

Hayek, Complexity and “Classical” Liberalism

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1. IS THERE A “CLASSICAL LIBERAL” VIEW?

Political theories are structures of conceptual, normative and empirical commitments (Chapman, 1965; Freedman, 1996: Part I; Gaus, 2000: chap. 3). We seek to understand them by classifying instances according to families or allied approaches — socialism, conservatism, liberalism, feminism, libertarianism, and so on. These classificatory schemes are critical to understanding, but at the same time they run the danger of distorting a specific political view by stressing some features over others, and perhaps employing categories that it abjures. These are unavoidable dangers of classification; we should be aware of them, and always inquire whether our classificatory schemes are interfering with understanding a theory on its own terms, and appreciating its insights. I believe that attempts at classification have been particularly distorting with respect to “classical liberalism.” To be sure, some political philosophers describe their view as “classical liberal” (e.g., von Mises, 2005 [1927]), yet the label is most often employed — perhaps originally devised — as a contrast class, designating liberal theories that are not “new,” “high,” or “egalitarian” forms of liberalism (Freeman, 2011; Brennan and Tomasi, 2012).¹ The “new liberalism” of the early twentieth century, which sought to reconcile elements of liberalism with socialism (Hobhouse, 1911; Dewey, 1931, 1935) was especially keen to distinguish its ‘renewed’ and ‘progressive’ version of liberalism from the “earlier” (Hobhouse, 1911: 54) or “old” version (Dewey, 1931), which was almost always equated with “laissez-faire” economics (Hobhouse, 1911; chap. IV). Because throughout the twentieth century the classical political economists (including Smith, Ricardo and John Stuart Mill) were widely thought to be advocates of “laissez-faire,” this classical system of political economy was often assumed to be the heart of

¹ Both Freeman and Brennan and Tomasi contrast classical liberalism to the “high liberalism” of

“classical liberalism,” a perception that continues to this day (Rawls, 2001: 137). The confusions that these associations have engendered are legion. The classical economists were not advocates, but indeed usually critics, of laissez-faire (Robbins, 1952: 34ff; O’Brien, 2004, Gray, 1986: chap.4); in fact, the only significant “classical liberal political economist” who sought to defend a weak version of laissez-faire was John Stuart Mill, and he is usually credited at being a paradoxical, transitional figure, bridging the “classical” and “modern” liberal views (Kors, 2011; Gaus, forthcoming).

The tendency to distort a sophisticated political theory by slotting it into a common view of “classical liberalism” is especially manifest with respect to the work of F. A. Hayek, who ultimately concluded that his view was best classified as “Old Whiggism” (Hayek, 1960: 409). Samuel Freeman, holding that classical liberalism is intimately bound up with modern economic models, depicts Hayek as basing his liberalism on the pursuit of efficiency, yet he admits that Hayek was skeptical that we could know much about efficiency and equilibrium (Freeman, 2011: 23n; compare Hayek, 1978a). Freeman’s, as have other attempts at classification, also depicts Hayek and the classical liberal tradition as essentially “indirect” or “rule-” utilitarian (Freeman, 2011: 23n; Gray, 1984: 59-60), yet utilitarianism is Hayek’s *bête noire*, manifesting a constructivist delusion that we can have adequate knowledge of the overall consequences of our actions and so can design systems to optimize good consequences (Hayek, 1973, 1978b).²

Hayek is a far deeper and more original thinker than these familiar efforts at categorization indicate. Indeed, in my estimation he points the way forward to the most sophisticated and compelling account of the Open Society on offer — a line of

² Because Hayek appeals to social evolution (see section 3 of this chapter), some seek to save the “utilitarian” designation by deeming him an “evolutionary utilitarian” — the outcome of social evolution somehow indicates what is, from the utilitarian point of view, best. Hayek was too sophisticated an evolutionary theorist to believe that social adaptation is a proxy for maximizing utility, much less that we could have any test of this claim. See further Kukathas, 1989: 198ff.

analysis that is, I think, barely recognized in current political philosophy. Because it does not fit neatly into familiar classification systems, its distinctive character is largely ignored. My aim in this chapter is not simply to demonstrate the originality and power of Hayek's theory, but to extend and develop it in the light of more recent work. The present essay might well be described as a "Hayekian" analysis, not an explication of Hayek (compare Rawls, 1999: 221-27). Rather than seeking to articulate a general account of classical liberalism, I shall outline an essentially Hayekian view of the Open Society.

Section 2 introduces the contrast between small, closed orders of cooperation and the extended rule-based "order of action," which Hayek calls the Great, or Open, Society. Section 3 sketches the "twin ideas" at the heart of Hayekian political theory: self-organization and social evolution. Section 4 then summarizes the idea of the Open Society and why Hayek thinks central themes in modern political thought are hostile to it. Section 5 takes up the question of normative justification. Given Hayek's stress on complexity and ignorance, is there any room left for normative evaluation in Hayekian liberalism?

2. EXTENDED COMPLEX ORDERS

2.1 Systems of Rules

Traditionally — to many, by definition — political philosophy focuses on political and legal institutions, their functioning and moral evaluation. On this orthodox understanding, the essence of a classical liberalism would be a theory about moral requirements regarding state institutions and their limits. Given the strong associations of classical liberalism with economic theory that we have noted, we also would expect it to be a theory that provides arguments in favor of market over political arrangements in a wide array of contexts. Thus we might expect a classical liberal view to be one that, say, upholds the values of economic liberty and private property (Brennan and Tomasi, 2012; Freeman, 2011). While, of course, Hayek

considers formal political institutions, constitutions and legislation (1979) — and he certainly insists on the importance of liberty and property — his core concern is the basis of social order, especially the moral framework of society (1973, 1988).³ In a Hayekian-inspired analysis, “classical liberalism” is first and foremost a theory about the basis of social order, and its complicated dependence on systems of rules.

2.2 *Complex Orders*

Consider a small society such as that described by Russell Hardin:

Axel Leijonhufvud... characterizes the village society of eleventh century France in which the villager Bodo lived. We have detailed knowledge of that society from the parish records of the church of St. Germaine. Today one would say that that church is in the center of Paris, but in Bodo’s time it was a rural parish distant enough from Paris that many of its inhabitants may never have seen Paris. Virtually everything Bodo consumed was produced by about eighty people, all of whom he knew well. Indeed, most of what he consumed was most likely produced by his own family. If anyone other than these eighty people touched anything he consumed, it was salt, which would have come from the ocean and would have passed through many hands on the way to St. Germaine, or it was spices, which would have traveled enormous distances and passed through even more hands. (Hardin, 1999: 401-2)

Bodo’s village was comprised of a small number of fairly homogeneous agents — their preferences were not radically diverse, Moreover, they tended to share a common, accepted, set of act-types: they categorized the available actions (being religious, being a father, trading) in similar ways (Hardin, 2003: 98-99). Such a society still needs a system of social rules,⁴ but the small number of rules,

³ Hayek (1973) is also critically concerned with common law, which shares much with informal social morality.

⁴ While direct reciprocity (for example, “tit-for-tat”) can be effective in accounting for cooperation in very small groups (dyads, triads) its capacity to sustain cooperation dramatically decreases as group size increases (Henrich and Henrich, 2007: 51). Bodo’s group of 80 would be far too large for direct reciprocity to sustain cooperation (see Bowles and Gintis, 2007: 64-68).

homogenous preferences and shared categorizations imply that the rule system will be simple, and the effects of changes predictable. Because there are only a small number of rules, there will not be complicated interactions among them; because individual preferences are homogenous, it is relatively easy to predict how people will respond to rules, and because they share similar, and rather limited, categorizations they will understand their option sets in similar ways and so the rules can be relatively exhaustive in identifying what is permitted (Gaus and Nichols, 2017).

As Hayek stressed, such groups share a thick set of “aims and perceptions,” and this sharing guides social coordination and allows participants to agree on acceptable outcomes (Hayek, 1988: 12). Moreover, predicting the social consequences of changes in the rules of cooperation is a relatively tractable problem. The rules of such an order can be understood as rules of regulation, designed to achieve certain common ends or values (Hayek, 1973: 48-52).

Let us add more individuals, extending to hundreds of thousands. If the individuals share a rich set of common goals (say they are all devoted to living in accordance with the same principles of justice) and so have relatively homogeneous preferences (they have some different goals, but share overarching regulative values), they could still be organized by rules of regulation that have a reasonable chance of securing their shared ends and common normative commitments (cf. Cohen, 2008: 283ff). Now, however, let us introduce a high level of heterogeneity of preferences (or aims) and ways of classifying actions and options. Depending far less on shared aims and goals to secure cooperation, this group will require a far more extensive system of rules. Hayek recognized that such rule systems — composed of a large number of highly heterogeneous individuals guided by a number of rules — quickly give rise to complex systems (Hayek, 1967b; 1978a: 26-27; Saari, 1995; Mitchell, 2009: 12). In perhaps the earliest analysis of such systems John Stuart Mill (2006 [1872]: 370-73; 438-40; Auyang, 1998: 173-4) considered a system *S* composed

of elements $\{e_1 \dots e_n\}$ and an overall resulting outcome O . In his *System of Logic* Mill proposes three features of property O :

- (1) O is not the sum of $\{e_1 \dots e_n\}$;
- (2) O is of an entirely different character than $\{e_1 \dots e_n\}$;
- (3) O cannot not be predicted or deduced from the behavior of the members of $\{e_1 \dots e_n\}$ considered independently (i.e., apart from their interactions in S).

This is the idea of an emergent property, recognized by Hayek.

The “emergence” of “new” patterns as a result in the number of elements between which simple relations exist means that this larger structure as a whole will possess certain general or abstract features which will recur independently of the particular values of the individual data, so long as the general structure (as described, e.g., by an algebraic equation) is preserved. Such “wholes,” defined in terms of certain general properties of their structure, will constitute distinctive objects of explanation for a theory, even though such a theory may be merely a particular way of fitting together statements about the relation between individual elements (1967b: 267; see also Vaughn, 1999: 248).

Thus it is said that waves are an emergent property of H_2O . The properties studied by hydrology are not the sum of the properties of hydrogen and oxygen (as opposed to a mechanical force, which may be seen as the sum of its causes); waves have a very different character than a chemical compound, and the properties of an individual water molecule do not allow us to deduce the relevant laws concerning waves. Emergent properties are distinguished from mere “resultant” properties on the grounds that, while a resultant property is the expected outcome of S , an emergent property is novel and, given our understanding of $\{e_1 \dots e_n\}$, often unexpected or surprising (Auyang 1999: 177).

The scientific study of complex orders cannot, Hayek insisted, aim at the prediction of the “specific” future states or values of the individual elements. To be sure, just how specific a specific prediction must be is context-dependent; his claim,

though, was that in many natural sciences (such as parts of physics), “it will generally be possible to specify all those aspects of the phenomenon in which we are interested with any degree of precision we may need for our purposes” (Hayek, 1967a: 8). In contrast, when dealing with complex phenomena we are simply unable to specify the values (in contemporary terms, the system is modeled in nonlinear equations; Vaughn, 1999, 245; Holland, 2014: 4; Mitchell, 2009: 22ff.): we can only predict the “range of phenomena to expect” (Hayek, 1967a, 11; Hayek, 1967b). We can understand the general principles on which the system operates, and with this knowledge we can predict the parameters within which the system will settle. This is, as Hayek says, an idea of “great importance for the understanding of the theoretical methods of the social sciences” (Hayek, 1955: 43). It is the failure to understand the limits of social prediction that leads to the ill-fated attempt to employ social science to engineer society.

2.3 The Order of Actions

Readers in political philosophy may perhaps already be dismayed: what can all this highly theoretical social science have to do with the case for “classical liberalism” and the Open Society? It is, however, absolutely central to Hayek’s understanding of the rule-based extended orders, for his fundamental claim is that the “order of actions” which characterizes an extended society is a property that emerges from its underlying moral and social rules and the way heterogeneous agents act under them (see Mack, 2006). Not only does Hayek insist on the basic importance of rules and institutions (§2.1), but he stresses that an extended order of diverse agents cannot be identified with, or reduced to, these rules and institutions or its “basic structure.” Our ultimate concern in social and political philosophy, Hayek stresses, is the sort of social order characteristic of a society. In an extended order composed of diverse agents guided by a large set of rules, this order is inherently complex — it emerges

from the system of rules, yet it is neither equivalent to them, nor can it be predicted as a simple resultant of those rules.

2.4 How Complex?

Hayek was manifestly correct that the social order of a large and diverse society will display characteristics of a complex system (Page, 2011). This itself was a tremendous insight. As he recognized (1955, 1973), political philosophers often take up an engineering perspective on society, supposing that a society can construct a basic structure that will reach the social and moral goals set for it. Some seek a basic structure that will apportion holdings according to desert, or which yields the greatest happiness for the greatest number. This is plausible if societies are simple orders like the village in which Bodo lived: the social rules can be understood simply as effective instruments to secure posited goals. However, complex systems are characterized by constant novelty. Their elements are coupled, so that a change in one variable can reverberate throughout the system (Hayek 1967b). Because of this the emergent outcomes generated by their rules can be deeply surprising.

However, Hayek never took up the question of just how complex extended societies are, and we shall see in section 5 that a good deal turns on this issue. The strong Hayekian thesis is that diverse, extended, social orders are *maximally complex*. An order is maximally complex — indeed, chaotic — if any change in its underlying structure of social rules moves the system to a new state that is entirely uncorrelated with the present system state (Kauffman, 1993: chap. 2; Gaus. 2016: 61-74). Somewhat more formally, we can say that in such systems emergent property O (an order of actions, a system state) emerges on rules $\{r_1 \dots r_n\}$; any change in a rule r_i to its closest variant r_i^* (i.e. a slight change in r_i) produces an order O^* that is entirely uncorrelated with O — knowing state O does not provide one with any evidence as to what O^* would be like. In Stuart A. Kauffman's terms such systems manifest "complexity catastrophe" (1993: 52). Such maximally complex systems occur in a

large set of rules where each is interconnected with all others. That is, a change in any one rule r_i , affects the functioning of all other rules, so that one change affects everything, and so O^* may be entirely unlike O .⁵ In more familiar philosophic terms such systems are characterized by “holism.” For example, in thoroughly holistic theories of justification, the justification of every element of a system of values or beliefs is dependent on all others — such systems are often depicted as “webs,” indicating a very high degree of interdependence among many variables. It is precisely such systems that give rise to complexity catastrophes; a small variation in one value can jump the system to a radically different state.

Hayek certainly embraced some form of holism: “systems of rules of conduct will develop as a whole” (1967c: 71). But systems can be holistic — the functioning and consequences of one rule can be dependent on others — without being maximally so. In a system that is *moderately complex* the functioning and consequences of some rules will be dependent on others; in such systems it still remains the case that a small variation in one rule from, say, r_i to r_i^* can move the system from O to O^* , where O^* differs far more greatly from O than r_i^* does from r_i . Still, in such moderately complex systems the values of O and O^* will be correlated: knowing O is indicative of what O^* will be (Gaus, 2016: 73-4). As we shall see, it matters a great deal whether we interpret Hayek’s complexity analysis in the strong or moderate sense.

It is important to emphasize that the difficulty of predicting what the emergent property — in this case, the order of actions — will be does not mean that we are ignorant of the way the heterogeneous rule-based systems behave. It is sometimes claimed that Hayek’s thought is, at bottom, contradictory: he insists on our ignorance of social processes but, out of his analysis of ignorance, he generates prescriptions about what we should do (Hodgson, 1993: 183). If we know enough to

⁵ This is sometimes called “tight coupling.” See Tanner, 1996: 16.

say why, for example, socialism will not work, then we must have good enough insights into the economic order to intervene to promote social goals. This, though, is wrong. As we have seen, on a complex systems analysis we can know quite a lot about the principles on which complex orders operate, and this theoretical knowledge allows us to say that some system states cannot be achieved and that some ways of organizing social cooperation are more efficient than others; we also know that we are unable to predict the course of, or control, the complex order itself. As we shall see (§4) the analysis of complexity provides sound reasons against planning that seeks to control the emergent order. There is nothing contradictory about a mix of knowledge of principle and ignorance of what is a good plan or optimal policy.

3. THE TWIN IDEAS

3.1 *Self-Organization*

If we cannot organize such systems according to a deliberate plan — if they cannot be engineered — then how *are* they organized? Hayek repeatedly refers to “the twin ideas of evolution and spontaneous order.”⁶ Some commentators question whether these ideas are related (Hodgson, 1993, 177ff.); however more recent analyses have modeled relations between self-organization and evolution (Kauffman, 1993; Mitchell, 2009: chap. 1; Holland, 2014: chap. 3).

A system is self-organizing when its elements behave in such a way as to accommodate their behavior to each other so as to achieve a stable pattern of

⁶ The most our theories can do is tell us that the system moves towards equilibrium. Thus our theories of equilibrium (say, price theory) will not allow us to reliably predict actual prices. It is important to realize that Hayek accepted the legitimacy of mathematical modeling of the economy; what he dismissed was any claim that we could reliably estimate actual values and so employ our model to generate fine-grained (or even medium-grained) predictions (Hayek, 1978: 27). Thus, while efficiency is a relevant feature, it cannot have the pride of place it has in many neo-classical static equilibrium theories.

⁷ Hayek, 1967c, 77; in 1978b, 250. Hayek writes of “the twin ideas of evolution and of the spontaneous formation of an order.” See also Hayek, 1973, 23; 158. In Hayek, 1988, 146, he writes of “the twin concepts of the formation of spontaneous orders and selective evolution.”

relatively dense interactions. In a physical system, the state space may exhibit basins of attractions in which elements gravitate over time to equilibria; it may be in principle impossible to predict on which equilibrium the system will settle, but it may well be extremely likely that the self-organizing system will gravitate to one of them (Kauffman, 1993: 175ff; Smith, 1998). Complexity and self-organization are indeed intimately related ideas (Waldrop, 1992: 300ff). The Hayekian analysis is inspired by Hume's observation that coordination of a group on a social rule arises through "a slow progression, and by our repeated experience of the inconveniences of transgressing" it (Hume, 1978: 490; Kukathas, 1989: 88ff; Hardin, 2007: chap 4.) Over long series of iterated interactions individuals adjust their actions to each other to secure stable patterns of interactions.

Yet not all self-organizing patterns are especially fruitful for the network of individuals. Although the pattern of interactions cannot be so dire that the constituent individuals expire, systems can get stuck at poor "local optima" — there are no marginal changes in their social rules that will produce better outcomes, yet overall the individuals are not doing well in the system. (We can measure "doing well" in different ways — how well the diverse individuals satisfy their aims, their health, longevity, incidence of violence, wealth and so on). It is here the second — and I think even less well understood — of the twin ideas, social evolution, enters.

3.2 Social Evolution: Macro and Micro

Hayek insisted that social evolution did not rely on Darwinian natural selection. Cultural evolution, says Hayek, "simulates" Lamarckian evolution because acquired characteristics — rules and institutions — are transmitted from earlier to later generations (1988: 25; cf. Mesoudi, 2011: 43-44). This is accomplished, he argued, through individual-to-individual transmission of social-moral rules, crucially through imitation (1967c: 67; 1979: 156-7). The more recent, and much more sophisticated, work of scholars such as Peter Richerson and Robert Boyd (2005: chap.

3) has greatly added to our understanding of cultural transmission, distinguishing conformity bias (doing as most others do), prestige bias (copying high status individuals), unbiased transmission, and various content biased transmissions (e.g., a bias toward rules that accord well with our sentiments; Gaus, 2015). It is important to appreciate that the teaching and preaching of social-moral rules is an important form of transmission.

An evolutionary analysis requires, in addition to a *transmission* mechanism, sources of *variation* and *selection*. In cultural evolution, variation in social-moral rules can come from random changes, errors in transmission, drift or explicit revision (Mesoudi, 2011: chap 3; Richerson and Boyd, 2005: 68ff.) This last is especially important: there is no reason why a theory of cultural evolution cannot appeal to explicit efforts to improve social-moral rules; in this sense cultural evolution is by no means simply “blind” (see §5). Some might decide that a current moral rule is objectionable, and so, say start preaching an alternative. Although Hayek’s evolutionary account is often criticized as having no room for conscious attempts at innovation, an evolutionary analysis *requires* variation, and Hayek certainly accepts that rules can be consciously altered.

It would seem that what cannot be consciously determined on Hayek’s social evolutionary account is whether a cultural innovation is adaptive. That requires competitive *selection* mechanisms. Hayek’s account of selection is complicated, indeed more so than he often suggests. Selection occurs at both the macro and micro levels. At the macro level, “the selection process of evolution will operate on the order as a whole;” what is selected, Hayek (1967c: 71) argues, is the order of actions that arises from numerous interacting rules, other elements of the social system and the wider environment. At the macro level selection pressures operate directly on “the order of actions of a group” (1967c: 72). The distinction between a set of rules and the order of actions to which it gives rise (§2.3) allows Hayek to distinguish the *focus of selective pressure* (the order of actions) and the underlying rules, which are

transmitted from generation to generation (§2.1). Recall that on Hayek's analysis, a group of individuals living under a set of social rules $\{r_1 \dots r_n\}$, will give rise to a certain emergent order of social interactions, O ; it is this order on which macro selection operates (Hayek, 1967b: 23-24).

On Hayek's analysis macro social evolution is based on a form of group selection. "The rules of conduct have ... evolved because the groups who practiced them were more successful and displaced others" (1973: 18, 1988: 25). Just what is meant by "group selection" is a vexed issue; models with very different dynamics are often categorized under this rather vague term.⁸ Leaving nomenclature aside, a crucial claim is that if society S_1 , characterized by order of actions O_1 , is more productive than S_2 based on O_2 , society S_1 will tend to win conflicts with S_2 , a mechanism akin to natural selection (cf. Bowles and Gintis, 2011). But perhaps more importantly, the members of S_2 , seeing the better-off participants in S_1 characterized by O_1 , may either immigrate to S_1 , or seek to copy its the underlying rules, thus inducing differential rates of reproduction between the two sets of underlying rules (Hayek, 1979: 26; 1973: 3, 17-18; 1988: 6, 25, 43).

Although in some statements Hayek seems to suggest that all selection occurs at this macro level, his more nuanced view is that, while the macro level is the primary locus of selection, rule selection also takes place in the form of competition between rules within a society (1988: 23). For a rule r to be selected, it must be contributory to a selected order, O , but it must also attract allegiance within the group of individuals who coordinate via r . Individuals are constantly testing rules to determine whether conformity suits their overall concerns. We see here an especially intimate tie between self-organization and social evolution: the process by which self-organization occurs (individuals searching for rules that satisfy their aims) is also a

⁸ While the importance of forms of multi-level selection in biological evolution is still hotly disputed, I think there is conclusive reason to view multi-level selection as fundamental in cultural evolution. For a very helpful discussion, see Okasha, 2006.

process of evolutionary selection. Although in his discussions of social evolution Hayek himself disparaged rule selection based on how well a rule conformed to one's social or moral ideals,⁹ any plausible account of the selection of moral rules within a group must accord weight to how well those rules conform to the moral sense and judgment of different individuals. One of the factors that determine within-group fitness of a moral rule is its ability to secure allegiance and be taught to the next generation. This is a case of content bias: rules that accord with people's moral sensibilities are more apt to be learned and transmitted.

4 THE OPEN SOCIETY AND ITS ENEMIES

4.1 The Evolution of the Extended, Open Society

Over the last three to four hundred years a self-organizing network of moral rules and institutions has evolved that has provided the basis for world-wide cooperation. As Hayek stresses, to say that this order has evolved is not to deny that large parts of it were deliberately constructed (1988: 37), but the emergent order of actions was not itself so constructed. This network secures wide-scale cooperation under conditions of wide and deep diversity: indeed, not only does it allow cooperation in the face of diversity (itself no mean feat), but draws on deep heterogeneity as a pillar of cooperation (Friedman, 2008). It is hard to overestimate the revolutionary character of this development. Throughout human history cooperative schemes were largely based on some form of homogeneity — some way in which “we,” who were a distinct people which shared characteristics, engaged in a rich network of cooperation that, if not hostile to others, certainly was less concerned with maintaining relations of trust and beneficial interchange with them (Greene, 2013:

⁹ Hayek argues that the steps in cultural evolution toward large-scale coordination “were made possible by some individuals breaking some traditional rules and practising new forms of conduct — not because they understood them to be better, but because the groups which acted on them prospered more and grew” (1979: 161). For a general analysis of the role of conscious deliberation and choice of rules in Hayek, see Peart and Levy, 2008.

Part I; Haidt, 2012: Part III). The tremendous scaling up of this order of cooperation, based on a moral order that extends trust and notions of fairness to massively extended networks of cooperative interactions (Rose 2011, Gaus 2015), lead to what Hayek called the Great, or Open, Society.

It is critical to stress that this order is not only distinctive because of its extent, but the way it draws on deep and wide diversity of preferences, goals, and values (Gaus, 2016: chap. 4). It is because of this, perhaps, that some see a utilitarian idea lurking — the order of actions maximizes the satisfaction of diverse preferences. We can safely say that hitherto no human order of actions has been able to draw on, and in so doing satisfy, the diverse aims of so many people, but we cannot say that the satisfaction of preferences is maximized, assuming some sense can be made of that idea. More importantly, should we identify some way in which overall preference satisfaction is less than we wish or can imagine, this would not indicate a flaw in the order, for there is no engineering aim to successfully maximize.

4.2 Property, Markets and Order

As we have seen, networks with a large number of heterogeneous elements can be highly complex — in the extreme case they are chaotic. Although we cannot eliminate complexity from networks of heterogeneous interactions, we have powerful reasons to seek to reduce complexity and secure a social order that provides a more predictable pattern of interactions. This can be done by partially decoupling the decisions of agents, lessening the complexity of the system, so that changes in one's agent's action do not automatically induce changes throughout. What I have elsewhere called "jurisdictional rights" serve this function (Gaus, 2011: 199ff). Rather than seeking to construct "a system of assessment that enables diverse interests to be brought together in a field of calculation," this method aims "to keep them apart, in order to simplify the basis for decision making" (D'Agostino, 2003: 104).

In effect, we say that in a society with n individual members, there are n separate spheres in which an answer ... may be sought, each of which is, in theory, inviolable and particular to the individual who occupies it. A decides for himself what he should believe; B decides for herself; and so on. ... In other words, we don't approach the matter of "basic belief" as one which ... requires that individuals' judgments about this matter be aggregated.... We see it, rather, as one which is devolved to individuals whose rights to decide the matter for themselves are scrupulously protected. (D'Agostino, 2003: 105)

Property rights and markets function in this way. As John Gray (1993: 314) once noted, "The importance of several [i.e., private] property for civil society is that it acts as an enabling device whereby rival and possibly incommensurable conceptions of the good may be implemented and realized without any recourse to any collective decision-procedure." Private property rights are quintessentially jurisdictional. To own property is to have a sphere in which one is free to act on, and explore, one's own purposes, plans, and beliefs and yet, given markets, one is able to collaborate with others as one thinks best (Hayek, 1988: 35). Because the very foundation of an extended order is to allocate firm jurisdictions to each participant, so that each has a socially recognized basis for planning and acting, it is no exaggeration to say that justice *is* the recognition of jurisdictions in such a society (Hayek, 1988: 33).

Jurisdictional rights — most especially property rights — are critical because they provide basis for each person to act on her or his heterogeneous preferences. We must always remember that diversity and heterogeneity are at the core of the complex Open Society. It is possible to organize on the basis of shared aims, but such organization is always homogenizing, taking us back towards simple orders. Any complex order must provide a basis for each person to undertake action based on her own goals. Markets — self-organizing systems of heterogeneous interactions — are the lynchpin, providing a way for innumerable heterogeneous agents to coordinate plans and share information (Hayek, 1945).

4.3 Socialist Planning

A traditional aspiration of socialism was a large-scale social order guided by a collective plan, allocating resources and activities to secure the greatest collective benefit. As some communists put it, under socialism “society will be transformed into a huge working organization for cooperative production. There will then be neither disintegration of production nor anarchy of production [i.e., competition and markets]. In such a social order, production will be organized” (Bukharin and Preobrazhensky, 1969: chap. 3, §19). Society was to become one huge factory. To Hayek this is perhaps the fundamental error of social theory — to treat a complex system as if it were an organization (1973: 36ff). An organization may be complicated, but it is not complex: its aims are set by its global controller, and plans are designed to achieve them. As Hayek recognized, complex systems have no global controller (Rosser, 1999: 176). Any attempt to treat them as organizations will spur an iteration of ad hoc interventions as the complex system responds in unexpected ways, leading to a decrease in the freedom of agents in the system to decide their own courses of actions. In the end, the system may become dysfunctional, failing to secure even the most basic ends of its participants (Hayek, 1944). In contrast, systems based on property and markets allow each individual to adjust her plans to revisions in the plans of others, acting and reacting as she sees fit (and sometimes not reacting as all, say to the way a person chooses to use her property to worship her God), yet all these constant changes at the micro level are consistent with an order of actions.

4.4 Social Justice

Hayek (1976) famously insists that social justice is a mirage. In order to appreciate both the power and limits of this claim, consider first what has been called a “patterned” theory of social justice, according to which a social state is just only if

the holdings in that state correspond to a pattern such as “to each according to his deserts” (Nozick, 1974: chap. 7). Hayek’s argument against treating complex orders as organizations applies here. The particular array of outcomes produced by complex orders (person *A* receives *x*, person *B* receives *y*, person *C* receives *z*, and so on) is unpredictable: holdings ultimately depend on an innumerable and unknowable range of factors. Thus Hayek (1976: chap. 7) insists that any government devoted to such a strong conception of social justice must constantly violate the rules (whatever they are) on which the complex order of actions depends, since the overall array of outcomes produced by *any system of rules* cannot be predicted. This is why “rule utilitarianism” is ultimately oxymoronic in a complex system: the system of rules cannot be designed to ensure the “correct outcome,” and so devotion to producing this outcome must involve constant violation of the underlying rules. Recall that the ultimate order of actions is an emergent property on a set of rules, so no matter how much we refine a set of rules, we cannot ensure that it secures the desired outcome. So any theory that is devoted to an overall outcome must necessarily be one that constantly interferes with the operation of the rules on which the overall order depends.

Note that this analysis would not apply to a theory of justice that adopts institutions and then defines as justice whatever outcomes this scheme produces. This helps explain a remark of Hayek’s that has so puzzled commentators. In the preface of a book dismissing social justice as a mirage (1976: xiii), he asserts that he has no deep objection to the most important work on social justice in the history of political philosophy — John Rawls’s *A Theory of Justice*. Hayek’s (1976: 100) point is that Rawls’s proposal does not seek to select specific distributive outcomes, but rather articulates principles that might ground complaints against a set of rules; if the rules withstand such complaints, then the distribution, whatever it might be, is just. Because Hayek reads Rawls’s theory as insisting on a refinement of the rules

underlying the order of actions, and not one seeking to specify the overall outcome, he insists that it is consistent with the complex order of the Open Society

5 THE PARADOX OF MORAL INQUIRY

5.1 Complexity and Moral Reform

The least developed aspect of the Hayekian project is the justification of the rules of the Open Society and the possibility of deliberate reform and justification. We have just observed that he seems friendly to (his understanding of) the Rawlsian project, as one that seeks to determine whether free and equal citizens might have *bona fide* complaints against the rules of the Open Society. It would seem, though, that if a complaint is to make any sense, it must be possible to reform the order of actions in a way that mitigates the complaint, by reforming and improving the nature of our cooperative arrangements. But given the complex nature of the order of actions, can we even make sense of this?

The distinction between high and moderate complexity (§2.4) is critical in answering this query. If the system is maximally complex, every feature of the overall order of actions emerges on the interactions of every rule. Change any one rule and the order of actions can be entirely transformed. If so, it is quite useless to evaluate whether any specific rule is functioning adequately, for all rules are, as it were, implicated in everything. Moreover, attempts at experimental or incremental change are quite hopeless. Any change can take the system to any system state. Suppose we make a change in rule r_i and the system radically changes. Suppose further that everyone approves of the new system. Another small additional change in r_i can again move the system anywhere, so even the smallest additional change will undo our previous one. Essentially we would only be able to move randomly and observe results. Under these conditions interpreting Hayekian analysis as conservative has much to recommend it (Freedman, 1996: 373ff; cf. Hayek, 1960:

397ff.). Given the utter unpredictability of change, we might as well try to stay where we are, where we might have some modicum of reasonable expectations.

However, even under extreme complexity Hayek is not best understood as a conservative. Hayek avoids conservatism by placing great weight on principles that he deems the bedrock of the Open Society, such as personal liberty (1973: chap. 3); the right thing to do might be to simply demand the satisfaction of certain principles, and live with the consequences. Thus he chides the conservative for accepting whatever outcome has been produced by the latest intervention (1960: 397ff), and so failure to stand up for the core principles (liberty, jurisdictions and markets) on which the Open Society depends. “A commitment to principles presupposes an understanding of the general forces by which the efforts of society are co-ordinated, but it is such a theory of society and especially of the economic mechanism that conservatism conspicuously lacks” (1960: 401).

Things look different under moderate complexity, where the rule system is not so tightly coupled. Here reform of the rules to improve the order of actions seems entirely possible. Small changes in the underlying rules will produce significant changes in the order of actions, but we have seen that these changes are correlated: the overall features of S^* , the state after the change, will have significant similarity to the previous system, S . While we can by no means predict the precise outcome of a change in the underlying rules, we will have reasonable confidence that — to put the matter roughly — they will be in the same neighborhood of the current order.¹⁰ So incremental social experimentation looks plausible. Given this, we may interrogate rules with a prospect of improvement. A rule might strike us unfair, or needlessly restrictive of freedom. In a maximally complex system we would be most reluctant to experiment by altering it — the change would lead us to an entirely unpredictable outcome. But in a more moderately complex system, while global control is still out of the question, it is not reckless to incrementally alter rules with the aim of

¹⁰ I consider this idea of a “neighborhood” in much more detail in Gaus, 2016: chap. 2.

improvement. The society that results will not be radically different from our present one.

5.2 The Seeming Impossibility of Reasoned Moral Inquiry

Reform of a moderately complex system thus seems feasible. But while it is feasible to reform, decisions to reform presuppose that we have rationally examined our order of actions, and have determined that it comes up short, and we have an idea what to do about this. Hayek (1988: 68ff), though, is understandably skeptical of the very idea of rationally evaluating our order of actions and demanding a justification, or coming to the conclusion that some rule r is unjustified. Given the essence of complexity we do not understand the outcomes produced by r . In a complex system r interacts with a large set of other rules, to produce an order of actions, the features of which simply cannot be wholly known from the characteristics of the individual rules. This, as we have seen, is a fundamental feature of complex systems. Thus it would seem that Hayek is quite right to reject any demand for justification according to which “our morality is justified just to the extent, say, that it is directed towards the production of, or striving after, some specific goal such as happiness” (1988: 69). If we do not know the consequences of our rules, it is hard to see how we can evaluate their outcomes. Of course insofar as the overall system supports the Open Society, and there is no alternative structure for coordinating multitudes of heterogeneous agents for large-scale mutual benefit, we might think that is all the justification we need.

Hayek insists that individuals do not learn the moral rules of their society through reasoned inquiry, but through cultural imitation (1988: 21ff). Because we cannot really know the purposes or consequences of any given rule r , morality is learned by observing the behavior of others and imitating it. This converges with recent analysis of the evolution of culture, which put imitation and conformity bias at the very heart of cultural transmission (Richerson and Boyd, 2005: 86ff; Henrich and

Henrich, 2007: 22ff.). Because culture has evolved complex adaptive practices, humans typically do well by imitating the behavior of others around them. We often do not understand precisely the benefits of our cultural practices, but because culture is largely transmitted via imitation, people often do not have to know why something is done, only that it is the done thing around here. Whereas intelligent primates such as chimps tend to figure out problems for themselves, human infants have a much stronger tendency to simply copy what they observe being done, copying “stupid” acts which the chimp sees as pointless (Horner and Whitten, 2005). Hayek, once again runs against the current, insists that this general feature of culture applies to morality. Because the rules of morality are complex cultural adaptations, we do not really understand their functions or effects on the order of actions, and so simply imitating the rule-following behavior of others is not only sensible, but necessary (1988: chap. 5).

5.3 The Necessity of Reasoned Moral Inquiry

Yet cultural and moral innovation depends on innovators who employ their reasoning to question current rules and seek better alternatives. If cultural transmission requires conformity, improvement and adaptation requires reasoned innovation (Boyd and Richerson, 2005: chap. 2). New problems arise, experience points to possible flaws in current rules. As in culture, the spread of new moral ideas is often based on the innovator’s or trendsetter’s reasoning (Bicchieri, 2016). Innovators provide reasons for endorsing the new rule, and seek to persuade others to come on board. Nevertheless, given the complexity of the order of action, no innovator’s reasoned inquiry will capture the full function or consequences of any rule.

Thus the paradox of moral inquiry: in some ways it is bound to fail in its quest for understanding and evaluation, yet it is an ineliminable feature of morality. Because all reasoned investigation is incomplete, the process of moral reform should

draw on the largest possible pool of information, as diverse individuals throughout society observe changes in moral rules and the new state of affairs that result. It must be stressed that not even the entire collectivity can fully appreciate all the effects of changes in the system of moral rules, but the wider the population participating in the process of change, the greater the chance that important changes in the order of actions will be observed, and this information will affect the process of change. Hayek thus envisages a decentralized testing of current rules by diverse individuals: “it is, in fact, desirable that the rules should be observed only in most instances and that the individual should be able to transgress them when it seems to him worthwhile to incur the odium this will cause. ... It is this flexibility of voluntary rules which in the field of morals makes gradual evolution and spontaneous growth possible, which allows further modifications and improvements” (1960: 63).

We should distinguish rule abolition from rule replacement. Individual decisions to flout a moral rule can be very effective in undermining it. In many cases, as increasing numbers of individuals violate a current rule, and others observe their behavior, and approve of the results, the general expectation that the rule will be followed is undermined, and so the rule is apt to fade away. Such trendsetters can have great impact in undermining rules they see as morally objectionable, as they take the first steps, followed by others (Bicchieri, 2016: chap. 5). Instituting new rules is more difficult; an innovator can do significant damage to an existing moral rule by flouting it and encouraging her network to follow her — it is more difficult to get groups to adopt and follow new rules. But here too change can be from the bottom up. As small networks of people come to adopt a new rule, through persuasion or example others may begin to adopt the new rule, first in neighboring networks and then the new behavior can spread more widely. Changes in many rules about gender equality appear to have demonstrated this dynamic over the last forty years: what were the norms of distinct subpopulations spread to the entire society and they

came to be endorsed by increasingly large social networks. And people often adopt new norms on the grounds of their reasons for them (Bicchieri and Mercier, 2014). Yet Hayek is surely correct that too a great a faith in our ability to judge — insisting that our rules must be verified from the bar of reason in the sense that they must be fully understood and comprehensively evaluated — means that we cannot benefit from the evolution of our self-organizing order of actions. Morality requires conformity without full understanding, while also requiring reason-giving and reasoned-innovation/reform. A paradox indeed.

5.4 Macro Justification of the Open Society?

Hayek's account of social evolution, I have argued, integrates micro-selection of social rules by the participants (§3.2); this opens up a path for content-based moral evaluation of social rules by diverse individuals to affect the evolution of the order of actions. This integration of moral evaluation into social evolution is a critical, and often overlooked, feature of his analysis. It is not simply that we can make moral evaluations (of course we do that): Hayekian analysis shows how these help shape a complex self-organizing adaptive system. For the Hayekian, that is the critical idea. Still, from the perspective of moral philosophy (and those political philosophers who see theirs as a subfield of moral philosophy) this will not be enough, for they demand a macro-justification of the Great or Open Society. Why should we welcome it, rather than work toward controlling and simplifying it? A Hayekian can offer three sorts of answers to this query.

The first, no doubt, will be entirely unsatisfying to the moral philosopher: there is no longer an alternative. The option of planning modern large-scale societies is an illusion — attempts to plan complex orders inevitably lead to constantly unexpected results as the order refuses to act like a well-behaved organization. As I said, this will be unsatisfying to the moral philosopher, as it may simply be a cause for more lamentation: justice is beyond the horizon of modern humans! And if the moral

philosopher does view the Open Society as corrupt, constant disruption may even seem attractive— a sort of endless guerilla war with the diversity and complexity of the Open Society. The second response moves toward what, hopefully, the moral philosopher will see as normatively relevant: that the Open Society has provided the framework for tremendously more people to achieve freer, more satisfying, more interesting, healthier and more enriched lives, recognizing a larger diversity of aims and ends — of both men and women — than was imaginable even a hundred years ago. As Deirdre Nansen McCloskey (2016) demonstrates in her recent encyclopedic analysis of human betterment over the last two hundred years, at its core has been the openness and creativity characteristic of the Open Society. Without openness, dense interactions among the mass of people and heterogeneous ideas, this tremendous human betterment would not have occurred (McCloskey 2016: 40); but these are the very sources of complexity. Yet, the moral philosopher may still press, what does this have to do with the MORAL desirability of such a society? The Open Society, he may insist, is still unfair: it does not give us “true” equality or “fair” equality of opportunity, it does not track merit, it does not maximize utility or community. Perhaps justice requires humans have less wealth, opportunities and comforts, but live in much fairer and very different ways. After all, says John Rawls, beyond some point wealth “is more likely to be a positive hindrance, a meaningless distraction at best if not a temptation to indulgence and emptiness” (1999: 258). The Hayekian has one last response, drawing on a Millian idea. As I have recently tried to demonstrate (Gaus, 2016), a highly diverse society, in which people have and develop deeply different views about ideal justice, provides the framework in which we stand the best chance of learning what ideal justice truly is. Let us admit that knowing the ideally just social state is not easy, and even when we think we have a good idea of it, we always have something to learn. Scott Page (2007) has stressed the ways in which a wide diversity of perspectives is critical in helping a group solve its most pressing problems — over a large range of circumstances diverse groups

and societies solve problems better homogenous ones. And, the moral philosopher should acknowledge, one of our critical problems is figuring out what justice is. John Stuart Mill (1859) was right: if we wish to progress in our understanding of justice, we need the diversity and complexity of the Open Society.

6 AN EVOLVED COMPLEX ORDER

Hayekian “classical liberalism” remains obscure to most political philosophers, as it denies most of their basic assumptions, and rejects their main categories. First and foremost, it is not a “moral theory,” which formulates normative standards that are then used to evaluate and propose reforms of social orders. The Hayekian approach does not justify the Open Society in terms of efficiency, productivity, utility, utility-based rules, “evolutionary utilitarianism,” social welfare, desert, merit, natural rights, autonomy, economic liberty, respect for persons, or progress. This is not to say that it is skeptical whether the Open Society has been a tremendous boon to humanity; having experienced it, the resulting human betterment is manifest to all who truly look. But it was not designed to produce that betterment, nor can it be controlled to secure it in ways that may seem most desirable to us. We know the general features of the Open Society such as its endless inquiry and innovation, but it has no “maximand” — values to be maximized, by which it is to be rated. Hayek presents us with a comprehensive theory of the Open Society — how its complex order comes about, the type of morality that it engenders, the types of social relations it makes possible, and why our failure to understand it leads both friends and foes to treat it as a simple order that can be evaluated by ethics, and controlled by politics. Ethics is not an Archimedean point that allows a person to stand outside a moral system and evaluate it, dictating the correct way to live together (cf. Gauthier, 1986: 233); our ethical views are a product of the very social evolutionary process we are seeking to understand and improve.

REFERENCES

- Auyang, Sunny Y. 1998. *Foundations of Complex-systems Theories in Economics, Evolutionary Biology and Statistical Physics*. Cambridge: Cambridge University Press, 1998.
- Bicchieri, Cristina 2006. *The Grammar of Society: the Nature and Dynamics of Social Norms*. Cambridge University Press.
- Bicchieri, Cristina. *Norms in the Wild*. New York: Oxford University Press.
- Bicchieri, Cristina and Hugo Mercier 2014. "Norms and Beliefs: How Change Occurs." *Iyyun: The Jerusalem Philosophical Quarterly*, vol. 63 (January): 60–82.
- Bowles, Samuel and Herbert Gintis. 2011. *A Cooperative Species: Human Reciprocity and its Evolution*. Princeton: Princeton University Press.
- Boyd, Robert and Peter J. Richerson. 2005. *The Origin and Evolution of Cultures*. New York: Oxford University Press.
- Brennan, Jason and John Tomasi. 2012. "Classical Liberalism." In *The Oxford Handbook of Political Philosophy*, edited by David Estlund. Oxford: Oxford University Press: 115-32.
- Bukharin, Nikolai and Evgenii Preobrazhensky. 1969 [1922]. *The ABC of Communism*. New York: Penguin Books.
- Chapman, John W. 1965. "Political Theory: Logical Structure and Enduring Types." *L'Idée de Philosophie Politique, Annales de Philosophie Politique*, vol. 6. Paris: Presses Universitaires de France.
- Cislaghi, Beniamino, Diane Gillespie and Gerry Mackie 2014. *Values Deliberation and Collective Action in Rural Senegal*. Wallace Global Fund and UNICEF Child Protection Section.
- Cohen, G. A. 2008. *Rescuing Justice and Equality*. Cambridge, MA: Harvard University Press.
- D'Agostino, Fred. 2003. *Incommensurability and Commensuration: The Common Denominator*. Burlington, VT: Ashgate.
- Dewey, John. 1931. *Individualism — Old and New*. London: George Allen and Unwin.

- Dewey, John. 1935. *Liberalism and Social Action*. New York: G. P. Putnam's Sons.
- Freeden, Michael. 1996. *Ideologies and Political Theory*. Oxford: Clarendon Press.
- Freeman, Samuel. 2001. "Illiberal Libertarians: Why Libertarianism is Not a Liberal View." *Philosophy & Public Affairs*, vol. 30 (Spring): 105-51.
- Freeman, Samuel. 2011. "Capitalism in the Classical and High Liberal Traditions." *Social Philosophy & Policy*, vol. 28 (summer): 19-55.
- Freidman, Daniel. 2008. *Morals and Markets: An Evolutionary Account of the World*. New York: Palgrave Macmillan.
- Gaus, Gerald. 2000. *Political Concepts and Political Theories*. Boulder, CO: Westview.
- Gaus, Gerald. 2011. *The Order of Public Reason*. Cambridge: Cambridge University Press.
- Gaus, Gerald. 2015. "The Egalitarian Species." *Social Philosophy and Policy*, vol. 31 (Spring): 1-27.
- Gaus, Gerald. 2016. *The Tyranny of the Ideal: Justice in a Diverse Society*. Princeton: Princeton University Press.
- Gaus, Gerald. forthcoming. "Mill's Normative Economics." In *The Blackwell Companion to Mill*, edited by Christopher Macleod and Dale Miller. New York: Wiley-Blackwell.
- Gaus, Gerald and Shaun Nichols. 2017. "Moral Learning in the Open Society: The Theory and Practice of Natural Liberty." *Social Philosophy & Policy*, vol. 34 (Spring).
- Gauthier, David. 1986. *Morals by Agreement*. Oxford: Clarendon Press.
- Gray, John 1984. *Hayek on Liberty*. Oxford: Blackwell.
- Gray, John. 1986. *Liberalism*. Milton Keynes, UK: Open University Press.
- Gray, John. 1993. *Post-Enlightenment Liberalism*. London: Routledge.
- Greene, Joshua. 2013. *Moral Tribes: Emotion, Reason, and the Gap Between Them and Us*. New York: Penguin.
- Haidt, Jonathan. 2012. *The Righteous Mind: Why Good People are Divided by Politics and Religion*. New York: Pantheon.

Hardin, Russell. 1999. "From Bodo Ethics to Distributive Justice." *Ethical Theory and Moral Practice*, vol. 2: 399–413.

Hardin, Russell. 2003. *Indeterminacy and Society*. Princeton: Princeton University Press.

Hardin, Russell. 2007. *David Hume: Moral and Political Theorist*. Princeton: Princeton University Press.

Hayek, F. A. 1944. *The Road to Serfdom*. Chicago: University of Chicago Press.

Hayek, F. A. 1945. "The Use of Knowledge in Society." *The American Economic Review*, vol. 35 (September): 519-530.

Hayek, F. A. 1955. *The Counter-Revolution of Science*. New York: Free Press.

Hayek, F. A. 1960. *The Constitution of Liberty*. Chicago: University of Chicago Press.

Hayek, F. A. 1960. *The Constitution of Liberty*. London: Routledge.

Hayek, F. A. 1967a. "Degrees of Explanation." In F.A. Hayek, *Studies in Philosophy, Politics, and Economics*. Chicago: University of Chicago Press: 3-21.

Hayek, F.A. 1967b. "The Theory of Complex Phenomena." In F.A. Hayek, *Studies in Philosophy, Politics, and Economics*. Chicago: University of Chicago Press: 22-42.

Hayek, F.A. 1967c. "Notes on the Evolution of Systems of Rules of Conduct." In F.A. Hayek, *Studies in Philosophy, Politics, and Economics*. Chicago: University of Chicago Press: 66-81.

Hayek, F.A. 1973. *Rules and Order*. Chicago: University of Chicago Press.

Hayek, F. A. 1976. *The Mirage of Social Justice*. Chicago: University of Chicago Press.

Hayek, F. A. 1978a. "The Pretence of Knowledge." In F. A. Hayek, *New Studies*. London; Routledge: 23-34.

Hayek, F.A. 1978b. "Dr. Bernard Mandeville." In F.A. Hayek, *New Studies in Politics, Economics and the History of Ideas*. London: Routledge: 249-266.

Hayek, F.A. 1979. *The Political Order of a Free People*. Chicago: University of Chicago Press.

Hayek, F. A. 1986. *The Fatal Conceit: The Errors of Socialism*, edited by W. W. Bartley

III. Chicago: University of Chicago Press.

Henrich, Natalie and Joseph Henrich, 2007. *Why Humans Cooperate*. New York: Oxford University Press.

Hobhouse, L. T. 1911. *Liberalism*. Oxford: Oxford University Press.

Hodgson, Geoffrey M. 1993. *Economics and Evolution: Bringing Life Back into Economics*. Ann Arbor, MI: University of Michigan Press.

Holland, John H. 2014. *Complexity*. Oxford: Oxford University Press.

Horner, Victoria and Andrew Whiten. 2005. "Causal Knowledge and Imitation/Emulation in Chimpanzees (*Pan Troglodytes*) and Children (*Homo Sapiens*)." *Animal Cognition*, vol. 8: 164-181.

Hume, David. 1978 [1740]. *Treatise of Human Nature*, 2nd ed., edited by L. A. Selby-Bigge and L. P. H. Nidditch. Oxford: Clarendon Press.

Kauffman, Stuart A. 1993. *The Origins of Order: Self-organization and Selection in Evolution*. Oxford: Oxford University Press.

Kors, Alan Charles. 2011. "The Paradox of John Stuart Mill." *Social Philosophy & Policy*, vol. 28 (Summer): 1-18.

Kukathas, Chandran. 1989. *Hayek and Modern Liberalism*. Oxford: Clarendon Press.

Mack, Eric, 2006. "Hayek on Justice and the Order of Actions." In *The Cambridge Companion to Hayek*, edited by Edward Feser. Cambridge: Cambridge University Press: 259-86.

McCloskey, Deirdre Nansen. 2016. *Bourgeois Equality: How ideas, Not Capital or Institutions, Enriched the World*. Chicago: University of Chicago Press.

Mesoudi, Alex. 2011. *Cultural Evolution: How Darwinian Theory Can Explain Human Culture and Synthesize the Social Sciences*. Chicago: University of Chicago Press.

Mill, John Stuart. 1859 [1965]. *On Liberty* in *The Collected Works of John Stuart Mill*, edited by J.M. Robson, vol. XVIII. Toronto: University of Toronto Press.

Mill, John Stuart. 2006 [1872]. *A System of Logic, Ratiocinative and Inductive*. In *The Collected Works of John Stuart Mill*, edited by J.M. Robson. Indianapolis: Liberty Fund,

vol. 7.

Mitchell, Melanie. 2009. *Complexity: A Guided Tour*. Oxford: University Press.

Nozick, Robert. 1974. *Anarchy, State and Utopia*. New York: Basic Books.

O'Brien, D. P. 2004. *The Classical Economists Revisited*. Princeton: Princeton University Press.

Okasha, Samir. 2006. *Evolution and the Levels of Selection*. Oxford: Oxford University Press.

Page, Scott E. 2007. *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies*. Princeton: Princeton University Press.

Page, Scott E. 2011. *Diversity and Complexity*. Princeton: Princeton University Press.

Peart, Sandra J. and David M. Levy. 2008. "Discussion, Construction and Evolution: Mill, Buchanan and Hayek on Constitutional Order." *Constitutional Political Economy*, vol. 19: 3-18.

Rawls, John. 1999. *A Theory of Justice*, revised edition. Cambridge, MA: Harvard University Press.

Rawls, John. 2001. *Justice as Fairness: A Restatement*, edited by Erin Kelly. Cambridge, MA: Harvard University Press.

Richerson, Peter J. and Robert Boyd. 2005. *Not by Genes Alone: How Culture Transformed Human Evolution*. Chicago: University of Chicago Press.

Robbins, Lionel. 1952. *The Theory of Economic Policy in Classical Political Economy*. London: Macmillan.

Rose, David. 2011. *The Moral Foundations of Economic Behavior*. New York: Oxford University Press.

Rosser, Barkley Jr. 1999. "On the Complexities of Complex Economics Dynamics." *The Journal of Economic Perspectives*, vol. 13 (Autumn): 169-192.

Saari, Donald. 1995. "Mathematical Complexity of Simple Economics." *Notices of the AMA*, vol. 42 (Number 2): 222-231.

Smith, Peter. 1998. *Explaining Chaos*. Cambridge: Cambridge University Press.

Tanner, Edward. 1996. *Why Things Bite Back*. London: Fourth Estate.

Vaughn, Karen. 1999. "Hayek's Theory of the Market Order as an Instance of the Theory of Complex, Adaptive Systems." *Journal de Economistes et des Etudes Humaines*, vol. 9 (Juin-Septembre, 1999): 241-56.

von Mises, Ludwig. 2005 [1927]. *Liberalism in the Classical Tradition*. Indianapolis: Liberty Fund.

Waldrop, Mitchell. 1992. *Complexity: The Emerging Science at the Edge of Order and Chaos*. New York: Simon and Shuster.

