrism of the social

environment in which their specific institutional arrangements are embedded. This polycentric social environment may be a significant factor in the genesis, performance, and explanation of democracies and markets.

That is to say, markets, democracies, and polycentricities are the result of a combination of spontaneous evolution and human deliberation and design. Yet polycentricity seems to have an unmistakable preeminence, not only in a realist view that acknowledges the social fact of its existence and specific nature, but also from a normative perspective. Institutional theory, historical observations, and combinatory calculus suggest that an approximation of "polycentrism" may be a viable alternative to Knight and Johnson's "democracy" as an encapsulating institutional framework able to solve second-order tasks.

In addition, let us note that following the Ostromian perspective, one may make a step further to what McGinnis calls—following insights sketched in V. Ostrom (1998)—a "third-order problem." The problem is whether or not the institutions set up to solve the first two tasks "do so in a way that tends to instill in the participants a set of moral values and practical incentives that support the continued operation of these same institutions. This test is likely to be failed if democracy is interpreted as centralized and if citizens do not learn practical skills of self-governance but instead come to rely on representative elections" (McGinnis 2012). In the end, polycentricity seems to display a unique combination of, on the one hand, spontaneous features of order and, on the other hand, elements that make room for deliberation, design, and relative control. The two aspects in conjunction make it a second-order mechanism able to lead via reflexivity and self-correction to better performance of the system, and a precondition for a constructive approach to the third-order problem. Markets are needed for efficiency, democratic arrangements for the effective governance of markets according to criteria and values other than efficiency, but polycentrism is needed for both to be fully functional and sustainable.

All this may sound counterintuitive. Polycentricity, even more than other decentralized systems, looks intricate, difficult to handle, and less prone to control. In comparison with the simplicity and clarity of the mainstream models of markets or democracy, polycentricity seems a highly wrought system, full of combinatorial possibilities, polymorphic, and difficult to comprehend in its multiple facets and metamorphoses. However, in many respects these are precisely the attributes noted by Hayek when he invited social scientists and policymakers to assume a humbler attitude about their ability to grasp the complexity of social order emerging from human intentions. These complex decentralized systems emerge in time, shaped by their evolutionary logic and historical accidents punctuated by human deliberation, strategies, and

blueprints, and it is a matter of pragmatic realism to acknowledge the cognitive and practical limits of what one can understand and control in such systems.

The Ostromian theme of polycentrism is thus consistent with a powerful intellectual tradition that has consolidated its distinctive domain at the intersection of social sciences and social philosophy. This tradition evokes, as Kukathas (2009, 3) put it, a vision of "a society of societies which is neither the creation nor the object of control of any single authority; though it is a form of order in which authorities function under laws which are themselves beyond the reach of any singular power." As its instantiation in polycentric institutions demonstrates, this is a vision of an open, evolving, pluralist order. The overlapping jurisdictions and multilevel, multifaceted, dynamic, and polymorphic features of polycentricity are the reflection in political economy and institutional theory of a social philosophy that understands that "the principle of a free society describes not a hierarchy of subordinate and superior authorities but an archipelago of competing and overlapping jurisdictions" (Kukathas 2009, 4).

These are, therefore, the elements of the broad intellectual context in which the discussion of second-order tasks should take place. Looking at democracy from the perspective of this pluralist social philosophy, William Galston (2002), notes that if one takes pluralism seriously, "it becomes more difficult to accord democracy the unquestioned normative priority it typically enjoys in both ordinary and philosophical discourse." Seen from a pluralist point of view "the scope of democratic political authority is restricted" and "certain alternatives to democracy within the sphere of politics must be taken more seriously than they usually are." That is indeed consistent with a view of governance in which

> our social life comprises multiple sources of authority and sovereignty—individuals, parents, associations, churches and state institutions among others—no one of which is dominant for all purposes and all occasions. Non-state authority does not exist simply as a concession or a gift of the state. A well-ordered state recognizes but does not create other sources of authority. . . . A theory of multiple sovereignties does not imply the existence of separate social spheres each governed by its own form of authority. Political pluralism is consistent with the fact of overlapping authorities whose relationship to one another must somehow be worked out. (Galston 2002, 36)

These remarks and the tentative conclusions about polycentricity we have reached contrast up to a point with the Knight and Johnson thesis, according

to which democratic centralization takes preeminence and other institutional arrangements, both centralized and decentralized, operate under the second-order umbrella of this *primus inter pares*. The qualifier "up to a point" is important for two reasons. First, Knight and Johnson embrace a version of pluralism, too: their notion of democratic centralization allows more degrees of freedom and more flexibility than is suggested by the echoes of the traditional, standard usage in academic and common language. Second, their assessment of democracy is largely based on criteria that also apply to polycentricity. Looking through the theoretical lenses of polycentricity, one observes that democracy may be seen as one form of polycentricity. In fact, in Vincent Ostrom's own work the two notions (polycentricity and an idealized model of "bottom-up," deliberative democracy) are sometimes used interchangeably. Thus, in the end, the gap between the Ostromian perspective and Knight and Johnson may be not so large. In fact, as we'll see in chapter 6, a pragmatist social philosophy permeates both. In any case, for the purposes of this chapter's argument, the important thing to note is that we have seen how the Ostromian idea of polycentricity comes to occupy a central position in the new cycle of research on institutional diversity, pluralism, and governance, to the launching of which Knight and Johnson's book has made an important contribution.