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From collection to collective: Institutional conditions for the organic state

John B Horowitz[1] and Alexander Schaefer[2]

Abstract

Despite its prominence in the history of political thought, the analogy between states and organisms has fallen into disrepute. Evolutionary theory, however, gives reason to reconsider it. The Price equation, a model drawn from theoretical biology, identifies specific conditions that facilitate the transition from a collection of individuals to a collective organism. It thereby provides a powerful framework for resolving the longstanding debate in political theory between those who view states as cohesive organisms and critics who emphasize rational individual choice. Our analysis suggests that organic theory can withstand the main criticisms offered by methodological individualists, but only with certain qualifications. Although organic theory is unlikely to apply to large, modern states, it may prove useful when applied to subnational entities.

Keywords

Political theory, cultural evolution, multilevel selection, methodological individualism

Introduction

Political theorists often compare the state to an individual organism (Durkheim, 2013; Hegel, 1991; Hobbes, 2012; Plato, 2006; Rousseau, 1962a, 1962b; Spencer, 1954; Turchin, 2016). But when, if ever, is this an apt analogy? When, as Rousseau puts it,

[1]Department of Economics, Ball State University, Muncie, IN, USA
[2]Department of Philosophy, Murphy Institute, Tulane University, New Orleans, LA, USA

Corresponding author:
Alexander Schaefer, Department of Philosophy, Murphy Institute, Tulane University, 105 Newcomb Hall 1229 Broadway, New Orleans, LA 70118, USA.
Email: aschaefaz@gmail.com

can we regard a collection of individuals as a single social "body" that acts with a will of its own? (Rousseau, 1962b: 33, 51)

Today, the prevailing answer is "never." As Jon Elster puts it, "to explain social institutions and social change is to show how they arise as the result of the actions and interaction of individuals" (Elster, 1989: 13; see also Elster, 1982). Many claim that acceptable explanations must "run in terms of the actions and reactions of individuals" (Arrow, 1994: 1). This perspective, often referred to as *methodological individualism*, is the default position in much of social science. If all explanations must reduce to individual behavior, then there seems to be little room for explanations that treat society as an entity with its own goals and agency.

Recent developments in theoretical biology challenge this assumption. Biologists have identified mechanisms and mathematical principles that explain how loose collections of individuals can become integrated wholes. Drawing on this work, we argue that the analogy between political units and organisms is viable under specific, formalized conditions. When these conditions are met, it becomes appropriate to describe a state as a kind of "superorganism" (Maynard Smith and Szathmáry, 1995). When they are not, individualist approaches remain more compelling.

Our central thesis is that the *Multilevel Selection* (MLS) *Framework* (defined in section 4) clarifies the variables and relationships that make the state-organism analogy useful. It helps adjudicate the longstanding debate between organic and individualist theories (Sec. 3) while also illuminating earlier political thought. Our conclusion strikes a middle ground between organicists and methodological individualists: *while large, modern states are typically not analogous to organisms, sub-national associations often exhibit key features of organisms.* Organic theory remains illuminating but only when applied at the right scale.

In the next section, we discuss the notion of an "individual organism," arguing that an organism's essence, at least for the purposes of the state-organism analogy, is its internal cooperation and coordination. Section 3 examines cooperation and coordination in the work of three organic theorists: Plato, Rousseau, and Hegel. It also discusses major critiques of organic theory offered by advocates of methodological individualism. Section 4 lays out the MLS Framework, with Section 5 showing how it bears on past theories of the organic state. Section 6 presents the key upshot of this analysis for contemporary political analysis: in large, complex societies, organic theory is misleading when applied to states but often illuminating at the subnational level.

On the meaning of "organism"

Before assessing the viability of the organism-state analogy, we must confront a foundational challenge: biologists disagree on what constitutes an individual organism. Without a settled definition, comparing states to organisms becomes conceptually difficult.

In a survey of the biological literature, Lidgard and Nyhart identified a wide range of criteria used to define individuality, including causal integration, collaboration, cohesion,

and agency. Different criteria yield different extensions of the concept (Lidgard and Nyhart, 2017).

Despite this diversity of definitions, there is a notable convergence on the idea of coherent functioning. Consider the following conceptualizations of individuality:

- Tolerance and mutual acceptance between parts (Pradeu and Vitanza, 2012)
- Internal integration enabling autonomous agency (Okasha, 2011; Wilson, 2004; Wilson and Barker, 2024)
- High cooperation and low internal conflict (Queller and Strassmann, 2009, 2016; Strassmann and Queller, 2010)
- Mechanisms for internal policing and boundary maintenance (Clarke, 2012)

Though framed differently, these definitions all point toward the *coherent functioning* of multiple parts. This idea becomes more precise when we consider the kinds of problems that undermine group functionality.

First, groups face cooperation problems when individual incentives partially diverge. The classic illustration is the Prisoner's Dilemma: individually rational choices lead to collectively inferior outcomes.

Second, even when interests align, groups can still face coordination problems. When multiple beneficial equilibria exist, and individuals lack shared knowledge about which to follow, coordination may fail. Multiple equilibria and imperfect communication can prevent even well-intentioned actors from achieving optimal outcomes (Lewis, 1969: 16).

In practice, most social interactions involve both conflicting and complementary interests, producing "conflictual coordination," a blend of cooperation and coordination challenges (Vanderschraaf, 2019). From this analysis, we interpret coherent functioning as the successful resolution of both cooperation and coordination problems. Accordingly, we conceptualize an organism as one that satisfies two criteria: robust cooperation and coordination among its constituent parts.

This definition may seem too spare, since even doctrinaire individualists allow that cooperation and coordination can emerge in equilibrium. The key term, however, is "robust." An organism does not cooperate only under ideal conditions. It sustains cooperation even when private incentives diverge and coordination even when equilibrium selection is difficult.

Robust cooperation and coordination yield a form of group-level rationality. Cooperation ensures Pareto-efficient collective choice.[1] If an outcome is not Pareto efficient, then at least one individual is either acting irrationally (failing to maximize utility) or uncooperatively (refusing to adopt a strategy at no personal cost in order to benefit another). The Pareto rule—which requires that all Pareto improvements be taken—defines a partial ordering. If we treat all Pareto efficient outcomes as equally preferred, this ordering is quasi-transitive for any finite choice set.[2] Cooperation thus ensures that, for any finite set of options, there exists at least one top-ranked outcome. Coordination, in turn, ensures that group members select the same Pareto-efficient outcome. The result is coherent, agent-like behavior: the group acts as if guided by a unified decision function.

This matters because classic organic theorists treat the state as an entity that behaves analogously to an individual decision-maker. If robust cooperation and coordination generate agent-like behavior, they help explain why the organism analogy can sometimes be apt.[3]

A final consideration that motivates our definition is its alignment with intuitive examples of multicellular organisms and how they fail. The human body, for instance, is a collection of cells that have achieved cooperation and coordination. Cells forego reproduction to perform specialized functions that sustain the organism, and they communicate to maintain systemic function. Many diseases reflect breakdowns in these processes. Cancer exemplifies a breakdown in cooperation: cells ignore regulatory signals and proliferate at the expense of the whole. Insulin resistance illustrates a breakdown in coordination: communication failures prevent cells from responding properly to metabolic conditions. In both cases, the organism's unity and coherence deteriorate when cooperation or coordination breaks down. Conversely, when cells cooperate and coordinate effectively, they form a unified, coherent agent.

We remain agnostic about whether cooperation and coordination suffice to produce a literal organism. Our claim is narrower: cooperation and coordination capture what matters for the state-organism analogy, because they generate the kind of unified agency organic theorists attribute to states. Because cooperation and coordination generate precisely this kind of agent-like behavior, they offer a compelling and analytically tractable definition of "organism" for our purposes.

Organism and its discontents

Our definition clarifies the challenge organic political theory has long faced in explaining how the members of a state act as a unified whole. This section examines how major organic theorists have addressed the problem of collective agency. While their approaches differ, each aims to show how a political community can approximate the coherence and agency of an organism by achieving coordinated cooperation; methodological individualists question whether such coherence is ever realistic.

Organic theorists on cooperation and coordination

Many political theorists have presented organism-state analogies, but the most elaborate and influential are those of Plato, Rousseau, and Hegel.[4] Each asserts that individuals can achieve cooperation and coordination and thus constitute an integrated whole.

Plato initiates this tradition in *The Republic* by drawing an analogy between the individual and the city (Plato, 2006: 368d–369a, 462c). In developing this analogy between the individual and the polis, Plato introduces a key theme of organic theory: the alignment of individual and collective interests. In a just city, each part of the political body, like each part of the just soul, identifies with the interests of the whole: "whenever anything good or bad happens to a single one of its citizens, such a city above all others will say that the affected part is its own and will share in the pleasure or pain as a whole" (462a–d).

Coordination, on the other hand, enters Plato's account through his analogy of a "harmony," anchored in a division of labor among three classes—guardians, auxiliaries, and producers (Plato, 2006: 431a–432a, 434c, 442e). For Plato, functional differentiation in the form of a division of labor is crucial for the city, just as it is for the individual organism (Plato, 2006: 369b). The guardian class rules, the auxiliary class enforces, and the commercial class produces the goods necessary for subsistence. In Plato's view, the needs of the city generate a telos that assigns functional roles to its members, a foundational idea in organicist political thought. Coordination is achieved when each part does its specific task without deviating, just as harmony is achieved among musicians when each plays her specific part. The point of Plato's harmony analogy is to show how this functional differentiation is compatible with agreement and unity. Citizens, like musicians in an ensemble, share a common project and are therefore highly disposed to cooperate, but what counts as cooperative behavior differs from one citizen to another, just as it does from one musician to another. For this reason, cooperation is fully compatible with hierarchical control.

Rousseau's most famous expression of the organism-state analogy is his concept of the general will, which he describes as the will of the "body of the people" (Rousseau, 1962b: 35, 40). In a just society governed by the social contract, individuals become interdependent, and the general will reflects their shared interests (83–4). Each person "places in common his person and all his power under the supreme direction of the general will; and we receive as a body each member as part of an indivisible whole."[5] Through this act of submission, a "moral and collective body" is formed.[6] As citizens mature and recognize their interdependence, they develop a desire to support the whole and cooperate with others in their moral community.

Rousseau, like Hegel, treats preferences and institutions as coevolving: human nature shapes institutions, and institutions shape human nature.[7] Institutions can shape citizens' dispositions, making voluntary cooperation self-sustaining. As Rousseau puts it, "At the birth of societies … the leaders of republics create the institutions; thereafter, it is the institutions that form the leaders of republics" (1962b: 51).

While Rousseau's account of the institutionally shaped preference to abide by the general will describes, in essence, a disposition to *cooperate*, his account of coordination relies on deliberative democracy. Assuming citizens wish to obey the general will, the question must be answered: what does the general will command? The procedure for uncovering its demands leads to social coordination. According to Rousseau, each citizen votes based on her best estimate of the general will (Rousseau, 1962b: 106). Given diverse perspectives and epistemic limitations, disagreement is inevitable. However, such disagreement need not undermine unity. A voting procedure transforms good-faith disagreement into a determinate outcome, which all citizens can accept as the expression of the general will.[8] By adhering to the decisions of this procedure, citizens can achieve coordinated collective action.

Building on Rousseau, Hegel offers perhaps the most elaborate organic theory of the state. Hegel accuses social contract theorists of misrepresenting the state as a voluntary association or club (Hegel, 1991: sec. 258). In doing so, they make two basic errors: First, they present the state as organized rather than *self-organizing* (Wolff, 2004:

301–302). Much like an organism, the state develops over time and acts to preserve itself. Second, aside from Rousseau, they miss the *reciprocal relationship* between the state and the individuals it comprises (Westphal, 2018). The state provides conditions under which individuals develop their ends, identities, and moral personalities. The state is therefore both the *origin and result* of particular individuals (Singer, 2001: 46).

Like Rousseau, Hegel seeks an institutional foundation for cooperation. A well-functioning state cultivates in its members a shared set of "satisfactions, activities, and way of life," thereby fostering social union (Hegel, 1991: sec. 258). In Hegel's ideal state, cooperation arises from self-consciousness and mutual readiness to act collectively, reducing the need for coercion: "Coercion is the mark of undeveloped, undifferentiated structures. Where self-consciousness comes into its own, coercion becomes superfluous" (Avineri, 1972: 193). In this way, Hegel's theory incorporates what biologists and complexity theorists call *downward causation*, where higher-level structures (e.g., the state) shape the behavior of lower-level components (e.g., individuals).[9]

Hegel's approach to coordination involves two components. First, in his account of the rule of law, Hegel emphasizes the importance of *publicity.*[10] Second, Hegel introduces a highly limited but symbolically crucial monarch. For Hegel, the figurehead of the state "has only to say 'yes' and dot the 'i,' because the throne should be such that the significant thing in its holder is not his particular make-up … In a well-organized monarchy, the objective aspect belongs to the law alone, and the monarch's part is merely to set to the law the subjective 'I will'" (Hegel, 1991: sec. 280). As Avineri puts it, this role is "both essential … but also ultimately trivial" (Avineri, 1972: 188). It provides a focal point for collective decision-making, enabling coordinated action through a publicly recognized expression of will.

All three theorists recognize the importance of cooperation and coordination for their organism-state analogy. Without both features in place, the organism-state analogy risks being more misleading than illuminating. Yet, as we will see, many question the realism of robust cooperation and coordination in human groups. For political theory, the most influential criticisms along these lines come from self-described *methodological individualists*.

Methodological individualism and the critique of organic theory

Organic political theory has faced sustained criticism from methodological individualists, especially in economics. Their favored approach explains social phenomena by reference to individual choices, holding that "all theorizing, all analysis, is resolved finally into considerations faced by the individual person as decision-maker."[11] Proponents of methodological individualism have offered compelling reasons to reject the organic paradigm. John Stuart Mill, for example, claims that because individuals' actions bring about social outcomes, we must understand social outcomes in terms of the properties of individuals (Mill, 1843: 6.7.1). As Kenneth Arrow (1994: 3) writes: "[t]he individual in the economy or in society is like the atom in chemistry; whatever happens can ultimately be described exhaustively in terms of the individuals involved."[12]

Methodological individualism motivates two central criticisms of organic theory.[13] First, group-level explanations seem incomplete: only individuals have intentional states,

so talk of group interests or goals is at best metaphorical and at worst anthropomorphic (Watkins, 1957: 105–106).

Understood as a methodological thesis, however, organic theory need not claim that the state literally has beliefs or desires. It needs only to claim that the state behaves in a way analogous to organisms that *do* possess these mental states. Thus, the challenge that this criticism of holism poses for the organic theorist is not that organic theory offers an incomplete explanation—which is true of any nonreductionist field of study, including psychology, biology, and even microeconomics—but that there is no reason to expect groups to exhibit the same degree of coherence as an organism.[14] This leads directly to the second central criticism of organic theory.[15]

Modern economic theory highlights the fragility of cooperation within groups. Influential models developed by Paul Samuelson (Samuelson, 1954), Garrett Hardin (Hardin, 1968), and Mancur Olson (Olson, 1965) demonstrate the frequent divergence between individual rationality and Pareto efficiency. As Olson argues, and Douglass North (North, 1968) elaborates, this divergence creates an explanatory gap in group-level theories, such as those found in Marxist thought: they fail to explain why individuals would willingly make sacrifices to advance group interests, however those interests are defined.[16] Again, this criticism implies that the analogy between an organism and a state is misleading because groups do not exhibit coherence or approximate rationality as individuals do.

This criticism strikes at the heart of the organic conception by challenging the likelihood of cooperation. It denies that individual interests will naturally coincide with group interests. Appeals to benevolent rulers, civic virtue, or shared identity don't explain by themselves why individuals would bear personal costs for the sake of the group. Nor can external monitoring and enforcement provide a full solution, since rulers themselves have incentives to exploit their positions, inviting the classic question: *Quis custodiet ipsos custodes?* There is more reason to assume that the rulers will pursue their own interests than that they will be fully benevolent or impartial (Buchanan, 2003).

For organic theory to withstand these criticisms, it must show how groups can systematically overcome failures of coordination and cooperation. Cooperation enables prioritization of collective interests, while coordination ensures a shared understanding of those interests and how to pursue them. Defending the state-organism analogy thus requires showing how individual and collective interests can be brought into alignment.

As we will see, recent developments in evolutionary theory allow the organic theorist to defend a quasi-Hegelian account of how individuals internalize values that serve the emergent goals of the whole. This Hegelian-style approach relies on downward causation to explain how, over time, individuals can acquire preferences that align with those of the social whole, thereby generating meaningful overlap between personal motivations and collective aims.

In the next section, we examine how the MLS framework specifies the conditions under which cooperation and coordination can emerge. This framework enables organic theorists to respond to their individualist critics with a more robust, empirically grounded account of collective agency.

The multilevel selection framework

From a biological perspective, entities are inherently multilevel: from society to the cell, each level consists of smaller units while also constituting a larger whole (Lee et al., 2019). For example, the human organism is composed of cells. Yet, it also exists within a broader social community of other human organisms. Which level exerts the most influence on evolutionary outcomes depends on a range of parameters that can shift over time (Wilson et al., 2013: 24). Evolutionary "transformations" occur when the dominant level of selection shifts, leading to profound changes in organization and behavior.

The kind of transformation that concerns organic theorists is a transition from the individual or associational level to a higher level, that is, the state. Building on the work of Lynn Margulis (Margulis, 1970), the biologists John Maynard Smith and Eörs Szathmáry developed a theory of major transitions to explain how lower-level entities give rise to higher-level "superorganisms" (Maynard Smith and Szathmáry, 1995). Their examples include the emergence of cells, multicellular organisms, insect colonies, and human societies. In each case, mechanisms were required to suppress competition within groups. Through processes such as symbiosis or symbiogenesis, group members adapted to one another, forming cooperative, coordinated units that function as unified wholes.

The price equation: four conditions for group cohesion

The key challenge in explaining these transitions is understanding why individuals sometimes act cooperatively even at personal cost.[17] According to the selfish gene theory, traits that reduce individual fitness should never evolve. However, multilevel selection shows that groups of cooperators can outperform groups of selfish individuals. As Wilson puts it, "Selfishness beats altruism within groups. Altruistic groups beat selfish groups" (Wilson, 2015: 27). The question is: under what conditions can this dynamic lead to the proliferation of prosocial traits that achieve group cohesion? In other words, when does benefit-to-the-group overpower benefit-to-the-individual within the group? The mathematical framework developed by George Price provides modern biologists with a crucial tool for addressing this question (Price, 1970).

The *Price equation* can model evolutionary change in a wide variety of systems, from cells to organisms to groups of organisms (Gardner, 2008). Its generality allows it to model both genetic and cultural evolution across multiple levels (Okasha, 2006). Most importantly for our purposes, the multilevel version of the Price equation identifies the key conditions for the spread of group beneficial traits despite the costs to individuals. There are several ways to represent the Price equation, but the most convenient formula for understanding multilevel selection comes in the form of a simple inequality:[18]

$$\frac{Var(z_j)}{Var(z_{ij})} > \frac{-\beta_2}{\beta_1} \tag{1}$$

In (1), z represents a trait, typically a quantifiable phenotype. By assumption, this trait is *cooperative* in the sense that it benefits the group as a whole and does so at some cost (or foregone benefit) to the individual exhibiting that trait. The subscript j indicates that

the variable describes a feature of the population of groups, and the subscript *ij* describes a population of individuals within some group *j*. β_1 and β_2 are regression coefficients. β_1 measures how changing the average level of some trait *z* within a group affects the average fitness of the group.[19] In contrast, β_2 measures how changing an individual's level of *z* within a group will change that individual's fitness. This formula implies four features that promote the spread of prosocial traits:

1. Lower within-group variance $Var(z_{ij})$: For any group *j*, > the relevant trait *z* does not exhibit a high degree of variance > in the level of *z* exhibited by its members. In other words, > members of a group exhibit similar levels of the prosocial trait. > When variance is low, defectors are less able to exploit > cooperators.
2. Lower within-group selective pressures ($|\beta_2|$) against > the trait: For some individual *i* in group *j*, possessing > higher levels of *z* does not impose a massive fitness cost > (including foregone benefit) on *i* relative to other members of > *j*. The personal cost of cooperative behavior must be modest. > Even if cooperation is not individually beneficial, it must not be > prohibitively costly.
3. Higher between-group selective pressure (β_1) for the > trait: Groups with higher average *z* levels have a much higher > average fitness. More cooperative groups must outperform less > cooperative groups. The more substantial these differences, the > stronger the group-level selection.
4. Higher variance between groups $Var(z_j)$: Groups within the > population exhibit very different average levels of the *z* trait. > Groups must differ meaningfully in their cooperative traits; > without such variation, selection has nothing to act on.

This inequality can be represented graphically to capture its intuitive logic (Figure 1).

Each black diamond in Figure 1 can be thought of as an individual organism and a member of some group, while the dotted circles around clusters of these diamonds demarcate groups within the population. In this graph, $Var(z_{ij})$ is a measure of how close the diamonds within each group are, as measured by the *x*-axis. $|\beta_2|$measures how steeply negative the slope of the line of best fit is, again within groups. β_1 measures the slope of the line of best fit *between* the groups. And, finally, $Var(z_j)$ measures how spread apart the groups are, as measured along the *x*-axis. Put simply, what inequality (1) says is simply that the overall relationship between the *z* trait and fitness is highly positive when the diamonds within a group are clustered tightly together (low $Var(z_{ij})$ and low $|\beta_2|$) and when the groups are spread far apart (high β_1 and high $Var(z_j)$).

The firm as an organism

This abstract presentation is easier to grasp through a concrete example. Surprisingly, for a discipline that avows a firm commitment to methodological individualism, economists typically model firms as rational agents that maximize profits. They do so despite the fact that firm behavior results from a complex interplay of individual choices. As Lee et al. (2019: 44) put it, "What is most striking about the corporation is its ability to bind its

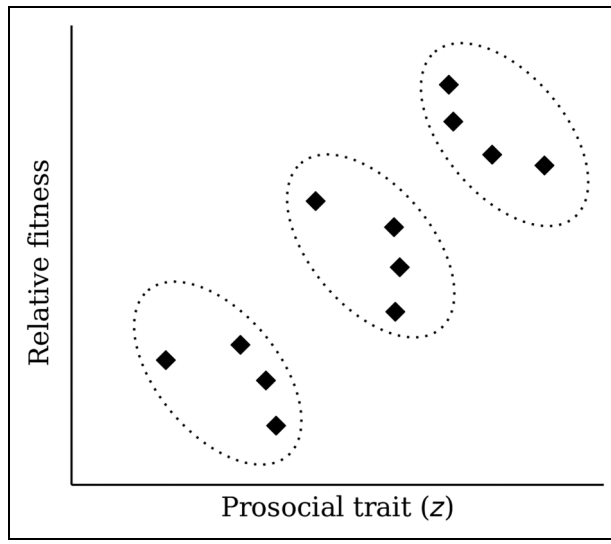

Figure 1. Individuals (diamonds) within groups (dotted circles) are more fit with lower z. Groups with higher average z are more fit.

different parties—employees as well as investors—to the collective interest of the corporation as a whole." The multilevel Price formula helps to explain this striking fact.

Following Alchian, we can think of firms in a competitive market as engaged in an evolutionary struggle for survival (Alchian, 1950). A firm's traits include its product specifications, manufacturing techniques, marketing and pricing strategies, and so on. Crucially, it will also include the company culture and the degree to which team members—employees, managers, and executives—seek to promote the firm's interest rather than maximize their own personal material interests. The z trait measures this culture, or, more specifically, it measures each team member's willingness to perform her job diligently and to refrain from shirking, free-riding, embezzlement, and so on.

While maintaining a high average z within a firm is critical to maximizing profits, it is not in any employee's material interest to exhibit a high z. Nevertheless, a competitive market provides a context in which a collection of individuals is likely to coalesce into an integrated team, capable of approximating profit-maximizing behavior. This occurs because, in the competitive context, all four conditions implied by formula (1) are satisfied, and selection at the firm level can therefore overpower selective forces at the individual level.

Competitive markets tend to satisfy all four conditions for the emergence of cooperative teams:

1. Lower within-firm variance $Var(z_{ij})$: Firms attempt to hire for cultural fit, invest significant sums to promote the culture among employees, and use internal norms

to align behavior and curb internal competition that leads to counterproductive behavior. Firms' distinct cultures reduce within-group variance $Var(z_{ij})$.

2. Lower within-firm selection ($|\beta_2|$) against cooperation: Performance monitoring, promotion systems, and sanctions reduce the advantages of opportunistic behavior. Most firms attempt to promote and reward their most diligent workers (those with high z) and to dismiss or discipline workers who appear to be taking advantage of the firm (those with lower z).
3. Higher between-firm selection (β_1) for the trait: Competitive markets reward firms with cohesive, productive teams; unsuccessful firms lose market share or fail. Alchian emphasizes that a competitive market imposes rather intense selective pressure on firms. Firms that don't maximize profits will lose market share to those that do, and will soon fail. This competitive pressure captures the essence of condition (3), viz., higher between-group selective pressures (β_1) for the trait.
4. Higher variance between groups $Var(z_j)$: Firms differ widely in culture, strategy, and internal cohesion, creating the variation necessary for selection. In other words, some firms are much more successful at aligning behavior than others. Firms with different levels of norm adherence cause higher between-group variance ($Var(z_j)$).

In this environment, firms can behave as coherent, goal-directed entities. The MLS framework thus clarifies why treating firms as rational actors is empirically successful: the competitive structure suppresses internal conflict and rewards group-level coherence.

Many other concrete examples suggest themselves. Drawing on Polanyi (1951), we might analyze scientific teams in a decentralized and competitive research environment as organisms that satisfy all four conditions. Or, drawing on Tiebout (Tiebout, 1956), we might also analyze local governments within a competitive, federalist structure using the MLS Framework. The central point of the Framework is that certain interaction structures allow groups to coalesce and pursue collective interests, even when cooperation and coordination seem unachievable for materially self-interested individuals.

The evolution of coordination

Most discussions of multilevel selection focus on cooperation, but *coordination* is equally important for group-level agency. Appreciating how coordination fits into the picture is important for understanding how higher-level selection can generate collective agency and for avoiding a common misunderstanding related to condition (1) of the MLS Framework.

One reason for the common neglect of coordination in discussions of multilevel selection is a failure to appreciate the severity of the challenge. When first presented, the coordination problem often seems trivial because it is illustrated as a 2×2 matrix with two rather obvious equilibria. Players can easily identify and achieve an efficient solution, especially if they can communicate beforehand. The ease of finding an efficient solution in simple games obscures the difficulties that arise in more realistic scenarios. Coordination problems in the real world involve many individuals attempting to select from a vast set of possible equilibria.[20] In such scenarios, two kinds of non-trivial

problems emerge. First, participants may coordinate on a stable equilibrium, but the equilibrium may be suboptimal. Second, due to communication difficulties and inaccurate expectations, the group may persist in a state of disequilibrium.

However, just as with cooperation, higher-level selection can favor groups that overcome these challenges and coordinate on approximately efficient equilibria. Evolutionary theory tells us little about the mechanisms by which they do so. The method may involve a process of intentional design, in which far-sighted leaders steer the group towards an efficient coordination point. At least as often, societies may "stumble upon" coordination schemes, perhaps relying upon arbitrary correlation devices.[21] In either case, once discovered, these schemes can be stabilized and spread through group-level selection. A range of models supports this intuition, showing how evolutionary pressures lead to the proliferation of efficiently coordinated groups.[22]

The way in which multilevel selection supports coordination explains how functional differentiation—for example, the division of labor—is compatible with condition (1) of the MLS Framework. This condition specified that within-group variance should not be too large; otherwise, within-group selective pressures may overwhelm between-group selective pressures. Yet, the most effective collectives often exhibit a high degree of diversity. The human body, for example, contains a diverse array of organs composed of cells that differ in functionally important ways. Similarly, a large, advanced firm will comprise many departments, made up of specialists with very different backgrounds. Does this not belie the claim that effective groups must exhibit low variance in their traits?

To see why this objection is mistaken, it is crucial to bear in mind that variance must be minimal for *a narrow set of traits* that might plausibly be described as prosocial traits. In the MLS Framework, the z trait does not refer to all traits. Instead, it refers to a specific disposition: the willingness to cooperate as a team member, whatever that may entail, even at some personal cost. Adhering to a social norm of honesty, to a work ethic, or to refraining from free-riding on collaborative projects are all examples of traits that could be modeled in the MLS framework as z traits. Traits like being an engineer or an accountant are not plausible examples of z traits.

A crucial and related point is that in group efforts, especially in larger groups, cooperation is never enough. As Adam Smith famously argued, specialization and the division of labor are crucial for effective collaboration. But they require a high degree of coordination. Even highly altruistic group members would be unable to further the group's interests if they didn't know their specific role and its associated expectations. Effective cooperation thus requires coordination, and the MLS Framework helps to explain the emergence of both, even when examining individual-level tendencies alone does not.

In this way, MLS theory deepens our understanding of when and how social cooperation and coordination can be achieved. Crucially, it responds to both types of individualist critique: it explains when individuals within the state can acquire prosocial dispositions and when those prosocial individuals can act together in a coordinated fashion, each fulfilling her specific role. According to our analysis, the longstanding debate between organic theorists and their critics can thus be reframed as a more tractable empirical question: *Does the state satisfy the four conditions necessary for a major transition from a collection of individuals to a collective superorganism?* The key upshot of our analysis, defended in the next

section, is that organic theory is inapt for analyzing modern states. At the same time, it offers a valuable analytic lens for analyzing a wide range of subnational, mid-level organizations (Sec. 6). While its scope must be limited, organic theory should therefore not be abandoned. In the sections that follow, we show how the MLS framework can be leveraged to adjudicate the dispute between organic theorists and their critics.

Applying the MLS framework to organic theories of the state

To determine whether a state can be meaningfully described as a superorganism, we return to the four conditions under which cooperative behavior enjoys a selective advantage, as outlined in Section 4: low within-group variance of cooperative traits, a low individual disadvantage for cooperative behavior relative to selfish behavior, high group-level advantages for cooperation, and high between-group variance in the prevalence of cooperative traits. When a state satisfies these four conditions, it acquires a degree of coherence and functional unity analogous to that of an organism.

This section applies the MLS framework to the political theories of Plato, Rousseau, and Hegel. The analysis yields three payoffs. First, we gain a theoretically grounded assessment of each thinker; second, we highlight the implicit assumptions that make their theories plausible or implausible; and third, we draw general lessons about when the organism-state analogy is appropriate. In other words, the MLS Framework formalizes and generalizes the features of cohesive groups that political theorists have grasped only at an intuitive level, while also highlighting defects that arise when organic theory is misapplied.

Plato's organic state

The MLS Framework illuminates certain statements Plato makes about both the internal and the external relationships of his ideal city-state. Internally, Plato seeks to ensure that members of the polis will all have a strong tendency to identify their personal interests with those of the whole, or what we might think of as maintaining a uniformly high level of the cooperative z trait, thus satisfying criterion 1. Plato foregrounds this concern when considering the ideal *size* of a city-state, arguing that social unity requires strict limits on its size (Plato 2006: 423b–c).[23] If a city grows too large, individuals will cease to identify with the whole, leading to selfish factions.

Even in a properly sized polis, Plato views education—which he calls "the one great thing" (Plato, 2006: 423e)—as a fundamental instrument for ensuring cooperative harmony. Its primary purpose is to cultivate virtue, a key feature of which is an eager willingness to do one's part in serving the good of the whole (2006: 623e–624b; 1997: 653a–d).[24] In sum, limitations on size and virtue-focused education are, through the lens of the MLS Framework, mechanisms for reducing within-group variance (and increasing average prevalence) of a cluster of traits properly modeled as z traits.

In addition to achieving uniformly high levels of z traits, Plato also lays out mechanisms for suppressing within-group selection (criterion 2). The primary mechanism for doing so comes in the form of Plato's material egalitarianism. Plato warns that inequality can divide the state and thus destroy it (Plato, 2006: 416–417; 1997: 697b–e).

Consequently, guardians and auxiliaries must share all things in common and live under an austere communism (Plato, 2006: 416d–e, 423e). While the strictest egalitarianism applies only to the guardian and auxiliary classes, Plato does flag the threat posed by the accumulation of private wealth, arguing that it could give rise to an oligarchy.[25] Through the lens of the MLS Framework, we interpret this preoccupation with material equality as a way of suppressing within-group selective pressures; it eliminates special benefits that accrue to those willing to cheat or free-ride, thereby weakening the comparative desirability of antisocial traits such as greed and suppressing their spread.

Plato's discussions of the relations *between* states also map remarkably well to the MLS Framework. He shows an awareness of inter-group competition (criterion 3) and emphasizes variance in the quality of these competing states (criterion 4). Competition is apparent in his frequent allusions to war (Plato, 2006: 373d–e; 422–423). In *The Laws*, he even tells us that every city is "by nature fighting an undeclared war against every other state" (1997: 626a). Competition also occurs in the cultural domain. The fear of unhealthy cultural influence lies behind Plato's infamous banishing of the poets from his ideal city (Plato, 2006: 398a). His anxiety about cultural competition is even more pronounced in *The Laws*, where Plato warns that ports and trade bring in "wicked" foreign customs and declares that a good city must resist the "disgraceful copying of enemies" (Plato, 1997: 704a–705c, 706a). Plato thinks foreign visitors must be limited "because the unfamiliar customs of the visitors rub off on to their hosts—and this, in a healthy society living under sound laws, is an absolute disaster" (19 97: 950a). At the same time, travel to foreign cities must be strictly regulated and monitored. Those under the age of 40 are too impressionable to travel abroad; those who do travel abroad must return and recount the vast inferiority of foreign social and political customs (Plato, 1997: 950d–951a). These same passages attest to Plato's belief that cities will exhibit large differences in their degree of virtue. The MLS Framework would interpret this as a claim that condition 4—*viz.* high variance of *z*-trait between groups—is generally satisfied.

In short, the MLS Framework renders Plato's organism quite plausible. Like many organic theorists, Plato focuses on the ideal state, but he also extends his analysis to imperfect states, which he treats as unhealthy organisms. Classical Athens, as a city-state, had a relatively small and culturally homogeneous population. Citizens shared a rich civic culture, common values, and broadly agreed on the key individual virtues. In such a context, the first two conditions are likely satisfied: low variance in norm compliance and effective social mechanisms for punishing violators. The third and fourth conditions also appear to hold. Athens competed intensely with neighboring city-states—most famously Sparta—and these city-states exhibited significant variation in their moral and political institutions. In this competitive environment, group-level selection pressures were likely powerful. It is therefore unsurprising that Plato developed the organism-state analogy and may have viewed Sparta as a more unified or "healthy" organism than Athens. Indeed, Plato's admiration for Sparta's unity may have shaped his critique of Athens' openness and instability.[26]

Rousseau's organic state

An admiration of Sparta is not the only point on which Plato and Rousseau concur (Shklar, 2009). For Rousseau, a legitimate state rests on "shared mores, customs, and

opinions" (Scott, 1997: 803), a point that maps directly onto conditions 1 and 2 of the MLS Framework. Through this shared affective cultural basis, citizens exhibit a strong and uniform orientation toward the common good, uniting as a social body, each giving himself to all and identifying the common good as his own (Rousseau, 1962b: 33). Like Plato, Rousseau holds that one of the conditions of a unified polity with a general will is a strict limit on its size. If a polity became too large, sharp disagreements—that is, too much within-group variance—would undermine its status as a unified organism. When an individual extends her concern too widely, it evaporates; by contrast, seeing one another regularly supports a sense of the total whole to which we belong (Rousseau, 1962a: 251; 1962b: 56). A small state thus supports internal unity, that is, a propensity to identify one's interests with the common good.

Rousseau also recognizes the need for suppressing within-group selection. Those rare few who fail to identify with the interests of the state will be properly disciplined, that is, "forced to be free" (Rousseau, 1962b: 36). Such punishment might be viewed, through the MLS Framework, as a means of reducing within-group selective pressures (condition 2), as can Rousseau's proposals for distributive justice. Like Plato, Rousseau presents material egalitarianism as a crucial mechanism for social unity. He goes beyond Plato in applying it to the entire citizenry, asserting that the general will *always* tend toward equality (Rousseau, 1962a: 460). According to Judith Shklar, Rousseau holds that equality is the state's single most important interest (Shklar, 2009: 169).

Unsurprisingly, in the context of eighteenth-century Europe, Rousseau is deeply concerned with interstate competition. He discusses military competition, asserting that a properly sized state will be proportionally stronger than a large one, even while conceding that, if too small, a state will be incapable of defending itself (1962a: 251, 485; 1962b: 56).

Like Plato, Rousseau also views cultural distinctiveness as essential: shared customs preserve internal unity and distinguish one polity from another, satisfying condition 4. To stop a city from disintegrating culturally, the legislator must establish unique cultural mores and customs; these cultural attributes will foster fraternal relations among members of the state, and these fraternal relations act "as barriers" to keep the state and its members "separate from their neighbors" and to stop "them from mixing with one another" (Rousseau, 1962b: 428). As with Plato, Rousseau's concern about cultural competition sometimes veers into xenophobia: "Every patriot hates foreigners" (Rousseau, 1921: 7). Between his recognition of militaristic and purely cultural competition, along with his insistence that his city will have a distinct tendency to exhibit virtue in the form of social union, the MLS Framework reveals Rousseau's depiction of the ideal state as one in which group-level selection dominates.

Rousseau's inspiration, the closest real-world approximation to his ideal state, was the self-governing city of Geneva. At the time of Rousseau, it likely had a population of fewer than 25,000. Geneva was politically and culturally distinct from its neighbors, a point that Rousseau emphasizes in his dedication of the Second Discourse. Given the intense interstate competition of eighteenth-century Europe, it is no surprise that the analogy between cities and organisms struck Rousseau as appropriate, just as it did for Plato.

Hegel's organic state

Like Plato and Rousseau, Hegel emphasizes the importance of identifying individual interests with those of the whole, presupposing a uniformly high prevalence of the cooperative trait (condition 1). In his ideal state, "duties are experienced as one's own will" (Hegel, 1991: secs. 148–149). The patriotic individual is one who "… knows that his own interest is preserved in the interest and end of the state" (Hegel, 1991: sec. 268). This suggests that Hegel views a high concentration of prosocial dispositions (uniformly high z trait) as a hallmark of the organic state. However, Hegel does not adequately describe any mechanisms that will bring about this uniformity. Unlike Plato and Rousseau, Hegel does not seem to restrict the size of the state and envisions a large, complex state with an extensive civil society and a large administration (Hegel, 1991: secs. 182–208, 260, 275–286, 287–297). Indeed, some have suggested that Hegel had the Prussian Empire in mind with an eye toward pleasing Frederick William III (Popper, 1971b: 31–35).

Large states generally exhibit internal diversity and weak informal social enforcement, reducing their ability to maintain a single, cohesive ethical life, and making it difficult to satisfy conditions 1 and 2. While Hegel recognized the importance of a low internal variance of the z trait, he did not offer a compelling explanation of how this condition would come about. Relatedly, suppressing within-group selective pressures is difficult, if not impossible, for large states. Unlike smaller, tight-knit communities, large states struggle to enforce morality, even if they are effective at stopping more disruptive crimes.[27]

Hegel's discussion of the external conditions of his ideal state also raises a host of questions. He is adamant that there is a high degree of variance between states (condition 3) and that each state embodies not just different laws but a distinct "ethical life" (condition 4) (Hegel, 1991: secs. 257–260). This is why constitutions cannot simply be transplanted from one state to another (Hegel, 1991: secs. 274–280). Hegel says little about militaristic and cultural competition in concrete terms, but his account of history as a struggle between distinct national spirits strongly suggests selective forces operating between states (Hegel, 1991: secs. 341–360). As Hegel puts it, "world history is the world's court of judgment," and, elsewhere, "states are independent of one another, and therefore their relations to one another are relations of externality. They stand to one another in a condition of struggle, because each asserts its own independence" (Hegel, 1991: secs. 331, 340). Hegel's account does not explain how his state will maintain its unique identity and avoid "dissolving" (to borrow Rousseau's term) into its neighboring states. Indeed, Hegel's large, extended, internationally connected state seems highly prone to external influence.

In sum, the MLS Framework shows that Hegel's organic theory does not adequately establish the conditions required for a state to behave like a unified and coherent organism. First, Hegel does not seriously confront the rise of conflict and diversity within the modern state, except in his exhortation to consider only the ideal state rather than any existing state. Second, in contrast to Plato and Rousseau's small, manageably homogeneous city-states, Hegel's ideal state is a large, modern nation. And large, modern nations

are unlikely to satisfy conditions 1 or 2; they tend to be highly diverse, including in those traits corresponding to a *z* trait. This diversity weakens moral consensus and enforcement mechanisms. Moreover, as both Plato and Rousseau argued, large, internationally-connected states do not support the same degree of cultural differentiation as smaller, closed states, which undermines condition 4. Applying the MLS Framework to Hegel allows us to go beyond merely clarifying past work; this framework is also useful for critically assessing the theories on offer.

Summarizing and generalizing the analysis

Table 1 shows that the small city-states Plato and Rousseau had in mind satisfy the Price equation conditions fairly well, as they were developed with small, cohesive, culturally distinct city-states in mind. Hegel's theory, by contrast, does not satisfy the MLS criteria because it assumes that large, modern states can achieve unity on a scale that MLS makes unlikely. Group-level selection, the primary mechanism for downward causation, is unlikely to occur in large, diverse states.

Applying this analysis to our current political reality reveals the implausibility of assuming that state-level selection can ensure organic unity. Modern globalization undermines selection at the level of the political unit. Increased migration raises within-nation diversity of many important traits, undermining condition 1. At the same time, advances in communication technology create similar popular music, art, language, and science globally, arguably weakening condition 4. Some claim that condition 3 fails in modern settings, as competition between nations rarely results in the extinction or absorption of one group by another (Gaus, 2021: 71). However, some international conflicts are existential, and even setting this fact aside, the argument is not convincing in the case of cultural evolution. When considering the proliferation of cultural replicators, competitive pressure does not seem to have subsided. Given the trend towards constant global contact, competition between groups may be intensified simply by their more regular interaction, with each constantly winning or losing minor cultural "battles." In the realm of cultural evolution, competition need not be a life-or-death matter; it may simply involve the nonviolent spread of cultural practices or norms. That said, even if condition 3 is partially satisfied through cultural competition, the failure of conditions 1, 2, and 4 suggests that selection at the state level is weak. As a result, modern states are unlikely to meet the criteria for organic coherence, casting doubt on the applicability of organic theory to contemporary political reality.

Multilevel selection and subnational associations

The failure of large, modern states to satisfy the MLS conditions undermines the traditional analogy between states and organisms. However, this doesn't necessarily invalidate organic theory in contemporary political analysis. The key to applying organic theory effectively lies in identifying the appropriate level of analysis.

Organic unity requires that individuals form groups in which cooperation is rewarded and internal conflict is suppressed. Many subnational settings provide precisely these

Table 1. Organic theories in terms of price equation conditions.

Condition	Explanation	Plato	Rousseau	Hegel
1. Low within-group variance	Individuals within a group are similar in cooperative traits.	Satisfied: small-scale state and shared culture in the Greek city-state.	Satisfied: small-scale state and civic education in Geneva.	Not satisfied: Though assumed in an ideal state, it is unrealistic in a large, modern nation or empire like Prussia.
2. Weak within-group selection	Individual costs of cooperation are minimized. Institutions suppress selfish behavior.	Satisfied: Small-scale city-states facilitate monitoring and social censure.	Satisfied: Small-scale city-state facilitates monitoring and social censure.	Not satisfied: A large, diverse population makes internal policing of shared social norms difficult.
3. Strong between-group selection	High degree of competition at the group level, characterized by frequent group contact and/or high stakes.	Satisfied: City-state competition (e.g., Athens vs. Sparta) increases higher-level selective pressures.	Satisfied: Early modern Europe exhibited high levels of cultural and military competition.	Satisfied: Early modern Europe exhibited high levels of cultural and military competition.
4. High between-group variance	Groups differ significantly in cooperative traits. This allows selection to act on group-level differences.	Satisfied: Greek city-states exhibited distinct cultures and social norms.	Satisfied: Geneva was a city-state with a unique political culture, surrounded by heterogeneous states.	Not satisfied: The Prussian Empire was too large and internally diverse to exhibit sharp differences from neighboring states.

conditions. As noted above, market institutions often provide such a structure, allowing firms to coalesce into organic wholes and permitting economists to treat them as rational profit-maximizers (Alchian, 1950).[28] Other examples include scientific research teams (Tarko, 2015; Polanyi, 1962), local political jurisdictions (Tiebout, 1956), and religious associations (Gill, 2021). These collectives operate under competitive pressures that encourage internal cooperation while differentiating them from one another. If subnational associations can create their own institutions within specified jurisdictions and compete for members or influence based on the effectiveness of those institutions, then the four conditions for higher-level selection will likely be satisfied.

Subnational groups and the MLS conditions

Small, voluntary, or decentralized associations are well-positioned to meet the four MLS requirements:

1. Low within-group variance *($Var(z_{ij})$):* Voluntary associations, religious communities, and local jurisdictions tend to share certain values and priorities, minimizing within-group cultural variance (Aligica, 2019).[29]
2. Low within-group selection ($|\beta_2|$): Small groups can develop formal and informal monitoring and enforcement mechanisms to discipline defectors, maintain trust, and reinforce cooperative traits.
3. High between-group selection (β_1): When associations or jurisdictions compete within a larger system, they compete for members, resources, influence, or legitimacy. Groups that sustain cooperation and coordination tend to outperform those that do not.
4. High variance between groups ($Var(z_j)$): Different associations embody different norms, rules, or values. Consequently, each attracts members with distinct normative orientations and may also shape them over time. As long as groups retain autonomy to shape their internal institutions, meaningful differences between groups can persist, enabling selection to operate.

The modern state thus offers a framework in which organism-like associations can evolve.[30] Rather than a unified organism, the state is better understood as a "compound republic," consisting not just of individuals but also of nested subsidiary jurisdictions and voluntary associations, such as regional governments, municipalities, firms, churches, unions, and other interest groups that promulgate values or enforce rules (Ostrom, 1987). These substate units compete for resources and members, and under the right conditions, can transition into organism-like structures in their own right. This analysis suggests a deep connection between the political theory of polycentricity and multilevel selection theory.[31] In particular, polycentricity may entail conditions conducive to the emergence of collective organisms.

Even without being an organism in its own right, the modern state still regulates important areas of human life, and many of its laws and institutions enjoy widespread support or, at least, adherence. The key difference between a subnational organism and

a large, modern state does not lie in the mere fact of regulation and rule adherence, but in the mechanisms and explanations thereof. In an organic association, members' preferences correspond to a shared goal, or a set of shared goals, that they pursue jointly by relying on a coordination device (e.g., a priest or a manager). There is a functional *consensus* on the relevant goods to be pursued by the group, and this consensus justifies its rules, regulations, roles, and corresponding duties. By contrast, in the non-organic, large, modern state, rules and regulations are adhered to for a wide variety of disparate reasons. There is no consensus on the good, even if there is a *convergence* on the rules to be followed.[32] In many cases, the rules in force rest on a mere *modus vivendi*, in which shifting power tends to produce a corresponding shift in the rules in force. This dynamic is apparent in the major legal and social transformations that have occurred in the United States over the last century.

Some, especially those of a communitarian or conservative bent, have argued that this lack of moral consensus poses a threat to large, modern states.[33] While we do not take a stance on this issue, it's worth noting how our thesis relates to this debate. The MLS Framework identifies the conditions under which organic unity is likely to attain. For those who think such unity is a prerequisite for a legitimate or functional state, these conditions present a practical political agenda. On the other hand, those who reject organic unity as a viable goal for large, modern states can use this framework to clarify the severity of the challenge such states would face in the pursuit of organic unity.

The value and limits of organic theory

Viewing society as a set of competing and cooperating groups has several benefits. First, it allows for economy of explanation. If groups act with coherent agency, then focusing on the microlevel—that is, the level of individuals–introduces additional complications and "noise" without enhancing explanatory power (Hoel 2025); Flack 2017). Second, organic theory refocuses the inquiry on essential questions of institutional design. Organic theory presses us to ask first, which institutional conditions generate cooperative and coordinated wholes, and second, which forms of competition exist between groups. Some forms of competition, such as price competition between firms, contribute to human well-being, but others, such as corporate sabotage, do not. According to this view, the modern state's role is not to constitute a superorganism in itself but to act as the regulator and umpire for various superorganisms within its jurisdiction.

Organic theory also highlights a normative concern. Groups that act coherently can still be internally exploitative or externally harmful; coherency may even exacerbate these threats. However, when effective institutional safeguards are in place to mitigate such risks, cooperation and coordination remain valuable for human welfare.

Conclusion

Critics of organic theory correctly emphasize that conflicts arising from competing interests undermine the organismic status of the modern state. Modern states tend to be large

and open societies that incorporate individuals with differing priorities and varying levels of prosociality. They cannot, therefore, transition into collective wholes. At the same time, a modern state typically contains numerous lower-level governments, organizations, and associations; often, individuals within these organizations share common goals, values, and rules. When institutions structure these organizations within a competitive framework, processes at the subnational level can produce a degree of collective rationality within them. For this reason, organic theory remains valuable for social theory, even if it cannot be applied to today's dominant political units.

The MLS Framework thus imparts a dual lesson: methodological individualists must consider the possibility of group-level agency at intermediate levels. At the same time, organic theorists must apply their central analogy more carefully. Groups of individuals can indeed cooperate, coordinate, and become superorganisms—but achieving this transformation is no simple task.

By identifying the conditions under which cooperation and coordination emerge, the MLS framework allows us to adjudicate the longstanding debate between individualist and organicist theories. It shows that the question is not whether states or individuals exhibit organic unity, but rather when and where organismic properties emerge and at what scale they matter.

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ORCID iD

Alexander Schaefer https://orcid.org/0000-0001-6567-5445

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Notes

1. More precisely, outcomes will approximate subjectively-perceived Pareto efficiency. We do not assume perfect execution or perfect information, even if such assumptions are used in modeling.
2. The expanded edition of Sen's *Collective Choice and Social Welfare* (Sen, 2017: ch. 4) develops this framework. Quasi-transitivity means that the strict preference relation is transitive. That is xPy & yPz → xPz. The Pareto rule, defined $xPy \leftrightarrow \neg[(\forall i : yR^{i}x)\&(\exists j : yP^{j}x)]$, defines a social decision function that satisfies all four of Arrow's conditions, in addition to being quasi-transitive. Sen (2017: 54) shows that this result can be extended to infinite sets with a modest technical assumption, though the details are too lengthy to include here.
3. It is important to note that our definition of organism is much weaker than the recent account of group agency developed by List and Pettit. Most organic theorists, at least, are drawing an analogy, not claiming, as List and Pettit do, that groups have "minds of their own" (List and Pettit, 2011: 77). Another important point is that we are assessing organicism and individualism as *methodological*, as opposed to *ontological*, theses (Hodgson, 2007: 214). The disagreement between the two views is not about the fundamental building blocks of reality, but about which entities can be fruitfully studied as agents.
4. For purposes of exposition, we focus on just three paradigmatic political theorists. A comprehensive treatment of organic theory would span across disciplines, including sociology, institutional economics, and contemporary analytic philosophy. For an exploration of organicism in sociology, see Levine (1995).
5. Rousseau (1962b: 33). Our translation differs from common translations only in how it handles "en corps," which we translate "as a body," preserving Rousseau's intended analogy between state and organism. Donald Cress's "as one" captures the meaning but obscures the metaphor, while G.D.H. Cole's "in our corporate capacity" loses it entirely.
6. Rousseau (1962b: 33). Rousseau elaborates on this metaphor in his discussion of the death of the state (1962b: 91–92).
7. For a formal model, see Juarez-Garcia and Schaefer (2022).
8. We leave open whether Rousseau's voting procedure uncovers an independent truth about the general will (see Cohen, 1986) or whether it constructs it. Interpretations vary, with some viewing Rousseau as an epistemic democrat and others as a political constructivist.
9. Lee et al. (2019: 35). The related idea of an "etiological function" has recently been introduced to political theory by Burelli (2020: 630).
10. Hegel (1991: sec. 224). See also Westphal (2018). Hegel rejects case law in favor of formally promulgated legal codes, which better ensure publicity (Hegel, 1991: sec. 215).
11. Buchanan and Tullock (2004: 300–301). There are several alternative ways to construe methodological individualism (see Hodgson, 2007).
12. Arrow is explaining this view, not endorsing it.
13. We follow Heath (2005) in identifying these as the most significant critiques.

14. As Arrow showed, there is, in fact, no rational and reasonable social preference that can be derived from individuals' rational preferences (Arrow, 1950).
15. Arrow (1950). More precisely, Arrow's theorem asserts that, given two or more agents with rational preferences and three or more options in the choice set, there is no rational social preference derivable from the individuals' preferences that can simultaneously satisfy four reasonable conditions: universal domain, Pareto optimality, independence of irrelevant alternatives, and nondictatorship.
16. David Sloan Wilson (2016) casts this challenge in evolutionary terms.
17. Darwin himself grappled with this challenge (see Darwin, 2006: 870). See also Sober and Wilson (1998).
18. For a derivation of this formula from a more basic version of the Price equation, see Schaefer (2023).
19. Throughout this paper, the term "fitness" is used in the biological sense of replication. We focus on cultural, rather than genetic, replicators. So, the fitness of a group is its capacity to replicate its cultural traits, for example, rules, norms, and values.
20. Punishment norms can stabilize an infinite array of outcomes (see Boyd and Richerson, 1992).
21. Vanderschraaf (2019). Note that coordination and cooperation, as fitness-enhancing, group-level properties, are almost never the goals of agents. Instead, agents merely seek to find and beneficially interact with cooperators. The proliferation of cooperative behavior and coordinating norms at the population level is an unintended consequence of intentional behavior.
22. See Boyd and Richerson (1990); Robson (1990); Canals and Vega-Redondo (1998).
23. Several other organicist theories follow Plato in this regard.
24. Plato also emphasizes a disposition to be "gentle to each other" as a hallmark of proper education (2006: 416b).
25. Plato (2006: 550c–551b). Plato rarely discusses the class of workers, so it is hard to know exactly what economic regulations and distributive rules he would advocate for this class.
26. Popper (1971a: 176–183) characterizes Athens as a proto-typical "open society," arguing that its laudable openness threatened the unity and stasis that Plato idealized.
27. Durkheim, anticipating recent work on "tight" and "loose" cultures, observes that in modern societies, criminal law becomes eclipsed by tort law, reflecting less consensus on and weaker enforcement of morality (see Durkheim, 2013: 52–102).
28. Notably, Nozick draws on Alchian's article to illustrate the idea of a "filtering mechanism," the basis of one kind of invisible hand explanation (see Nozick, 1974: 21).
29. There is an important conceptual connection between Aligica's idea of problem-solving groups and the evolutionary literature on migration between groups. That literature shows that in-flows and out-flows between groups can enhance selective pressures when they are non-random (see Rogers, 1990).
30. This more "minimal" task of the state corresponds to the "political minimalism" defended by Rodríguez-Alcázar (2017: 738–739).
31. This relationship has been explored in at least two recent articles. Wilson et al. (2013) demonstrate that Elinor Ostrom's "design principles" for resource management support successful group outcomes because of their ability to engender beneficial group selection. Another article has also shown that polycentricity tends to support the emergence of Ostrom's design principles within self-organized communities (see Schaefer, 2023).

32. For the distinction between consensus and convergence, see Gaus and Vallier (2009: 58–59).
33. See, for example, MacIntyre (1998: 242); Sandel (1984: 82, 93–95); Deneen (2018: 179–180); Etzioni (1996: 159–160).

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