

Spontaneous Orders and Cooperation – A Research Overview

By

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Introduction: The Problem of Order

That there is order in social life may seem obvious, but rarely does one ponder why this is so. Individuals need structures to act within, they need familiarity and some level of predictability in social life, some ability to make projections as to the consequences of different actions in order to be able to pursue goals, individually or by cooperation with others. If things in social life appear completely random how can civilization thrive? But from where do such structure and predictability originate? What makes society possible, what are the mechanisms that make cooperation between individuals for reaching common goals possible? Below we shall present some solutions to these questions.

The State of Nature: the problem restated

In order to answer the question of how order arise some philosophers have envisioned a hypothetical state of existence before society, a place where no political or economic institutions exist. This place is generally referred to in political philosophy as a *state-of-nature*. Perhaps the most famous formulation of a state-of-nature came in 1651 when Thomas Hobbes published his perennial classic *Leviathan* (Hobbes, 1981) wherein he asked the timeless question *what makes order out of chaos?* In Hobbes's state-of-nature man engages in desperate struggle for survival, for according to Hobbes, man is inherently selfish and greedy. Life in the state-of-nature is hence necessarily "solitary, poor, nasty, brutish and short" (Hobbes, 1981:186). Such existence will only lead to everyone's war against everyone. For man to prosper order needs to be imposed in some fashion or other.

Hobbes meant that man must voluntarily submit to a *social contract* which partially transfers individual autonomy to some order-preserving organization—the *state*. The view of mankind as inherently selfish and prone to violence made Hobbes conclude that the state must have extensive power to impose and coerce order for society to prosper. He concluded that absolute state power was necessary and that the social contract would award all individuals the ability to make decisions as one voice. It was the only way for mankind to prosper.

A contrast to Hobbes was provided some forty years later by John Locke. His *Two Treatise of Government* arrived in 1690 (Locke, 1960). He too proceeded from a state-of-nature, but of a different kind. Locke meant that the state-of-nature was one of peace, good will towards fellow men and mutual support. Man was equally created by God and free to roam as he liked, utilizing his property without being conditioned by another's will. However, there are bad apples even in this peaceful state nature. To flourish, man needs an impartial judge to resolve conflicts and an institutional framework that is fair and accepted by all. Like with Hobbes, man must enter a social contract which relinquishes some autonomy to a state which has as its task to protect life and property. Locke's state was, unlike Hobbes, necessarily limited in scope – the state was to uphold rights already existing in the state-of-nature, given to man by God, not to designate new rights or be a mechanism for shaping society according to some specific ideal.

In summation, Locke and Hobbes represent a school that advocates social contracts to end the chaos of disorder. Although having different conceptions of the

nature of man, both would advocate an intentional contractual arrangement, binding each member in society to hold up his end of some common notion of good. They would both advocate a central authority which would enforce the contract.

In the next section we will take a quick look at brief typology of different kinds of orders.

Two meta-categories: Made Orders versus Spontaneous Orders.

Theories of order can be said to fall in either of two general categories. One we have already touched upon above when discussing the social contract theories of Locke and Hobbes. Those social contracts were the result of rational reasoning, planning and intentions. They were purposive—society has a purpose of some kind which the social contract were set to realize. Such orders are generally referred to as *made* orders (Hayek, 1997).

A clear example of a made order is the *firm* or some other *organization*. These embody a limited and a specific purpose and their order is made by someone for this specific purpose. A social order of this kind transfers the same kind of logic from firms and organizations to the entire society. Order must originate with some sort of central authority (government, God, central committees and so forth) and be imposed on society. Order must serve some grand purpose and lead the whole of society to some goal, perhaps some commonly shared good. Order can be said to be *exogenous*, it is imposed on society from the outside by some authority (cf. Hayek, 1997:234). Other terms fitting to describe the made order are that it is a *construct*, it is *artificial* and it is *consciously* directed.

There is a theoretical complex of orders that is of a diametrically opposite kind, often referred to as *spontaneous orders*. The proponents of this type of order would insist that such social order isn't of deliberately designed origin. Rather it emanates out of the actions of the hundreds of thousands (or more) individuals who coordinate their actions with each other for the purpose of reaching specific individual goals. The most important institutions in human history, these people would claim, have risen from such *spontaneous* cooperation, citing markets, language, law, and money, as some (but not all) examples of institutions where the deliberate and planned actions of a state are not the point of origin. Civil society, a complex *network* of voluntary and spontaneous associations, bring organization to society. But civil society isn't *itself* an organization, it is not deliberately directed by someone for some grander purpose or scheme. It is no central authority (cf. Hayek, 1997). In contrast, spontaneous orders are not *made*, they are *grown* from within the context of social relations (cf. Hayek, 1997: 233 et seq.) It is *self-generated* or *endogenous*, as opposed to deliberately designed and exogenously imposed as is the case with made orders.

In the next section we shall go through an overview of writers and research that are related to spontaneous orders. We shall take a look at suggested mechanisms behind the origin of non-imposed order. In the final section we shall then tackle some critique against spontaneous order theory; most acutely the concept prevalent in neoclassical economics that rational behavior will produce non-cooperative equilibria, and hence, render the concept of spontaneous order partially useless.

Invisible hands: Smith to Nozick

The idea of a spontaneous, non-directed social order can be traced throughout history.¹ For instance, it is present in the thoughts of the eastern scribe Lao-tzu in Tao Te Ching, believed to have been written in the sixteenth century BC. Tao is usually translated into “the way”, but sometimes also referred to as “natural law”. It is some ultimate existential law that is referred to, the very nature of existence. Lao-tzu urges the ruler to refrain from action, to take the good with the bad (the yin and the yang) and let people pursue their own actions (Lao-tzu, 1997). He writes:

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Exterminate the sage and discard the wisdom [of rule],
And people will benefit a hundredfold

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Without law or compulsion, men would dwell in harmony
(Lao-tzu in Boaz, 1997: 208)

It is however, in the nineteenth century that modern theories of spontaneous orders appear. Adam Smith made a remarkable discovery about commercial markets; they seem to operate under some self-generated, decentralized mechanism without any grander theme or purpose. He described this mechanism with his now so famous metaphor: economic actors are guided in their self-interested conduct to promote ends that were never part of their intentions as if moved by an *invisible hand*.² We’ll elaborate further down.

Smith makes mention of two types of order in *The Theory of Moral Sentiments* (1976), before the writing about the invisible hand. He distinguishes between a system of natural harmony and spontaneous order versus “the man of system”, who imagines himself moving people around like they were chess pieces with the purpose of fulfilling some larger plan. Government, he means is full “men of system” who believes that society would run smoother if only individuals would cooperate with “the man of system’s” plan (Smith, 1976: 380 *et seq.*).

¹ Naturally, there are several ways to present an overview of the authors of works concerning spontaneous order. One may sort them after several different criteria, such as after discipline, separating economic theory from political science and sociology etc, or after some subcriteria involving spontaneous orders themselves, such as different kinds of spontaneous orders. I’ve simply chosen a (roughly) chronological order, presenting the ideas as they have emerged within social science. It is in my view the clearest way given that the objective is simply to present an overview. If the overview is to be used for some other purpose, say, as a part of an essay, other presentations might be more fruitful.

² It is worth noticing that theories of spontaneous orders are generally more prevalent in economic science than in other disciplines. This is likely due to the fact that the *market* is such a clear example of such an order. It is also worth noticing that spontaneous order is one of the foundations of much of libertarian theory. It is used there to justify the minimal state intervention so common within the libertarian school of thought. .

But, Smith says, the individual chess pieces have a principle of motion of their own, altogether different from the master plan. If the motion of all the individual pieces should happen to coincide with the man of system's plan, then society would run smooth, but if they are of opposite minds, the chess game will go miserably. Order is pre-governmental and was government to disappear, order would still be there because, according to Smith, order lay in "the principles of society and the constitution of man" (Smith, 1937: 13).

With the publication of *An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776 Smith elaborated on his idea of a harmonious and spontaneous order. His idea is focused around the *self-interest* of man. Order (not necessarily economic order) does not originate from the genius of man, it is not designed, it has no specific purpose, but it arises from man's need and desire for happiness. This desire manifests itself in economic cooperation; "the propensity to truck, barter, and exchange one thing for another..." (Smith, 1937: 13). Each person's regard for his own self-interest impels people to seek the cooperation and exchange with others in order to fulfill his own personal needs. He writes "it is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from regard to their own interest" (Smith, 1937:13). Trade, he writes, has the characteristic of being *mutually beneficial*,³ and hence as people consume and put their capital to use with the expressed intention of promoting only their personal gain, they also promote the public good (perhaps not always inadvertently, but he means that they cannot help promoting the public good even if they desired not to). *This is the workings of the invisible hand.*

Smith's contemporary, English and American agitator for freedom *Thomas Paine*, is perhaps equally deserving as an originator of spontaneous order theory. He insists that no man can be capable of fulfilling his needs without cooperation with others and every man has needs to fulfill; this is as "natural as gravitation acts towards a center" (Paine, 1997:212). But there is an aptness to man, society and its embrace of diverse abilities makes him flexible and can accommodate new situations to his advantage. He can overcome challenges and as such he can do so without the aid of government (Paine, 1997)

The foremost exponent of the theory of spontaneous order in the twentieth century is without a doubt *F.A Hayek*. He is responsible for increasing the complexity in the theory compared to previous thinkers; he graduates spontaneous orders from set of loosely connected ideas to a coherent theory. His main output in this field of study is to be found in the mammoth work *Law, Legislation and Liberty* (1973), where he distinguishes between two types of orders, "made" and "grown", in which "made" orders have the connotation as an exogenously, deliberately de-

³ Trade is considered mutually beneficial as it moves both parties to a higher indifference curve. This is not to be confused with the notion that trade is *equally* beneficial in the sense that it creates equal distributions or moves indifference curves by equal amounts. This can of course be the case under certain circumstances but this is to be considered a special case and not as an inherent propensity of trade.

signed order imposed by some central authority, and “grown” as endogenously self-generated order.⁴

Hayek also specifically mentioned that both made and grown order coexisted in every society. Made orders, he claimed, were suitable for organization in society—businesses, clubs, churches, cooperatives or something else. These have a specific purpose and are organized to achieve it, but society as a whole does not have a specific purpose but is rather an endless plethora of purposes, represented by the diverse preferences of society’s individual members, and as such the made order was unsuitable for a successful society. Hayek sites the planned economies of the socialist states (writing before 1991 when the Soviet union broke up) as typically failed orders of the made kind (phrasing it as the ‘fatal conceit’ of socialism) (Hayek, 1960; Hayek, 1992).⁵

Several contemporaries to Hayek wrote about spontaneous orders. For instance *Michael Polanyi*, a Hungarian-Born chemist and philosopher of science, analyzed science as a competitive process and spontaneous order. In *The Logic of Liberty* (1951) he broadened the analysis to include other spontaneous orders such as the market process. Michael Rothchild wrote in *Biomechanics: The inevitability of Capitalism* (1990) that non-centralized dissemination and dispersal of information is the basis for order (see note 6 about Hayek and the use of knowledge in society). He was unfamiliar with the work of Hayek and others of the ‘Austrian’ school of economics but came very much to the same conclusions.

By the end of Twentieth Century spontaneous order became less attached to its political connotations as a counterpoint and critique of the made order (and its connotation as that of totalitarian rule). It started to develop into a complete theory which could be used for purposes of empirical study, a *method* suitable for explanatory science regardless of any normative content. A pioneer in using the concept of a spontaneous order in this way is surely *Robert Nozick*. In his seminal *Anarchy State and Utopia* (1974) he describes a hypothetical process in which a minimal state could be self-generated from a state-of-nature. He is possibly the originator of the term ‘invisible-hand explanation’ (borrowing, of course, from Smith) as a scientific term describing something (like a state) being generated without design and purpose.

His argument is rather simple. People in a state-of nature find it convenient to form groups for mutual protection, pooling expenses and resources. Several such groups of various sizes appear, and people start to gravitate towards the biggest one (as it can most effectively provide protection). This group becomes a *dominant* agency and eventually acquires a *de facto* monopoly on protection services in its area of operation. Nozick calls this the *ultra-minimal* state. But only people soliciting services from the dominant agency receive protection and independent in-

⁴ Hayek wrote a considerable body of work detailing spontaneous orders. His main works are *The Constitution of Liberty* (1960) and *Law, Legislation and Liberty* (1973). He also wrote *The Fatal Conceit* (1988) in which he detailed the failure of a particular made order, socialism.

⁵ Related issues that is of interest is his theory of how knowledge is dispersed and used in society. He says that knowledge is decentralized and free exchange is necessary for society to function. He compares this “catallaxy” to planned economies in socialist thought where knowledge is forcibly centralized. His conclusions were that societies that tries to centralized knowledge will necessarily fail (cf. Hayek, 1960; Hayek, 1948).

dividuals are left to fend for themselves. The final step is taken when the ultra-minimal state in order to protect its clients from violence from the independents, prohibit these from using force against the agency's members. The independents are now without recourse for justice if wronged (by members of the agency) and the dominant protection agency is now morally obliged to extend its protection to include the independents. The dominant agency has thus become a (minimal or night-watchman) state with a monopoly on violence, although it was never anyone's intention or plan that such a state was to be formed (Nozick, 1974; Lacy, 2001).⁶

Rationality: Market Failures and the Problem of Collective Action

As the theoretical complexity and popularity of self-regulating orders, particularly in commercial markets, grew, so did skeptical inquiry. At the foundation of spontaneous order lies an assumption that human beings are inherently rational. This idea of rationality and a subsequent self-generated order faced a formidable challenge foremost from the economic theory of *market failures*.

In microeconomics the theory goes that under certain strong assumptions about individual behavior, producer behavior, technology, tastes, transactions costs, etc., production and exchanges of goods will automatically correspond to the requirements of Pareto-efficiency, that is, the market, through Adam Smith's "invisible hand", will automatically allocate resources in an efficient manner.⁷ The market order is self-generating. However, the theory of market failure says that such rationality will only produce efficiency if goods are private and completely divisible (such as an apples, or mobile phones). If goods are *public* to some degree (such as a lighthouse, or an insurance scheme), an economist says, the market order will fail and some imposed (made) order is necessary if such public goods are to be produced at all.

Consider the example of a small group of farmers sharing a creek for irrigation.⁸ The creek maintenance (and the creek itself) represents a public good scenario. The farmers face the annual problem of organizing a collective workday to clear out fallen trees and brush from the preceding winter. Each farmer's production is dependent on the condition of the creek. Rationality would predict failure here as each farmer benefits from *free-riding* on the efforts of others; his production will not suffer if he doesn't join in the work as long as the other farmers do. Since everyone has this incentive the 'market' for irrigation would fail, leaving each farmer worse off than if everyone cooperated.

⁶ The method of the invisible hand is apparent throughout *Anarchy, State and Utopia* (1974). In the famous section about distributive justice Nozick presents the analytical dimensions of *patterned* versus *non-patterned* distributions. Patterned distributions is someone's (government, the majority...) idea of a just distribution, i.e., a made distribution, whereas non-patterned distributions are simply the result of free exchange, i.e., an endogenously, self-generated distribution (cf. Nozick, 1974).

⁷ In economic theory this generally referred to as the *First Welfare Theorem*. The assumptions are generally, rational individuals, zero transaction cost and perfect and complete information. Confer any basic text on economic theory such as (Schotter, 2001) or (Rosen, 2002).

⁸ The story about the farm community is borrowed from Ostrom (1997).

The classic texts on market failures are Paul A. Samuelson's "The Pure Theory of Public Expenditure" (1954) and Francis M. Bator's "The Anatomy of a Market Failure" (1958). Samuelson presents the theory of public goods which is characterized by, among other things, "nonexcludability", that is, one cannot exclude people from consuming the good and hence one cannot ensure that consumers contributes to the cost of producing it. Bator presents a more complete and general exposition of the theory behind market failures.⁹

In political science and game theory the problem of market failures is more generalized to include any kind of common goal in which individuals have incentives to consider immediate self-interest rather than the common good of the group. Game theorist usually refers to the problem as individuals reaching *non-cooperative equilibria* in cooperative games and the political scientist usually calls it a problem of *collective action*. But it is the same complex of problems all three disciplines are discussing.

The theory of market failures (and its corresponding labels in other social sciences) mounts a formidable challenge to the idea of a spontaneous order; it makes a case for made orders at least in parts of society. The theory of market failure has arguably pushed along the development of spontaneous order theory. We will briefly examine how below.

Rationality reconsidered and expanded: Modern theories of spontaneous orders

The challenge from the theory of market failure was arguably not aimed directly at the idea of spontaneous social orders but rather against the concept of rationality. This of course, had *consequences* for the theory spontaneous orders. The simple rationality models so common in (but not exclusive to) economic theory had to be revised.

In recent decades theories incorporating social institutions into rationality models have flourished. Such social institutions include (but is not limited to) norms, conventions, rules of thumb, traditions..(include more). Social institutions, many claim, alleviate in various ways the problem of unmitigated self-interest and moves groups of people away from market failures in cooperative situations.

Political scientist Elinor Ostrom (1997) suggests that, when certain structural variables exist the likelihood for cooperation will increase.¹⁰ If the group is relatively small, and the individuals in it have symmetric interests (such as farming in the case of the farming community above), arriving at an agreement on how to cooperate to reach common goals wouldn't be very difficult. People who have see each other on a daily basis, she says, and who have to work together and see each other in the future would develop a norm system that would facilitate cooperation. Each individual knows that if he doesn't reciprocate cooperation he will earn distrust from his fellows and see the withering of his reputation as an honest man, but

⁹ The classic empirical example of a public good is the case of the lighthouse, where passing ships can make use of the emitted light without paying for the erection of the lighthouses. (cf. Coase, 1960, 1974).

¹⁰ See also Ostrom (1990)

if he does reciprocate, he will build trust and further cooperation. This could possibly make a central authority superfluous (Ostrom, 1997).

She suggest that the original ‘thin’ rationality model can be made a ‘thick’ and more realistic by including norms such as *reciprocity* (that is, reciprocating cooperation), *trust* and *reputation*. These variables let people choose with whom they ought to extend cooperation and this helps groups overcome the problem of market failure (Ostrom, 1997).¹¹

Andrew Schotter (explicitly citing Nozick’s method of ‘invisible hand-explanations’ as a primary influence) developed a more general theoretical framework for analyzing the emergence of social institutions without deliberate and planned actions from a central authority (Schotter, 1981). Political science has, he says, depicted the rise of the state as a social contract between free individuals, and as a result they have depicted it as risen from a state-of-nature via spontaneous actions, not subject to any grander and deliberate design.¹² He suggests that social institutions (such institutions that would, for instance, handle the provision of a public goods) arise via invisible hand processes without any agent or group of agents consciously designing it. For instance, with a market failure involving a public good, which is to be provided by a central distributor of some kind or other (but not necessarily a state), where individuals have incentives to lie about their willingness to pay for public good and some private good (which determines the demand for the public good), from which a suboptimal outcome then is the result, it would be effective for individuals in society to evolve an institution which would alleviate the problem (such as a convention to tell the truth about the willingness to pay) (Schotter, 1981).

Axelrod, although hardly an institutionalist, lends support to Schotter’s and Ostrom’s conclusions in *The Evolution of Cooperation* (1984). Taking a game theoretical approach he argues that if two individuals only need to cooperate *once* they will have tendency to be selfish and not cooperate, but if they have to interact in the future they will have incentives to cooperate (a so-called *repeated game*). They might meet again, he says, and then the payoffs of cooperation will be evidently higher than those from non-cooperation. Anyone who opts for non-cooperation will be met with same medicine the second time around. This compels individuals to seek cooperation, purely for selfish reason. The past “cast a shadow back upon the present” (Axelrod, 1984: 244).

Michael Taylor offers a similar view of cooperation without coercion as Axelrod in *The Possibility of Cooperation*¹³ He also uses game theory as a primary method. His book, he says, is to be read as direct critique of the liberal justification for the state, that cooperation for producing public goods (*order* is itself at

¹¹ Several other solutions to the problem of public goods provision without interventions from a central authority has been presented. See for instance, *Buchanan’s Theory of Clubs* (Buchanan, 1968), and *Brubaker’s Golden Rule of Revelation* (Brubaker, 1975). An anthology of critical essays on the problem of market failure is (Cowen, 1988).

¹² It is, in my experience, more common that social contracts are interpreted as intentional rather than spontaneous, as is the case with Locke and Hobbes discussed above. For another famous example see Rawls’ *A Theory of Justice* (1971), where society’s individuals choose a set of institutions in social contract from behind ‘a veil of ignorance’.

¹³ This is a reworked edition of Taylor’s original book on the subject, *Anarchy and Cooperation* (1976).

times construed as a public good) cannot emerge without its coercive powers. Axelrod and Taylor are perhaps the ones in our overview who insist the hardest that cooperation and order will emerge without a central authority. Both insist that the state isn't a requisite for order and cooperation. So strong are the drives, they claim, that compel individuals to seek the cooperation of others.

Douglas C. North's *Institutions, Institutional Change and Economic Performance* (1990) takes a similar approach to social institutions as does Schotter. He sees institutions as the "rules of the game" in a society (North, 1990: 3). They provide a stable set of structures which reduces uncertainty and facilitates cooperation between individuals. In North's terminology, institutions reduce *transactions costs* inherent to all human interactions. For instance, in the case of Schotter above, a convention of telling the truth about one's willingness to pay for a public good is such a reduction of transaction costs.

North's work is not necessarily a direct defense of the spontaneous order (against interventions and imposed orders) but can certainly be interpreted as a kind of catalyst for non-coerced cooperation, and hence for spontaneous order. Institutions can, according to North, be both 'formal', i.e., they are made, created deliberately by men for the sake of fulfilling some purpose, like *law*, and informal, grown or evolved without intention or purpose, such as *codes of conduct* and *rules of thumb* (North, 1990). North then, speaks of institutions that are both, in the terminology of Hayek, 'made' and 'grown'.

Jack Knight's *Institutions and Social Conflict* takes a similar view to North in that social institutions functions as a catalyst for human interaction. But Knight emphasizes the struggle for distributional shares (that is, the social distribution of utility) in explaining the rise of such institutions. Specifically he argues that social institutions such as norms and conventions arise spontaneously as a byproduct of distributional conflict in society. When rational individuals struggle to maximize their expected utility conflict and power asymmetries arise, and institutions alleviate this conflict.

Conclusion

In this essay I have presented an overview of the theoretical cluster of ideas referred to as *spontaneous order*, a social order that is self-generated without intentional human or purpose. I have also presented a brief overview of one of the most powerful ideas which has challenged the notion of a spontaneous social order, the problem of *market failure*. Finally, we examined how the theory of spontaneous order has evolved in light of this challenge.

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