

Hayek and Popper on ignorance and intervention

CELIA LESSA KERSTENETZKY*

Universidade Federal Fluminense

Abstract: Does limited social knowledge *inhibit* government intervention or, conversely, *demand* it? This article confronts these two positions, as they are respectively advocated by Hayek and Popper, and sets out to substantiate the belief that Popper's view is the more coherent one.

One of the most intriguing propositions in the Social Sciences states that the social world as a whole is an unintended effect of individual actions. In the twentieth century, Friedrich von Hayek and Karl Popper famously took this theme up and developed it further. Following Carl Menger's early lead, Hayek worked out this theme's organicist and evolutionary aspects, assembling them under the notion of spontaneous order or catallaxy. Popper devoted himself mainly to criticism of the historicist extensions, which this idea had received in the hands of Marxists, notably the notion of a historical purpose. Generally speaking, a sort of division of labour emerged from this unplanned collaboration between Hayek and Popper, in which the former focused primarily on a positive project – the construction of the idea of a Great Society – whilst the latter was involved in the de-construction of historicism. Or so it seems.

It may be argued that both Hayek's and Popper's readings of the unintended consequences approach to social co-ordination reflect certain assumptions about social knowledge. In other words, if individual action typically produces repercussions that were not intended or foreseen, the knowledge that the individual actors may possess is deficient in a fundamental sense. This cognitive deficit – let us call it ignorance – confronted with the order that nonetheless emerges from actors' interaction is the origin of their wonder (Hayek's in particular). The question naturally arises: How is it possible that ignorance coheres with co-ordination?

Hayek resorts to two auxiliary ideas to elaborate on the connection between ignorance and order: (1) the notion that evolving rules of conduct and social

*Full Professor in the Department of Economics at the Universidade Federal Fluminense, Rua Tiradentes, 17, Niterói, Brazil. Email: celiakersten@gmail.com.

The author wishes to thank, without implicating, Bruna Ingraio, Ernesto Screpanti, Alessandro Vercelli, Gary Dymski, Geoffrey Hodgson, and the anonymous reviewers of this journal for comments and suggestions on earlier versions of this article.

norms gradually and non-consciously provide the missing knowledge that individuals need to co-ordinate their actions; and (2) the idea of a perverse causation whereby major co-ordinating initiatives, originating not in evolving rules but in constructivist rationalism, are ‘punished’ by the emergence of the inverted consequence (and ultimately tyranny). Market society – where economic interaction is led by the market within the legal framework of the rule of law – is an instance of the former notion, whereas the interventionist state is an illustration of the latter.

However, one cannot safely assert that Popper endorses the connotation of ignorance supported by Hayek, let alone its political implications. In fact, it is this article’s main contention that Popper sets out a political philosophy that advocates politics and government as the crucial action spheres in the legitimate ‘search of a better world’, and does so based precisely on the premise of ignorance. As a consequence, the set of arguments put forward by Popper may challenge both historicism and evolutionism as viable accounts of the ‘unintended consequences’ approach to the social order.

In order to build the argument, I shall make an appraisal of Hayek’s approach to social co-ordination in Section 1. Upon inspection, the relationship between the epistemic starting point and the politico-normative conclusions emerges as a problematic one. On the one hand, the condition of ignorance rules out the possibility of the implementation of social reform. On the other, ignorance is not an impediment to Hayek’s favourite market-orientated reforms, an ambiguity that Michael Oakshott (1974) famously termed Hayek’s anti-interventionist-interventionism. In Section 2, Popper’s contribution is introduced by means of an assessment of his pertinent works. This assessment is more like a ‘rational reconstruction’, and is the major contribution of this paper; to the knowledge of the author, the ideas on this topic, scattered throughout Popper’s lengthy work, have never before been collated as they are here.

In Subsection 2.1, I work out Popper’s peculiar notion of ignorance, especially as it appears in the pieces on critical rationalism and objective knowledge. It turns out that, instead of understanding ignorance as a lack of knowledge that leads actors a-critically to follow rules, Popper’s conception is associated with the faculty of invention. In Subsection 2.2, I investigate in his political writings whether the conception of ignorance as inventiveness finds a translation into the social and political environments – this is examined in relation to social technology and social engineering categories. Finally, Subsection 2.3 addresses Hayek’s fears that the model of interventionism supported by Popper would give way to tyranny. It turns out that, for Popper, the sole interventionism that makes sense, given that knowledge is fallible, is democratic interventionism, i.e., interventionism which learns from its mistakes and, for all its defects, is deemed the best guarantee against dogmatism in power. In this subsection, economic interventionism is justified when it is bound to expand the equality of substantive freedoms in society, and not just lubricate the workings of a market economy.

Thus, Popper, in contrast to Hayek, appears to provide a number of reasons based on human fallibility for man's attempts to perfect the social world. *Ergo*, ignorance recommends intervention.

1. Hayek: order and spontaneity

In the postscript to *The Constitution of Liberty (CL)*, entitled 'Why I am not a Conservative', Hayek contended that 'where spontaneous change has been smothered by government control, [Liberalism] wants a great deal of change of policy' (Hayek, 1993: 399). This 'policy of spontaneity' is emblematic of the kind of tension between interventionism and conservatism that one finds in his politics. And yet, this is claimed by Hayek as the politico-normative consequence of certain facts concerning the making-up of the social world. Let me review the main lines of the argument.

As is well known, Hayek extracts from Adam Ferguson's historical account of the origin of institutions, in *An Essay on the History of Civil Society* (1767), the historical observation upon which his social philosophy rests: '[n]ations stumble upon establishments, which are indeed the result of human action, but not the execution of any human design' (Hayek, 1967: 96). In the seminal 1942–1944 (1979a) essay 'Scientism and the Study of Society', he builds on this conception so as to criticise social 'scientism'. The latter is the intellectual attitude of supposing society to be an object similar to nature and, accordingly, overlooking the fact that social action produces emergent effects that hinder efforts to control them. The constructivist picture of the social order as the outcome of planning and design is an instance of social scientism. In opposition to this view, Hayek sets out the theory of spontaneous order, which takes note of this fact, and draws some conclusions regarding the possibility of intervention.

The frequent occurrence of unintended repercussions of one's actions in the social world is the major source of individual ignorance. An important consequence of this fact is that no synoptic perspective of the particular kind needed for constructivism is possible in it, and conversely, the sole knowledge of which individuals can be certain is local. And yet, however tricky social action and co-ordination may appear under this dim light, they are ultimately possible due to forms of knowledge that have been decanted into practical rules, institutions, and ways of behaving, which have evolved over time through spontaneous experimentation. However, these are, for the most part, implicit or tacit pieces of social information that cannot be fully articulated by the people who use them. As far as the social scientist goes, he may have his hints concerning the general principles on which this order seems to rely, but he is denied access both to the details, and, importantly, to prediction.¹

¹ See Hayek (1979a). Caldwell (2004) recalls Hayek's distinction between 'explanations that allow predictions and those that explain the principle by which a phenomenon is produced'. And concludes:

Social action is thus cognitively dense, but the ability of consciousness and intentions – rationality as we know it – to bring about entire states of affairs is limited. In the end, Hayek grants Ferguson's dictum a social-epistemological justification: although the overall order is actually predicated on knowledge, the condition of limited *conscious* knowledge hampers anticipation of and control over the consequences of actions. Even though actors 'make' the world, design is simply not within their reach.

In this connection, social change occurs mainly as a result of changes initiated in external circumstances: '[e]very change in conditions will make necessary some change in the use of resources, in the direction and kind of human activities, in habits and practices. And each change in the actions of those affected in the first instance will require further adjustments that will gradually extend throughout the whole of society' (Hayek, 1989: 54/55). Secondly, taking advantage of the knowledge of the social scientist, changes may also occur as small adjustments made at the level of the more general and abstract rules with a view to enhancing their coherence. But a totally inappropriate additional source of change is collective action, i.e. the joint effort of a group of individuals aiming at some social change through common deliberation: '[t]he successful combination of knowledge and aptitude is not selected by common deliberation, by people seeking a solution to their problems through a joint effort . . .' (Hayek, 1989: 55).

Thus, generally speaking, social interaction relying on evolving and mainly unwritten rules of conduct and social practices turns out to be, to an important extent, *self-governed*.

To be sure, the epistemic story of how social order is brought about also includes the emergence of laws in the sense of legal rules, but, at the same time, it demarcates their character. On this account, laws have typically resulted from protracted experimentation by social actors with a view to enhancing the predictability of social intercourse. As general facts that people may act upon, laws substitute predictability and generality for the arbitrariness and discretion that are bound to prevail in their absence, when 'the control of the essential data of an individual's action is in another man's hands' (Hayek, 1993: 139).

This is when government enters the stage. Government is needed to protect and enforce the law. Its existence and the coercion which it represents is, in other words, justified only to the extent that, by enforcing the law, it guards people against coercion from others and protects their liberty, in this rather negative sense. Coercion, in the sense of 'control of the essential data of an individual's action by another . . . can be prevented only by enabling the individual to secure for himself some private sphere where he is protected against such interference. The assurance that he can count on certain facts not being deliberately shaped by another can be given to him only by some authority that has the necessary

'Because of the nature of our materials, 'explanations of the principle' are often the best that we can do in the social sciences' (247) These basically come down to some sort of description or 'conjunctural history'.

power' (139). And this power should be limited to that which is strictly required to prevent abuse, otherwise discretion and arbitrariness would be promoted instead. Incidentally, the protection of individual freedom also allows individuals to avail themselves of the local and dispersed knowledge which they uniquely possess, and deepens the knowledge content of the overall order.

At this point, Hayek singles out a number of government activities such as the provision of public goods and the assurance of a social safety net that extend beyond the so-called negative sphere and certainly imply a measure of extra coercion, at least in the sense that these are funded by taxation. Acknowledging that state provision may be needed in view of 'market failures', Hayek considers their correction justifiable since it preserves some properties of the general laws. In particular, the proposed corrective coercion, to distinguish it from the protective one, is so general and well known as not to jeopardize the social actors' horizon of predictability, and only works as a supplement – never as a substitute – for the spontaneously generated mechanism of co-ordination represented by the market, with the in-built freedom-preserving and universalistic features required of uncertainty-reducing laws.

These ideas had an early defence in *The Road to Serfdom (RS)*, Hayek's critical piece, in Chapter IX, 'Security and Freedom', but were more fully stated in *The Constitution of Liberty*, Hayek's picture of the Great Society, especially in Chapter 9: 'Coercion and the State'.

Nonetheless, 'perfectionism' inadvertently penetrates Hayek's system and generates imbalances in the relationship between ignorance and government. This is when his interventionism comes to the fore. In fact, it is out of Hayek's more detailed view of the corrective (and not just anti-coercion, protective) activities of government that the puzzle grows.

To begin with, in the ambit of the *RS*, Hayek seems disturbed by the privileges that are endorsed by a *laissez-fairian* political position, and defends a *planned* laissez-faire. It is perhaps his, by then, recalcitrant socialist sensitivity which makes him state that 'there is . . . all the difference between deliberately creating a system within which competition will work as beneficially as possible and passively accepting institutions as they are' (Hayek, 1979b: 17). He is especially concerned with the occurrence of unjustifiable inequality of opportunities: 'in a system of free enterprise, chances are not equal, since such a system is necessarily based on private property and (though perhaps not with the same necessity) on inheritance, with the differences in opportunity which these create. There is, indeed, a strong case for reducing this inequality of opportunity as far as congenital differences permit, and as it is possible to do so without destroying the impersonal character of the process by which everybody has to take his chance and no person's view about what is right overrules that of others' (Hayek, 1979b: 102). Thus, *the unfairness of the market* appears to be one of the candidate circumstances for corrective intervention (conditioned on impersonality), i.e. the deliberate creation of a system of institutions.

Later, as he becomes less critical of market societies, his attitude and concerns regarding intervention grow more bold and problematical.

The position held in *CL*, and increasingly in his later work,² now stresses that the social arrangements that have grown wealthier and more populous have thus proved to be superior to others, their rules and laws more cogent. Incidentally, these are those of liberal market-oriented societies. Various kinds of corrective intervention are then validated, which aimed at either restoring interrupted instructions of ‘spontaneity’³ or directly enhancing efficiency. In *CL*, for example, he affirms that ‘[t]here is ample scope for experimentation and improvement within that permanent legal framework which makes it possible for a society to operate most efficiently’ (Hayek, 1993: 231). The growth of wealth and technological knowledge are taken here as the representation of efficiency, and thus the justification for intervention. The list in Chapter 15 on ‘Economic Policy and the Rule of Law’ is quite impressive, and so are his efficiency-driven proposals of constitutional reform and intervention to improve monetary institutions later in the seventies.⁴ Thus, in addition to protective coercion, *market inefficiency* is also advocated as a circumstance recommending intervention.

In this connection, and more controversially, the inequalities of opportunity that concerned him earlier are now seen as having an efficiency function and hence are no longer a cause for concern. In the chapter on ‘Equality’ in *CL*, Hayek relates inequality of opportunities (in the sense of inequalities of ‘nature and nurture’) to efficiency or the ‘true interest of society’ (Hayek, 1993: 91). Referring to the importance of family and the institution of bequest, he now notes that ‘belonging to a particular family is part of the individual personality . . . and that the transmission of the heritage of civilization within the family is as important a tool in man’s striving toward better things as is the heredity of beneficial attributes’ (90). Symmetrically, efforts aiming at altering the system of rules embodied in liberal societies, especially the (by definition discretionary) attempts at social justice, remain appraised as destined to be perverted, and to destroy the spontaneous mechanism whereby such arrangements have been achieved, and are, for this reason, condemned.

On balance, the perfectionist element – which now appears as the unqualified defence of efficiency, for which an impersonal system of rules is instrumental – is in conflict with the ignorance argument. It is not only the general character of the rule – and hence its protective function – which commends it and justifies the intervention, but also a more specific and concrete task that it is able to

² See, especially, ‘The Extended Order and Population Growth’ (Hayek, 1988: Chapter 8).

³ The quote: ‘where spontaneous change has been smothered by government control [Liberalism] wants a great deal of change of policy’ (Hayek, 1993: 399).

⁴ I thank Bruna Ingrao for the reference to the latter. See Hayek’s (1990), *Denationalisation of Money – The Argument Refined*.

deliver, i.e. serving efficiency. In fact, in order to improve the efficiency of the aforementioned arrangements, Hayek advocates the addition of specific amendments to their general laws. '[T]he satisfactory working of a free economy' is now assumed to require much more than the mere observation of the rule of law, 'the prevention of violence and fraud, the protection of property and the enforcement of contracts, and the recognition of equal rights of all individuals to produce whatever quantities and sell at whatever prices they choose' (220).

General rules must be 'given a form', he proposes, 'in order that the market mechanism will work as effectively and as beneficially as possible' (229). Clearly, this may entail big government, as he himself admits (and downplays): 'it is the character rather than the volume of government that is important' (220). However, it is taken for granted here that efficiency-driven intervention – the specific 'form', and then the 'volume' – is not likely to conflict with the impersonal mechanism of information co-ordination, i.e. the general rules. But this is not warranted and, as far as our discussion goes, this seems to be a critical step. It is one thing to state that the impersonal mechanism delivers not only co-ordination but also some kind of efficiency, another to state that efficiency-enhancing initiatives are necessarily compatible with it, and still another to claim that the latter ought to be pursued.

In this connection, part of what remains to be demonstrated is why these multiple interventions are not supposed to have the distortionary effects that social justice intervention has; the other part is why efficiency should be pursued prior to – or even at the cost of – other large-scale social ends. Clearly, Hayek's rather curious account of the demands of social justice – which, he says, 'involve arbitrary discrimination between persons' or 'decisions as to who is allowed to provide different services or commodities, at what prices or in what quantities' (227) – can only provide a partial response. For it is, at least, arguable that this is not an accurate description of the ideals of social justice at large: John Rawls's conception of 'justice as fairness', for example, involves procedural, rather than end-state, justice, and it aims at the basic structure of society, not specific persons or groups.⁵ And, at any rate, as we multiply the instances of intervention and move from the general character of the law to the specifics – targeted at efficiency to the detriment of other goals – the cognitive criterion to tell legitimate from illegitimate intervention loses much of its strength.

It seems useful to disentangle two related issues. The first, the normative issue, has to do with the simple fact that any intervention aims at a certain end or set of ends – which, in the earlier Hayek, included the promotion of a 'fair market

⁵ See Rawls (1971). Hayek issued an early positive assessment of Rawlsian justice as fairness (see Hayek, 1976, vol. II: xiii; 100) but later changed his mind (Hayek, 1988: 74/75). It is significant that in the *The Fatal Conceit*, inequalities – 'differentiation due to luck' – are justified 'in order to keep the stream of production flowing and, if possible, increasing' (75)

order', and, in the later, the requirements of an 'efficient market'. What is it, after all, that the impersonal mechanism of the co-ordination of dispersed knowledge really requires or coheres with or still overrules? The variety of answers that Hayek himself provides suggests that the theme is controversial, and certainly *a determinate solution cannot be found from the cognitive starting point in ignorance alone*. And yet, concerning the ideal of an efficient market order, Hayek advocates it as though it were implied by the impersonal and spontaneous mechanism of social co-ordination.⁶

The related cognitive issue has to do with prediction. Here, a disturbing implication of Hayek's perfectionism emerges. His insistence on the articulation of large-scale ends, which are immanent to the market order and which intervention ought to serve, might align him with an extraction of social scientism which he had rejected precisely on cognitive grounds: the rational constructivism of Quesnay and the Physiocrats.⁷ To recall, perfectionist intervention neglects the problem of ignorance over the consequences: how can one know that a particular intervention is going to produce the desired results?

Overall, the relationship between limited knowledge and government appears problematical. Since consequences cannot be known beforehand, maximum restraint is recommended – as in Hayek's defence of protective government. And yet the results of intervention of a *certain kind* are predictably bad, as they endanger a better future of which we have foreknowledge. Thus, counter-intervention and positive efficiency-enhancing government – intervention of *another kind* – are urged: 'what is most urgently needed in most parts of the world is a thorough sweeping away of the obstacles to free growth' (Hayek, 1993: 399). But how can these be immune to the ignorance predicament?

To clarify, the point is not that disasters cannot be predicted and large-scale ends wished for, but that once we decide to follow Ferguson's lead, we need an argument that makes these cohere with ignorance. Thus, two questions must be addressed in order to tell good from bad intervention: (1) what the epistemic possibility is of *any* intervention; (2) how to undertake such a project without committing some sort of social determinism with regard to the purposes of intervention – in other words, how to decide which ends are worth pursuing or which are not.

It is to a proposed way out of these problems that we now turn.

⁶ Another important family of problems refers to the different possible meanings of 'efficiency' itself. I thank Ernesto Screpanti for the remark.

⁷ See, *The Counter-revolution of Science*, p. 19, where the physiocrats are said to represent an early attempt to treat social phenomena 'scientistically'. Caldwell (2004: 238, fn 3) makes a similar comment concerning Hayek's early belief in planning. Since my claim here is that the earlier and the later Hayek do not so much diverge in terms of the magnitude of the intervention as in terms of its content, it seems that this comment may apply to the later Hayek as well.

2. Popper in search of a better world

In his political philosophical work, Popper, in contrast to Hayek, remains a bold defender of interventionism. This has already been noticed by a number of commentators, even by Hayek himself, in spite of the myriad pronouncements by both himself and Popper regarding their strong intellectual affinity.⁸ The specific contribution of this section, however, is to show that Popper presents his case for intervention as *an outcome of views on the state of human knowledge comparable to those of Hayek*, producing as a result the positive connection – *prima facie* denied by Hayek – between ignorance and design. I shall argue this point by putting together different parts of Popper’s writings, both philosophical as well as political, and showing that these are components of a coherent view on the issue of the connection between ignorance and intervention.

I shall reconstruct Popper’s argument in two stages. First, I shall offer an interpretation of his peculiar notion of ignorance via an assessment of three intertwined themes that occur in his philosophical writings: critical rationalism, tradition, and invention. Then, I shall track, in the last two sections, what appears to be the implications of this notion when it comes to institutional design and government, and the relevant contrasts with Hayek.

2.1. *The resources of a limited rationalism*

Our discussion of the Popperian notion of ignorance starts with Popper’s examination of rationality as a method of acquiring knowledge, and rationalism as the belief in such a method. It actually starts out with Popper’s famous *defence* of rationalism. Then, it evolves into the relationship between rationalism and tradition, and finally concludes with Popper’s peculiar view of tradition. I shall then deploy the overall argument in three steps.

Step 1: What rationalism, if any, is tenable?

In the 1945 (1987a) essay ‘The Defence of Rationalism’ (DR), in addressing Michael Oakeshott’s famous criticism, Popper denies the possibility of a ‘comprehensive rationalism’ – the attitude of one’s not being prepared to accept any proposition that is based neither on argument nor evidence. Not being itself based either on argument or evidence, this attitude is logically untenable. He, then, realizes that rationalism, if it is to be tenable at all, must rest on a pre-rational decision: ‘no rational argument will have an effect on a man who does not *want* to adopt a rational attitude’ (Popper, 1987a: 131). Moreover, argument and evidence turn on previous knowledge or opinion – ‘presuppositions’ – which are, in turn, unsupported by argument and evidence. But, he then conjectures, were rationalism to be understood as the *voluntary* attitude of

⁸ See Shearmur (1996) and Hacoheh (2000).

systematic criticism of *received* knowledge, in the light of logic and experience, the presence of both a pre-rational decision and a set of presuppositions would not intrinsically conflict with it; they would, instead, be offering the motivation and the material upon which the rationalist might operate. Rationalism may be rendered coherent by the proper recognition of its inherent limitations, he concludes.

It is therefore *unlimited* rationalism which is logically unsound, not the kind of rationalism that he professes, which acknowledges its own limitations, i.e. its beginning in preferences and its dependence on presuppositions. And since rationalism, as now specified, is the quite modest belief in a method of assessing and acquiring fallible knowledge, it is unlimited rationalism, based on the unconvincing confidence in certain knowledge, which is bound to be rejected along the lines of Oakeshott's criticism. What now justifies the rationalist in being what he is is not so much the origin – in argument or evidence – of his current propositions, which might convey the character of certainty for the knowledge thus acquired, as much as what he can *do* with these; not that he is 'right', but that he may learn from his errors, via systematic criticism. Thus, the rejection of comprehensive rationalism is not a rejection of rationalism *tout court*.

We should note that Popper defends rationalism against the anti-rationalist conservative attack (by excluding the unreasonable position of the comprehensive rationalist) and rescues it as a tool for social reform. It is in this connection significant that Hayek starts out, from the opposite extreme of the spectrum, by attacking rationalism as a form of (left-wing) arrogance. Although some people think they meet in the middle, this is not the position supported here.

Step 2: The relation between rationalism and tradition

In the 1949 (1987b) essay 'Towards a Rational Theory of Tradition (TRTT)', Popper looks for a foundation for the social sciences, i.e. the possibility of a 'rational theory of tradition'. What is of direct interest here is that, in the essay, he examines the conventional antinomy tradition versus reason. The examination concludes rather unconventionally that the relationship between them must be one of co-operation. This is so because traditions are portrayed as 'systems of reference' or 'orders' or 'logic of the situation', which prove indispensable for rational action. Traditions also perform a role similar to myths in ancient philosophy in the social world, i.e. of cognitive nutrients to be processed critically, of 'presuppositions'.

On the one hand, then, traditions are granted a certain priority *vis-à-vis* reason: 'It is not possible for you to act rationally in the world if you have no idea how it will respond to your actions. Every rational action assumes a certain system of reference which responds in a predictable, or partly predictable way.' But, on the other, traditions must be scrutinized and criticized, not dogmatically consumed;

they give us ‘something upon which we can operate; something that we can criticize and change’. And he adds: ‘This point is decisive for us, as rationalists and social reformers’ (Popper, 1987b: 131).

Moreover, in addition to discerning the constructive functions of traditions, Popper also discloses their *artificial* nature, that they may be invented. And he offers rationalism itself as evidence of an invented – by the Greek philosophers – tradition, i.e. the tradition of appraising traditions. With this move, Popper is, importantly, de-naturalizing and de-idealizing traditions: these may be not only evaluated but also invented. But, how can we make sense of the possibility of the invention of traditions without succumbing to the comprehensive rationalist or hyper-rationalist temptation? Is it all reason, anyway?

Step 3: Invention of traditions

In Popper’s philosophical work, there are two major instances of the suggestion that we can invent traditions.

The first of these is presented in the 1974 volume *Objective Knowledge (OK)* as the World 3 – of theories, conjectures, but also institutions – a world resulting from intention-oriented practices of acquiring knowledge to solve problems. Now criticism is presented as imagination: ‘The process of learning . . . is always fundamentally the same. It is imaginative criticism. This is how we transcend our local and temporal environment by trying to think of circumstances beyond our experience: by criticizing the universality, or the structural necessity, of what may, to us, appear . . . as the “given” or as a “habit”; by trying to find, construct, invent new situations – that is, test situations, critical situations. . .’ (Popper, 1974: 147/148).

In this further clarification, critical rationalism does not coincide with the performance of coherence tests within given logical situations. As *imaginative* criticism, it is additionally understood as a creative act whereby, when trying to solve a problem, one creates the framework of reference or ‘test situations’ against which coherence is to be checked. That these invented ‘objects’ or ‘worlds’ have, thereafter, a life all their own does not alter the fact that *we* deliberately produced them. Actually, Popper unveils part of the process whereby these results come out: it is *because of lack of knowledge* that we are compelled to create, to imagine, and this overflows into new objects and worlds. Call this effect an externality of rationality – invention of worlds or objects emerging as a side-effect of one’s effort to solve problems.

A second related case of the inventiveness of the ‘ignorant’, with direct implications for the social world and intervention, appears in the volume *In Search of a Better World (SBW)*. When discussing alternative approaches to the evolutionary notion of selection, Popper suggests that the selection of ways of addressing problems also involves the oft-neglected ability of organisms to create *niches*, or circumstances of their own making, which thereafter *corroborate the*

solutions they stumble upon in their ‘search of a better world’.⁹ In other words, selection may be internal as well as external.

The transposition from the biological to the social world is left for the reader, but the language is suggestive: all life is problem solving, in search of a better world. In fact, the Popperian hypothesis of biological *niches* finds correspondence in the social *niches* of actual social interactions. The myriad instances of market power and collective action may be seen as intended developments on the side of the environment, which, in turn, affect the likelihood of one’s success in one’s dealings – internal selection. The strategy of environment building tames uncertainty by enhancing local predictability. (However, it also creates an opportunity, even a moral demand, for state intervention, as we shall see in the last section.)

This instance of invention suggests that, in addition to making up the environment (and generating unintended developments), social actors also have the ability to control it to an extent, via the use of power and concerted action. Let us call this second occurrence of human invention, the internalization of circumstances.

In Popperian spirit, we could perhaps organize the cluster of ideas discussed from step 1 to step 3 as a series of theses, stated in various places and times, as follows:

- (1) Comprehensive rationalism is untenable; a rejection of it implies a rejection of certain knowledge (DR).
- (2) Knowledge is fallible and ought to be submitted to criticism, the practice of which is critical rationalism (DR).
- (3) Criticism does not operate in a vacuum; it is contingent upon traditions, i.e. orders or systems of reference (TRTT).
- (4) Criticism may also engage in imagination/invention of new traditions (OK); critical rationalism is one such invented tradition, i.e. the tradition of criticizing traditions (TRTT):
 - (4.1) traditions may be invented as a side effect of a contrivance, i.e. an unintended development of an effort to solve a problem – externalities of rationality (OK);
 - (4.2) traditions may be directly invented as environment-building, i.e. creating *niches* – internalization of circumstances (SBW).

⁹I quote from Popper (1992: 13–14), the following qualification to the theory of evolution: ‘My new optimistic interpretation [of Darwin’s theory of evolution] stresses (as does Bergson) the activity of all living creatures. All organisms are fully occupied with problem solving . . . And one of the most important problems is the search for better living conditions: for greater freedom; for a better world. According to this optimistic interpretation, it is through natural selection and (we may suppose) through an external selection pressure that a strong internal selection pressure comes into being at a very early stage; a selection pressure exerted by the organisms upon their environment. This selection pressure manifests itself as a kind of behaviour that we may interpret as *searching for a new ecological niche*. Sometimes it is even the *construction* of a new ecological niche . . . the selection pressure of the niche that was actively chosen by [the organisms].’

In other words, Popper sets out to legitimize rationalism within an approach that recognizes a certain priority of tradition. And he does so by identifying rationalism as a mode of (procedural) tradition. He also sees the interplay between tradition and reason not only as reciprocal limitation, where reason inspects traditions while operating within their logic. But, by recognizing that traditions can be invented, Popper grants this interplay a substantial latitude, as there is now room for creativity (the externalities of rationality) and environment-building (the internalization of circumstances). The reason–tradition relationship is, in this way, seen as innovation enabling.

One can easily conclude that Popper’s depiction of the unintended consequences/knowledge limitation narrative seems to be that not only is much of the social world an extravagant result of intentional acts, as already advocated by Ferguson and later on by Hayek, but also that knowledge limitation itself fosters a second-hand cognitive strategy, peculiar to ignorant (but still rational) people. This is the strategy of learning from errors and *inventing that which cannot be discovered*, eventually raising the odds that attempts at solutions and proposed changes succeed.

In this connection, Popper’s own invention is the notion of internal selection, which gives the word selection a less naturalistic flavour than Hayek’s use of it. This has the implication of further separating their positions concerning design. Whereas, for Hayek, social change is mainly in reaction to changing external circumstances, for Popper, social change combines successful proactive changes (for example, the creation of *niches*, resulting from size or collective actions) with unintended developments.

However, we still need to find out how Popper’s interpretation of the cognitive predicament transposes into a defence of interventionism.

2.2. *Social technology, social engineering*

In *The Poverty of Historicism (PH)*, Popper praises the epistemic merits of intervention or ‘social engineering’, that social engineering may improve our knowledge: ‘The social sciences have developed very largely through the criticism of proposals for social improvements . . . , through attempts to find out whether or not some particular economic or political action is likely to produce an expected, or desired, result’ (Popper, 1997: 58). He is well aware, however, that the term ‘social *engineering*’ is ‘likely to arouse suspicions’, explicitly referring to Hayek.

To be sure, the reference to Hayek is of two minds. On the one hand, Popper quotes Hayek as implicitly approving of his position in a comparable extract in which the latter asserts that ‘economics developed mainly as the outcome of the investigation and refutation of successive Utopian proposals’ (58, fn 2). On the other, however, he sticks to the word ‘engineering’, conscious that it may ‘repel those whom it reminds of the “social blueprints” of the collectivist planners’, read: Hayek. To ‘offset undesirable associations’, he adds the predicate ‘piecemeal’ to it. Notwithstanding this, he feels compelled

to insist that ‘piecemeal tinkering . . . combined with critical analysis, is the main way to practical results in the social as well as in the natural sciences’, and dedicates two sections of a book primarily devoted to social science methodology to make his somewhat general point *for* social reform (58). We may recall that Hayek’s comparable piece built an argument essentially *against* design.¹⁰ Popper’s enemies were the (a-political) historicists; Hayek’s were the (hyperactive) constructivists.

Popper’s defence of social engineering begins with the question of its possibility. One of the main problems on the way to social reform is limited knowledge itself. How is social engineering possible in the first place? When addressing the issue, Popper bears in mind Hayek’s warning that no single mind is able to master the amount of knowledge needed for centralized planning, and that constructive politics delivers results that are the opposite of its intentions and ends up endangering the overall order. Popper acknowledges the problem, but does not buy Hayek’s political conclusions. Instead, he comes up with the alternative idea that the knowledge that the politician-engineer needs is the more modest – though, he claims, effective in terms of his also (falsely) modest task – *social technological* knowledge.¹¹

This point is made clearer in Popper’s discussion of two attitudes regarding intervention – passivism and activism – of which he prefers the latter. Passivism – ‘the view that if we are dissatisfied with existing social and economic institutions, it is because we do not understand how they work and why active intervention could only make matters worse’ – does not engage his sympathy, and he even believes that ‘a policy of *universal* anti-interventionism is untenable – even on purely logical grounds, since its supporters are bound to recommend political intervention aimed at preventing intervention’ (60/61). Hence, even the sort of active side to passivism seems to be in need of a logical foundation. He believes that his social technological approach is able to do this.

To begin with, social technology is knowledge of the social world that recognizes its own limits. It is, in other words, knowledge that, originating in conjecture (of the predictable effects to particular causes), only increases with *practice and criticism*. It is mainly practical, though also a bit theoretical, as theory helps to select problems. But, ‘[t]he technological approach imposes a discipline on our speculative inclinations. . . for it forces us to submit our theories to definite standards, such as standards of clarity and practical testability’ (59). Thus, its inseparable connection with tinkering.

¹⁰ I am referring to the ‘Scientism. . .’ essay.

¹¹ Besides parts of the main text (e.g., p. 60), some of the footnotes in *PH*, sections 20 and 21, testify to an intellectual friction with Hayek, which, although perceivable, is not always explicit. See, for example, fn 2 (58), fn 1 (64), fn 1 (65). This hypothesis is reinforced by Hacohen’s (2000) information that Popper was reading Hayek’s *The Road* and ‘Scientism. . .’ while writing ‘Poverty’ II and III. In fact, Hayek and Popper seem to have disagreed on a number of issues, though not publicly. The differences are clear, however, from an examination of their intense correspondence. Cf. Shearmur (1996).

This body of knowledge can be formulated in conditional laws – ‘sociological laws or hypotheses’, not ‘historical laws’ – and therefore can be usefully instrumentalized and tested. Thus, technological laws try to articulate the logic of the situation the social reformer is facing: for example, what the expected impact is of ‘prison reform or universal health insurance, or of the stabilization of prices by means of tribunals . . . upon, say, the equalization of incomes. . .’ (59). But the latter are also *negative* laws in a fundamental sense. They are more eloquent (certain?) about what *cannot* be achieved than they are of what can positively *be*. Popper presents this point by insisting rather oddly that any technology *may be said* to point out what *cannot* be achieved: ‘you cannot carry water in a sieve’. This negative presentation of laws is reminiscent of his discussion of falsifiability in *The Logic of Scientific Discovery* and his insistence that scientific laws should preclude some events from happening in order to be truly scientific. Translating this negativity of all scientific laws into that applying in the social world gives us a *social* technology which, relating to a ‘resilient world’, informs us of what *cannot* be achieved ‘without causing some repercussions which are undesirable from the point of view of the ends aimed at’ (62). Examples of technological laws are: ‘You cannot introduce agricultural tariffs and at the same time reduce the cost of living’ . . . ‘You cannot, in an industrial society, organize consumer pressure groups as effectively as you can organize certain producer pressure groups’, etc. (63).¹²

It is important to note that, however limited, social technology nonetheless engages in prediction. In this connection, Popper distinguishes between predictions entailed by historical laws – ‘prophecy’ – which he dismisses as impossible, and ‘preventive prediction’, which is ‘contingent upon conditions humans may change’ (cf. Hacoheh, 2000: 370). Institutions – which he defines at a certain point as ‘abstract models constructed to interpret certain selected abstract relations between individuals’ – *are* the conditions for human action in society (Popper, 1997: 140).

Now, when it comes to intervention, this limited and abstract knowledge, instead of recommending restraint, prompts a different attitude from the social reformer. His task is to use institutions – systems of reference, situational logic – for achieving the purposes that he has in mind, with foreknowledge that undesired repercussions are likely to come up. Many of these repercussions may be known beforehand, as a result of previous intervention; many others will only be known after reform is attempted. It turns out that the social reformer’s very attempts are the best way to get to know the social world. In Popper’s words, the ‘piecemeal technologist’ who knows that ‘we can learn only from our mistakes’ . . . ‘will make his way, step by step, carefully comparing

¹² But, he warns: ‘Nothing is here assumed about the strength of the available evidence in favour of these hypotheses . . . They are merely examples of the kinds of statement which a piecemeal technology may attempt to discuss, and substantiate’ (63).

the results expected with the results achieved, and always on the look-out for the unavoidable unwanted consequences of any reform' (67). In the end, social technology not only suffices for intervention but also crucially depends on it – at least as long as it remains an effective process of learning through piecemeal tinkering.

As a side point, Popper insists – very probably expressing a disagreement with Hayek – that 'the technological approach is quite independent of all questions of "origin"', i.e. that 'undesigned social institutions may emerge as unintended consequences of rational actions' (Popper, 1997: 65, fn 1). For a social technologist, it is immaterial whether some or most institutions in society have grown as a result of spontaneous processes, once their logic can be understood and their *modus operandi* enhanced or even changed (65). But, the knowledge constraint does impose at least this limit to intervention: it rules out reforms of the 'whole' of society, such as those pursued by the 'utopian' engineer. By failing to recognize his knowledge limitations, the utopian engineer imperils his position. His 'total' plan is bound to relapse into improvisation, 'continually [leading him] to do things which he did not intend to do' (69).

Reforms should therefore be gradual *for their own sake*. Gradualism is the only sensible method whereby the reformer can aptly learn from his errors and make his way 'step by step, carefully comparing the results expected with the results achieved'. Conversely, reform of the whole of society leads him astray: he loses track of the unwanted repercussions and cannot address them. Thus, method is everything. In particular, the scale and the scope of the intervention is not a concern; in addition to constitutional reform, even intervention with re-distributive purposes may be possible, as long as this is tried out as a series of piecemeal reforms 'towards a greater equalization of incomes' (68).¹³

In conclusion, social technology is Popperian imaginative criticism operating in the social realm. In the hands of the piecemeal social engineer, and in his hands alone, intervention seems essential to enhance knowledge. Moreover, intervention proved cognitively well-grounded, as it relies on 'preventive prediction'. Indeed, reform creates epistemic opportunities for further reform, in a sort of benign cycle intervention–knowledge–intervention.

Now, is the prospect of an endless interventionism something to be feared, because of the increasing power of the state that accompanies it?

13 How would Hayek react to this? In fact, whereas for him social justice was a concept mistake, Popper thought it meaningful (see letter from Popper to Hayek, 6 May 1946 and 22 May 1946, in Hayek Archive 44-1, cf. Shearmur, 1996). Popper also shows a concern about economic inequality, interference of business interests in politics, power of monopolies, and that 'freedom cannot be saved without improving distributive justice', in a letter to Carnap dated 17 November 1946 (Popper Archive 282–224), cf. Shearmur (1996). In a letter to Weimer on 16 January 1983, Hayek, in turn, discloses his disapproval of Popper's political views, as he there expressed 'the view that Popper remained too much of an economic interventionist' (Shearmur, 1996: 35).

2.3. *Democratic interventionism*

Popper's simple answer in *The Open Society and Its Enemies (OSE)* is that interventionism should be democratic. This, he justifies in epistemic terms: since we are all ignorant, we must create the political conditions to learn from our mistakes. Collectivist interventionism rules this out.

Much has already been said about Popper's negative utilitarianism, the view that constructive politics should endeavour to minimize suffering instead of maximize happiness, a seemingly more difficult task to specify.¹⁴ But the point that I wish to make here refers to Popper's suggestion that the democratic regime is in line with his epistemic view with regard not only to the means for intervention but also to the purposes to be pursued.

On this account, the first thing to be noticed is the place Popper claims for (constructive) politics in his political philosophical work. Having discarded social determinism and thus the notion that ends are somehow predetermined – a point which he forcefully makes against Marxism and historicism at large – Popper, nonetheless, agrees with Marx's social theory as well as his moral criticism of capitalism.

Social theory, first. It is most significant that, in contrast to Hayek, Popper regards Marx, not Ferguson, as being the initiator of the tradition of conceiving 'social theory as the study of the unwanted social repercussions of nearly all our actions' (Popper, 1971, II: 323, fn 11), actually taking up a suggestion by Karl Polanyi. Hayek famously complained.¹⁵ Popper is basically reading Marx as proposing that the study of society should focus on social institutions rather than on individual behaviour ('psychologism'), on how these come about and may be changed. He is crucially interested in social reform. Hayek, on the other hand, insists on Ferguson's historical point that social institutions are the result of action, not of design. And his reading typically emphasizes the burden that the origin of institutions impinges on attempts at designed change. Popper's reaction, as we have seen, is to claim that the fact that most institutions have originated in this way does not logically preclude that they be altered or that new institutions be created. It is merely a technological question (prudential as well as technical) of confronting the purposes that we want to pursue with the means to achieve these – institutions. To insist otherwise, one might add, is to beg the question concerning the ends.

Regarding Marx's moral critique of capitalism – 'unrestrained' capitalism, in Popper's words – Popper declares his agreement with it. 'Economic exploitation' is wrong: 'formal freedom' insufficient. He nonetheless judges, contra Marx, politics to be the dimension whereby to address these wrongs. He cannot agree

¹⁴ See, for example, Hacoen (2000).

¹⁵ For the disagreement with Popper, see Hayek (1967: 100 fn).

with Marx that politics is but the superficial expression of the economic drama.¹⁶ Economic trends are not given to our knowledge, and ultimate ends are not discernibly inscribed in history: we have to decide on means *and ends* in the political sphere. There, and only there, can we defend our moral views and call for political intervention to hold down what may appear wrong. This is activism as opposed to ‘impotence of politics’ where politics basically assists an inexorable transformation.¹⁷ (One might add that passivism, on the other hand, begs the question of the ends to be followed.) In view of the imperfect knowledge of social life, and thus the different views of what should be done and how, the kind of intervention that is justifiable is *democratic* intervention, which is submitted to the democratic procedures of deliberation – transparency of purposes and processes, open criticism and the possibility of change in the light of criticism.¹⁸

At this point, a further step is needed in order to understand better how Popper telescopes his rather Marxist moral views into his defence of democratic interventionism. How to align the fight against economic exploitation and for a substantive idea of freedom with the defence of democratic interventionism, and democracy *tout court*? The answer seems to be embedded in his idea of democracy.

As we have seen, democracy is important for epistemic reasons – given ignorance, we must create the political conditions to learn from our errors. These imply a check on the political power of the rulers by the ruled, which renders them accountable. However, power is not only political, in that the control of power typically requires some form of accountability in political democracies, but also economic, as displayed in the economic strength of specific actors. This would call for some sort of control as well. In a thicker conception, thus, democracy is also the ‘political control of the *economic* power of the ruled by the rulers’. *Social* democracy.

Economic power – Popper’s source of exploitation and lack of freedom – occurs in what he calls ‘semi-political organizations’, such as ‘monopolies, trusts and unions’, the so-called *niches* that actors create in order to make their way in the social world. Economic power materializes as inequalities of bargaining power among rich and poor in their encounters in the labour market which

16 See OSE II, ch.7: ‘The Legal and the Social System’, for Popper’s supporting Marx’s moral views, though rejecting the latter’s political theory of the ‘impotence of politics’.

17 Hacohen (2000) notes that ‘Popper’s initial charge against Marxism was impotence, not totalitarianism... He offered his technological social science and social engineering as an alternative to historicism’ (354). It is only after he read Hayek’s *The Road to Serfdom* and ‘Scientism and the Study of Society’ – between 1943–1944 – that Popper changed the charge to totalitarianism. But even then, in disagreement with Hayek’s politics and while rewriting *Poverty II*, he still ‘gave legal reform a broad institutional interpretation, assigning it tasks far exceeding Hayek’s intentions, equivalent at a minimum to the welfare state’ (482). Hacohen considers that, in the after war years, Hayek finally ‘managed to corrupt [Popper’s] socialism’ (486).

18 OSE II, ch.7. Also OSE II, ch. 17, and fn 9 to ch. 18, p. 335.

reduce ‘the freedom of the market to a fiction’ (Popper, 1971, II: 348, fn 26). The contrast here with Hayek’s position – his defence of negative, essentially market freedom – seems fairly obvious. Popper’s consideration of these entities and of the inequalities of economic freedom as part of the political environment of an ‘unrestrained capitalism’ suggests that, beyond political power, there are other *loci* of threatening, tyrannical power, which call for democratic control. Here is an instance of Popper’s paradox of freedom – too much freedom leads to oppression, not merely physical, of the strong over the weak (an excess that might be contained by the rule of law *à la* Hayek), but also economical, of the rich over the poor, where ‘the economically strong is still free to bully one who is economically weak, and rob him of his freedom’ (Popper, 1971, II: 124).¹⁹ This condition, he contends, requires a political remedy, i.e. (social) democratic intervention: ‘[W]e must construct institutions for the democratic control of economic power, and for our protection from economic exploitation’ (129). This is, in other words, an intervention destined to counteract the inequality of freedom to which too much freedom gives rise. And that is how Popper’s political liberalism addresses his liberal concerns.

Democratic intervention in economic life is, thus, justified as an antidote for inequalities of economic freedom. And although it might lead to increasing the power of the state, democratic watchfulness should provide the remedy (130). In any case, an enlarged sense of tyranny is proposed as *dogmatism personified in power* in all its forms – either in the authoritarian ruler or in the unchecked power of economic actors.

And yet, could not democracy itself become a source of tyrannical power, the power of the majority over the rest? This is one of the problems that Hayek appears to have had with democracy as he discussed it in his 1938 essay ‘Freedom and the Economic System’ (1997). Given the likely conflict between liberal freedoms and majority rule, Hayek’s lexicographical preferences rank liberalism first, ahead of democracy. Clearly, Hayek’s sovereignist conception of democracy, as ‘the majority rule’ or ‘the rule by the people’, is the origin of his cautious assessment of it. Popper’s view is significantly different: democracy is not the political arrangement designed to implement the right things – ‘the will of the people’ – but a corrective against the powerful.

Again, democracy crucially includes accountability, checks, and balances, and the possibility of the dismissal of the ruler without bloodshed. These mean mechanisms for the correction of mistakes and genuine learning. Even though wrong decisions cannot be averted, it is nonetheless very likely that the far more dangerous consequence, namely, the undercutting of the possibility of redress,

¹⁹ But, compare with Hayek’s statement: ‘the mere power of withholding a benefit will not produce coercion... Even if the threat of starvation to me and perhaps to my family impels me to accept a distasteful job at a very low wage, even if I am “at the mercy” of the only man willing to employ me, I am not coerced by him or anybody’ (Hayek, 1993: 137).

can be avoided: 'He who accepts the principle of democracy is therefore not bound to look upon the result of democratic vote as an authoritative expression of what is right. Although he will accept a decision of the majority, for the sake of making the democratic institutions work, he will feel free to combat it by democratic means, and to work for its revision.' And if the worse cannot be avoided at all – as when democracy votes itself out – this only shows that there is no 'foolproof method of avoiding tyranny', and it is the political culture, not democracy itself, that is called into question (Popper, 1971, I: 125).

Democratic interventionism is, in conclusion, symmetrical with limited rationalism and limited reformism: democracy (this is Popper's idea of limited government) is the way of governing most appropriate to our knowledge predicament. Considering the alternatives – especially collectivist interventionism or centralized planning, but also, one might say, passivism – it provides the highest degree of immunization against dogmatism in power. It is rational politics.

3. Conclusion

An assessment of Popper's work reveals, in spite of his famous 'negative' epistemology, a more optimistic and congruous approach to the relationship between ignorance and intervention than the one set out by Hayek. Popper's argument redresses the implicit logical incoherence in Hayek's position in favour of an anti-interventionist interventionism, and introduces other reasons, not only logical but also politico-normative (anti-tyranny) for state intervention in economic life, beyond the frame of the rule of law. Based on the notion of limited or fallible knowledge, Popper sustains both the possibility of and the opportunity for planned intervention in the economic order, relying largely on hand-made methodological artifacts, such as critical rationalism, social technology, piecemeal engineering, and democratic interventionism. These are ingenious substitutes for their bolder yet unattainable counterparts, i.e. comprehensive rationalism, certain knowledge, holistic engineering, and collectivist interventionism. In Popper's hands, social action counts irrevocably on intervention; given ignorance, the social world can be known only when one tries to change it.

References

- Caldwell, B. (2004), *Hayek's Challenge – An Intellectual Biography of F. A. Hayek*, Chicago: The University of Chicago Press.
- Hacohen, M. H. (2000), *Karl Popper – The Formative Years 1902–1945*, Cambridge: Cambridge University Press.
- Hayek, F. A. (1937), 'Economics and Knowledge', in F. A. Hayek, *Individualism and Economic Order*, London: Routledge & Kegan Paul (1949).

- Hayek, F. A. (1962), 'Rules, Perception and Intelligibility', in F. A. Hayek, *Studies in Philosophy, Politics and Economics*, London: Routledge & Kegan Paul (1967).
- Hayek, F. A. (1967), 'The Results of Human Action but not of Human Design', in F. A. Hayek, *Studies in Philosophy, Politics and Economics*, London: Routledge & Kegan Paul (1967).
- Hayek, F. A. (1976), *Law, Legislation and Liberty*, 3 vols, London: Routledge & Kegan Paul.
- Hayek, F. A. (1979a [1942–1944]), 'Scientism and the Study of Society', in F. A. Hayek, *The Counter-Revolution of Science – Studies on the Abuse of Reason*, Indianapolis: Liberty Press.
- Hayek, F. A. (1979b [1944]), *The Road to Serfdom (RS)*, London & Henley: Routledge & Kegan Paul.
- Hayek, F. A. (1988), *The Fatal Conceit – The Errors of Socialism (FC)*, *The Collected Works of F. A. Hayek*, vol. 1, ed. W.W. Bartley, Chicago: The University of Chicago Press.
- Hayek, F. A. (1989), *Order – With or Without Design?*, London: The Centre for Research into Communist Economies.
- Hayek, F. A. (1990 [1976]), *Denationalisation of Money – The Argument Refined*, London: The Institute of Economic Affairs.
- Hayek, F. A. (1993 [1960]), *The Constitution of Liberty*, London: Routledge & Kegan Paul.
- Hayek, F. A. (1997 [1938]), 'Freedom and The Economic System', in F. A. Hayek, *Socialism and War*, *The Collected Works of F. A. Hayek*, vol. 10, ed. Bruce Caldwell, London: Routledge.
- Kerstenetzky, C. L. (2000), 'Hayek: The Evolutionary and The Evolutionist', *Rationality and Society*, 12(20): 163–184.
- Oakeshott, M. (1974 [1947]), 'Rationalism in Politics', in M. Oakeshott, *Rationalism in Politics and other essays*, London: Methuen & Co.
- Popper, K. R. (1971 [1945]), *The Open Society and Its Enemies*, Princeton: Princeton University Press.
- Popper, K. R. (1974), *Objective Knowledge – An Evolutionary Approach*, Oxford: Clarendon Press.
- Popper, K. R. (1987a [1945]), 'The Defence of Rationalism', in D. Miller (ed.), *A Pocket Popper*, Fontana Press.
- Popper, K. R. (1987b [1949]), 'Towards a Rational Theory of Tradition', in D. Miller (ed.), *A Pocket Popper*, Fontana Press.
- Popper, K. R. (1992 [1988]), *In Search of a Better World: Lectures and Essays from Thirty Years (SBW)*, English transl. Laura J. Bennett, London & New York: Routledge.
- Popper, K. R. (1997 [1957]), *The Poverty of Historicism*, London: Routledge & Kegan Paul.
- Rawls, J. (1971), *A Theory of Justice*, Cambridge, MA: The Belknap Press.
- Shearmur, J. (1996), *The Political Thought of Karl Popper*, London & New York: Routledge.