
REVIEW

National Economic Planning: What Is Left? by Don Lavoie

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1. INTRODUCTION

It might seem odd today to review a book that was originally published in 1985. One could think this review arrived thirty years late, and hence it is engaging in an exercise of history of economic thought to reconsider some old ideas perhaps no longer relevant. Nevertheless, Don Lavoie's *National Economic Planning: What Is Left?* ([1985] 2016), recently republished by the Mercatus Center, has not only retained much of its academic freshness and readability, but his ideas have preserved (if not increased) their relevance for contemporary discussions on public policy, the design of institutions, and political economy in general. This book is not only relevant but also foundational for future research on political economy and comparative institutional analysis and to enrich our understanding of existent institutions.

The reason why this book will retain its relevance resides in its explicit treatment of the inexorable role of incentives, power, and, more critically, contextual knowledge in affecting all forms of decision-making and governance structures. In addition, it examines how these elements are shaped by alternative rules (formal or informal) and the institutional framework, and ultimately how incentives and knowledge directly affect individuals' capabilities to enact sound and wealth-enhancing policies. Since incentives and knowledge will always be crucial and pervasive in shaping human decision-making and capabilities, this book should always remain relevant.

The book critically suggests that social scientists cannot fully understand public policy's effectiveness and the soundness of rules and governments' decision-making—and their possible limitations and propensity to fail—if they neglect the role of incentives and contextual knowledge. Social scientists may keep discussing public policy, including the efficiency and wider functions of governments and other institutions, without fully acknowledging the role

and implications of incentives, conflicts of interest, and personal knowledge. But in so doing, they are not overcoming or solving these inexorable problems (inherent in decisionmaking), which *real* decision makers must always face. They are instead ignoring or assuming these issues away. Therefore, they are engaging in an illegitimate and incomplete form of scientific and institutional political analysis. In assuming the aforementioned issues away while evaluating or proposing public policy and institutional solutions to be implemented in real life—and thus grounding their analysis on ideal theory and idealistic assumptions of human nature—social scientists are precariously proposing idealistic, unfeasible solutions to vital and pressing social issues. Unfortunately, such well-intended public policy proposals (based on questionable assumptions about human nature, incentives and knowledge) will always reveal themselves inherently fragile and susceptible to failure whenever confronted with real conditions of politics and human ignorance, including limited knowledge and misaligned incentives (Paniagua 2016). It is in reminding us to never forget these enduring, pressing issues and to incorporate them explicitly into our analysis of governments, public policy and institutions that Lavoie's book will always maintain its relevance.

Lavoie's book was originally published in 1985 as part of a two-book sequence. His other book, *Rivalry and Central Planning: The Socialist Calculation Debate Reconsidered* ([1985] 2015), which provided a novel review and account of the socialist-calculation debate, is more well known today in economics. That book could be considered an exercise in the history of economic thought, the history of market socialism, and comparative analysis. Most of the arguments contained in that book reiterate and appraise the original arguments given by both sides of the debate. Therefore, it was a vital retrospective and revisionist contribution about the history and unfolding of the debate and its arguments.

Lavoie's *National Economic Planning: What Is Left?* ([1985] 2016) can be interpreted as a complement to the previous book, but in a way that looks forward rather than back on the arguments about knowledge and planning. This book builds upon the historical insights and arguments exposed on his previous book and enriches them with modern ideas concerning the philosophy of science, epistemology, and ontology. The outcome is a novel framework that incorporates past insights but enriches them with a multidisciplinary literature that makes the arguments more compelling than before and connects them to more explicit scientific foundations based in the philosophy of science. Finally, by successfully applying this framework to evaluate and assess different public policy ideas and notions of contemporary economic planning, Lavoie also provided the foundations for further applications in comparative institutional analysis. Whereas his other book helped rescue crucial past ideas in political economy previously overlooked by modern economics, the book under review instead provides a novel vision (and a tentative framework) for building a new multidisciplinary and scientifically broad political economy. Overall both books appeared as a serious challenge to the widely held view of the apparent success of market socialists in reconciling planning and markets. They also made economists more deeply aware of the technical, epistemological and scientific *unfeasibility* of socialism and central planning of the economy.

The next section outlines the book and calls attention to some crucial insights of Lavoie's peppered throughout it. Section 3 indicates some of the recent explorations and far-reaching applications of Lavoie's framework for comparative institutional analysis and his substantial contribution to robust political economy (Pennington 2011). Section 4 concludes by considering the work of Lavoie's as providing a radical vision for a multidisciplinary research agenda.

2. THE BOOK ITSELF

Lavoie's book was intended to challenge the new conviction that piecemeal or "noncomprehensive" planning is a much more feasible and perhaps even better alternative to comprehensive and large-scale national economic planning.¹ In Lavoie ([1985] 2015), he shows how comprehensive economic planning fails severely to achieve market coordination and a rational economic order. He provides a powerful case for why comprehensive planning is economically irrational since it is based on unattainable and inaccurate philosophical and economic foundations and on idealistic and static

assumptions concerning human knowledge. Lavoie ([1985] 2016) applies a similar analytical framework not only to comprehensive planning, but also to modern top-down contemporary forms of noncomprehensive (selective) planning. As the subtitle of the book suggests, part of its scope is to analyze what is currently left in the theory of national economic planning as a method of economic organization once it has been proven a failure as a comprehensive (total) approach. Next, it scrutinizes what is left of that theory and its implications for the current crisis of identity and of viewpoints in the intellectual left.

The book is both a theoretical development and refinement of the critiques of planning, and also a practical assessment of actual planning proposals along with evaluating contemporary planning alternatives. Lavoie sets the stage in chapters 1 and 2 by examining the inevitable "economic problem," or how we must deal with socioeconomic coordination and scarcity. Building from Hayek, he describes economic and plan coordination as the main social problem all institutional arrangements must pay attention to in order to deal successfully with scarcity and economic survival (pp. 26–28). In so doing, Lavoie analyzes in depth the concept and positive role of "social intelligence" and the crucial role of social-relational dynamic processes in forming a better and "higher order" type of social relational intelligence. Subsequently he explores how the economic problem and social intelligence relate with each other and are dealt with by three alternative forms of social organization—tradition, markets, and planning—and how these forms of organization can actually deal with scarcity and coordination. Lavoie argues that tradition, albeit a primitive form of coordination, is able to use informal rules and taboos to successfully coordinate and organize simple and small societies. Markets instead allow for extending the complexity and dynamism of coordination to new realms of social activities and interactions, deepening and extending collaboration, the division of labor and knowledge and increasing well-being. Planning, however, according to Lavoie, attempts to replace tradition and markets with a more comprehensive and "rational" social order. It attempts to consciously and explicitly apply reason and science to coordinate and establish a path for future developments and to control the destiny of society, all grounded in a single, overarching design.

Lavoie also argues that planning suffers more critically than markets and tradition from two severe problems. The first problem is the "power problem" generated by planning, in which there is a dangerous and excessive concentration of control and economic and decisional power in the

hands of a planning authority. The whole idea of planning is to radically replace the decentralized decision-making process of the market with a centralized entity. This institutional shift has deep repercussions for social control, the balance of power and governance in society, undermining individual choice, previously established interactions, and freedom of association. Furthermore, this top-down control of society can lead to severe unchecked abuses of power, severely hampering human dignity, morality, liberty, and well-being (pp. 20–21). The second difficulty, which according to Lavoie is the most fundamental one, is the “knowledge problem,” which he reviews in depth in chapter 3.²

Chapter 3 “contains the central argument of the book” (p. 5); hence I will put particular emphasis on it. Here the author lays out a thorough description of the market process and develops fruitful analogies of it with interesting examples of “organizational social patterns” and social processes borrowed from the fields of modern biology and scientific discoveries. Here is where he also lays out in more depth and clarity than ever what he considers the “knowledge problem.” Lavoie’s restatement of the knowledge problem does more than simply reiterate Hayek’s and Mises’s ideas concerning economic planning, and it could be considered instead as redefining and enlarging the arguments they raised. By borrowing from the growth-of-knowledge literature, sociobiology, the modern philosophy of science, and Polanyi’s sociology of scientific knowledge (Polanyi 1951), Lavoie redefines and broadens the knowledge problem. He puts more emphasis on the individual, socio-relational and tacit aspects of economic knowledge and more critically on the contextual and institutionally dependent aspects of the growth and emergence of such crucial knowledge (pp. 65–81). Ultimately, he argues that economic rationality and the efficiency of the market order are not social elements that can be fully defined and designed *ex ante* or predetermined with a static fully explicit plan. Rather, they are special and *socially-conditioned* complex emergent phenomena stemming from specific market-based social relations and market institutions. This critical point suggests that only *specific types* and combinations of orderly social relations and institutions can allow economic knowledge and the unique ontological market properties relevant for coordination to form at all. These crucial emergent and ontological social properties will not arise without the market institutional context and the use of money to relate (Paniagua 2018). This chapter sheds light on the indivisible relationship between institutional analysis, epistemology, and social ontology (Lewis and Lewin 2015; Paniagua 2018). The

chapter also suggests that the market’s competitive process itself, in addition to the local interactions between individuals under market institutions (mediated through the use of money), is the actual foundation and unique context in which novel and more intricate “higher order” market knowledge emerges and gets communicated. In Lavoie’s words, what central planners have failed to notice, and their critical epistemic flaw, is in overlooking

that the competitive market is itself the primary source of knowledge about which goods are to be produced and which production methods are feasible ... the social function performed by a particular complex of legal and market institutions makes them indispensable tools for the solution of certain unavoidable economic problems. (p. 4)

Contemporary planners and market socialists who have sought to guide and design the economy have partially recognized the power problem and the control-political dangers individuals face in relinquishing power and governance to a centralized agency. However, they have largely overlooked the epistemic and ontological implications they will face in establishing central planning over decentralized decision-making processes and market institutions. Thus they have disregarded the severe limitations—and even impossibility—they will face in producing and acquiring relevant procedural economic knowledge. This problem is actually institutionally inexorable and particularly acute whenever they attempt to replace, undermine, or govern some market-institutional relational aspects foundational for economic knowledge and coordination to emerge in the first place. Consequently, both market institutions and social relations perform unique epistemic and complexity-ontological functions that are vital to deal with scarcity and to ameliorate the economic problem while improving plans’ coordination. This novel institutional and social-procedural argument concerning how economic knowledge and collective intelligence are socially generated is crucial but still almost entirely unaddressed by the literature on planning, comparative institutional analysis, and politics.

Whereas contemporary proposals for planning have focused on retaining democratic values, incentives, “good people” in “the right place” and better computational-information processes, they have regrettably remained silent about the role of rules, institutions, and decentralized social interactions in forming knowledge itself—knowledge that planning theories simply assume to exist as available

data and thus as both already produced and already codified (and therefore of easy access). In so doing, they erroneously treat market knowledge not only as ‘already there’, but also as ontologically reducible to the *pre-existent* epistemic resources held by agents in isolation (regardless of their social relations); rather than focusing on how individuals, by being actually social-relationally organized through money in specific market contexts, produce a type of complex intricate knowledge arrangements that did not previously exist (pp. 65-76; Paniagua 2018). Hence planning proposals commit the fatal error of assuming that the emergent epistemic and ontological properties crucial to impart rationality and coordinate markets can be disassociated from, and can exist anterior or outside of, the actual social processes and institutions that allow them to exist. Social scientists have thus disregarded the contextual complexity of social orders, the ontological category of emergence, and their implications for knowledge in market institutions (Lewis and Lewin 2015; Paniagua 2018).³ Regarding market knowledge, there is a complexity and an ontological aspect of its emergence, suggesting that the “overall intellectual capacity of several *interacting* intelligences may be *quite different* from that of its constituent parts ... [W]hether the whole would be greater or less than the sum of its parts ... depends ... crucially on the method of interaction among them” (p. 27, emphasis added).

As suggested Lavoie’s critical insight is that economic knowledge is not only dispersed, local, and hard to articulate (tacit). More importantly, it is a *conditional* and *contextual-emergent* property of the unique combination of decentralized interactions and the use of money in competitive social relations. Following Polanyi (1951), he sheds light on the complexity aspects of knowledge as a social phenomenon and the epistemic emergent ontological properties that competitive social relations in markets generate. A vast extension of economic knowledge therefore appears to be an *ex post* indivisible complex outcome of a system of social relations sustained by money and competition (pp. 76-86; see also Paniagua 2016; 2017). In the words of Lavoie: “The spontaneous order that emerges on the social level is the outcome of the rivalrous competition among individuals. It is a higher-level order that evolves out of a furious turmoil of lower-level disorder” (p. 69).⁴ Replacing or altering the exclusive interactions and social processes of the market will deprive the social order of the framework and context in which new and wealth-enhancing “higher order” ontological and epistemic properties can emerge.

I consider Lavoie’s reframing of the epistemic problem along the lines of sociobiology, complexity and Polanyi’s sociology of knowledge a very important contribution, one that cannot be said to simply restate anterior arguments (pp. 65–85). Furthermore, it invites us to think deeply about the ontological properties of economic knowledge and markets and the role of rules and social relations by which such emergent coordinative properties can arise (Paniagua 2018).

The indivisible relationship between the existence and growth of economic knowledge and the institutional context for the rules and social-relational procedures that constitute it has been ignored in the social sciences. Hence Lavoie suggests that “when we study a social system, we have to focus on the method of mutual coordination among the individuals” (p. 28). Overall these first three chapters can be read independently of the following ones since they provide the core theoretical background by which to evaluate any form of public policy, planning or government attempt to control aspects of the economy. Moreover, these chapters can be read as a key contribution to an emergent-social-order perspective on knowledge.

After providing the theoretical framework in chapters 1, 2, and 3 that explains in depth the power problem and the knowledge problem, Lavoie systematically proceeds to scrutinize different contemporary practical forms of non-comprehensive planning; such as the macroeconomic aggregative planning represented by Leontief’s input-output method (chapter 4), broad economic democracy, which seeks to extend democratic inclusion and participation in private economic decision-making (chapter 5), and selective reindustrialization policies known as “structuralist” strategies, which seek to modernize and revitalize particular relevant or “structural” sectors of the economy (chapter 6). Here Lavoie goes beyond the theoretical arguments and focuses on a practical analysis of what occurs when non-comprehensive forms of planning are actually established, as well the implications. Taken together, these three chapters are excellent examples of how in practice the power and knowledge problems can be applied to provide an institutional-epistemic analysis of governance’s alternatives and assessment of real public policy and their limitations. Thus they allow readers not only to understand the severe limitations of contemporary proposals, but to get a notion of how to apply the theory to actual institutions and governments’ policies in order to analyze their merits and limitations regarding authority, knowledge, and incentives.

What all these three proposals have in common, and the reason why they fail to achieve their rational economic

goals, is that all of them are variants of economic planning, which seeks to institutionally centralize control, decision-making powers, and governance in the hands of a few or a group. Moreover, they seek to replace individual sovereignty, social relations, and local knowledge with centralized or group command and data aggregation. They are forms of top-down or group systems that override or dominate individuals' local knowledge, their relations, and their decision-making powers. Therefore, they are extremely vulnerable to both the power problem and more critically to the knowledge problem, preventing them from generating and using the contextual knowledge required to make rational economic choices. By replacing decentralize interactions and decision-making in the market for democratic or political command, they simultaneously become unable to generate knowledge and social intelligence required to make accurate decisions and to impart economic rationality. It is ultimately this crucial unavoidable structural relationship and trade-off between the replacement of institutional market arrangements and social interactions, on the one hand, and the loss of both context-specific knowledge and complex ontological properties, on the other hand that lies at the core of the fragility of planning and inexorably leads planning to fail. Recognizing this inherent relationship and unavoidable trade-off undermines all arguments for non-comprehensive economic planning and provide the key insight to be highly skeptical of all sorts of public policy and government institutions that seek to guide and plan complex social orders.

Chapter 7 addresses the ideological and practical challenges the modern left faces given the failures of planning previously exposed. Lavoie argues that the left made a severe mistake in embracing both comprehensive and non-comprehensive planning as means to a rational social order. The chapter demonstrates with its historical analysis of the power problem that the ends the radical left sought to pursue are paradoxically undermined and systematically violated by national planning. There is an historical and factual abyss (and perhaps a lethal contradiction) between the laudable goals of the radical left and the real outcomes of central planning it has supported. Planning has further militarized the economy and oppressed individuals. The chapter also provides a historical overview of the intellectual development of the left, militaristic control of society, and the left's practical experiences with planning, along the way suggesting where they went astray.

Finally, the appendix provides an invaluable account of the modern philosophy of science and its implications for

epistemology, public policy, and economics. Lavoie does this to defend his arguments on tacit and emergent knowledge against the claim that they do not rest on scientific foundations. By doing so, he actually shows that the current disavowal and demise of positivism and objectivism within the philosophy of science indicates that economic planning is essentially unscientific and built upon an erroneous positivistic conception of scientific discoveries and knowledge (pp. 261–64; see also Polanyi 1951).

3. EXTENDING LAVOIE'S WORK: ROBUST POLITICAL ECONOMY

The relevance of Lavoie's work today for political economists is not only in clarifying the insurmountable epistemic problems with central planning, but in thinking about what alternative institutional arrangements are in fact feasible and perhaps better than existent ones. The larger contribution of this book is to lead us think critically about the properties and robustness of our existent social organizations and institutions and see if there are relatively superior alternatives that we can move toward. His insights can be fruitfully extended to compare and evaluate institutions in order to understand their economic and social implications. In other words, we "must dare to imagine radical alternatives to the kinds of social institutions to which we have become so accustomed, and to explain why these new institutions would work qualitatively better than the present ones" (p. 16). Given the pressing socioeconomic difficulties we face, we need to seriously question and evaluate how our existent institutions actually operate and to see whether they enhance human well-being. Ultimately societies benefit from continuously and thoughtfully experimenting with institutions to find radical alternatives or improve existent systems when they are found lacking.

Lavoie's work suggests we should concentrate on real conditions and abandon the idealistic assumptions concerning politics, incentives, and knowledge that very often have plagued our theoretical analysis. In other words, it asks us to abandon ideal theory for real comparative institutional analysis—a form of inquiry that responds to Buchanan's plea to abandon romanticized visions of politics and institutions. Hence it is an open invitation to a research agenda for comparative institutional analysis 'without romance'. We must analyze alternative arrangements and see how they actually deal with human imperfection and whether in practice they produce beneficial or detrimental outcomes. We must think more seriously about the long-run effects of

those institutional arrangements when individuals are not perfect.

The radical agenda Lavoie gave social scientists is to constantly think critically about how all real-life institutional arrangements need to manage and ameliorate both the knowledge and the incentive-power problems—inexorable problems that decision makers will always face regardless of the institutional arrangement. The book could be seen as providing a way to extend and apply these crucial insights to a variety of proposals and institutions that have not previously been analyzed critically through a framework that takes into account Lavoie’s considerations seriously. It provides fertile ground for open-ended and interesting applications of the power and knowledge problems for scholars working in comparative institutional analysis and public policy. There is a wide range of contemporary social problems and original public policy proposals that aim for non-comprehensive planning solutions but might be amenable to critical scrutiny under Lavoie’s framework.

In fact, Lavoie’s framework has already been applied in political economy under the name of robust political economy (RPE). Thus the book has already contributed to an open-ended ongoing research program. Robust political economy means the analysis of comparative robustness of institutions and political-economic systems, or their actual ability to produce welfare-enhancing outcomes despite severe deviations from ideal conditions and problems concerning individuals’ incentives, motivations, and knowledge (Pennington 2011). Thus it relaxes the assumptions of complete knowledge, perfect rationality, and benevolence and asks whether institutions can still accomplish their objectives in the face of those defects in human nature. RPE seeks to address both the knowledge problem as laid out by Lavoie and the political, power, and incentives problem as further elaborated in the public-choice approach of Buchanan and Tullock in order to evaluate how resilient alternative arrangements are. Taken together the two approaches provide a strong—less idealistic and more conscientious—foundation for analyzing public policy and comparing institutions.

There have been interesting applications of the Lavoie-RPE approach in different subjects, expanding our understanding about the comparative robustness of alternative institutions in areas such as monetary policy and banking (Paniagua 2016; 2017), among others (see also Pennington 2011). It would be interesting to see scholars apply the Lavoie-RPE framework to institutional proposals in other fields such as economic development, immigration, and fi-

ancial regulation. It would also be of interest to apply the RPE framework to new theories that frame governments’ economic involvement as an efficient and dynamic way of generating “entrepreneurial innovation.” Such explorations will help scholars engage more productively in contemporary debates in public policy about “government entrepreneurship” and state-led innovation.

4. CONCLUSIONS FOR A RADICAL RESEARCH AGENDA

Lavoie’s work shows that planning faces severe, insurmountable problems concerning power, incentives, control, and knowledge. Both models of economic planning (comprehensive and noncomprehensive) are unable to solve in a rational and efficient manner the basic economic problem of how to coordinate activities. Despite showing that economic planning is unfeasible and even contradictory to our values of freedom, dignity, and abolishing political oppression, Lavoie does not reject planning in favor of the status quo. In fact, he proposes a “more scientifically sound radicalism” (p. 1). The only viable solution to these insurmountable problems, Lavoie suggests, resides in radically decentralizing governance and decision-making, allowing individuals at the local level the liberty to use their personal knowledge and resources as they see fit. By doing so, they can rely on voluntary cooperation, relations and market institutions to generate the crucial conditions required for forming and communicating relevant knowledge. His radical proposal resides in a complete and emphatic rejection of planning and an embracement of decentralization, freedom of association and markets as the mechanisms of social organization and well-being.

Facing the crippling epistemic limitations of planning for attaining the left’s long-desired goals, Lavoie suggests a radical, scientifically rigorous, market-based, and decentralized solution to our social problems. His proposal challenges modern radicals to scrutinize further their own preferred institutional proposals, given the inexorable trade-off between planning and knowledge explored in section 2. Economic planning is epistemologically unworkable and furthermore leads inevitably to strong control and to a reactionary, militaristic type of policy-making that goes against the very same goals and values the radical left seeks to pursue. Therefore, such forms of organization and planning must be abandoned by both the radical left and by conservatives.

Lavoie's radical vision of society should still be relevant and appealing today to everyone concerned about human dignity and freedom of association. The book asks us to think creatively about economics and political economy. I recommend it to every social scientist interested in building new scientific paradigms and in developing new avenues of research based on multidisciplinary scholarship. It will help scholars think creatively and differently about their own fields of expertise. Lavoie's framework is particularly useful to start dealing more explicitly and thoroughly about knowledge problems and epistemic constraints and incorporating them in our analysis of comparative politics and institutions. The enduring significance of the book is to remind us to constantly push back against romanticized political theory and idealistic economic policy and to always question the unwarranted epistemological and incentive assumptions scholars often make about humans in general and relevant decision makers in particular. Finally, Lavoie's contributions can be the foundation for novel research projects in comparative institutional analysis and public policy to understand the relative robustness or fragility of different institutional solutions to our pressing social issues. Henceforth this book does not simply clarify past ideas, but serves as a relevant and vital part of the current extended academic dialogue that is essential for the advancement of social sciences in general and for an unromanticized, rigorous, but multidisciplinary political economy in particular.

NOTES

- 1 Planning is here defined as "only those policy measures that involve concentrating power to shape the economy in a special government agency" (p. 2). Comprehensive planning is the complete abolition of private ownership, prices, and money and the complete substitution of market institutions and their social processes with government control. Instead, noncomprehensive planning means all variants of partial control over some areas of the economy while still retaining some market institutions.
- 2 "The knowledge problem is the contention that a central planning board, even if well intentioned, would lack the knowledge to combine resources in a manner that is economic enough to sustain modern technology" (p. 52). Lavoie adds emphasis on the fact that the problem of obtaining knowledge is *not* about gathering information and data, but about social access to and communication of a certain kind of practical knowledge that is both hard to convey (tacit) and also whose mere existence is conditioned by a set of institutions and social relations.
- 3 Readers interested in complex phenomena and social ontology should see Lewis and Lewin (2015). Particularly also related to money and complex phenomena see Paniagua (2018).
- 4 This insight does not invalidate or exclude the other aspects of the knowledge problem. In fact, Lavoie throughout the book uses all the different aspects of it. For tractability, the knowledge problem comprises three aspects: First, knowledge is fragmented and subjective and thus possesses deep local and individual properties. Second, some key knowledge is actually tacit and skill embedded and therefore unable to be conveyed accurately through language, questionnaires, or statistics (Polanyi 1951). Third, some knowledge needs to be socially generated and discovered under specific institutional contexts. Hence knowledge is also contextual and procedural. It emerges as a complex property of a competitive system of social relations which produces a type of knowledge nonexistent anterior to or outside of those rivalrous social processes that specifically constitute it (p. 6). Moreover, such "higher order" knowledge possesses ontologically and qualitatively distinct properties irreducible to the fragmented knowledge held by the agents anterior to or outside of specific market relations (Paniagua 2018). All three aspects of the knowledge problem complement and reinforce each other, making an epistemological and ontological case against central planning much stronger than previously recognized.

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