Developing Hayekian Insights on Social Science: Tensions and Contradictions Within and Between Spontaneous Orders

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INTRODUCTION

Daniel D'Amico writes "In a way, spontaneous order theory is both the alpha and omega of a shared research project in positive social science. With its discovery and elucidation, thinkers could utilize the spontaneous order framework as a baseline for comparative institutional analysis" (D'Amico 2015, p.). I strongly agree.

The recent volume *Towards a Hayekian Theory of Social Change* is a promising start in expanding the realm of Hayek influenced social analysis (Boettke 2024). I published a review essay earlier this year discussing the essays and the editors' introductory framework (diZerega 2024). I argued that many essays were steps forward in applying Hayek's concepts to a wider range of social phenomena, but the coherence of the whole was weakened by a defective discussion of what constituted spontaneous orders.

In my view the editors argued quite correctly that while Hayek often used the term very broadly, a more serviceable approach would limit it to the human realm. They agreed with D'Amico that a clear line separates human spontaneous orders from other in many ways similar biological orders. However, I argued they and D'Amico erred as to where they drew the line between the human and the not-human. They claimed culture, language, and common law, along with the market and science, fell into this category (2015).

Theirs was a near miss, and grasping the reasons for the miss lead to a better understanding of spontaneous orders. Language, culture, common law, and spontaneous orders are all complex adaptive social systems: dynamic networks of relationships where coherent patterns arise out of independent actions among their components. These patterns maintain themselves even when every element comprising them changes. This concept applies to more than the human social world. Ecosystems, for example, are complex adaptive systems. Spontaneous orders are a special subset within this larger category. Treating culture, language, and common law as spontaneous orders unintentionally undermined developing the concept "as a baseline for comparative institutional analysis" leading to mistaken analytic, empirical, and philosophical results.

PART I: WHAT IS A SPONTANEOUS ORDER?

Within the human realm, science and the market differ in important ways from culture, language, and common law. Hayek's term 'spontaneous order' helps distinguish between them, illuminating a taxonomy useful for the social sciences. The distinction between complex adaptive social systems such as culture, language, and common law, and spontaneous orders is based on the nature of the feedback signals such systems generate and who has access to contributing to such systems' adaptive patterns. As a subset of complex adaptive systems, spontaneous orders depend on *simplified and standardized* feedback emerging from the application of *explicit* rules governing cooperation within a system.

Because D'Amico and the volume's editors include culture, language, and common law as spontaneous orders, I will describe how they differ from spontaneous orders as I describe them.

CULTURE

Cultures adapt through the impact of many different feedback signals arising from a variety of causes and often becoming part of a largely tacit network enabling strangers within a given culture to easily cooperate. This is as true for illiberal cultures as illiberal ones. The antebellum South with its foundations in slavery certainly had a culture that was the product of human action but not of human design. So did Tsarist Russia.

Culture also has very clear non-human expressions. Chimpanzees have complex cultures (Polito 2019). Even closer to human culture, chimpanzees have recently been found to improve on exiting cultural techniques when female chimpanzees from one group become members of another with different cultural traits. Sometimes the new techniques they bring are combined with existing practices to create something new (Leste-Lasserre 2024, p. 13). Nor is culture confined to the great apes and humans, for it exists in very different species, from birds to whales, and much more (Le Page 2021; Whiten 2021). We observe a continuum between animal cultures and more complex human cultures, not a sharp dividing line.

Nor can we draw the line between human and non-human cultures by the presence of explicit moral rules. Socrates demonstrated for most Greeks of his time known moral values such as virtue were known only tacitly. Socrates asked Meno to describe "virtue". Meno responded by giving many examples of virtuous action. Socrates responded "I only asked you for one thing, virtue, but you have given me a whole swarm of virtues." Meno and others of his time used the word to define certain actions as virtuous, and others as not, but when asked to define the abstract word itself, could not do so (Ong 1977, p. 290; Havelock 1963, pp. 197-133; Abram 1996, p. 110).

This kind of tacit morality pretty clearly applies to some nonhumans. Chimpanzees and bonobos voluntarily open doors to give another access to food, even if the assisted one then eats food they would have had to themselves. Rats act similarly, when they either know the trapped rat, or are familiar with that strain of rat, even if that particular rat is a stranger. They do not when the other rat is a stranger and of a different appearance. (DeWaal 2016, pp. 197-201; Safina 2015, p. 64; Bekoff 2009). Morality's foundations are prelinguistic, located in Charles Darwin's concept of sympathy, which he derived from David Hume (diZerega 2023).

Explicit definitions of moral principles arose later, when literacy began to change how people thought about the world and themselves (Ong 1977; Abram 1996). Socrates and Plato lived when literacy and the habits of thought it encouraged first became well-established in Greece.

If the line separating culture from what is not culture *included* many animals, the line that separated explicit moral rules from a morality without such rules *excluded* many people. Culture and morality do not form categories unique to human beings.

LANGUAGE

Like culture, language is a complex adaptive system without a clear feedback signal. As Wittgenstein demonstrated, words such as virtue do not have clear meanings, but are understandable in terms of the complex contexts within which they and similar terms apply. Think about how much more easily words in a text can be misunderstood compared to the same words in a conversation. Many people in the same linguistic community use common words to which, if they were queried, they would give somewhat different definitions (Christiansen 2022, pp. 225, also 74-6, 188-90). Consider 'freedom,' 'justice,' and 'work' as contemporary examples.

Most human beings are usually not aware of the rules for correct grammar they follow when speaking. Like many rules shaping a culture, they are not explicit. Children learn to speak English by hearing speech, not by taking lessons. Grammatical rules can also shift in important ways, as with the contemporary changing use of pronouns with respect to individual identities. Fluent speakers' knowledge of the appropriate rules for speaking is tacit in Michael Polanyi's sense (1951). Like culture, living languages are the product of human action, not of human design, but have no explicit feedback signals serving the function prices, votes, or impersonal standards of evidence such as measurement, prediction, and experiment serve in spontaneous orders.

Spontaneous orders arise from people following *explicit procedural rules* while pursuing projects of their own choosing. These rules generate a standardized pattern of signals assisting people in successfully pursuing their plans or signaling they are unlikely to succeed. Spontaneous orders facilitate effective cooperation by relying on a *single feedback standard for determining systemic success.* Their rules are *purely procedural and impersonal, and so open in principle to anyone*.

Complex adaptive systems need not embody liberal values and spontaneous orders always do. *Liberal principles generate spontaneous orders and illiberal ones do not.* Spontaneous orders depend on a broadly liberal ethic of formal equality for all who participate. This framework also enables us to see why common law is not a spontaneous order.

COMMON LAW AS A COMPLEX ADAPTIVE SYSTEM, NOT A SPONTANEOUS ORDER

Common law adapts through processes of persuasiveness in important ways similar to science, but whereas in principle anyone can engage in scientific research (Robles-Gil 2024), only judges are involved in discovering the law (Hayek 1973, pp. 72-93). Sometimes common law's conclusions have very coercive impacts on people excluded from participating as formal equals, and its roots had little to do with any recognition of equality in any sense. Slavery was considered lawful for a long time in common law (Brewer 2022). Common law also has no equivalent to prices, votes, or what we loosely call the scientific method, which seeks as far as human efforts can to base its findings on impersonal standards. It is statute law that seeks to maximize impersonality. Common law is a complex adaptive system but not a spontaneous order.

DEMOCRACY AS A SPONTANEOUS ORDER

Members of this gathering will presumably agree to my describing the market and science as spontaneous orders. After all, Hayek did. But what of democracy?

The rules generating a spontaneous order reflect the dominant value inherent its processes. The rules of the market facilitate formally voluntary exchanges among legal equals. The rules of science facilitate discovering a consensus among formal equals about what constitutes reliable scientific knowledge (Ziman 1978).

Within science, consensus develops through a process of persuasion about the nature of the physical world. The market generates its feedback signals about the advantageous use of resources through the price system automatically adjusting to changes in the supply of and anticipated demand for goods and services.

However, the market cannot determine what counts as exchangeable goods and services, it only shapes the patterns arising when exchanges take place. Time matters in the market far more than in science because much of what is exchanged is necessary for human life, such as food, shelter, clothing, and medicine. These rules defining what can and cannot be exchanged allow the market process to emerge and rapidly adjust to price signals more than any alternative, but the rules can take many forms. They can be discussed abstractly only in theory, without direct connection to life as it is actually lived.

Within a spontaneous order rules apply community-wide to all participants. Science developed and enforces its rules, united by a common commitment among scientists to discover as much reliable knowledge as possible (Ziman 1978). Their common procedural value is to maximize *impersonal* standards in evaluating claims. The market has the same dependence on universal. *impersonal* rules. but lacks the means to define, enforce, and change them. Whereas scientists can judge the applicability of rules for experiment, measurement, and prediction as they best apply to the matter studied, the market process lacks similar adaptability to different applications.

PROPERTY RIGHTS

In the market, exchanges of goods and services must take place within a context of common rules facilitating cooperation. Further, what is exchanged must be defined accurately enough as to minimize conflicts between parties after the agreement to exchange has taken place. The umbrella concept for such requirements is property rights: the enforceable right to use something in certain ways and exclude others from doing the same. The result is not "property" but, as Harold Demsetz (1967) emphasized, *bundles* of property rights, with each element of the bundle defining a legal relationship into which the owner could choose to enter, either with another, or with the 'property' itself.

Bundles of property rights differ with the kinds of property involved. I do not own 'land' or a 'car' or a 'dog.' Those nouns are simplifying descriptions of a more complex relationship defining specific rights and corresponding obligations with respect to them. The ante-bellum South once had a free market in owning and selling human beings. However, you could not legally kill your slave, whereas you could legally kill your pig. Slave owners owned a different bundle of rights than pig owners. This point manifests in an extraordinary variety of ways.

When I rent a house, the landlord temporarily gives up some rights associated with home ownership so long as the rental contract exists. The renter controls certain bundles so long as rent is paid. To give another example, if I live out in the country I will have more rights to make noise than if I live in a condominium apartment complex, such as the right to play loud music late at night. In both cases I own a dwelling, but what I actually own are somewhat different bundles of rights with respect to it.

When rights in one bundle appear to conflict with the rights held within another, as when the music I play in my backyard is considered too loud by my neighbors, my outdoor lights shine into their window at night, or smoke from my barbeque invades their yard, a legal system is required to adjudicate the dispute. Property rights are inextricably connected to the moral and ethical issue of what kinds of relationships are appropriate for people to engage in? *The market itself cannot define such bundles of rights, only how they are exchanged.*

Common law plays a role here, but is not sufficient (Hayek 1973, p. 168 n. 35). At one time, in America, owning human beings was an acceptable property relationship. today it is not. That property right no longer exists. Few miss it today, though at one time hundreds of thousands fought and died in its defense. The market was 'free' in both cases: property rights could always be exchanged between willing partners.

Democracies coordinate relations among and between the explicit rules that govern society as a whole, including fundamental property rights. Such rules are essential for any complex society. The democratic process is the only means people have developed to give *everyone* potentially impacted by a change in property rights an equal voice at some point along the way in determining what change, if any, will happen regarding bundles of property rights.

Rights to many exchangeable values can be defined in very different ways, as whether or not we own our personal data or whether the tech industry can use it without paying us for their use. Had people possessed such rights, the nature of the web would be very different today (Lanier 2019). Today a major issue is AI's uncompensated appropriation of other people's work that, in other contexts, they own. And, of course, there is the increasingly important issue of CO2 emissions now endangering well-being on a global scale. Some means must exist to determine what are or are not legitimate property rights open for exchange. This occurs when people vote for representatives or for an initiative or referendum or, in small towns, meet together. A *particular* majority 'rules' on a *specific* issue or set of issues.

This process of democratically determining property rights is a spontaneous order. Democracy's basic rules are procedural, explicit, apply equally to all, and impersonal. Like science and the market, democratic decisions depend on persuasion. Unlike the market, and like science, a number of different criteria common to the issue must be evaluated, such as costs, practicality, whether some group feels victimized, and so on, all in relation to a measure's impact on the community as a whole, as scientists must determine how its basic procedural rules apply to a field of study. The mix is different for astronomy than for biology. In democratic theory the ideal is called the public good, and a simple definition of the public good is "fair rules for everyone in the community."

THE GROWING IMPORTANCE OF DISCOVERING THE PUBLIC GOOD

The importance of discovering the public good expands as a society becomes more complexly integrated. Relations between property owners become increasingly complex, and in that complexity the possibility of conflicts over boundary issues increases. To pick an uncontroversial example, the amount of uncontested noise a landowner can legitimately make is related to the proximity of a neighbor. The more closely people live together the more necessary such rules become. If you want to internalize negative externalities, fewer rules are needed when building a house out in the country compared to building one in a densely packed urban environment, and even more in a historically valuable neighborhood.

According to research on many kinds of complex adaptive systems, the most adaptive networks have very few links between individual nodes within them. Stuart Kauffman described it as "somewhere in the single digits" no matter how large the network (quoted in Kelly 1994, p. 399). The modern NIMBY phenomenon is an example of what can happen to attempted changes when connections become very highly linked.

Adding to this problem, unlike within science, time matters when determining rules governing property rights. When a conflict between right holders emerges, no decision is a decision for the status quo. How much pollution is acceptable is an important example. In a liberal order the democratic process is required to oversee and occasionally modify basic rules regarding property rights based on the community's judgement as to what is best for the group as a whole. *Democracy is the one method providing everyone affected by a decision an equal standing at some point in the process of decision-making.* The same standard applies for other decisions sometimes made by democratic orders that citizens believe are important for the community as a whole, such as standards for public health and education.

Determining the public good is a discovery process (diZerega 2019b). It's *ideal* is unanimity regarding public policy, as science's ideal is unanimity among scientists about the nature of the material world. That unanimity is never fully attained is no more an argument against the concept's usefulness than is science's failure to reach unanimity an argument against its usefulness in understanding scientific processes. Something similar exists in markets, which rely on powerful tendencies toward attaining an equilibrium that is never reached.

BUT WHAT ABOUT MAJORITY RULE?

The most egregious description of democracy possible is when its critics call it 'mobocracy.' The second most misleading description is to define it as majority rule.

The United States was designed to make sure majority *rule* was unlikely- while never subordinating decision-making to a person or institution not subject to majority *acceptance*. In *Federalist 58* James Madison wrote:

> That some advantages might have resulted from [a minority veto] cannot be denied… But these considerations are outweighed by the inconveniences in the opposite scale. In all cases where justice or the general good might require new laws to be passed, or active measures to be pursued, the fundamental principle of free government would be reversed. It would be no longer the majority that would rule: the power would be transferred to the minority. . . . an interested minority might take advantage of it to screen themselves from equitable sacrifices to the general weal, or, in particular emergencies, to extort unreasonable indulgences. Lastly it would facilitate and foster the baneful practice of secessions (Publius 1961, p. 361)

Madison argued abuses through majority rule could be prevented if the House, Senate, and President, were elected by *different* majorities at *different* times, and all had to agree to initiate policy. Members of the House of Representatives were elected all at once for two-year terms. Unlike in the House, one third of the Senate is elected every two years. It would take four years to change a majority of Senators. Each also represented different constituencies. The president represented a different constituency as well. The logic here was to get as close to a practical unanimity as possible while still preserving the ability to act reasonably quickly. I have showed how both Aristotelian and Madisonian arguments in favor of democracy emphasized the ideal of consensus, not majority rule (diZerega 2000).

Majorities of Representatives, Senators, and a nationally selected President are needed to adopt a measure. The two violations of this principle, the electoral college and the divorce of Senate representation from population, have become major threats to maintaining the constitutional democratic character of the government. They may yet destroy it.

Except in the rarest of instances, in a liberal democracy there is no mob. In fact, *no one rules*. As with the market and science, a democracy cannot be understood in terms of the final outcome (or products) emerging from its processes. It is the entire process, from the man or woman acting as a citizen engaging in political discussions, through the media and different organizations seeking to influence public policy, all the way through the electoral process and final decisions on issues and how that influences the same process in the future, that distinguishes democracies from states. The best study of this process and its superiority to top-down control that I know of is John Kingdon's *Agendas, Alternatives and Public Policies* (1995).

Hayek came very close to grasping the similarities between democratic processes and market processes. In *The Constitution of Liberty* he wrote

> We may admit that democracy does not put power in the hands of the wisest or best informed and that at any given moment the decision of the government of the elite may be more beneficial to the whole; but this need not prevent us from still giving democracy the preference. It is in its dynamic, rather than its static, aspects that the value of democracy proves itself… the benefits of democracy will show itself only in the long run, while its more immediate achievements may well be inferior to those of other forms of government (Hayek 1960, pp. 108-109).

This argument is *identical* in logic to one Hayek (and others) made about the market. In Hayek's words, the market is "a multi-purpose instrument which at no particular moment may be the one best adapted to the

particular circumstances, but which will be the best for the greater variety of circumstances likely to occur" (Hayek 1976, p. 115; see also Kirzner 1973, pp. 232-3).

A democracy is a discovery process seeking general rules for the well-being of society as a whole. Every citizen has equal status at one crucial point in the consideration of public policies while the long-involved process of designing policies enables informed input from every interest affected.

Today a minority veto has arisen in the Senate through the abuse of the filibuster. Its impact has been as Madison predicted. Polarization has increased and the well-being of the nation is held hostage to extortion by small minorities of politicians. Proposals with clear majority support are prevented from being voted on. The democratic discovery process is undermined to the increasing cost of the country as a whole.

CONSTRUCTIVISM?

Some might object that the United States constitution is an example of 'constructivism.' Getting clear on this issue requires making a distinction about procedural rules. A spontaneous order requires its rules to apply to all participants equally and not be designed to attain specific ends. Rather, the ends at any time must be discovered through its processes, and can always be questioned or changed through the same processes. The constructivist elements in the constitution reflect giving unequal status to slave-holding states and to states with smaller populations. These exceptions were seen at the time as the price to be paid to enable thirteen quite different states to unite in a union. (An interesting question is whether there was enough of a public good in common between the North and South to maintain a political union rather than an alliance.)

In every other respect the original constitution fit the description of a spontaneous order. The liberal value of equality under the law, at least for white men, meant equal status as participating citizens. Further, the constitution could only be implemented if a super majority of nine states agreed, and did so through popular referendums. The emphasis on popular acceptance and a super majority weakened efforts to include specific policies into the document, such as efforts to include property qualifications for voting rights. Most of the constitution, and certainly its core, established abstract procedural rules empty of concrete political implications, a major requirement for a spontaneous order to arise.

Those elements that sought to protect concrete values or policies almost immediately caused serious problems, as they continue to. Weighted voting power for slave states enabled minority domination by slave states, followed by secession and civil war. The Senate empowered small states out of proportion to their actual numbers, effectively diluting the votes of people in larger states. The electoral college gave some states more influence than population alone justified. Collectively these failures to observe democratic rules has led to the crises we face today in presidential elections, and earlier led to abandoning constitutional amendments protecting Black Americans leaving them to the tyranny of the former slave states. Two constitutional amendments shared the same flawed character. The 2nd amendment has subordinated civil safety to its most extreme interpretations. Prohibition was such a failure that it was repealed from the constitution, the only one to have been rejected. Hayek's warning against constructivism is confirmed in these cases.

The general rules for electing the legislature, the executive, and establishing the courts, are almost purely abstract and procedural, and have fared much better, and would fare better still in the absence of what survives in the above.

THE STATE

Some readers will likely reply democracies are called states, and aren't states coercive hierarchies? Often such people will talk of the "deep state," as if the concept has any meaning at all, which it does not.

That terminology is rooted in the same kind of ambiguity Hayek identifies when the term "economy" is used to describe both the market and organizations operating within the market, such as a business (Hayek 1976, pp. 107-32). Hayek suggested the market order be called a catallaxy rather than an economy. In popu-

lar terminology, the term "state" applies both to hierarchical organizations of rule and to democratic spontaneous orders. Getting clear about these distinctions is one of the major contributions a Hayekian approach to political economy can provide. *In Hayekian terms,* democracies are not states.

In a democracy each legislator is him or her-self subject to the independent influence of the voters and the political discussion about what policies are desirable permeate society as a whole. No overarching authority determining who gets heard. In this sense it is like science where the ultimate judgements reflect very complex networks of investigation and evaluation long before a final (if sometimes temporary) consensus arises about a theory.

What of the 'deep state'? It is an ignorant term for the Civil Service, often used by people who seek to turn the Civil Service into a tool for the executive- which would, in fact, create the foundation for a genuine state.

Eliminate the legislature so that only the president is elected, and has legislative as well as executive power. We would then have a hierarchy of power relations, a state. Situations of extreme polarization, such as we see today, can encourage one or both sides to seek subordinating democratic procedures to organizational criteria, as with the *Heritage 2025* plan to subordinate Congress and the courts to an imperial or 'unitary' presidency. If the legislature is subordinated to the executive, a democracy becomes a state, even if 'elections' are held, as in Putin's Russia.

After his own term as President ended, Harry Truman said of the newly elected Dwight D. Eisenhower "He'll sit here, and he'll say, 'Do this! Do that!' *And nothing will happen*. Poor Ike—it won't be a bit like the Army" (Neustadt 1960, p. 9). Neither Putin nor Trump, if the Heritage 2025 plan implemented, would have that problem.

A democratic government is not sovereign because ultimate authority lies with the people through their voting and the influence of the organizations with which they are involved. The system is sovereign. Within a democracy, the closest resemblance to a sovereign state is the dominant governing party or coalition and the administrative apparatus over which it presides. In a more than rhetorical sense, however, sovereignty resides in the community of citizens as a whole, and not in the government.

PART II: PERSONAL AND SYSTEMIC VALUES

Any set of abstract rules governing human action will privilege values emerging from the complex of rules and not necessarily mirroring the values of those acting within this context. Different systemic values emerge independently from participants within systems created by different rules. I can engage in political action for many different reasons: a desire for power, a desire to make alliances bringing me wealth, a desire to solve an important community problem, or a sense of duty, such as a desire to impact policies with anti-war demonstrations. Winning an election is subsidiary to these motives.

I can engage in science because I seek to discover unknown truths, enjoy the hunt for solutions to defined problems, love teaching, or want scientific prestige. And again, many other possible personal values. Science has many examples of dogged researchers whose pursuit of truth led them to ignore the judgment of their peers for years, only much later to be proven right. For example, in the 1920s G. Harlan Bretz discovered the cause behind Eastern Washington's strange landscape as due to enormous floods dwarfing anything the mainstream in geology believed could exist. His discovery was rejected because mainstream geology assumed the same causes shaping landscapes today explained what happened in the past. Decades later Bretz was proved right. In 1970 he was awarded the Penrose Medal, the highest medal of the Geological Society of America for extraordinary contributions to geological science (Hodges 2017). Bretz weighed scientific methodology and assumptions differently than had his peers.

I can participate within the market because I want to make money, support my family, provide for my retirement, acquire prestige, because I do not want to have a boss, or I prefer to 'buy local,' and many other possibilities. Only the first is in perfect agreement with the market's purely instrumental systemic values.

For example, Peter Barnes helped manage Working Assets as a privately held socially screened money market fund, which means supporting values beyond money income alone were to be a part of its investment strategy. At one point Working Assets considered going public with an initial public stock offering. Barnes writes "Our investment banker informed us that, simply by going public, we'd increase the value of our stock by 30 percent. He called this magic liquidity premium. What he meant was that stock that can be sold in a market of millions is worth more than stock with almost no market at all. The extra value would not come from anything we did, but from the socially created bonus of liquidity."

"Wall Street's calculus" would override the decisions and values of the then owners of the company. They would still own stock, and presumably be richer, but the values associated with private property are not simply financial, and those values would be subordinated to an impersonal market calculating whether the company's assets were being utilized with maximum efficiency in seeking wealth (diZerega 2019a). Working Assets ended up not going public because, Barnes wrote, "we didn't want to be subjected to Wall Street's calculus" demonstrating he and other investors put other values ahead of maximizing money profit (Barnes 2006, pp. 67-68).

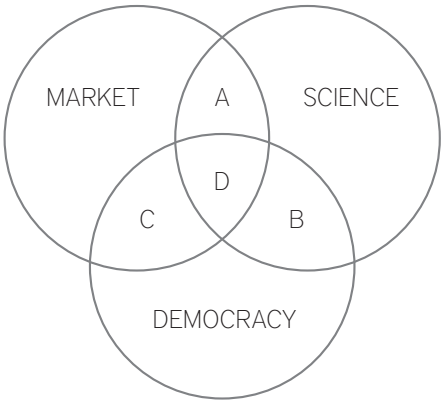
This 30% "liquidity premium" gives a sense of the financial advantages of replacing complex value decisions by people with a single-minded focus on profit. The market determined that eliminating human values not compatible with maximizing profit increases resources' money value by 30%. In market terms this is more efficient. In human terms, it impoverishes the values able to be expressed within the economy.

These examples, and many more, demonstrate that every spontaneous order has a *systemic bias*. Science privileges impersonal standards and so continually struggles with issues involving consciousness, markets privilege instrumental exchange over values resisting quantification, and democracies privilege winning elections over serving the public. Their procedural rules are not neutral channels through which individual choices are harmonized within complex systems. Rather, they bias some values over others, values not necessarily motivating the people participating within them.

These systemic biases manifest as *systemic power*. The context of rules within which we act shapes the outcome of our actions. Those whose values are in greatest harmony with these systemic values will tend to acquire more *systemic* resources, such as scientific status, money, or political power, over those whose values differ (diZerega 1997). Systemic power is also the outcome of human action but not human design.

Spontaneous orders actively shape the kinds of projects people are most likely to pursue within them and independently define what counts as success within them as distinct from the value judgements of those whose actions generate the system. The result of integrating systemic power into the study of spontaneous orders is far more complex than their simply being the "product of human action but not human intent."

TENSIONS BETWEEN SPONTANEOUS ORDERS



The Venn Diagram above outlines the various interrelationships actions within a society can have with respect to the three spontaneous orders I have described. Sometimes a project might require interacting entirely within one such order, sometimes within two such orders, and sometimes within all of them. A competent approach to analyzing spontaneous orders must deal with all of these possibilities. Here are some illustrative examples.

Consider individuals engaging in medicine. Much American medicine takes place within a market context. Doctors enter the field for many reasons, from a desire to engage in a profession helping people, to a desire for a prestigious occupation, to the desire to make a good living, and more. Some of these motives fit the values of the market, particularly the desire to make money. Others do not, such as the desire to engage in a helping profession as a good in itself. This second motive accords better with the systemic values of science and democracy than the market. For example, Jonas Salk discovered the first polio vaccine and refused to patent it, in order to make it maximally available (Salk Institute 2015). This contrast between systems becomes explicit when the dominant priorities in emergency rooms in medicine change after they become owned by private equity firms. Patient care and doctors' medical judgement are subordinated to a heightened emphasis on profit (Landman 2024; Morgenson 2020). The same conflict in interests arises when private insurance is relied on to cover medical expenses despite doctors' recommendations (Miller 2024). **ZONE A.**

Scientific research is sometimes funded by market-based organizations. Whereas scientists benefitting from the funding are generally motivated by their search for truth in a particular field, the funders are motivated by a search for profit. Market-oriented research can lead to medicines that would not otherwise be discovered. On the other hand, market institutions neglect research unlikely to lead to profit, such as in the medicinal qualities of plants that cannot be patented. The first example, but not the second, falls into space **ZONE A**. Public funding is more likely to fund this kind of research, with final choices as to its targets made within the political system, not the scientific community. **ZONE B**. So might educational and philanthropic organizations as part of civil society, to be discussed below.

Scientists want their publications to be read by as many as possible. Publishers of academic journals also want many readers, but only if they pay. Those of us with years of teaching may well remember when professors could put together readers of journal articles for our students tailored to our courses. This practice largely ended when journals demanded financial compensation for articles included, compensation their authors, as practitioners of science and the gift economy, would never see. The clash of systems could not be more stark. **ZONE A**.

The American press is almost entirely composed of private businesses. Freedom of the press is the only private business granted explicit constitutional protection because of its political role in informing citizens.

However, some kinds of political coverage are more profitable than are other kinds, creating a system-based tension between its political function of informing *citizens* and the desire to maximize profit by appealing to *consumers* (diZerega 2004). The recent refusal of the *LA Times*, *Washington Post,* and Gannet, to make endorsements for President are another example where the financial interests of their owners clashed with their staff's concern with fulfilling the media's constitutional function. The clash was so strong many long-time staff members resigned and *NPR* reported some 200,000 people cancelled subscriptions to the *Post,* **ZONE C** (Folkenflik 2024)**.**

For a different kind of example, some rules made democratically will influence the form the market takes, as when slavery was abolished in the United States, wiping out enormous concentrations of Southern economic wealth and power. Changes in laws shaping contracts among employees and employers, such as the scope of do not compete or nondisclosure agreements, also shape the kind of market that emerges (diZerega 2020). In all these examples and many more the values served within the two spontaneous orders do not necessarily harmonize. **ZONE C**.

Government could make decisions about public values not directly interacting with either science or the market, such as setting speed limits, or it could rely on science, the market, or both to make policy decisions about issues that are not strictly economic or scientific, such as in public health. In such cases both scientific criteria and market criteria play a role with political criteria. Public provision of vaccines is a good example. Sometimes the government may rely on the market to produce resources needed for scientific research that also serves a political purpose, as with funding Space X for rockets transporting astronauts to the International Space Station. In such cases all three spontaneous orders contribute to the phenomena studied. All three help shape the outcome. **ZONE D**.

In most cases, if I want to have a career in scientific research entering the marketplace is not my first choice. On the other hand, in most cases scientific research is not an inviting place to engage in business. To be sure, there are areas where success in one breeds success in the other, but these are also areas where the contrasting values of the two orders can come into conflict.

A viable social science rooted in acknowledging the importance of social spontaneous orders must investigate the systemic relations in all seven of the areas enclosed within these three circles. Focusing on a single spontaneous order coordinated by the feedback it generates can lead to a very misleading picture of how such orders function in society as a complex whole. Any attempt to focus only on one: the market, democracy, or science, will give misleading conclusions outside of a very narrow context.

COSMOS VS. TAXIS

Spontaneous orders select for projects within them that are in greatest harmony with their systemic rules and interpret systemic feedback most successfully. But any person or group who initially succeeds in these ways is not guaranteed to continue doing so. Today's success might be displaced in the future by an unexpected competitor. Such orders reward successful adaptation, but with no guarantee that what initially promises to be such a success will long remain so. Sometimes an adaptation will prove inadequate when confronted by competition, and sometimes a successful enterprise or project will be rendered extinct or relegated to a smaller niche because no amount of adaptation would have sufficed.

Manufacturers of typewriters, schools of geological theory emphasizing land bridges, and advocates for prohibition created organizations to further their goals. They are now either extinct or niche dwellers. Even very successful organizations might eventually be confronted with competition that renders them small, or extinct. Throughout most of the 20th century, Kodak held a dominant position in photographic film, and produced important technological innovations in its Kodak Research Laboratories. In 2012 Kodak filed for bankruptcy.

Scientific research organizations and academics favoring particular scientific theories can disappear when scientists find better alternative approaches. The replacement of Newtonian Mechanics with Relativity and Quantum theory is perhaps the most spectacular such development, but on a smaller lev-

el, it happens frequently. The Psychology Department at the University of Kansas was dominated by Behaviorists. Behaviorism began losing its dominance by the 1960s, and today its most useful insights have been integrated into other psychological approaches based on different assumptions.

Prohibition is among the most spectacular political fails. It once gained a constitutional amendment enforcing it. The amendment was later repealed and no significant political pressure to repeat the experience exists today. Its 1960s equivalent, the outlawing of marijuana, is following suit, happily without needing to repeal a constitutional amendment.

Markets have often been compared to biological ecosystems (Vermeij 2004). Both generate stable patterns whose specific details may or may not harmonize with the continued success of its most successful participants. In an ecosystem a dominant species may be pushed to niche status, or even exterminated. In the market a dominant industry or company may suffer the equivalent fate. The same is true within science and democracies. Succeeding within such a system does not guarantee that at some future point the winner will not become a loser.

This lack of security over the long run for even the most successful organizations within a spontaneous order explains the deepest conflict within such orders. But they have in principle a wider range of ways to cope. In a biological ecology plants and animals must either adapt to change, find a niche, or die out. In spontaneous orders successful organizations can seek to continue innovating, or they can do something unavailable to organisms in nature: seek to change the rules. A great many seek the latter, especially in the market and democracies. (This is more difficult in science because its ideal tests for evaluating a thesis are as impersonal as possible, but there are always academic departments to control). Although scientific organizations have proven unable to exert long-term control over the rules that generate science, it is a different story for markets and democracies.

Businessmen were not simply victims of political power, they often advocated centralizing and manipulating it in their favor. Long before FDR, Samuel Insull initiated Federal regulation of his industry because it made life simpler for him compared to dealing with independent state rules. Insull pushed for political centralization of regulations where his advantage in wealth and focus gave him an edge in determining what those regulations would be (MacDonald 2004).

The logic of corporate structure and advantages in wealth pushes them in that direction, and far more successfully than labor unions, environmentalists, and others. To give a clear example, today copyright and patent laws are written to serve corporations, an example to which I will return. The same is true for many liability, food safety, and pollution rules.

TROUBLING IMPLICATIONS

One implication of this analysis is that the role of organizations is more important than much 'spontaneous order' analysis appears to recognize. Ignoring this is a major impediment to creating a genuine social science. The market can operate within the context of many different organizational forms, and different forms reflect and reinforce different values, and ignoring this fact impoverishes understandings of markets. Ignoring the '*taxis*' dimension of markets as a *kosmos* obscures other market institutions that better reflect the richness of human values over the thinness of purely instrumental ones.

Cooperatives are one clear example distinct from publicly traded corporations. Their economic success has been a major problem for their longevity, for their shares can accumulate such value as to be unaffordable to new generations of workers when the initial ones retire.

The Mondragon worker-controlled 'cooperatives' in the Basque region of Spain played a major role in turning the country's poorest region into its richest. Their organizational model incorporated the Vatican's alternative to traditional capitalism and socialism: labor hired capital rather than capital hiring labor. They have prospered and grown for over 50 years. The Mondragon co-operatives are not really cooperatives as Americans think of them, and have solved the problem afflicting more traditional cooperatives (diZerega 2014).

Family owned businesses are another value-rich example (Skorodziyevskiy et al. 2024). Individual proprietorships and partnerships are others.

Consider also the advantages of locally owned small businesses over corporate chains. More money stays in the community, creating a richer social ecosystem. Jane Jacobs won deserved renown by emphasizing the non-market services vital neighborhoods with small businesses contributed to urban life (Jacobs 1992). By contrast, once busy small downtowns are often destroyed by Walmart, and left in worse shape if they then leave (Miczek 2016).

What distinguishes all these examples from publicly held corporations is the greater complexity of values they embody in their actions. The publicly held corporation is entirely constrained by market values, and successful ones will tend to seek means subordinating the market process to their own benefit. This is less often the case with more value-complex organizations.

This particular problem is stronger in the market than in science or democracy because virtually all social activity must make use of resources, especially physical ones. The price system has proven superior to alternatives as a means for producing useful physical resources, and so exerts pressure on all acting within it. However, the complex values of other productive forms modifies the impact of purely instrumental values. When an activity shifts from other organizational forms into a corporate one, the values it responds to become much more narrow.

It can even eliminate the human element.

ELIMINATING THE HUMAN ELEMENT

Ludwig von Mises famously titled his magnum opus *Human Action*. It certainly described action by active agents. But he did not describe *human* action. Mises' praxeology depended on separating means from ends in action, which accurately describes the systemic values of the market process as privileging only instrumental values. But outside of sociopaths, this does not describe *human* action.

When an organization exists only to maximize making money, the complexity of fully human motivations becomes a problem. Now that the technology exists to do so, organizations seeking to maximize market values alone are often eliminating the human dimension completely. Today important managerial functions at major hedge funds such as Bridgewater Associates are being turned over to computer programs in order to eliminate the 'fallible' human dimension in financial management (Copeland 2016). Many rents for housing are now set by algorithms that completely eliminate the human element, essentially engaging in price-fixing, which is illegal when done by human beings (Alford 2024). No human need be involved, just the logic of the market at its most inhuman. Its error rate is 90% (Ross 2023). With the human element minimized, profits increased. There is no more clear distinction between the logic of profit maximization and actual human action.

It is easy to anticipate a time not far off where important investment decisions will be made without any input by messy human values at all, because human beings will have been largely eliminated from the process. From computerized buying and selling stock, to managing the organizations in whose name the buying and selling happens, in principle, virtually no human element need remain. People will prosper to the degree they serve this process.

With its emphasis on maximizing impersonal objective analysis, science can have a similar impact in eliminating complex human values, as the history of eugenics in the United States demonstrated (Black 2003). On balance, democracies are less prone to this particular problem because a vote does not signal a particular value or set of values. Each individual vote incorporates the various values motivating a particular voter and public policies are often chosen for value-complex reasons.

EXTERNALITIES

Economists frequently speak of externalities, the positive and negative unintended consequences of economic activity. My analysis deepens this issue for three reasons. First, because the market (and every other spontaneous order) generates systemic biases independent of the values held by participants, *the market itself is an "externality."* The more pure market values dominate in exchanges, the harder time other values will have in shaping people's abilities to harmonize exchanges with their own values. This is obviously also true for democratic politics and (more subtly) in science.

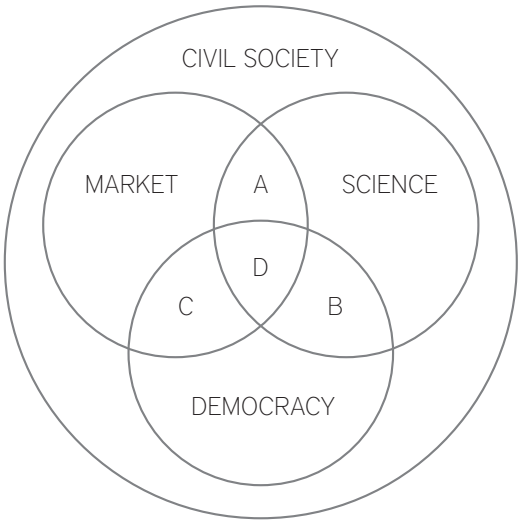
Second, the interactions of different spontaneous orders, each with its own systemic bias, generate another level of complexity. For example, science is based on the "gift economy" but the market is based on the price system, and scientific research depends on materials and skills that the market (or some other means) provides (Hyde 1983, pp. 77-83; Titmuss 1971). Each system imposes externalities on the other when they interact.

Third, and perhaps most fundamentally, the more closely linked people within a society become, the more externalities appear that were not an issue when links were looser. I came across an example regarding antibiotic resistance while working on this paper. As is well-known, antibiotic resistance towards an effective medicine gradually develops in bacteria the longer they are exposed to it. In the absence of new medicines, as this happens the death rate from a disease treatable by this antibiotic will increase. This has been one argument for making antibiotics requiring a physician's approval to be available. But even with this protection, many antibiotics are used in agriculture, especially in factory farming. And we know that diseases can jump the species barrier. Factory farming and easy availability of antibiotics both increase the rate of antibiotic resistance, and with it, the death rate from once treatable diseases (Le Page 2024, p. 17). These extra deaths are externalities.

The traditional concept of externalities contains an additional unexamined problem illuminated by studies of complex adaptive systems. As discussed above, when linkages causing negative externalities are frequent, seeking to address them all leads to stagnation

Nor are externalities simply market phenomena. Within spontaneous orders, and complex adaptive systems more generally, the saying "You can never do just one thing" holds true. The problem is as real in public policy as it is within the market. Establishing an organization to pursue public goals also establishes an organization that will tend to redefine those goals to subordinate them to the well-being of the organization itself. Because most readers of this piece will be very sensitive to the unintended consequences of some public policies, while being less so to the unintended consequences of the market process, I have focused on the market. But from urban renewal to busing in public schools to the Forest Service's commitment to put all fires out as soon as possible, organizational interests have often overridden the scientific evidence and the public interest alike, in government and science as well as in the market.

CIVIL SOCIETY



Michael Polanyi distinguishes a free society from science (and democracy) as one in which 'the public interest is known only fragmentarily and is left to be achieved as the outcome of individual initiatives aiming at fragmentary problems" (Polanyi 1969, p. 71). Polanyi describes what I define as "civil society."

Neither the market nor science nor democracy can be described as simply the expression of free men and women cooperating together. All are emergent patterns arising from formally voluntary cooperation within a different contexts of rules. Reducing a free society to scientific, democratic, or market values is crude reductionism. Not every individual value is best served within a particular spontaneous order, or even within any of them. For example, the arts are to some degree independent of all three.

The larger encompassing context within which people engage in voluntary cooperation is, called civil society: a field for voluntary cooperation among status equals in which markets, science, and other social institutions provide contexts for different kinds of projects. Civil society, and not any subset within it, is the ultimate context for freedom (diZerega 2014a). Civil society encompasses all spontaneous orders plus the rest of society engaged in relations of formal equality under the law. It is depicted here in the encompassing circle that includes the market, science, and democracy. I think much of Alexis de Tocqueville's *Democracy in America*, especially vol. I., provided the first in-depth appreciation of civil society and how it was something new under the sun.

WHY IT MATTERS

The distinction I am making between social spontaneous orders and other kinds of complex adaptive systems, such as language, as well as organizations described in terms of a hierarchy of goals helps explain important empirical patterns distinguishing spontaneous orders from other social phenomena, as well as shedding attention on important phenomena that do not fit into established categories of social science.

The most important, perhaps, is it explains why humanity might have finally found a cure for the curse of war.

DEMOCRACIES HAVE NEVER FOUGHT WARS WITH ONE ANOTHER

If democracies are spontaneous orders for discovering true public values, I think it would be hard to deny that the most important public value possible to establish is peace between different peoples. Liberal democracies have *never* fought wars with one another, with war being described as a conflict with 100 or more casualties (diZerega 2024; 1995).

From the earliest tribes, war has been a constant issue. World history is characterized by an endless record of conflicts between peoples leading to continually redrawn boundaries, massive casualties, profound suffering, and new conflicts. Many studies appeared suggesting a tendency to waging war was either hardwired in human character (Morris 1999) or emerged and spread out of the logic of survival when challenged by others (Schmookler 1994).

Almost entirely ignored until the work of R. J. Rummel (1997) was the fact that even in nations with a long history of mutual conflict, such as Britain and France, Germany and France, or of violent conquest of one by another, as with Japan and Korea, or Britain and Ireland, the likelihood of war became virtually unthinkable once both parties became democratic. Even when some nations were in one alliance, and another was not, their borders were demilitarized, as with Switzerland and its neighbors, or Sweden and Norway, Norway and Finland, or the US/Canadian border.

When a democratic nation did wage aggressive war, as the US more than others has, it has been the doings of an executive able to free himself from democratic oversight, as with the American invasion and conquest of Iraq. Such executives also assisted in the violent overthrow of democratic governments when the scale of the engagement was so small as not to involved other democratic institutions, such as the US and Iran, US and Guatemala, US and Chile. An executive branch independent of the legislatures, like all undemocratic governments, is understandable as a state not a spontaneous order (diZerega 2024b).

SCIENCE IS A PROCESS OF DISCOVERING RELIABLE KNOWLEDGE

Unlike religions, ideologies, and forms of purely philosophical knowledge, science has repeatedly transformed what once seemed central assumptions because it holds its assumptions to the same standards as it holds any other claim to knowledge: based on maximally impersonal rules for investigation: measurement, prediction, and experiment, are they reliable? Early science began with core assumptions central to the Protestant religious beliefs most held at the time (Toulmin 1990, pp. 109-115). Today virtually all have been abandoned in favor of different assumptions. Measurement, prediction, and experiment are procedural, and do not say anything about truth. Unlike religion and many philosophical systems, science does not claim to discover truth, but eliminate error. What remains is the most reliable account known by these standards, but not a claim to truth (Ziman 1979).

No other conception for understanding reality has come close to science in its ability to reframe even its most basic assumptions when they conflict with findings about reliable knowledge. Nor has any other way of knowing led to such an enormous impact on human life. The reason is other approaches to knowledge *began* with an affirmation of a truth, and then sought to provide evidence for the claim and rebuts arguments against it. They are constructivist. Science instead relies on abstract procedures able in principle to evaluate any truth claim. Science is a discovery process, not a confirmation process, even though its original founders thought it would be (Hayek 1978, pp. 180-1; Polanyi 1969; 1954).

THE MARKET AS A PROCESS FOR COORDINATING EXCHANGES THROUGH THE PRICE SYSTEM

Prices shaped by previous decisions among producers and buyers, as well as by their future expectations, create a coordination network far more sensitive to relevant information than any attempt to manipulate prices from the outside based on other values or replacing the price system with central planning. Hayek as well as some other economists saw this as the strongest advantage of the market process over would-be alternatives (Hayek 1948, pp. 119-208).

THE BIG PICTURE

Economics mostly stays firmly within analyzing a market framework focusing on the implications of instrumental exchange within a price system. Political science focuses on the organization of power, particularly within governmental organizations. A Hayekian approach illuminates a new framework emphasizing the interactions of spontaneous orders and organizations within different overlapping contexts. In doing so it sheds light on important institutions that do not fit within either traditional category because they have elements of several. I will briefly discuss two examples.

THE NATIONAL TRUST OF ENGLAND, WALES AND NORTHERN IRELAND

The National Trust is the world's oldest land trust, celebrating its centenary in 1995. The National Trust's properties now extend to 612,000 acres (about 1000 square miles) in the UK, including about 18% of the total coastline of England, Wales, and Northern Ireland. After the Crown, the National Trust is the largest landowner in the UK. It has over 3 million members, and is very popular. A similar trust also exists in Scotland. The National Trust's ability to incorporate ecological as well as historical values and its consistent acquisition of new land is impressive evidence of the concept's promise, even in densely settled lands.

The National Trust has a substantial democratic component. Anyone can become a member by joining, thereby obtaining voting rights. As of 2005, The National Trust has a Council consisting of 52 members, 26 elected by its membership, another 26 appointed by outside bodies. Direct management of the National Trust is through a Executive Committee, under which are a number of decentralized Regional Committees. Far from being devoid of political debate, the National Trust is frequently the site of vigorous campaigns by members seeking changes in policies regarding hunting, recreational use, and similar issues (Dwyer and Hidge 1996, p. 84). The National Trust integrates successful management of public land and democratic values, and has done so largely scandal free for 130 years. US National Forests could be managed as democratic trusts, integrating democratic values with civil society rather than subordinating them to bureaucratic and legislative priorities (diZerega 2006).

SPAIN'S MONDRAGON 'COOPERATIVES'

Cooperatives have traditionally been organized and analyzed on purely economic grounds, but seek to integrate democratic values within this framework. They have actually often been successful economically but as the value of shares increases, new workers cannot afford them when older ones retire and seek to sell them. They end up being bought by more traditional economic organizations such as corporations. The Mondragon cooperatives solved this problem and have prospered since 1956, now having over 90,000 members.

The most basic theoretical distinction between the Mondragon cooperatives and more traditional cooperatives concerns property rights. In a genuine sense Mondragon style cooperatives are owned by no one. They resemble democratic communities of citizens more than traditional cooperatives.

Membership in Mondragon is based on working in the cooperative, not on owning a share. I am a member *only* so long as I actually work there. Every member has an equal vote, and collectively they govern the business. If a worker retires or goes to work elsewhere he or she loses the right to vote and the right to a share of the cooperative's net profits.

Every member has a right to a share of the cooperative's net profits, paid out in a way superficially similar to wages in a traditional business. It will not necessarily increase in an unusually profitable year. At the same time the worker also accrues a portion of the company's net worth, but only receives this portion after ceasing to be a member, usually upon retirement. Increases in capital value are kept within the enterprise to be used for business needs, and when a person retires they receive their accrued portion over and above their pension. This arrangement is best understood politically rather than economically. In many ways membership in Mondragon is more analogous to citizenship than to traditional ideas about ownership of property (Ellerman 2012).

By having membership rights attached to work but rights to capital attached to the person working, the problem of future workers not being able to afford membership in a successful enterprise is solved. No worker need come up with the enormous amount needed to buy into a successful enterprise. Nor does the retiring worker need to sell his or her share to reap the benefits of capital accumulated during their membership because this capital is distinct from the share. This way shares can be kept affordable (diZerega 2014).

CONCLUSION

The framework I am helping develop in this article creates the foundation for a genuine "political economy" rather than what is often the case today of reducing politics to a form of economics. Spontaneous orders are products of human action but not of human design. All arise from people acting within formally equal contexts and choosing projects according to their own values and interests. Thus, all these systems incorporate the most basic liberal assumption: that all humans are formally equal, into their basic character.

Equally importantly, organizations within these systems will have interests different from the values that create the systems and will perpetually be drawn between two alternative strategies to flourish within them: creative adaptation or seeking to control the system to give it special protection from its dynamics.

Also important, people upon becoming members of organizations have a tendency to modify their own values and actions in ways to bring them into greater harmony with the organization itself. This effect is easily observed in corporations, sports teams, the military, religious organizations, and charities.

All of this takes place within civil society, the encompassing framework within which these and other networks of cooperation and connection arise within a free society. One could expand this framework farther, exploring how human complex adaptive systems and spontaneous orders themselves exist within the large complex adaptive system of the planet earth. But that is another paper (see however, diZerega 2020b).

I hope this analysis has demonstrated getting spontaneous orders right provides enormous analytical depth to our research, demonstrates liberal principles are inherent in the most important institutions of the modern world, and explain enormously important empirical patterns. One cannot ask much more from social science.

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