

## Epistemic Polycentricity and the Theory of Public Entrepreneurship

Abstract: Political theorists have recently shifted their focus from the *normative* properties of institutions to their *epistemic* ones. One popular thesis in the current literature is that democracy has desirable epistemic properties, at least when compared to other methods of social choice. Critics respond by highlighting problems with the mechanisms epistemic democrats rely upon in making their arguments. A quite different thesis in the literature points out the desirable epistemic properties of markets. There are problems, however, with these sorts of arguments as well. Given the lack of no clear victor, this paper explores the epistemic properties of *polycentric* governance systems, which cannot be accurately characterized as either states or markets. Possessing some features of both these more traditional forms of governance, the paper argues that polycentric systems possess all the benefits and none of the drawbacks of epistemic accounts of democracy and markets.

### 1. Introduction

All things equal, it is better to have more information than less when making a decision. This not only applies to individual choices but to social choices as well. When we decide important policy matters that could have life or death implications, it is best to have all the relevant information at hand when doing so. This maxim has led several political theorists to shift their focus from the *normative* properties of institutions to their *epistemic* ones. In short, these theorists ask: which institutions will allow us to best utilize existing information when making collective decisions? Which institutions will allow us to best discover new information, thus allowing us to make the best decision possible?

One popular thesis in the current literature on epistemic approaches to institutional analysis is that democracy – through a variety of different mechanisms that appeal to both the role voting and deliberation play in a democratic society – has desirable epistemic properties, at least when compared to other methods of social choice. Critics respond by highlighting problems with the mechanisms epistemic democrats rely upon in making their arguments (§2). A quite different thesis in the literature points out the desirable epistemic properties of markets. Though the mechanisms underlying the epistemic properties of markets are less speculative than those epistemic democrats rely upon, critics are quick to point out that markets have their own shortcomings as well, and that we cannot rely on them for all our collective decision-making (§3).

This paper agrees with the critics. There are deep problems with both epistemic accounts of democracy and epistemic accounts of markets. Given the lack of no clear victor, this paper explores the epistemic properties of *polycentric* governance systems (§4).<sup>1</sup> Initially explored in the work of political scientists Vincent and Elinor Ostrom, polycentric governance systems cannot be accurately characterized as either states or markets. Possessing some features of both these more traditional forms of governance, the hope is that polycentric systems of governance possess all of the benefits and none of the drawbacks of epistemic accounts of democracy and markets. In showing this, we end up carefully exploring the role of the public entrepreneur in local public economies (§5), as well as the motivations that drive public entrepreneurship and innovative governance more generally (§6). The conclusion of the paper is that, if one is primarily concerned with the epistemic properties of the institutions of collective choice, then one can do no better than a polycentric system of governance.

## 2. Epistemic Democracy

Epistemic approaches to democracy hold that, when compared to other methods of social choice, democratic institutions are more likely to select the “best” or “correct” choice from the set of available options (e.g., Anderson 2006; Estlund 2008; Ober 2008; Knight and Johnson 2011; Landemore 2012). As Hélène Landemore notes in her work on epistemic democracy, epistemic democrats are committed to political cognitivism, which says that *(i)* there exists a procedure-independent standard of correctness for evaluating social choices, and that *(ii)* we can know, or at least get some grasp of, this standard (Landemore 2012: 208). It is democracy, according to the epistemic democrat, that is most likely to select the option that does best across this procedure-independent standard. As an example of this, suppose we all agree that justice requires maximizing the welfare of the least advantaged – this is our procedure-independent standard. Yet still, we could face a set of many possible policies to implement, unsure which policy will indeed best maximize the life prospects of those worst off. Epistemic democrats hold that it is democratic institutions of some kind that are most likely to select the policy that will maximize the life prospects of those worst off.

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<sup>1</sup> Polycentricity has also recently been the subject of normative analysis among political theorists. See Kogelmann (2017); Kogelmann (2018); Vallier (2018).

Why think this? According to Melissa Schwartzberg’s thorough review article, there are three mechanisms epistemic democrats appeal to that supposedly demonstrate democracy’s superior epistemic status (Schwartzberg 2015: 196). First, some epistemic democrats appeal to the *Condorcet jury theorem* which holds that, if certain conditions obtain, then as the size of a collectivity increases the likelihood of the collectivity selecting the correct answer when given some of binary proposition approaches one (Grofman and Feld 1988).<sup>2</sup> Or, the *miracle of aggregation* holds that, when we average a collectivity’s estimates of some scalar value then – again, so long as certain conditions obtain – as the size of the collectivity increases the likelihood of the collectivity selecting the correct value approaches one (Surowiecki 2005). And finally, many appeal to Lu Hong and Scott Page’s *diversity trumps ability theorem*, which says that groups of diverse yet less-capable problem solvers can outperform homogeneous yet more-capable problem solvers so long as certain conditions are met (Hong and Page 2001; Hong and Page 2004). On this model, many persons work together trying to solve a complex problem in a baton-passing manner; if one person gets stuck trying to solve a problem, then another person jumps in and offers her input in attempt to move the collectivity forward.

There are many criticisms of these mechanisms in the literature. In terms of the Condorcet jury theorem, many have pointed out the implausibility of the “independence” assumption (e.g., Estlund 2008: ch. 12). According to this key assumption of the theorem, the probability of one voter getting the correct answer must be statistically independent of the probability of another voter getting the correct answer. Yet in a democracy influence is widespread, and many hold that this is typically a good thing. As such, the widespread violation of independence casts doubt on the extent to which we can depend on the logic of the Condorcet jury theorem holding in the real world.

In terms of the Hong-Page theorem, some have highlighted a potential inconsistency between two key assumptions of the model. In particular, the model assumes first (*i*) that persons have diverse perspectives and heuristics – that is, they understand problems and potential solutions in very different ways – and second (*ii*) that persons share the same value function – that is, they all agree on what a good solution to a problem looks like. Yet diversity in terms of perspectives and heuristics is likely coupled with diversity in terms of value judgments, making

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<sup>2</sup> List and Goodin (2001) extend the Condorcet jury theorem so it applies to cases with more than two options.

it hard to imagine *both* these assumptions holding at the same time (Gaus 2016: 130-133; Ancell 2017). Other criticisms of the applicability of the Hong-Page theorem in actual democracies are available (e.g., Brennan 2016: 180). If an epistemic democrat appeals to either of these mechanisms, then she will need to offer a response to these sorts of criticisms before her claim of democracy's superior epistemic status is credible.

A more general criticism of epistemic approaches to democracy – in that it applies to all the mechanisms highlighted above – appeals to the widespread notion of *voter ignorance* (e.g., Pincione and Tèson 2006; Achen and Bartels 2016; Brennan 2016; Somin 2016).<sup>3</sup> In short, these criticisms of epistemic democracy ask: how can democracies make such informed collective decisions when individual voters tend, on average, to be so uninformed? Of course, it is a well-established fact by this point that voters are uninformed. In the words of Ilya Somin: “The reality that most voters are often ignorant of even very basic political information is one of the better-established findings of social science. Decades of accumulated evidence reinforces this conclusion” (Somin 2016: 17). This is deeply worrying for the epistemic democrat regardless the mechanism she appeals to in defense of democracy's superior epistemic status. This is because the three mechanisms highlighted above (and their variations) all presuppose some minimum threshold of individual competence. With the Condorcet jury theorem, for instance, voters must have a better than equal chance of being right. And with the Hong-Page Theorem, problem-solvers need sufficiently complex models of the world, and must be willing to learn from others and take advantage of other participants' knowledge. The empirical literature on voter ignorance suggests that these assumptions do not hold in the real world.

The worry goes deeper than to merely point out that persons are uninformed – for things can change and perhaps one day they will be more knowledgeable. The heart of the worry is that persons have an *incentive* to be uninformed. In other words, they are rationally ignorant.<sup>4</sup> This classic problem for the democratic theorist dates back to Anthony Downs (1957). According to the logic here, the costs of being an informed participant in the democratic process far outweigh the expected benefits. For consider: the expected benefit entails changing the outcome of an election or debate, which has an incredibly small chance of actually happening. Yet the costs of

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<sup>3</sup> Related to the problem of voter ignorance is voter *irrationality*, as discussed by Bryan Caplan (2007).

<sup>4</sup> Continuing the footnote above, Caplan argues that voters are rationally irrational.

informing one's self are great: one's time is spent learning about candidates and issues rather than doing something more enjoyable. As Downs puts it: "In general, it is irrational to be politically well-informed because the low returns from data simply do not justify their cost in time and other scarce resources" (Downs 1957: 259). Having an incentive to be uninformed suggests a certain permanence of democratic ignorance; this is more serious than simply pointing out that persons are ignorant, without any mechanism detailing why this is so. Indeed, concerns over rational ignorance have led some to abandon epistemic defenses of democracy, offering new kinds of instrumental defenses of democratic institutions instead (e.g., Bagg 2018).

The discussion of rational ignorance is instructive. It reveals that it is not enough to simply highlight a mechanism (e.g., the Condorcet jury theorem or the Hong-Page theorem) that bestows desirable epistemic properties on a set of institutions. One must *also* show that this mechanism is incentive-compatible. That is, one must show that it is rational for individuals to behave in a manner consistent with what the proposed mechanism presumes. Epistemic democrats fail to meet this challenge. In particular, they attempt to demonstrate the epistemic properties of democracy – through the Condorcet jury theorem, miracle of aggregation, or Hong-Page theorem – without showing that it is individually rational for participants in the system to behave as the relevant models assume they do. In fact, the exact opposite is the case. All three of our mechanisms assume some threshold of competency, but persons have an incentive to *not* meet this standard. For this reason, current epistemic accounts of democracy fail.

### 3. Epistemic Markets

Long before epistemic democracy became a mainstream view, the epistemic power of the market had long been recognized. Indeed, this is arguably F.A. Hayek's most important contribution to the field of economics. In his seminal essay on the use of knowledge in society, Hayek tells us that the central economic problem any society faces is not about how to allocate scarce resources, but instead "is a problem of the utilization of knowledge which is not given to anyone in its totality" (Hayek 1945/2014: 94). One of Hayek's central insights is that different institutional arrangements will utilize knowledge to better or worse degrees. Thus, a society's central economic problem is not about "how we can 'find' the people who know best, but rather what institutional arrangements are necessary in order that the unknown persons who have

knowledge specially suited to a particular task are most likely to be attracted to that task” (Hayek 1948/2014: 108).

Thus far what Hayek says seems consistent with the overarching goals of epistemic democracy. *Contra* the epistemic democrat, though, Hayek emphasizes the epistemic properties of the market rather than the epistemic properties of democracy.<sup>5</sup> In his words: “We must look at the price system as such a mechanism for communicating information if we want to understand its real function” (Hayek 1945/2014: 100). Now there are two different ways in which markets perform an epistemic function (Kirzner 1988: 4; Kirzner 1997: 62). First, prices convey information about changes in the supply of goods as well as attitudes toward demand through their fluctuation. To borrow an example from Hayek, if there is a shortage of tin for some reason – and Hayek emphasizes that it does not matter what the cause of this shortage is – then markets convey information of this shortage through the rising price of tin (Hayek 1945/2014: 99). Consumers can then respond by economizing on their use of tin. As another example, if demand for a good increases – suppose everyone now wants good X – then the market conveys this information through the rising price of X. Firms can then respond by making more of X to capture profits from these rising prices.

So prices in a market convey information about supply and demand. But there is another important epistemic function of markets, arguably more important than the first one. In particular, “the price system promotes alertness to and the discovery of as yet unknown information (both in regard to existing opportunities for potential gains from trade with existing techniques and in regard to possibilities for innovative processes of production)” (Kirzner 1988: 4). That is, beyond merely conveying already existing yet dispersed information, the price system also aids in the discovery of information that is not yet known by anyone. Key to understanding this epistemic function of the price system is understanding the role of the entrepreneur in the market process. And to get a better grasp of this it is best to turn our attention to Israel Kirzner’s pioneering work on entrepreneurship.

In describing the role of the entrepreneur in the market, Kirzner begins with a thought experiment:

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<sup>5</sup> Given the recent interest in the epistemic properties of institutions, there has been contemporary defenders of this thesis as well. See, for instance, Pennington (2011); DeCanio (2014); Tebble (2016).

...let us imagine a market in which all those currently participating are in fact *unable* to learn from their market experience. Would-be buyers who have been returning home empty-handed (because they have not been offering sufficiently high prices) have *not* learned that it is necessary to outbid other buyers; would-be sellers who return home with unsold goods or resources (because they have been asking prices that are too high) have *not* learned that they must, if they wish to sell, be satisfied with lower prices. Buyers who have paid high prices do not discover that they could have obtained the same goods at lower prices; sellers who have sold for low prices do not discover that they could have obtained higher prices (Kirzner 1973/2013: 11).

The general idea here is that the imaginary market fails (in that certain gains from trade go uncaptured), yet the market does not correct, meaning that these gains continually go unexploited. This is meant to be a fantastical example that deviates from our experiences in the real world. Though markets almost always fail in reality, errors are learned, markets adjust, and gains from trade once past by are captured in the future. In Kirzner's thought experiment, though, this does not happen.

What explains the difference between this unrealistic thought experiment and our real world experiences is, according to Kirzner, the presence of the entrepreneur. He writes:

Into this imaginary world of men unable to learn from their market experience let us now introduce a group of outsiders who are themselves neither would-be sellers nor would-be buyers, but who *are* able to perceive opportunities for entrepreneurial profits; that is, they are able to see where a good can be sold at a price higher than that for which it can be bought. This group of entrepreneurs would, in our imaginary world, immediately notice profit opportunities *that exist because of the initial ignorance of the market participants* and that have persisted because of their inability to learn from experience (Kirzner 1973/2013: 11).

The entrepreneur is able to help the market correct because she does not merely maximize relative to constraints as producers and consumers do, but rather actively seeks new ends (i.e., new goods) to pursue, and new means (i.e., new production technologies) by which to maximize new or existing ends. In other words, the entrepreneur possesses "alertness to possibly newly worthwhile goals and to possible newly available resources" (Kirzner 1973/2013: 27). By

introducing these new means or new ends the entrepreneur remedies existing market failures, allowing for gains from trade that were once passed by to be captured.

We thus have two ways in which the market acts as a discovery procedure. The market acts as a discovery procedure in the first sense by revealing information about changes in relative scarcity and demand schedules through fluctuating prices. And the market acts as a discovery procedure in the second sense by allowing entrepreneurs to discover new goods to produce and new technologies of production that, when introduced, remedy existing market failures and allow gains from trade to be captured. For the remainder of the paper we will only be interested in this second epistemic feature of markets: the ability of markets to discover new means and new ends through the entrepreneurial process. The reason why is that this seems to be akin to the kind of information the epistemic democrat seeks to uncover through the democratic process. The democratic process can discover new aims to pursue – new policy initiatives that we ought to implement – as well as new means by which to pursue them – novel ways of providing healthcare, novel ways of financing public infrastructure projects, etc.

In contrast to those mechanisms appealed to by the epistemic democrat, the entrepreneurial mechanism for discovering new information is incentive-compatible. Recall the challenge laid down at the end of the last section. Any mechanism highlighting the epistemic properties of some set of institutions must show that it is rational for individuals to behave in a manner consistent with what the proposed mechanism presumes. Epistemic democrats could not do this with their favored mechanisms. The mechanisms appealed to (the Condorcet jury theorem, the miracle of aggregation, and the Hong-Page theorem) presume a certain level of competence, yet individuals do not have an incentive to meet this threshold. Worse than this, they actually have an incentive to *not* meet the required level competency.

Yet defenders of the epistemic properties of markets *can* show that their preferred mechanism is incentive-compatible. According to the current story, the epistemic properties of the market depend on entrepreneurs who are alert to new technologies and new projects that can remedy market failures and capture unexploited gains from trade. And what incentivizes the entrepreneur to do this is what Kirzner calls the “heady scent of profits” (Kirzner 1973/2013: 178). A bit more precisely: “the lure of pure profit is what permits an individual decision maker to transcend the limits of a given, perceived planning framework and to escape, to some extent,

the basic knowledge problem that surrounds all individual decision making” (Kirzner 1984/2018: 84). That is, it is this drive for profits that incentivizes the entrepreneur to be alert to new discoveries; it is the drive for profits that incentivizes the entrepreneur to behave in the manner required for the market to yield its desirable epistemic properties.

Though markets have desirable epistemic properties, they are not without flaw. Indeed, the reason why we *do* use alternative methods of social choice is that there are some deeply important goods that markets are unable to effectively provide: namely, public goods. In contrast to private goods, a public good is a good that is both (i) non-rivalrous and (ii) non-excludable. A good is non-rivalrous just in case consumption of that good by Althea does not prevent consumption of that good by Bertha. In reality, there are no goods that are *purely* non-rivalrous, but rather goods exist on a continuum between rivalrous and non-rivalrous. A good is non-excludable just in case, after production of the good, Althea and Bertha cannot be prevented from consuming that good. As before, excludability can exist on a spectrum as well. The quintessential example of a non-excludable good is a lighthouse. Once the lighthouse has been built, there is nothing to stop Althea and Bertha from using that lighthouse to steer their ships safely ashore. Public goods are thus those goods that are (relatively) non-rivalrous and (relatively) non-excludable.

One major thesis of twentieth century political economy – most forcefully argued for by Richard Musgrave (1939) and Paul Samuelson (1954; 1955) – is that markets will tend to underprovide public goods, in that the amount of public goods provided by a pure market mechanism will be suboptimal when compared to citizens’ preferences for these public goods. The argument for why this is so is quite intuitive and can be stated absent the mathematical formalism. If an entrepreneur cannot exclude consumers from using a good – and this is by definition the case with public goods – then they will not have incentive to produce the good because producing the good will likely be unprofitable. As an example, if a would-be entrepreneur cannot exclude persons from using her lighthouse – Althea and Bertha will be able to steer their ships using the lighthouse regardless whether they pay for the service or not – then the venture will not be profitable (for Althea and Bertha will not pay for it if they do not have to), meaning the lighthouse will not be produced.

Moreover, *even if* the entrepreneur finds a way of excluding persons from consuming the good, the fact that the good is non-rivalrous suggests that exclusion will be inefficient. If Althea can be excluded from using a highway, but her using it would not diminish anyone else's use of the highway nor would it increase the cost of producing and maintaining the highway, then exclusion is suboptimal from a purely welfarist perspective. Since markets do not efficiently provide public goods or do so inefficiently, most think that a single, centralized government must step in to provide such goods. Indeed, among economists, the central justification for the coercive state in the first place is to provide public goods to remedy market failures that will *not* be remedied by entrepreneurs acting the marketplace (e.g., Buchanan 1975/2000: ch. 3). A democratic system of governance backed up by the coercive power of the state can effectively provide those public goods that markets are unable to effectively provide.

We thus face a tradeoff. Markets have desirable epistemic properties, in that they can discover new information through the entrepreneurial process. Moreover, this mechanism by which markets attain their desirable epistemic properties is incentive-compatible, in that entrepreneurs are incentivized to discover new goods and production technologies through entrepreneurial profits. But even so, markets cannot give us everything we want. They will fail to effectively and efficiently provide public goods. A democracy backed by the coercive apparatus of the state could provide public goods for us. But democracy's lack of a plausible epistemic mechanism that is also incentive-compatible suggests that it might make quite poor decisions. Given the failures of both systems, a natural question arises: is there a system of governance that (i) can effectively provide public goods, that also (ii) has an incentive-compatible epistemic mechanism? The remainder of the paper proposes such a system.

#### 4. Polycentricity: Neither States nor Markets

The last section ended with a challenge. It asked whether there was a form of governance that possessed the desirable properties and none of the negative drawbacks of those systems we examined in the prior two sections. Markets have desirable epistemic properties but fail to provide public goods. A democratic state can provide public goods but lacks an incentive-compatible epistemic mechanism. In thinking about alternatives to markets and democratic states, a plausible place to begin is with Elinor Ostrom's Nobel lecture. Ostrom begins her talk

by noting that economists and political scientists typically reference two – and *only* two – “optimal organizational forms” in their discussion of institutions. In particular, “the market was seen as the optimal institution for the production and exchange of private goods. For nonprivate [i.e., public] goods, on the other hand, one needed ‘the’ government to impose rules and taxes to force self-interested individuals to contribute necessary resources and refrain from self-seeking activities” (Ostrom 2010: 642). In other words, we have the market and the state.

Notice how these two organizational forms correspond to the two systems of governance we have thus far discussed. We have the market on the one hand (with its desirable epistemic properties yet inability to provide public goods), and the democratic state on the other hand (with its ability to provide public goods but lack of an incentive-compatible epistemic mechanism). Yet, Ostrom notes, these two organizational forms fail to describe many *actual* systems of governance we find around the world: “Undertaking empirical studies of how citizens, local public entrepreneurs, and public officials engage in diverse ways of providing, producing, and managing public service industries and common property regimes at multiple scales has generated substantial knowledge that is not explained by the two models of optimal organizational forms” (Ostrom 2010: 643). In light of the explanatory failures of this dichotomous paradigm, Ostrom introduces the idea of *polycentric* governance systems, that do not quite fall into either category of states or markets.

The idea of polycentricity was initially explored in a paper on metropolitan governance by Vincent Ostrom, Charles Tiebout, and Robert Warren.<sup>6</sup> The authors begin by noting that metropolitan governance usually consists of “overlapping jurisdictions” of authority, “duplication of functions” concerning the provision of public goods and services, and “many centers of decision making that are formally independent of each other” (Ostrom et al. 1961: 831). This is opposed to monocentric or “gargantuan” approaches to governance, where authority, decision-making, and the provision of public goods and services are limited to one centralized governance unit, such that this one single unit’s jurisdiction does not overlap with any other unit’s jurisdiction. Monocentric governance structures are akin to one of optimal organizational forms that Elinor Ostrom decries – *the* state. Polycentric forms of governance are clearly distinct from this paradigm, in that authority is dispersed, fractured, and overlapping. And

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<sup>6</sup> For an overview of the history and development of the idea of polycentricity, see Aligica and Tarko (2012).

yet, polycentric governance systems are also clearly not markets, making them distinct from the other paradigm constituting the market-state dichotomy. We thus have a distinct form of governance that cannot be classified as either the state or the market.

Let us try to make this notion of polycentricity more precise. Following the work of Paul Dragos Aligica and Vlad Tarko, we can say that polycentric governance systems consist of the following three basic features (Aligica and Tarko 2013: 737; Aligica 2014: 58):

*Multiplicity of Decision Centers*, where there are distinct and overlapping units of governance that compete with one another.

*Overarching System of Rules*, which defines the limits of a polycentric governance system and specifies how separate governance units relate to and interact with one another.

and

*Spontaneous Order*, which is the result of the polycentric order, generated by competition among distinct and overlapping governance units.

The multiplicity of decision centers is the defining feature of polycentric governance structures. Instead of a single set of rules coming from a single centralized authority (one of the two optimal types of organization that Elinor Ostrom rails against), there are multiple sets of rules coming from multiple authorities that overlap and compete with one another. Polycentricity's second defining feature is the overarching system of rules. This overarching system of rules not only serves to define what is and is not part of a polycentric order, but also how different units of governance within the order must relate to and interact with one another. And finally, the spontaneous order element characterizes the resulting states of affairs produced by polycentric orders: they are the result of human action, but not of human design.

As our definition above highlights, a key aspect of polycentric orders is *competition* among the multiple, overlapping units of governance. Indeed, when governance jurisdictions and functions are broken up and dispersed in a polycentric as opposed to a monocentric governance system, a market-like mechanism is induced over the provision of these public goods and services. As Ostrom, Tiebout, and Warren put it: "Patterns of competition among producers of public services in a metropolitan area, just as among firms in the market, may produce

substantial benefits by inducing self-regulating tendencies with pressure for the more efficient solution in the operation of the whole system” (Ostrom et al. 1961: 838). Because of this, “much of the flexibility and responsiveness of market organization can be realized in the public service economy” (Ostrom et al. 1961: 839).

But even so, it is important to remember that polycentric governance systems – in the same way that they are *not* traditional states – are also *not* traditional markets. Rather, they merely have some market-like properties due to presence of competition among the distinct and overlapping units of governance. In the words of Vincent Ostrom:

Thus, competitive rivalry and quasi-market conditions are artifacts of polycentricity and can be induced in a polycentrically organized public service economy. Efforts to supply public goods and services through market arrangements will *fail*. The provision of public goods and services must be collectively organized *before* quasi-market mechanisms can be generated in a public service economy. A polycentric political system is not a market; and a theory of polycentric organization is not a metaphor for a market model.

Polycentric systems can be organized so as to induce elements of market organization *among* public enterprises. Such conditions can exist only if advantage can be taken of a rich structure of overlapping jurisdictions and fragmentation of authority (Ostrom 1972/1999: 72).

It is an open question which properties of markets polycentric systems possess. In particular, it is an open question whether polycentric systems retain the desirable epistemic features that traditional markets have, as discussed in §3 above. As Peter J. Boettke and Christopher J. Coyne put it: “how transferable are the desirable consequences of entrepreneurship to settings outside the market context?” (Boettke and Coyne 2009: 81). We turn our attention to this in the next section.

But what *is* clear is that polycentric systems can effectively and efficiently provide public goods. Indeed, this is the central thesis of the Ostrom, Tiebout, and Warren paper. As opposed to public goods being supplied by a centralized state, “a polycentric political system can be viable in supplying a variety of public goods with many different scales of organization and in providing optimal arrangements for the production and consumption of public goods” (Ostrom et al. 1961: 839). More generally, a major theme of the Ostroms’ research agenda is empirical examination

of the provision of public goods in polycentric systems. In her examination of polycentric and monocentric approaches to policing, Elinor Ostrom concluded that the “most efficient producers supply more output for given inputs in high multiplicity [i.e., polycentric] metropolitan areas than do the efficient producers in metropolitan areas with fewer producers” (Ostrom and Parks 1987/1999: 287).<sup>7</sup> So not only can polycentric systems provide public goods, but they often do so more efficiently than monocentric systems. But of course, other systems of governance – for instance, the monocentric democratic state – can provide public goods. It is thus an important question what other desirable features (e.g., an incentive-compatible epistemic mechanism) polycentric systems have as well.

## 5. The Public Entrepreneur

In the last section we saw that polycentric governance systems can effectively provide public goods. We also saw that polycentric governance systems possess some market-like properties, induced by the presence of fragmented and overlapping units of governance that compete with one another. But polycentric governance systems are not markets. As such, it does not follow that they possess all those features markets possess – indeed, this can be seen from the fact that they effectively provide public goods, something markets cannot do. It is thus an open question whether polycentric governance systems possess the same desirable epistemic properties that markets do (as we examined in §3 above). The current section tries to answer this question.

Now certainly, there are many who do indeed think that polycentric systems possess desirable epistemic properties. Aligica, for instance, argues that “if experimentalism is a central issue... then one can hardly think of a better arena of 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 be prepared to adjust to) the evolutions of other units” (Aligica 2014: 66). As another example, John Stuart Mill’s system of “experiments in living” closely resembles a polycentric order consisting of competing and overlapping units of governance; the

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<sup>7</sup> For an overview of her work on this subject, see Boettke, Palagashvili, and Lemke (2013); Tarko (2017: ch. 1).

very purpose of such a system is to discover novel ways of organizing social and political institutions (Muldoon 2015; Muldoon 2016: ch. 2). As a final example, Robert Nozick's framework for utopia closely resembles a polycentric system (Kogelmann 2017: 680; Kogelmann 2018: 95). And, Nozick argues, the ability to experiment with different forms of life is the best way to find the ideal society. Since "one cannot determine in advance which people will come up with the best ideas," what is required is "many communities trying out different patterns" (Nozick 1974: 316-316).

A more careful analysis, however, is required to determine whether polycentric governance systems possess desirable epistemic properties. In determining this it is helpful if we return to our analysis of the epistemic properties of markets from §3 above. There we argued that markets have two important epistemic functions, though we focused in on one in particular. The entrepreneur, acting in the market, discovers new goods to produce and new production technologies that, when introduced, remedy market failures. Beyond the entrepreneur's alertness to new discoveries, we also highlighted the incentive-compatible nature of the entrepreneur's role in the market. It is the drive for profits that incentivizes the entrepreneur to engage in the discovery process. This led us to conclude that markets, through the entrepreneurial process, possess an incentive-compatible epistemic mechanism.

In examining the epistemic properties of polycentric governance systems, an initial question is whether there is an equivalent actor in such a system to the entrepreneur in the market process. Relevant here is work on *public entrepreneurship*, a topic pioneered by the Ostroms in their analysis of polycentric systems. Indeed, in her dissertation, Elinor Ostrom examined "those who undertake to provide public goods and services in the public sector, which might be appropriately characterized as public entrepreneurship" (Ostrom 1965: 5). These public entrepreneurs offer "a particular form of leadership focused primarily on problem-solving and putting heterogeneous processes together in complementary and effective ways" (Ostrom 2005: 1). We can understand the role of the public entrepreneur in a public economy as very similar to the role of the entrepreneur in the market. The public entrepreneur is alert to new ends to pursue (i.e., new public goods to produce), and new means by which to pursue new or existing ends (i.e., new ways of producing and financing public goods). The new means are particularly important. Indeed, much of Ostrom's work on public entrepreneurship focused on the innovative

ways individuals financed and regulated the governance of common pool resources (Ostrom 1990). Success and failure in such an arena was quite literally the difference between life and death.

Though public entrepreneurship is a genuine phenomenon, the scope of its presence remains unclear. Entrepreneurs are present in markets, but are public entrepreneurs always present in public economies? If they are, then one might think that epistemic democrats can lay claim to the public entrepreneur as an epistemic mechanism for the centralized democratic state. Yet in a recent book, Aligica argues that the presence of public entrepreneurship is institutionally contingent. In particular, there is a strong link between polycentric governance structures and public entrepreneurship, in that the more polycentric a system is (i.e., the more authority is dispersed and fragmented), the more public entrepreneurship will flourish. Conversely, the more monocentric a system is (i.e., the more authority is unified and centralized), the more public entrepreneurship will be stifled (Aligica 2018: ch. 1).

The reason why an increased degree of polycentricity is correlated with an increased presence of public entrepreneurship has to do with the fragmented and dispersed nature of decision-making in a polycentric governance system. Public entrepreneurs are alert to new opportunities, but we never know *ex ante* who exactly will discover these opportunities; we never know who “will prove to possess the right combination of aptitudes and opportunities to find the better way” (Hayek 1960/2011: 79). As a result, the more people who have the capacity to act on their discoveries, the more likely we will be able to make use of such knowledge. That is, the more people who have the capacity to act on discoveries, the more public entrepreneurship (and traditional entrepreneurship) we will see. But note, a polycentric governance system does give – through its multiplicity of governance units – more people the capacity to act on discoveries, at least when compared to monocentric governance systems. For in a monocentric governance system, authority is centralized in a single unit – it is only individuals within this one particular unit who have the capacity to act on discoveries. What is key for discovery is that “each individual be able to act on his particular knowledge” (Hayek 1960/2011: 80). Polycentric systems facilitate this to a greater degree than monocentric systems. Because of this, polycentric systems will exhibit a higher degree of public entrepreneurship when compared to monocentric systems.

So public entrepreneurs are alert to new discoveries just as entrepreneurs in markets are, and public entrepreneurs are more likely to be present in polycentric, rather than monocentric, political orders. This is sufficient to show that there exists a plausible epistemic mechanism present in polycentric orders. But note an important asymmetry between the public entrepreneur and the private entrepreneur. The entrepreneur in the market, we noted, is incentivized to discover through the capture of entrepreneurial profits. This is what led us to conclude that markets possess an incentive-compatible epistemic mechanism. But what incentivizes the public entrepreneur to be alert to new discoveries? There is clearly no profit motive as there is in the market – public officials and community leaders do not make billions for discovering new ways to produce and finance public goods. This asymmetry leads to the worry that, though polycentric governance systems possess an epistemic mechanism, this mechanism is not incentive-compatible, in that there is no clear motive for the public entrepreneur to be alert to new discoveries. Epistemic accounts of polycentricity are thus in the same boat as epistemic accounts of democracy: with an epistemic mechanism, but no reason to think the behavior required for the mechanism to operate will obtain.

A more careful analysis is required here. For there are models of polycentric public economies that *do* articulate possible motives driving the public entrepreneur. Consider, for instance, Charles Tiebout's (1956) classic paper "A Pure Theory of Local Expenditure." Tiebout's paper is meant to respond to the challenge (examined in §3 above) raised by Samuelson and Musgrave that only a centralized state can effectively and efficiently provide public goods. In his response, Tiebout develops something like a polycentric model of governance where citizens are faced with several different communities that they can sort themselves into to best satisfy their preferences. In such a world, "the consumer-voter may be viewed as picking that community which best satisfies his preference pattern for public goods" (Tiebout 1956: 418). Tiebout shows that under heavily idealized assumptions, the proposed model of social and political order can achieve an efficient level of public goods provision.

An important aspect of Tiebout's model concerns what motivates local communities (i.e., public entrepreneurs) to supply citizens with public goods in the first place. After all, if communities are not responsive to citizens' preferences, then an efficient provision of public goods will not be attained. Here, Tiebout assumes "that communities below the optimum size seek to attract new residents to lower average costs" (Tiebout 1956: 419). In other words,

communities seek to increase their overall residency. The reason why they do this is to increase the tax base of their community, and thereby increase total revenue. Note that Tiebout is not alone in this assumption – many in the public choice literature have offered a revenue-maximizing account of what motivates public actors (e.g., Brennan and Buchanan 1980/2000: 33). On this view, just as the private entrepreneur in the marketplace is driven by entrepreneurial profits, the public entrepreneur is driven by increased tax revenue.

There are some who find this account of what motivates public entrepreneurs unsatisfying. In their critique of this motivational account of the public entrepreneur, Richard J. Oakerson and Roger B. Parks note that the feedback local officials receive from citizens “voting with their feet” is often quite noisy and, more importantly, delayed.<sup>8</sup> A decline in public services followed by a decline in property values followed by a decline in tax revenues is not immediately felt – at least not as immediately felt as persons cancelling their Netflix subscriptions and signing up for Hulu instead. As such, the Tiebout account of what drives public entrepreneurs cannot just say that public entrepreneurs want to maximize revenue, but also that they have particularly long time horizons as well: “If local politicians are not strongly motivated by long-run calculations, the prospect of eventual erosion of property tax base among homeowners is unlikely to provoke an early response, when doing so would entail significant short-run cost” (Oakerson and Parks 1988/1999: 309). Beyond the implausibly long time horizons required for this story to work, one could more generally doubt the importance of increased tax revenues to local entrepreneurs as well. Increase tax revenues by no means imply an increase in personal wealth; such being the case, why take this as one’s main driving motivation?

Oakerson and Parks offer a compelling criticism of the Tiebout account of what incentivizes the public entrepreneur. But they do not offer a new account to take its place. Though they note that the activities associated with public entrepreneurship are costly in terms of time and effort, they do not tell us why persons frequently engage in these activities. All they tell us is that “some individuals must be willing to incur those costs if a complex metropolitan area is to function effectively. This is the work of individuals we call ‘public entrepreneurs’ namely, persons who propose ideas and carry the burdens of ensuring discussion, compromise, and creative settlement” (Oakerson and Parks 1988/1999: 320). But absent a plausible account of

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<sup>8</sup> See also Aligica and Boettke (2009: 46-49).

what incentivizes the public entrepreneur to carry these burdens, we cannot claim that polycentric governance systems possess an incentive-compatible epistemic mechanism. Epistemic polycentricity thus fails to convince, just as epistemic democracy does.

## 6. Entrepreneurship and Esteem

Here is where things stand. Polycentric systems of governance can provide public goods, oftentimes in a more efficient manner than monocentric systems of governance. And just as there are entrepreneurs in competitive marketplaces alert to new discoveries, so too are there public entrepreneurs in competitive polycentric governance systems. This suggests that polycentric governance systems possess an epistemic mechanism akin to those in markets. But there is a problem with our understanding of the public entrepreneur. In the marketplace, the entrepreneur is incentivized to be alert to new discoveries through the possibility of capturing entrepreneurial profits. Yet public entrepreneurs who discover new ways of financing and packaging public goods do not earn profits. So, what incentivizes the public entrepreneur's alertness? Without an answer to this question we cannot claim that polycentricity has an incentive-compatible epistemic mechanism; this would be a serious theoretical defect. The current section offers an account of what incentivizes the public entrepreneur's alertness. In doing so the goal is to flesh out some remarks Boettke and Coyne make in their analysis of entrepreneurship in civic and cultural contexts. According to Boettke and Coyne, it is *reputation* that drives entrepreneurship in these domains: "in other words, entrepreneurs in a non-market setting who satisfy the wants of consumers gain a 'profit' via increased reputation capital, and those who fail to meet consumer needs incur a 'loss' via decreased reputation capital" (Boettke and Coyne 2009: 82). In a similar fashion, the current section argues that entrepreneurs in polycentric systems are driven by the pursuit of *esteem*, and avoidance of *disesteem*.

For all its insights, one unfortunate feature of the neoclassical economics tradition is its narrow understanding of what drives persons. Persons are maximizers of utility, and utility is typically (but not always) interpreted as monotonic with wealth. By implication, persons are driven by a desire to increase personal wealth. This is certainly consistent with our understanding of the entrepreneur in the marketplace. But political theorists of old recognized that, while persons are maximizers of some kind, there are things they try to maximize besides personal

wealth. Adam Smith, for instance, recognized that “nature, when she formed man for society, endowed him with an original desire to please, and an original aversion to offend his brethren” (Smith 1982: 116). John Locke held that “the principle spring from which the actions of men take their rise... seems to be credit and reputation, and that which at any rate they avoid, is in the greatest part shame and disgrace” (Locke 1993: 236). As a final example, John Adams held that “no appetite in human nature is more universal than that for honor” (Adams 1973: 51).

Inspired by these sorts of remarks, economist Geoffrey Brennan and philosopher Philip Pettit offer a thorough analysis of what they call the “economy of the esteem,” or the manner in which esteem and disesteem are supplied and demanded, as well as the overall social effects this has along with implications for the theory of institutional design. According to the authors, to esteem someone means to estimate or think positively of them; to disesteem someone means to estimate or think negatively of them (Brennan and Pettit 2004: 15). There are three key features of esteem and disesteem as attitudes we have toward others (Brennan and Pettit 2004: ch. 1). First, esteem and disesteem are *evaluative* attitudes, meaning that when we esteem or disesteem someone we are rating them in some respect. As an example, to show high levels of esteem toward an academic could mean that one rates her performance *qua* academic highly. Second, esteem and disesteem are *comparative* attitudes, which means that the amount of esteem or disesteem bestowed on an individual depends on this individual’s performance compared to others. For instance, esteeming the academic for her performance as an academic means that we think highly of her when compared to the performance of other academics, not that we think highly of her as such. And third, esteem and disesteem are *directive* attitudes, in that the esteem or disesteem bestowed upon a person signals what this individual can do to get more esteem or less disesteem. If an academic gets quite a bit of disesteem from other members of her department, there are likely things she can do to change this: publish more, engage in more service, and so on.

A central thesis of Brennan and Pettit’s work is that esteem is a highly sought after good for most persons, and that disesteem is a bad that persons typically try to avoid. There are many reasons why this is so. In terms of the instrumental benefits esteem can bring: “to the extent that I am positively esteemed by others, my interactions with them are likely to run smoothly and to the extent that I am disesteemed, my interactions are likely to hit rough patches” (Brennan and Pettit 2004: 26). It is not hard to think of examples here. When one is esteemed by fellow

coworkers in the office it is typically easier to get them to help one out – say, to come in on a Saturday and help out with an undergraduate event. As another instrumental benefit, both esteem and disesteem can act as evidentiary tools: “Enjoying the esteem of others provides me with evidence, though of course only defeasible evidence, that I am living up to the ideals assumed in the background evaluations” (Brennan and Pettit 2004: 26). The general idea here is that we are often unsure of how we perform across some standard, and esteem and disesteem from others can help us get a more accurate gauge of this.

But esteem is not only valued, and disesteem avoided, for instrumental reasons. Esteem is also an intrinsic good people seek, and disesteem an intrinsic bad people avoid (Brennan and Pettit 2004: 29-31). This can be seen most clearly by examining cases where esteem affects us positively and disesteem negatively, *even though* such attitudes cannot make our lives instrumentally better or worse. We often care about the esteem of strangers, for instance. Yet receiving esteem or disesteem from strangers by definition cannot make our interactions go better or worse with them. This suggests that the value of esteem or disesteem cannot solely be understood in terms of its ability to lubricate social interaction. And we are often bothered by disesteem even when we know that such an attitude is not grounded in an accurate appraisal of our performance. This suggests that esteem and disesteem cannot solely be understood in terms of its provision of evidence of our performance. There is thus good reason to think that esteem is not only instrumentally valuable, but intrinsically valuable as well.

Esteem is thus something that is highly sought after, and disesteem likewise avoided. This suggests that esteem and disesteem are something – like the acquisition of wealth – that can *incentivize* behavior. And, if we are clever, we can design institutions to utilize esteem and disesteem in the motivation of behavior we find socially desirable. This is too fast a conclusion to reach. Esteem and disesteem are great motivators, and the pursuit of esteem and avoidance disesteem can act as catalysts for all sorts of behavior we find desirable. But to what extent esteem and disesteem act as drivers of behavior depends on several institutionally contingent factors (Brennan and Pettit 2004: 69). For instance, the extent to which esteem and disesteem drive performance depends on an audience’s evaluation of expected performance. Suppose the expected performance in an academic department is one published article a year. Esteem is given to anyone who surpasses this hurdle. But given *where* the hurdle is set, we can hardly depend on esteem to incentivize persons to publish twenty articles a year. Compare this to a department

where the expectation is fifteen articles a year. Surpassing the hurdle in this department in pursuit of esteem likely can lead to twenty articles a year. So the extent to which esteem and disesteem operate as incentives depends on several institutionally contingent factors.

There are two factors influencing the extent to which esteem and disesteem act as incentivizing devices that are especially relevant to polycentric governance systems and public entrepreneurship. First, the extent of publicity matters greatly in harnessing esteem and disesteem as incentives (Brennan and Pettit 2004: chs. 8-10). In particular, since esteem and disesteem are bestowed upon persons for their performance in some domain, people must actually have access to and be aware of these performances in order for them to even be able to bestow esteem or disesteem in the first place. Indeed, esteem has no effect on actions that are done completely in secret. As an example, we do not cast votes with the esteem or disesteem of our fellow citizens in mind because we employ the secret ballot (Brennan and Pettit 2004: 313). Yet highly public acts – giving a speech, giving a live performance of some kind, and so on – are subject to the influence of esteem and disesteem, as there is actually an audience that can witness the relevant behavior.

Importantly, how well local public entrepreneurs perform in the provision of public goods and services is highly public. We know quite well about the road quality in our communities, how our schools are performing, how interactions with the police typically go, how well waste management works, and so on. Indeed, this highly public nature of public good provision is grounded in the very nature of what public goods are. Non-excludability not only means that consumers cannot be kept away; it also means that consumers cannot typically keep away, even should they choose. We often have no choice but to use our community's roads, send our children to the local school, and so on. As a result, we are constantly faced with the performance of public entrepreneurs when it comes to the provision of public goods and services. And, because of this, we can bestow esteem or disesteem on them based on their performance. This suggests an incentive for public entrepreneurs to be alert to new opportunities so they can improve their communities: if they do well then they will be the subject of esteem by those in their community; if they do poorly then they will be the subject of disesteem.

But the public nature of performance in public goods provision is not unique to polycentricity, but rather any form of governance (including the monocentric democratic state)

that does indeed provide public goods. Another contingency that affects the extent to which esteem and disesteem act as motivational drivers is audience composition (Brennan and Pettit 2004: 204). Who sits in the audience – particularly what evaluative standards these audience members employ – has a major impact on esteem and disesteem as incentivizing devices. As an example, consider the incentives of a chef on (i) a night in which she must serve typical diners, and (ii) on a night in which her cooking will be reviewed by a revered food critic. Intuitively, it seems obvious that the pursuit of esteem will have a much larger impact in the second case than the first – in that she will put more effort into her performance in the second case – even though the only difference between these two cases concerns who sits in the audience for the performance.

So the evaluative standards of the audience matter greatly when it comes to the influencing power of esteem and disesteem. One important facet of this concerns homogeneity and heterogeneity of evaluative standards among the audience. Suppose our chef is about to get reviewed by an entire restaurant full of food critics. For simplicity, suppose there are two types of meals she can make:  $x$  or  $y$ . In the first case, suppose that all critics in the room are known to prefer meal-type  $x$  to meal-type  $y$ . In the second case, suppose that half the critics in the room prefer meal-type  $x$  to meal-type  $y$ , and half the critics in the room prefer meal-type  $y$  to meal-type  $x$ . In the first case it is clear what affect the pursuit of esteem will have on our chef. She will do her very best in making meal-type  $x$ . In the second case, though, it is not clear to what extent esteem will have a major impact on our chef's actions. If she does a good job making meal-type  $x$  then we know that roughly half the critics will bestow esteem on her; yet, the other half may very well bestow disesteem on her for not making meal-type  $y$ . And if she does a good job making meal-type  $y$  the same outcome applies. As a result, the heterogeneity of evaluative standards in the second case make esteem much less a motivating factor when compared to the first case – no matter what she does in the second case, she will get some disesteem, which must be traded off against any esteem she might receive for an outstanding performance.

This point about heterogeneity and homogeneity of evaluative standards is deeply important for understanding the role esteem and disesteem play in polycentric governance systems. Polycentric governance structures consist of multiple and overlapping governance units, whereas monocentric systems consist of a single centralized governance unit. An important presumption about polycentric orders is that persons tend to sort themselves into communities

that best satisfy their preferences. In the words of Tiebout: “the consumer-voter may be viewed as picking that community which best satisfies his preference pattern for public goods” (Tiebout 1956: 418). Note, this is not to say that there will be perfect sorting. In the real world, transaction costs are high and it is not always feasible to move to a different community simply because its public goods and services would better satisfy one’s preferences. The claim is rather that governance units in polycentric governance systems will consist of more homogeneity of preferences over public goods provision when compared to a single governance unit in a monocentric order.

This increased homogeneity of preferences in a polycentric order can have a large impact on the ability of esteem to act as an incentive for public entrepreneurs. Indeed, consider an analogous case to our chef. To simplify, a public entrepreneur can produce two types of public goods,  $x$  or  $y$ . In the first case she knows that roughly the entire population of her community prefers good-type  $x$  to good-type  $y$ . In the second case she knows that roughly half the population of her community prefers good-type  $x$  to good-type  $y$ , and the other half of the community prefers good-type  $y$  to good-type  $x$ . Similar to before, esteem will have a greater influence in the first case when compared to the second. In the first case, the public entrepreneur knows that if she does a good job of providing good-type  $x$  then she will receive esteem from her entire community. This gives her an incentive to be alert to new and innovative ways of providing public good  $x$ . But in the second case, even if the public entrepreneur does a good job of providing good-type  $x$ , she knows that roughly half the population may bestow disesteem on her for not providing good-type  $y$ . As a result, she has much less incentive in this case to be alert to new and innovative ways of providing good-type  $x$ . For even if she does do an excellent job providing good-type  $x$ , half the population may bestow disesteem on her regardless. This gives her less incentive to provide public good  $x$ , at least when compared to the first case.

The above logic concerning homogeneity and heterogeneity of preferences and their impact on the incentivization of public entrepreneurship is, I think, clear. The main claim here is that polycentric governance systems are more likely to resemble the first case rather than the second (because of sorting), whereas monocentric governance systems are more likely to resemble the second case rather than the first (due to an inability to sort). This – along with the effects of publicity in public goods provision – suggests that the pursuit of esteem and avoidance of disesteem are plausible drivers of public entrepreneurship in polycentric orders. Highlighting

the role of esteem in local public economies, we thus have an account of what incentivizes the public entrepreneur. By implication, we can conclude that polycentricity has an incentive-compatible epistemic mechanism.

## 7. Conclusion

Which institutions we use to live together is a deeply important question. Not only do normative considerations play a role, but so do epistemic ones. All things equal, we want institutions that best utilize existing information, and are most likely to discover new information as well. The current literature on the epistemic properties of institutions is myopic, in that it focuses on only two ideal-type institutional arrangements: the market and the democratic state. This paper sought to go beyond this dichotomy by exploring a new way of organizing our social and political institutions: through a polycentric system of governance. The central thesis was that polycentric systems of governance possess all the epistemic benefits and none of the drawbacks of our two dichotomous forms of organizations. This, of course, does not provide overriding reason to pursue polycentric forms of organization over others. Rather, it merely offers a first step in such an argument; much more work needs to be done. Hopefully, political theorists will begin paying more attention to polycentric forms of governance, along with other, non-traditional forms of organization as well.

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