Socialism against markets?
A critique of two recent proposals

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Abstract

The debate over the feasibility of socialism has lasted for much of the twentieth century. This essay evaluates two important recent proposals for systems of socialist planning in which markets are given merely a marginal role. Beforehand, some of the key theoretical issues are placed in the context of the 'socialist calculation debate' that lasted from the 1920s to the 1940s. It is argued that the Austrian critics of centralist socialism rightly focused on questions of information and knowledge, and similar considerations also undermine the two recent proposals under review. However, a full appreciation of the role of learning in a knowledge-intensive economy also challenges some of the presuppositions of market individualism.

Keywords: socialism; planning; markets; knowledge; learning; innovation.

Despite the collapse of the Eastern Bloc in 1989, the long debate over the feasibility of socialism shows no sign of abating. It is the aim of this essay to evaluate two important recent proposals for systems of socialist planning in which markets are deemed to play a marginal role (Devine 1988; Cockshott and Cottrell 1993). Before these two proposals are addressed, however, some of the key theoretical issues are placed in the context of the 'socialist calculation debate' that simmered from the 1920s to the 1940s.

The central issue in the long debate between socialism and capitalism is often characterized as one of planning versus markets. But this can be misleading. Planning in some form exists in all economic systems. Both individuals and organizations can have plans. A central problem in any economic system is how the inevitably diverse plans of many varied individuals or organizations can be reconciled, without conflict or disorder. Human beings differ by both nature and nurture, and to some degree will always do so. Institutions differ in their histories and in their paths of development. If we accept the inevitability of this...
diversity, then this problem has to be faced. How can the varied plans of multiple agents be reconciled?

One solution is to crush dissent. The plan of the party or the dictator becomes the plan of the whole society and other plans are disregarded. All by law must conform to the single, central plan. This solution is not attractive to many socialists. A popular alternative is often described as 'democratic socialism'. This involves democratic debate between the exponents of various plans, reaching some decision by a system of voting. In this case the minority plans may still be blocked, but by democratic vote rather than dictatorship. The possibility of such a democratic system will be discussed in more detail below.

The third method is by use of the market and the price mechanism. One person plans to produce a new commodity. In a market system it is not generally necessary to impose a dictatorship or persuade a majority on some committee before the new commodity is produced. It is required to obtain enough buyers to keep production viable. This is not to suggest that the market always encourages creativity or enterprise. As a system it has many flaws. However, its inherent, undirected mechanism that reconciles conflicting plans and maintains a degree of diversity should not be overlooked. By contrast, collective planning, whether democratic or otherwise, has a crucial disadvantage. As Friedrich Hayek pointed out:

That [collective] planning creates a situation in which it is necessary for us to agree on a much larger number of topics than we have been used to, and that in a planned system we cannot confine collective action to the tasks on which we can agree, but are forced to produce agreement on everything in order that any action can be taken at all, is one of the features which contribute more than most to determining the character of a planned system.

(Hayek 1944: 46)

In contrast, in a market system we are not 'forced to produce agreement on everything in order that any action can be taken at all'. Separate, diverse plans can be reconciled by multiple, bilateral deals of negotiated exchange. Whatever its manifest limitations, this crucial advantage of the market should not be disregarded.

However, for many socialists, markets have had no role in the desired socialist society of the future. As Noel Thompson put it: 'The market was anathematized by almost all nineteenth century socialist writers' (1988: 281). Even Fabian socialists had an 'ultimate vision of a fully planned and consciously controlled socialist economy' where markets were gradually marginalized to insignificance. Thompson concludes:

For the most part, however, their critique of the functioning of the market led nineteenth century socialist writers to throw the market baby out with the bath water . . . the consequences of this determination to abandon the market were
little short of disastrous for the subsequent evolution of socialist economic thinking.

(Thompson 1988: 285)

The basis of this rejection was a deeply rooted judgement that the market fostered competition, encouraged greed and led to inequality and exploitation. Socialists believed that markets could be abolished by replacing them with the all-embracing, rational institutions of evaluation, planning and control. Accordingly, the socialist attempt to attain social harmony would require the imposition of severe constraints on economic autonomy, variety and pluralism.

The socialist calculation debate

In 1920, Ludwig von Mises published, in German, a path-breaking article, making the claim that comprehensive, rational, central planning in a socialist economy was bound to fail (Mises 1935). This was not an argument about the desirability or otherwise of socialism, but primarily about its workability.

On this basis the ‘socialist calculation debate’ emerged. It is one of the most illuminating and significant debates in economic theory in the twentieth century. In response to von Mises, a number of socialist economists in Britain and the United States developed the notion that it was possible for the planners to substitute for the market and its functions, within a framework where the means of production were owned and managed by the state. A model was outlined in the following terms. The planners would somehow observe whether each good or service was in short, or excess, supply. If there was an excess supply the price would be lowered; if an excess demand it would be raised. Through such incremental adjustments, supply and demand would eventually be matched, and equilibrium prices would be formed.

The most famous formalization of this approach was the model of so-called ‘market socialism’ developed by Oskar Lange and Frederick Taylor (1938). Lange and Taylor showed how such a notional process of price adjustment could be fitted into the general equilibrium theory developed in the 1870s by the neoclassical economist Léon Walras. Although the Walrasian model was purportedly a model of a market economy, it used the fiction of a single auctioneer to formalize the process by which prices are formed. The auctioneer would adjust prices up or down until an equilibrium of supply and demand was reached. Lange and Taylor simply substituted the central planning authority for the auctioneer, and without any violation of the core neoclassical precepts of the Walrasian model.

In the absence of private ownership of the means of production, how would efficient production be maintained? Lange and Taylor added the rule that the central planning authority would instruct the managers of firms to expand production until marginal costs were equal to the established price of the product. Thereby, productive surpluses would be maximized. With rules governing price
formation and managerial behaviour, it was seemingly possible for the means of production to be publicly rather than privately owned. Without much apparent difficulty, the Walrasian model of capitalism was transformed into a planned, socialist system, with public ownership of the means of production.

Lange and others confusingly used the term 'market socialism' to refer to their models of an economy in which the workings of the market were simulated, rather than a true market itself being accommodated. In fact, the models developed by Lange and his collaborators involved a high degree of centralized coordination and knowledge that excluded any real-world market. No attempt to implement a Lange-type model has ever been tried. Lange himself made no effort to persuade the post-1945 'socialist' government in his native Poland of the value of the idea. At best, the proposal was an attempt to mimic the market through central controls. For this reason, the use of the term 'market socialism' in this context is highly misleading. Lange’s proposal certainly did not involve a true market at its core, and many would declare that it was not socialist. Given this legacy of confusion, it would be better that in these debates the term was not used, at least to refer to Lange-type models.

Despite the manifest limitations of their approach, the overwhelming verdict by about 1945 was that Lange and others had 'won' the socialist calculation debate with sound arguments. It was widely believed, even by leading and erudite economists, that the argument of von Mises concerning the unfeasibility of socialism had been answered and refuted by Lange and others.

It was not until the 1980s that the tide of opinion began to turn. The swell was increased by the growing political influence of the New Right and by the rising academic stature of Friedrich Hayek and other Austrian economists. In this context, some careful and scholarly re-evaluations of the socialist calculation debate appeared in the 1980s, notably by Karen Vaughn (1980), Peter Murrell (1983) and Donald Lavoie (1985a). The overwhelming and persuasive conclusions of these studies were that:

1. Lange and his followers had failed to answer adequately the criticisms and responses of von Mises and Hayek in the debate.

2. Lange and his followers had failed to provide a satisfactory outline of a workable and dynamic socialist system.

3. Lange and his followers had failed to recognize the inadequacies of the Walrasian theoretical approach to the analysis of real-world capitalism and markets.

Also in the 1980s, some works appeared by authors more sympathetic to socialism, but who also argued that some (limited) use of market mechanisms in a socialist economy was unavoidable (Nove 1983; Hodgson 1984; Aganbegyan 1988; Brus and Laski 1989; Le Grand and Estrin 1989; Miller 1989).

In retrospect it is clear that Hayek in the 1940s had showed that Lange and others had a limited and naive view of the nature of knowledge in economic systems. These writers had assumed that all relevant technical and economic information would be readily available to the decision makers. While advocating
a modified, Lange-type model, Henry Dickenson wrote symptomatically: ‘All organs of the socialist economy will work, so to speak, within glass walls’ (1939: 9). As a result, the central planning authority would be the ‘omnipresent, omniscent organ of the collective economy’ (1939: 191).

In taking this limited view of information and knowledge, Lange, Taylor and Dickenson reflected the weaknesses of the neoclassical theory they had embraced. Addressing the prevailing neoclassical approach, Hayek (1948: 46) concluded that by depicting ‘economic man’ as ‘a quasi-omniscent individual’, economics has hitherto neglected the problem that should be its major concern, that is ‘how knowledge is acquired and communicated’ (1948: 33). The models proposed by Lange and others did not deal adequately with the central problem of ‘how knowledge is acquired and communicated’. Tacit knowledge held by workers and managers was entirely ignored. Different cognitive interpretations of identical information were not considered. The assimilation of new scientific concepts or interpretations was assumed to be unproblematic. Contrary to Lange, Taylor and Dickenson, it would not be possible for managers to calculate marginal costs accurately, nor for central planners to make fully ‘rational’ investment decisions on this basis. In any case, in a dynamic and uncertain world, investment depends on entrepreneurial expectations and hunches, not merely explicit costs. These failures are crucial to matters of learning, innovation and economic growth.

Nevertheless, a stagnant and bureaucratic version of the Lange-Taylor-Dickenson system might be possible in practice, perhaps if patched up by illegal but genuine markets and spurred on by ideological exhortations. After all, the former Soviet Union incorporated a routinized and bureaucratic system of central planning, without even attempting a general replication of the market forces of supply and demand. Although bureaucratic and ultimately sluggish, the system worked for several decades. What had been shown by von Mises and Hayek was that such systems, according to acceptable criteria, could be neither rational, dynamic nor efficient.

Accordingly, the greater force of Hayek’s economic criticisms of the pseudo-market models of Lange and Taylor does not centre on the question of their feasibility, but on their capacity or otherwise for innovation and economic growth. It is on the germane questions of knowledge and learning that Hayek produced his strongest arguments. The proper appreciation of these dynamic issues involves a fundamental challenge to the equilibrium framework of neoclassical theory.

Consider the questions of price formation and competition. Although prices were formed in the Lange-type models, they did not perform a competitive function, as in a genuine market economy. As Hayek argued:

The force which in a competitive society brings about the reduction of price to the lowest cost at which the quantity salable at that cost can be produced is the opportunity for anybody who knows a cheaper method to come in at his own risk and to attract customers by underbidding the other producers. But, if prices are fixed by the authority, this method is excluded.

(Hayek 1948: 16)
Also at issue was the nature of costs and prices themselves. To a large degree the problem disappears if prices are conceptualized within the general equilibrium framework of neoclassical economics or within an input-output framework of the type developed by Piero Sraffa (1960). In both these cases we are essentially dealing with a stationary state in which the future resembles the past. In contrast, in a dynamic context, we are obliged to deal with an uncertain future. Such radical uncertainty rules out the possibility of any calculation of probabilities or expected returns. Instead, we have to rely on intuition and judgement. As a result, prices depend as much upon subjective expectations as upon objective costs. Hayek argued this point clearly:

In no sense can costs during any period be said to depend solely on prices during that period. They depend as much on whether these prices have been correctly foreseen as on the views that are held about future prices. Even in the very short run costs will depend on the effects which current decisions will have on future productivity . . . almost every decision on how to produce . . . now depends at least in part on the views held about the future.

(Hayek 1948: 198)

Notably, the problems of uncertainty in addressing the future, and of decision making in a dynamic context, are neglected in Marxian, Sraffian and neoclassical economics.

Lange, Taylor and Dickenson assumed that, in addition to the managers in charge of each productive plant, there would be planners in charge of each industry as whole. These planners would make investment decisions concerning the expansion or contraction of the industry, and the number of productive plants within it. These industry managers would be charged with the problem of making estimates of the future productivity and viability of their industry. As a result, both the plant and the industry managers would be responsible for crucial investment decisions. In such circumstances, as Hayek points out, it would be very difficult to assess and assign responsibility for mistakes:

To assume that it is possible to create conditions of full competition without making those who are responsible for the decisions pay for their mistakes seems to be pure illusion. It will at best be a system of quasi-competition where the person really responsible will not be the entrepreneur but the official who approves his decisions and where in consequence all the difficulties will arise in connection with freedom of initiative and the assessment of responsibility which are usually associated with bureaucracy.

(Hayek 1935: 237)

The above argument was formulated by Hayek before the publication of Lange and Taylor's (1938) book. It applies to all forms of collective planning and control of investment decisions. It is suggested here that problems of dynamic inefficiency and bureaucratic sclerosis are ubiquitous in all socialist proposals to eliminate or marginalize the market. It is to some recent proposals along these lines that we now turn.
A proposal for 'democratic planning'

The idea of 'democratic planning' has long been posed as an alleged antidote to the problems of bureaucracy in non-market organizations. An important recent proposal along these lines has been advanced by Pat Devine and his student Fikret Adaman (Devine 1988; Adaman and Devine 1994, 1996a, 1996b, 1997). They oppose all versions of 'market socialism' and propose that large portions of the economy should be directed and co-ordinated, neither through markets nor through bureaucratic planning, but through a 'third way' involving 'democratic planning based on negotiated coordination' (Devine 1988: 3).

In their proposal, Devine and Adaman accepted that labour markets, and markets for consumer goods, should remain. However, decisions concerning 'the pattern of investment, in the structure of productive capacity, in the relative size of different industries, in the geographical distribution of economic activity, in the size and even the existence of individual production units' should not be the 'result of atomized decisions' under the sway of 'market forces' (Devine 1988: 23).

This may suggest to some readers that markets are to be abolished in industries producing machines, raw materials and all other goods not part of final consumption. But no: it is 'market forces', not markets, that are to be abolished. Their model 'retains market exchange, but replaces market forces by the process of negotiated coordination' (Adaman and Devine 1996b: 534). In all sectors, enterprises still 'compete', prices are still set, money still exists, and goods and services are bought and sold (Devine 1988: 208ff.).

There is very much an element of having it both ways here. Devine's book opened with a lament over the degree to which 'the doctrine of market socialism has achieved near hegemony' among non-dogmatic socialists. 'The crisis of the traditional socialist vision has enabled the new right's market-orientated project to gain the ascendancy' (1988: 6). Yet, when it came to the crunch – the economic detail of the system – Devine himself was impelled to advocate some version of the market mechanism. Yet this pill was sweetened with layers and layers of sweet-sounding proposals concerning 'negotiated coordination' and 'democratic planning'. In all, the layers are so thick that it is difficult to find the bitter pill itself. Devine thus simultaneously opposed what he calls 'market socialism' and proposed a version of 'socialism' – with 'market exchange'. It is not thus a 'third way', as he suggests, but a radical variant of a system of market exchange.

Nevertheless, the proposals for negotiated co-ordination are of interest and importance. Similar in some respects to ideas of a 'stakeholder capitalism' (Hutton 1995), they involve the idea that new integrative structures and social relationships can limit the damaging effects of sectional and individual greed. Such interlocking social institutions can make both producers and consumers more aware of the interests of others, of society as a whole and of the environment. By suggesting that such institutions could be integrated with the market, the vista is opened up of transforming the market itself.
What is highly problematic, however, is the extent to which such bodies can ‘replace market forces’. Devine’s proposal to replace ‘market forces’ but to retain ‘market exchange’ depends upon a clear distinction between the two. Unfortunately, as shown below, the basis of such a differentiation is unclear.

Devine noted that with ‘the operation of market forces . . . production and investment decisions are made atomistically and coordinated ex post’ (1988: 236). Is this the basis of the distinction? If so, then there are problems. Taken literally, this means that the ‘non-atomistic’ production and investment decisions of a capitalist monopoly (in the literal sense of an industry with one firm), or collusive oligopoly, do not amount to ‘the operation of market forces’. This would be true a fortiori if the capitalist monopoly or oligopolies were subject to a degree of public regulation, and if there was worker participation in some key decisions.

Furthermore, it is a mistake to regard the market as purely a mechanism of ex post co-ordination. All costs in markets involve calculations by social agents concerning the future. In addition, futures markets are specialist institutions concerned largely with ex ante adjustments: that is, purchases and sales of titles to commodities that may not yet exist. It is thus quite wrong to see planning as largely or exclusively future-oriented and markets, in contrast, as largely or exclusively concerned with the reconciliation of past decisions. All future-oriented economic activity has to use and assess resources bequeathed from the past. Markets are not simply mechanisms for price and resource reconciliation, they are also means by which new products, involving ideas and expectations concerning the future, can be launched.

Both markets and planning are simultaneously involved with both ex post adjustment and ex ante expectations. Both markets and planning are processes, looking forward into the future with the knowledge and judgement of the past. The difference between the two does not lie primarily in the direction of their temporal orientation but elsewhere. Market-orientated systems involve multiple, potentially conflicting, plans of many production units. Whereas centralized planning entails just one overall plan. Notably, and despite the masking rhetoric, Devine’s model is explicitly an example of the former rather than the latter.

The conceptual separation of ‘market exchange’ from ‘market forces’ is difficult, to say the least. Like all structured interactions between individuals, the market is a process, involving a degree of creativity and discovery. People, and the relations between them, are changed by such interactions. In whatever form, ‘market exchange’ must involve a measure of human learning and development. It is thus difficult to separate any ‘market exchange’ from the dynamic effects that Devine placed under the separate heading of ‘market forces’.

In practice, any attempt to permit the operation of ‘market exchange’ without the pressure of ‘market forces’ would be highly problematic. How would such a distinction be managed and policed? Devine’s criterion seems to be the following:

In the model of negotiated coordination a distinction is drawn between the use of existing capacity, which is decided by production units in response to
current demand, and changes in capacity, which are decided by negotiated coordination bodies covering all production units in a particular branch of production. Changes in productive capacity affect those who work in the production units concerned, and in interdependent production units, those who live in the communities where these units are located, customers, and usually also the concerns of some interest and cause groups. All would participate in the decision-making.

(Devine 1988: 190–1)

Seemingly, as long as the resources and processes of production and consumption do not change, then ‘market exchange’ can operate without the need for ‘negotiated coordination’. The latter would come into play when a new product is proposed, or new technologies emerge, or new processes of production are developed, or consumer tastes alter, or people move their location, or incomes change, or people get older, or new diseases arise or are discovered. All such changes involve investment. As a result, according to Adaman and Devine, decisions concerning them must be consigned not to the market but to the ‘negotiated coordination bodies’.

However, no real world economic system is static. All economic systems, past and present, involve a degree of innovation and learning. Consumer tastes change incrementally through experience, and repeated application may enhance productive skills. Accordingly, it would be difficult to avoid the conclusion that every decision should be referred to some ‘negotiated coordination body’ because to some extent it involved something new. As Heraclitus pointed out, we never step into the same river twice. Taken literally, Devine’s list of substantial issues requiring negotiated co-ordination – ‘the pattern of investment . . . the structure of productive capacity . . . the relative size of different industries . . . the geographical distribution of economic activity . . . the size and even the existence of individual production units’ (1988: 23) – could be taken to refer to almost every economic decision, throughout the economy.

With the possibility that every economic decision would have to be referred to a network of deliberative bodies, for negotiations in which ‘all would participate’, the system faces the danger that it will grind to a halt. Every citizen would be faced with an endless succession of meetings and discussions. There would be no time left for work, leisure or consumption. For such a system to be remotely workable, some boundaries have to be drawn to the jurisdiction of the committees and some limits have to be put to the potentially endless processes of discussion and negotiation. Over this very real problem of limits and boundaries, Devine and Adaman have been, to say the least, very vague.4

At root, the most severe set of problems with Devine’s proposal concerns the implementation, scale and boundaries of ‘negotiated coordination’ itself. Long ago, Oscar Wilde was reported as being responsible for the quip that socialism was impossible because it would take ‘too many meetings’. Faced with this direct criticism of their ‘overloaded’ scheme of negotiated co-ordination by Robin Blackburn (1991: 48), Adaman and Devine (1996b: 534) made the riposte that
this criticism is ‘based on a fundamental misunderstanding of the model being proposed’ and does not apply ‘with the same force’ because ‘market exchange’ is retained in their proposal, and ‘all transactions’ are not to be the subject of ‘negotiated exchange’.

The problem here was not the misunderstanding of critics, however. It lay with the proposal of Adaman and Devine, and their failure to see that their own criteria cannot prevent almost every significant economic decision being paralysed by potentially endless discussion in a network of committees. Taken literally, their own criteria suggest that the role of the market would be confined merely to static and routinized activity, bereft of any innovation and change. As argued above, this hardly leaves any scope for the market at all.

Once again, Adaman and Devine wanted it both ways. When convenient, they deprecated ‘market socialism’. On the other hand, when their ‘alternative’ proposal was closely scrutinized, and its workability questioned, then they retreated and freely admitted a significant role for ‘market exchange’ in their system. Yet, when their criteria for the admission of ‘market exchange’ are placed under the light of examination, they evaporate to insignificance. They switched from a fanfare of anti-market rhetoric, to an admission of markets in principle, and back to criteria that would largely rule them out in practice. As long as their proposal is merely a matter of published words, and not constructive deeds, then it is easier to shift the stress from one to the other, and back again. When faced with the real-world practicalities of implementation, however, much clearer and less elastic formulations would be required.

A crucial and widespread problem with all proposals – whether bureaucratic or democratic – for all-embracing socialist planning concerns the scope for novelty, innovation, learning and change. These issues emerged at the centre of the Austrian contribution to the socialist calculation debate. Although he addressed some of the very real problems of the planning experience in the former Eastern Bloc, Devine (1988) paid very little attention to the arguments of von Mises and Hayek, or indeed to the socialist calculation debate as a whole. This omission was rectified to some degree in two subsequent essays (Adaman and Devine 1994, 1996b). However, the manner of this partial rectification betrays another weakness in the argument.

For Adaman and Devine (1994, 1996b) the Austrian argument against centralized planning hinged on the role of tacit knowledge. In response, Adaman and Devine ‘contest the view that the discovery of tacit knowledge is possible only through entrepreneurial activity in the market process and argue that participatory planning would promote the discovery and social mobilisation of dispersed tacit knowledge more efficiently’ (1996b: 524). This formulation of the problem is symptomatic, especially with regard to its notion that tacit knowledge is something to be ‘discovered’. The issue became clearer in another passage, where they argued that, through ‘democratic participatory planning . . . tacit knowledge is discovered and articulated and, on the basis of that knowledge, economic decisions are consciously planned and coordinated’ (1996b: 531–2). Accordingly, for Adaman and Devine, tacit knowledge is something
that we can eventually ‘discover’, ‘articulate’ and thereby use for conscious planning.

We shall quickly pass over the faulty epistemological suggestion that knowledge in general is something – out there – to be ‘discovered’. Note that this empiricist conception of knowledge is also ubiquitous among mainstream economists. It is flawed because all knowledge depends on preconceptions and prior cognitive frameworks that in principle are not there to be ‘discovered’ and cannot be established simply through reason or fact. Our minds may receive sense data, but sense data are not the same as information or knowledge. Information is data to which some meaning has been attributed. Knowledge is the product of information use. Many of the cognitive processes that we use to obtain and use information are tacit and inaccessible. Rooted in an untenable, empiricist epistemology is the idea that any knowledge – including tacit knowledge – can be ‘discovered’.

Some knowledge can be codified, but to what extent can tacit knowledge be ‘articulated’? To answer this we must examine the meaning of tacit knowledge. Tacit knowledge means knowing how rather than a knowing that. It is in principle both prior to, and beyond the reach of, explicit articulation. In his classic text on the topic, Michael Polanyi wrote: ‘we can know more than we can tell’ (1967: 4). We can recognize a familiar face in a crowd of thousands but be unable tell how, and incapable of drawing or describing it in detail. We use many gestures, body language and interpersonal skills with limited awareness and self-reflection.

Tacit knowledge is a necessary foundation to all knowledge. Just as logically we cannot adequately define every single word in the dictionary in terms of the other words, generally and ultimately we must rely on intuitions or tacit meanings. Although the boundary between the tacit and the explicit may shift, especially as our scientific understanding improves, it cannot be all brought up to a visible level where everything is rendered explicit. Organizational learning, for example, may involve transforming some tacit into codified knowledge, so that it can be communicated to others. But it is important to realize that, in principle, not all tacit knowledge can be rendered explicit. Indeed, as Polanyi put it: ‘an unbridled lucidity can destroy our understanding of complex matters. Scrutinize closely the particulars of a comprehensive entity and their meaning is effaced, our conception of the entity is destroyed’ (1967: 18).

Polanyi argued convincingly that the foundation of knowledge must remain inexplicit, because all codifiable knowledge is necessarily an emergent property of underlying and tacit rudiments. Accordingly, the ideal of eliminating all personal elements of knowledge would, in effect, aim at the destruction of all knowledge . . . the process of formalizing all knowledge to the exclusion of any tacit knowledge is self-defeating’ (1967: 19). It is thus a serious misunderstanding of the concept of tacit knowledge to see it as being something that generally and readily can be discovered, articulated or communicated.

Polanyi argued forcibly that tacit knowledge is essential for all human activity, including science, but it cannot generally be made explicit or codified. Some tacit knowledge may become explicit, but a thick layer of irredeemably tacit
knowledge is essential to all acts of interpretation and communication. Indeed, for Polanyi, to attempt to dispense with tacitness, and to attempt to subject all human affairs to open reason and discussion, would be a dangerous and destructive enterprise. There is much of importance in human activity and interaction that cannot be the matter of rational deliberation and discussion. Much has to be taken for granted. We are forced to rely on tacit knowledge which is necessarily beyond our full scrutiny.

Tacit knowledge forms the indissoluble core of all skills. All skilful human activity involves the use of rules and principles which are not known openly to the person involved. For example, we may be unable to articulate the rules of grammar, but in our use of language we largely conform to them. We may be able to ride a bicycle or fly an aeroplane but we shall be unable to communicate anything but the barest principles of these activities in codifiable form. Indeed, all productive human activity has these features: we use rules but we are unable to make many of them explicit. The tacit realm is irreducible. As Richard Nelson and Sidney Winter argued:

much operational knowledge remains tacit because it cannot be articulated fast enough, because it is impossible to articulate all that is necessary to a successful performance, and because language cannot simultaneously serve to describe relationships and characterize the things related.

(Nelson and Winter 1982: 81–2)

It is this type of resolutely tacit knowledge that is problematic for any planning process, participatory or otherwise. The insurmountable barrier is the vast amount of vital knowledge that cannot be the subject of rational deliberation. As Anthony Giddens pointed out:

In politics as elsewhere, rationalism presumes the superiority of ‘universal’ solutions to the problems over answers coming from tradition or embedded practice. . . . All forms of knowledge, no matter how general they appear to be, are saturated by practice, by what cannot be put into words because it is the condition of linguistic communication.

(Giddens 1994: 29)

As Hayek and others have argued, the widespread existence and indispensable qualities of tacit knowledge make completely centralized planning, ‘as if in a single head’, impossible. Adaman and Devine did not propose completely centralized planning, but an interlocking network of negotiation committees to formulate the plans. The proposal is different but the same central problem remains. How can these committees discuss and deliberate on matters which individuals (or groups) may ‘know but cannot say’? Adaman and Devine avoided this problem by wrongly assuming that all tacit knowledge can be articulated. Having made this untenable assumption, they then argued that all relevant knowledge can be made explicit and subject to discussion and reason. The same erroneous argument underlay former proposals for centralized planning that have been found wanting, both in their theoretical formulation and their
practical application. Such proposals for ‘centralized’ and ‘democratic’ planning are both founded on a similar misapprehension of the nature of knowledge, and a corresponding overestimation of the power and scope of human reason.

Hilary Wainwright (1994) has given some support to Devine’s (1988) ideas. At the same time she has provided a more in-depth treatment of the issue of tacit knowledge. Her key argument against the individualistic ideas of Hayek was that tacit knowledge is largely social, and often held by groups of workers rather than simply by individual entrepreneurs. This is an important and valid point and it is elaborated elsewhere (Hodgson 1998). However, the team-based character of tacit knowledge does not save the Adaman-Devine proposal from fatal criticism. Tacit knowledge is tacit. Whether tacit knowledge is held by an individual or by a team, it cannot, in principle, be widely dispersed and fully appreciated throughout the economy. Although knowledge is social in character, this does not mean that it is transparent, or readily accessible to any member of society. Wainwright’s argument pointed to the limits of an individualistic understanding of productive knowledge and organization. It did not demonstrate, however, the possibility of an all-embracing collective plan. If knowledge resides in productive teams of workers, then the question remains as to how the economic organizations encompassing those teams are to be co-ordinated. Further handwaving in the direction of ‘social knowledge’ does not solve this crucial problem. The need to rely to some significant degree on markets and the price mechanism remains. Wainwright and others are reluctant to admit this.

Knowledge is both social and contextual; it is rooted in practice. For it to be accessible, conceptions and practices have to be shared. But there are limits to the amount of shared or widely accessible knowledge. Learning depends on ingrained familiarity, obtained through repeated routine. For this reason – and contrary to both Owen and Marx – in any complex society, people have no alternative but to be specialists. There are limits to the amount of knowledge that can be understood by any individual or group. The failure of leading members of the socialist tradition to recognize the true character of knowledge has led to a gross underestimate of the importance of specialized learning, and of the inevitability of a division of labour based on differentiated skills.\(^7\)

As Polanyi explained, all scientific advances and technological innovations are bound up with tacit knowledge. They rely on accumulated skills and habits, embedded in individuals and institutions. The creative spark is often a result of the striking of intuition upon the flintstone of tacit skills, rather than coming by logical deduction or rational deliberation.

Yet novelty, by its nature, challenges established belief. Inventions often require much development and pragmatic refinement before they are deemed plausible. Accordingly, an economic system that fosters innovation must enable the eccentric inventor or entrepreneur to develop an idea that may seem, at first sight, to be implausible or far-fetched. To some degree, a system with markets and private property may allow this, as long as other important cultural and institutional conditions are met. The Austrian critics of socialism wrongly suggest that markets and private property are alone sufficient for entrepreneurship and
creativity. The experiences of varied capitalist systems show that innovation also depends on specific cultural and institutional supports. But that does not mean that we should underestimate the importance of property rights and market incentives. A benefit of systems based on private property and exchange is that they allow some entrepreneurs to test the demand for new innovations by bringing them to the market. Such a system has its limitations. But it is an open question whether an alternative set of viable arrangements could exist.

Any alternative proposal must take account of tacit knowledge. A system that compelled every innovation to the deliberations of multiple committees, however democratic and well-meaning, would stifle the creative impulse. The tacit knowledge of the innovators cannot readily become the general knowledge of the committee. In principle, the creative idea cannot be given full, open consideration. It cannot be the subject of full, rational deliberation. The Adaman and Devine model of 'negotiated co-ordination' thwarts innovation, and is thus a recipe for economic stagnation.

Furthermore, in proposing 'negotiated co-ordination' in almost every area of economic life, Adaman and Devine ignored the problem of severe information overload in modern economic systems. Modern economies produce millions of types of product. If every attribute of every new or modified product is potentially the subject of 'negotiated co-ordination' then each committee faces an agenda that will take it to eternity. The Adaman-Devine proposal was motivated by the fine and admirable sentiments of democracy and co-operation, but it simply ignores the key issues upon which the appraisal of its feasibility must depend.

Basically, planning operates either through direction or through agreement. In the former case, orders are given by those in authority. In the latter case, agreement is reached through some democratic procedure. In a modern, complex economy, vast numbers of decisions are involved. Through command or through agreement, all these decisions must be made. The more 'democratic' the decision-making process, the more decisions each individual has to make. An attempt to gain agreement on an extensive scale on many issues is likely to lead to frustration. Like it or not, there would be pressure to delegate decision-making powers to experts and permanent officials, unless planning itself were to be abandoned. Adaman and Devine failed to address and answer this argument, made by Hayek (1944: 45–50) long ago. There can be little confidence that their proposal, if it managed to function at all, would not develop along the same bureaucratic and elitist lines.

After all, in a highly complex world it is difficult for everyone to gain the requisite specialist knowledge to be involved in many aspects of decision making. Only to a limited degree can a democratic committee understand and analyse the complexities of every scientific, technological and economic issue that comes under its jurisdiction. There are limits to what can be discussed and negotiated, requiring powers being delegated to expert sub-groups. Yet all this goes against Devine's principle that 'all would participate in the decision-making'. This principle simply ignores the degree of complexity and the amount of information
pertaining to decisions in modern economies. These issues were raised by the Austrian critics of socialism long ago. Yet they were ignored by Adaman and Devine.

Whatever the limitations of the market system, it has the supreme advantage that it does not require everyone to agree on everything, before a decision can be made. And it can do this without creating authoritarian concentrations of bureaucratic power. To an important extent, markets create zones of partial autonomy within an interrelated economic system; agents attempt to enact their decisions through negotiated contracts with others. It is possible for technological or institutional innovations to be pioneered without the prior agreement of committees or bureaucrats.

We may imagine a system of ‘democratic planning’ where ‘all would participate’ and ignore the vast amount of decision making involved. In such a dream we may dismiss the market, or confine it – in the manner of Adaman and Devine – to a static and repetitive sphere where the decisions are already made. But in any real and genuine attempt to extend economic democracy, we would face the problem of confining decision making within manageable proportions. We ignore this problem at the cost of democracy itself: a system overburdened with decisions would create the impetus for bureaucratic power. The market has many deficiencies, but no-one has shown how its use can be avoided without creating the alternative of a bureaucratic and authoritarian juggernaut. Seen in this light, the market can be the protector of viable economic democracy, rather than its enemy.

Surprisingly, despite the frequent occurrence in the socialist literature of the notion of ‘democratic planning’, there are too few attempts to explain how such an idea would work in practice. Despite its limitations, the proposal by Adaman and Devine is one of the few examples of such an attempt. However, their endeavour to marginalize both the market and private opportunity is likely to be deleterious to technological innovation, human learning and economic growth. While markets do not themselves guarantee economic dynamism, they are likely to remain indispensable to any innovative and advancing economy. Within practical limits, some measures of economic democracy and negotiated planning are worthy, positive and attainable. But, in addition, in any dynamic economy there seems to be little alternative to the significant use of markets and private opportunity, to facilitate innovation and to help stimulate creativity. Contrary to Adaman and Devine, the market cannot be confined to the mere allocation of resources.

These arguments are further reinforced after critical examination of another recent proposal for a system of socialist planning. In this proposal extensive use is made of indices of value, calculated by computers. Seemingly, such calculations would make it possible to reduce the amount of negotiated decision making, on the basis that these indices of value are usable as representations of social worth. Markets use prices as (imperfect) representations of the interrelated decisions of many agents. Is it possible to abolish the market, but use the computer to calculate some usable, social indices of value? In this manner, can
the number of decisions in a modern economy be reduced? It is to this proposal that we now turn.

Computers to the rescue?

Since the Second World War and the development of the modern computer, the idea has repeatedly been put forward that these machines can resolve key problems with central planning. Notably, in 1967 Lange revisited his proposal of thirty years before, still claiming that in it he had ‘refuted’ the arguments of Hayek and others. He then asked himself:

Were I to rewrite my essay today my task would be much simpler. My answer . . . would be: so what’s the trouble? Let us put the simultaneous equations on an electronic computer and we shall obtain the solution in less than a second. The market process with its cumbersome tâtonnements appears old-fashioned. Indeed, it may be considered as a computing device of the pre-electronic age.

(Lange 1967: 158)

This was written perhaps at a high point of post-war, technocratic optimism. Lange’s electronic solution had, at least for committed socialists, some persuasive appeal.

However, considerations of the practical application of computer algorithms to price calculations, and to other planning problems in a socialist system, revealed unforeseen impediments. In an important article by a knowledgeable expert on the Soviet economy, Alexander Nove (1980: 4) quoted a Soviet estimate that there were 12 million types of commodity being produced in the USSR in 1977. In my book The Democratic Economy I used this as a ball-park minimum figure to estimate the amount of time it would take to calculate, using standard computers and input-output techniques, the prices of all the commodities in a modern economy. Such a calculation would involve the inversion of a matrix with 12 million rows and 12 million columns. My estimate was that such a set of computer calculations would take more than eighteen years (Hodgson 1984: 170).6 Central planning in such a time scale would be totally impractical. Lange’s 1967 statement that such calculations would take ‘less than a second’ was evidently wrong, and the idea of rescuing central planning by use of the computer seemed doomed.

What was overlooked in my 1984 book was the reckless pace of development of computer technology. Compared with 1967, or even 1980, computers are now much more powerful and are produced at a much lower cost. Recognizing this, W. Paul Cockshott and Allin Cottrell have attempted to revive the idea of wholesale central planning (Cockshott and Cottrell 1993). They have also suggested that modern computer technology rebuts the view of the Austrian school that rational, socialist planning is unworkable (Cottrell and Cockshott 1993). Building on the fast and relatively cheap computer technology of the 1980s and 1990s,
the works of Cockshott and Cottrell are important markers in the long socialist
calculation debate.

For some time, strong arguments have been put forward that no form of
socialism can function adequately without markets. Many on the socialist left
have met these arguments with mere rebuttals, and have not even attempted to
show in detail how socialism could function without a market. The market has
been rejected for moral rather than practical reasons. The work of Cockshott and
Cottrell (1993) is an exception. Instead of ritual displays of angst and moral
indignation, Cockshott and Cottrell attempted to give a detailed explanation of
how a centrally planned socialist system could work. The fact that this argument
is ultimately unconvincing does not detract from either its rarity or its import-
ance.

Cockshott is a computer expert and he has outlined the calculations and the
technology available. Using appropriate numerical methods, and supercompu-
ters that were just available in 1985, a 10 million square 'sparse' matrix could
be inverted in less than twenty minutes (Cockshott and Cottrell 1993: 57–60;
Cottrell and Cockshott 1993: 101–3). Moreover, much faster computers became
available in the 1990s. On this basis they concluded, quite reasonably, that such
calculations are well within the scope of modern computer technology.

However, it is still an open question whether modern computers can tackle
the actual amount of information involved in the modern context. Today it is
likely that the number of different types of commodity in any advanced economy
would vastly exceed 10 million. Many of these individual commodities have vari-
ations and varied specifications. Joseph Stiglitz (1994: 84) noted that the specifica-
tion of the characteristics of a particular, but standard, white t-shirt filled up
thirty small-print pages. If this amount of information applied to each one of
millions of commodities would even the fastest of modern computers be able to
cope? And then there are the variations of delivery time and location for each
good. As Hayek remarked long ago, once we try to replace the market there is
the limitation that 'the price-fixing process will be confined to establishing
uniform prices for classes of goods and that therefore distinctions based on the
special circumstances of time, place, and quality will find no expression in prices'
(1948: 193). It is still not clear whether modern computers can handle all the rel-
levant, detailed information in modern economies. Nevertheless, given the spec-
tacular advances in computer technology in the 1980s and 1990s, and the
possibilities for further advances in the technology, a decisive criticism of cen-
tralized planning cannot be based on this point.

More than half a century after the publication of the 1920 article by von
Mises, Cockshott and Cottrell would have it that the problem of socialist calcu-
lation had been finally solved by the development of computing technology.
Ironically, these developments came to fruition at the very time of the collapse
of the Soviet Bloc itself. Seemingly, just as the computer technology was devel-
oped to make comprehensive planning possible, the economies that had cher-
ished that socialist ideal imploded, and turned to capitalism instead.

Cockshott and Cottrell were aware of these ironic setbacks, but stood firm in
their belief in the possibility of centralized planning. They devised ingenious methods to communicate and update, throughout the economy, the information required for central planning. Their ideas here include the employment of standard bar-code readers and the use of televisions with teletext. All this is now familiar and readily available technology.

With such technological instruments, Cockshott and Cottrell (1993: 29, 57–9) revived some of the fundamentalist socialist ideas of Robert Owen and others. Prices should generally reflect the amount of socially necessary labour time embodied in each commodity. Workers should be paid not with money but in non-transferable tokens, in proportion to the number of hours of performed work, with which they could purchase consumer goods. Allegedly, with modern computers, the amount of socially necessary labour time embodied in each good or service can be readily determined. This calculation is a matter of constructing the technological input and output matrices for the economy, and performing a matrix inversion. The wheel has turned full circle. By the aid of the modern computer we are able to revisit the ideological debates of the 1840s, now seemingly unencumbered by the intervening objections of the Austrian school.

However, there is more to the running and functioning of an economy than the inputting of data and the solving of equations. In their book, Cockshott and Cottrell addressed a number of possible problems with, and objections to, their scheme. There is the problem of varying levels of skill. The two authors proposed a system of calculating the amount of labour expended, by teaching and in teaching materials, on raising the skill level of the worker (Cockshott and Cottrell 1993: 40–7). It is thus possible, with a number of ad hoc assumptions, to calculate a ‘skilled labour multiplier’ by which skilled labour is augmented in the embodied labour calculations. However, it is not proposed that the skilled worker is paid at a greater rate per hour, because the cost of his or her education has been financed by society as a whole. The skilled-labour multipliers are calculated solely for the purpose of determining the prices of commodities.

Another problem is the lack of a time dimension in production involved in the use of prices based on embodied labour. With a growing economy their use is suboptimal, by standard criteria (Baisch 1979). Their use is equivalent to the assumption of a zero interest rate, and a zero rate of time preference. This means that two projects involving equal remuneration and equal investments of overall labour time, but expenditures or remunerations occurring at different times, are treated as equivalent. As a result, embodied labour-time prices may bias the system excessively towards future investments. Cockshott and Cottrell (1993: 76–7) proposed that this bias be alleviated by the use, by the central planners, of a discount rate equal to the projected rate of future productivity growth.

Yet another problem is how the system is to respond to changes in consumer tastes or demand. Cockshott and Cottrell (1993: 118–26) envisaged a market for consumer goods, in which ‘prices’ are adjusted, in Lange-type fashion, in response to excess demand or excess supply. The idea introduced by Cockshott and Cottrell would be to use, instead of the firm’s profit level, the ratio between calculated labour embodied and market-clearing, labour token price as an
indicator for planning purposes. The ratio of market-clearing price to labour content is calculated for each consumer product, and production increased or decreased by the planners, depending on the outcome.

Another vital problem is how to encourage production plants to improve their productivity. By the mechanism outlined above, firms producing consumer goods will be pressured to maintain product quality and market demand for their product, and to save as much as possible on the use of direct and indirect labour time. They propose that the principle may be extended indirectly, by imputation, to those goods and services which enter the production of consumer goods.

At first sight, Cockshott and Cottrell seem to have responded to a number of key problems and constructed a feasible model of a centrally planned socialist economy. On closer inspection, however, some deeper problems remain. Notably, to some extent, these were problems already raised by von Mises and Hayek. Yet Cottrell and Cockshott (1993) claim to have answered these Austrian critics of central planning. This claim turns out to be false. There is no adequate discussion in the works of Cottrell and Cockshott of the nature of learning and of the importance of tacit knowledge.

Symptomatically, addressing the Austrian argument that the Lange model failed to deal properly with dynamics, innovation and economic development, Cottrell and Cockshott skipped quickly over the issue, and belittled its importance. In their attempt to reply to the Austrian arguments, they alleged that problems such as ‘the speed of adjustment following parametric changes’ were ‘more substantial’ than the question of dynamic development (1993: 89). Yet the issues of dynamics, learning, discovery and creativity are indeed central. They pose severe problems for any model of centralized socialist planning.

It has been noted above, in relation to the model of Adaman and Devine, that a key problem with central planning is the impossibility of accessing all the tacit knowledge dispersed throughout an economy. Although they eventually assumed the problem away, at least Adaman and Devine addressed this issue. In contrast, Cockshott and Cottrell fail to give it any significant attention. Essentially, they have a technocratic and empiricist conception of information, and are most incautious concerning the limits of artificial intelligence and computing technology. The importance of tacit knowledge has been discussed above, so it is unnecessary to repeat the arguments here. Nevertheless, they apply to Cockshott and Cottrell as well.

How do Cockshott and Cottrell propose that the planners deal with innovation in their proposed system? They write:

Suppose we have a system by which production engineers register possible technologies with the planning computers. They would give details of the inputs required and the predicted output. On the basis of a central evaluation of the different production technologies, the planning system would choose the intensity with which each technology was to be used.

(Cockshott and Cottrell 1993: 131)

A crucial problem with this rather bureaucratic proposal is that the managers
have little incentive to take risks. Cottrell and Cockshott propose an 'innovation budget' in which firms would apply for funds to develop innovations (1993: 90). Potential innovators would have to convince the planning board ex ante of their ideas, prior to their practical realization. It would be a cumbersome and bureaucratic process, acting on balance to stifle rather than encourage initiative. Standard criticisms voiced by Austrian school economists concerning the potential stagnation of a centrally planned economy still apply.

From their proposals it is clear that Cockshott and Cottrell have a conception of technology and innovation as transparent, allowing them to be adequately summarized in explicit and codifiable information, such as in the technical coefficients of an input-output table. They assume that investment planning is possible, but only on the assumption of complete knowledge at the centre concerning all production functions. This is a complete misapprehension of the nature of technical knowledge and of the focuses of economic innovation. It involves a false epistemological assumption that knowledge is attainable directly from codified data.

The tacit and idiosyncratic nature of much technical knowledge makes any 'central evaluation of different production technologies' ineffective and unviable. Often a new technology does not emerge as a given package, with known 'details of the inputs required and the predicted output'. Typically, the development of a new technique or product is a matter of repeated experiment, over a long period of time. A decision to invest in a technology involves hunch and conjecture, not simply given, objective data.

Furthermore, much innovation in modern economies is not product innovation but process innovation (Davenport 1993; Rothwell 1992). It involves changes in the way of producing things, rather than the product itself. In this context, organizational innovation is often as important as technical innovation. Process information typically involves a great deal of tacit knowledge, held by workers close to the production process.

It is also important to note that many products are not standardized and are designed for specific users. Especially in these cases, much innovation involves extended interaction and dialogue between users and producers. A focus on the registration of specified inputs ignores the ongoing process of negotiation between producer and user which is directed towards the use of alternative components or materials. Central registration itself would be time consuming. The central registration bureau would be overwhelmed with countless piecemeal innovations, or its use as an administrative focus would deter innovation itself.

Technical knowledge is highly contextual. It is often difficult to understand the nature or value of an innovation without intimate knowledge of the situation to which it relates. It is often difficult, even impossible, for one unit to convey to another what precisely is required. Unless there are shared ideas and patterns of experience then agents are unlikely to understand the raw data in the same terms. Because of the lack of these common conceptions, they may not, in effect, speak the same language.

The key difficulty in a system dominated by central planning is one of the
communication of appropriate knowledge. If we reduce knowledge to data then the problem appears to be overcome. But knowledge is not, and cannot be reduced to, data. To make sense of data we require concepts and cognitive frames, involving tacit meanings and ideas. For knowledge to be communicated, the sender and receiver must hold the appropriate concepts in common. Any large economy is unlikely to have or achieve the degree of conceptual uniformity and integration required to enable the ready transfer of most relevant knowledge.

This issue of organization and cultural integration is of vital importance and relates to the critique of both market-dominated systems and proposals for central planning. But a measure of irony can be noted here. By treating technological innovation as transparent, Cockshott and Cottrell make a similar epistemological error to those who believe that the price system can adequately communicate all the important economic information. Problems concerning the lack of common cognitive frameworks are ignored in both cases.

Furthermore, despite their hatred of the market, some aspects of their proposal are strangely and resolutely contractarian in nature. Like the advocates of free markets, Cockshott and Cottrell seem to assume that changes in the form of property and ownership are sufficient to transform individual incentives and social culture. As in the case of many free market economists, there is little discussion of the role of institutions and culture in transforming perceptions and goals.

At the same time, unlike the advocates of free markets, they ignore the bureaucratic and totalitarian dangers of such enormous concentrations of economic and administrative power. Yet it would be more consistent with a Marxian approach to propose that a centralized economic ‘basis’ would lead to an equally centralized and monolithic political ‘superstructure’. As Hayek (1944) argued, a state which played a central role in important matters, that could not be codified in explicit rules, would lack constraints on the arbitrary exercise of power and seriously threaten liberty and the overall rule of law. The political dangers in concentrating so many crucial decisions in the hands of the state and its central planners remain very real.

Cockshott and Cottrell propose that the employee ‘signs a contract with the employment agency stating that she will work for so many hours a week on a particular project’ (1993: 206). This is an explicitly contractarian focus, with a notion of contracted work, delimited by time. It has been argued that this notion is becoming increasingly obsolete in the context of modern economic and technological complexity (Hodgson 1998). As work becomes more varied and skills more specific, then measures of work in terms of time are increasingly problematic.

Clearly this would have major implications for any proposal to use labour hours as a major unit of economic accounting. A further irony emerges. In fact, just as the computer technology emerged in the 1980s to make its extensive use in central planning possible, the transformation of work, partly under the impetus of the new technology, made discussion of ‘labour hours’ increasingly obsolete. In the 1980s computers proved capable of handling and rapidly
processing huge amounts of data relating to large numbers of mass-produced products. At the same time, however, these and other related economic and technological developments opened up huge possibilities for more complex, flexible and specialized methods of production. These developments undermined both traditional employment contracts and the meaningfulness or applicability of labour time as a measure of economic value.

Furthermore, they undermined the viability of central planning itself. Stiglitz noted that, in the technological evolution of the world economy, there may have been only ‘a short window of time, the period of heavy industry associated with steel, autos, coal, and so on, in which some variant of socialism may have been able to work’ (1994: 205). In this period, the degree of quality variation and complexity was not too great to pose insurmountable problems in the meaningful formulation and use of aggregative measures of output and output per hour. But, beyond this time, the level of complexity has increased to the point that the economy can no longer be placed under the deliberative control of any group or planning agency (Luhmann 1982).

**Concluding remarks: can socialism learn?**

There is a strong argument that the greatest weakness of all attempts to dispense with the market in centrally planned systems has been the loss of dynamic, rather than static, efficiency. This argument has empirical support in studies of the former Soviet bloc. Peter Murrell (1991) argued from empirical data that the former ‘Communist’ countries were apparently no less efficient in allocating resources than capitalist societies. Where they lagged was in terms of dynamic efficiency: the ability to innovate. Dynamic efficiency concerns not the allocation of existing resources but the potential for dynamic and transformative growth.

Despite the criticisms of the former Soviet system by Adaman, Cockshott, Cottrell, Devine and others, their proposals suffer from the same defect. There is an insufficient appreciation of both the role of tacit knowledge and the need for shared experiences and cognitive frameworks in order to communicate technological and other information. Their proposals rely exclusively on explicit, readily codifiable and communicable, knowledge. Ironically, if economic and technological knowledge really was of this character, then there would be stronger arguments for the exclusive use of contracts and markets, as well as a seemingly greater possibility of completely centralized planning. If knowledge was readily communicable, then contracts and markets would be less problematic, just as collective planning would be more feasible. Despite their intentions, Lange and others in fact demonstrated that empiricist notions of knowledge do not support socialist planning but a massive and unacceptable indifference concerning the institutional structure and cultural content of the economic system.

The proposals to subject a large number of decisions to the open deliberations of committees (Adaman and Devine) or to the calculations of computers (Cockshott and Cottrell) both ignore a key feature of socio-economic reality and
misunderstand the nature of knowledge. Socio-economic systems are essentially and unavoidably built up of historically layered and densely entangled institutions and routines. The more advanced the society, then the more complex the institutions and the more dense the entanglement. Institutions, in short, are the stuff and substance of social reality. They store and support both tacit and explicit knowledge. In customs and traditions, the knowledge of the past is accreted. The idea that this knowledge can be readily extracted from its institutional carriers, and freely codified and processed by a committee or by a computer, perpetrates a fatal error of Enlightenment thought: that such matters can largely be made subject to reason and deliberation; and that the mind may soar free of all the habits, preconceptions and institutions – of which in fact it is unavoidably obliged to make extensive use.11

Like many others, Adaman, Cockshott, Cottrell and Devine are clearly motivated by a strong moral opposition to the market system. Strangely, however, they are all forced to admit a place for genuine markets in their proposals for an ideal society. Adaman and Devine admit a role for markets in the vaguely-defined and non-dynamic zone of economic allocation. Cockshott and Cottrell 'make no apology for advocating a market in many items of personal consumption' (1993: 214). Yet, while admitting the market on one hand, there is the same generalized deployment of anti-market rhetoric. There are the warnings against 'the recent tide of right-wing pro-market opinion . . . market socialism reflects not a bold new conception on the part of socialist theorists, but a damaging accommodation to the dominance of the right' (1993: 216). In their work, markets in general, rather than capitalist markets in particular, are seen as the source of inequality and exploitation. Yet if markets, in general, are the problem, then why not press for their total abolition? Such inconsistencies are typical. Indeed, from its inception, socialism has failed to resolve the conundrum of the market.

In the socialist literature as a whole there is little recognition that vastly different types of market may exist, often with very different consequences in terms of the distribution of income and wealth and the tenor of the prevailing social culture. A very similar error is committed by the zealous advocates of the market system. Markets can encourage greed: but the degree to which this can happen depends on the type of market and the prevailing social culture. As Jim Tomlinson put it, 'the political desirability of markets cannot be judged separately from the peculiarities of the market concerned' (1990: 121). A mistake committed typically by both opponents and advocates of the market is to ignore this fact.

A key issue for the twenty-first century is the role of learning in a knowledge-intensive economy. The phenomenon of learning challenges the standard recipes of both market individualism and anti-market socialism. Market individualism is challenged because it assumes that the individual is generally the best judge of his or her interests. Yet if learning is a truly transformative process then individual preferences and visions are to be changed. Anti-market socialism is challenged because it wrongly assumes that all knowledge can be gathered together and processed by planners and committees. In truth, neither the market nor the plan can be abolished or marginalized. The problem is to combine and transform
them in some way so that human capacities can be developed to face new horizons.

Such a combination may include a substantial role for state intervention – even for a limited form of state planning – as well as for private property and markets. To answer such questions we must lay aside simplistic and untenable solutions, including those involving the marginalization or abolition of markets. There is no substitute for detailed and specific analysis, alongside a much more sophisticated theory of the role of knowledge and learning in modern economies.

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Notes

1 Fortunately, a number of instructive analytical summaries of the arguments exist (Caldwell 1997; Hayek 1935; Hoff 1981; Lavoie 1985a, 1985b; Murrell 1983; Steele 1992; Vaughn 1980).
2 Another critique of Adam and Devine’s position is in Foss (1996).
3 Adam and Devine claim inspiration for this distinction between statics and dynamics in the writings of Maurice Dobb. However, Dobb (1969: 122) himself seems in turn to have been partly inspired on this issue by Hicks, who wrote: ‘In statics there is no planning; mere repetition of what has been done before does not need to be planned’ (1965: 32). What is controversial here is not simply the allusion to the planning of dynamic processes, but also the possibility in reality of an entirely static system. The distinction between statics and dynamics is more a matter concerning economic models that any real economic system. In reality, no economic system can stand completely still.
4 Equally undetailed and problematic are their considerations of the pricing process. For instance, Adam and Devine write, without any further elaboration: ‘Enterprises would set prices equal to long-run average cost, calculated on the basis of labour costs, a centrally determined capital charge, and the prices of producer goods used as inputs’ (1996b: 533). Yet it is far from clear how firms would find the appropriate point on the supposed long-run average cost curve, or have any incentive or capability to minimize any cost or input, especially when all relevant decisions, including their scale of their output, are supposedly determined by an external network of negotiation committees. Adam and Devine seem to take it for granted that all such problems can be sorted out simply by sufficient measures of discussion and goodwill.
5 See also Adam and Devine: ‘a process of cooperation and negotiation . . . would enable tacit knowledge to be articulated’ (1997: 75).
6 Michael was a younger brother of Karl Polanyi, the famous institutional economist.
7 The fact that Marx and Engels had little recognition of the importance of tacit
knowledge and the inevitability of specialist skills is illustrated by their support for a system where the division of labour is abolished. In his *Critique of the Gotha Programme*, Marx (1977: 569) argued that in the future communist society ‘the enslaving subordination of the individual to the division of labour’ would vanish. In a famous passage in *The German Ideology*, Marx and Engels opined that ‘in communist society, where nobody has one exclusive sphere of activity but each can become accomplished in any branch he wishes, society regulates the general production and thus makes it possible for me to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticize after dinner, just as I have a mind, without ever becoming hunter, fisherman, cowherd or critic’ (Marx 1977: 169). For a relevant discussion, see Khalil (1992).

8 Major capitalist countries such as Britain, Germany, Japan and the United States have very different histories in terms of innovative success. More generally, see the illuminating comparative studies of the varied performances of ‘national systems of innovation’ (Edquist 1997; Freeman 1987; Lundvall 1992; Nelson 1993).

9 For the record, I made these calculations in 1982. The typescript of *The Democratic Economy* was submitted to the publisher in January 1983.

10 A sparse matrix is one with lots of cells containing zeros, enabling a faster iterative method to be used. I had not assumed that the matrix was sparse in my 1982 calculation. Furthermore, a much more serious confession, I devoted too much attention to the problem of calculations performed on accessible data in my 1984 book, and too little to the dynamic issues of learning and creativity.

11 Arguably, the propositions here concerning the nature of institutions and knowledge are foundational for institutional economics. They were certainly prominent for the pragmatist philosopher Peirce (1934), who taught Veblen. See also Hodgson (1997).

12 The fact that the ‘Austrian’ critique of completely centralized planning is ineffective against the idea of a mixed economy, involving both markets and state planning, is not widely recognized. An exception is Steele (1992: 22), an enthusiastic exponent of the ‘Austrian’ arguments, who wrote: ‘Contrary to what Mises and some of his followers have occasionally seemed to imply, it is perfectly reasonable for a welfare-statist or interventionist to accept the economic calculation argument in its entirety. No inconsistency is entailed in this.’


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