Economic (e)valuation: household and catallaxy

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Abstract

The article adopts a moral economic approach to assess different forms of economic evaluation, and the different kinds of criteria, rationality and judgement used. In particular it compares evaluation involving use-value measures and multiple criteria with 'valuation' involving a single cardinal measure such as price. It is argued that while prices enable complex modern economies to be coordinated, they are seriously inadequate as indicators of economic value. The argument is developed via a comparison of a self-sufficient household economy or commune with a 'catallaxy' or economy with an advanced division of labour coordinated by markets, such as capitalism. In the household, its unity and internal transparency is such that economic evaluation can be based on assessment of several different kinds of criteria regarding products, work, social relations and environmental impacts. In a catallaxy, as Hayek and others argued, this transparency is absent: the deep division of labour implies a division of knowledge which cannot be overcome by a single agent as was hoped in attempts at comprehensive central state planning under state socialism. However, while coordination via market prices has significant advantages it allows important information relevant to economic evaluation to be ignored. I argue that the household case holds important lessons regarding the kinds of economic evaluation and regulation that are necessary for an environmentally sustainable economy which is socially just and supports well-being.

Introduction

What is or should be involved in rational economic evaluation, that is, in deciding how societies can best provision themselves? The article assesses different forms of economic evaluation, and the various kinds of criteria, rationality and judgement involved. In particular it compares evaluation involving use-value measures and multiple criteria with 'valuation' involving a single cardinal measure such as price. It is argued that while prices enable complex modern economies to be coordinated, they are seriously inadequate as indicators of economic value. The argument is developed via a comparison of a self-sufficient household economy or commune with a 'catallaxy' or economy with an advanced division of labour coordinated by markets, such as capitalism. In the household, its unity and internal transparency is such that economic evaluation can be based on assessment of several different kinds of criteria regarding products, work, social relations and environmental impacts. In a catallaxy, as Hayek and others argued, this transparency is absent: the deep division of labour implies a division of knowledge which cannot be grasped by a single agent as was hoped in attempts at comprehensive central state planning under state socialism. However, while coordination via market price has significant advantages it allows important information relevant to economic evaluation to be ignored. I argue that

the household case holds important lessons regarding the kinds of economic evaluation and regulation that are necessary for any environmentally sustainable economy that is socially just and supports well-being.

I shall use a 'moral economic' approach to tackle this subject. While the term 'moral economy' has been used in many different ways, here I use it to refer to an approach that examines and assesses the *justifications* of specific forms of economic organization and practice, such as particular property relations (Sayer, 2007). It regards the transhistorical point of economic activity as *provisioning* - providing the wherewithal for societies to survive, and perhaps flourish. While this involves a 'substantivist' view of economics, rather than a 'formalist' one in which economizing is seen as central, it can acknowledge economizing wherever it occurs. We can also acknowledge that under capitalism the goal for capitalists is profit rather than provisioning. However, the viability of capital accumulation depends on capitalism's workforces being reproduced, so their provisioning has to be secured somehow.

It is customary in the economic literature to focus on 'value' and 'value theory', which immediately suggests that it is about something unitary and quantifiable; similarly, 'valuation' suggests assigning something a single value. Here I shall question the very idea of such a thing. Evaluation by contrast implies something more qualitative and plural, involving assessing different qualities against different criteria.

Some of these issues were raised in the classic debates about economic planning and markets and the so-called 'socialist calculation' problem, between Otto Neurath and Ludwig von Mises and Frederik Hayek, particularly the latter's claims about the problems of centralised economic planning and the superiority of price as a coordinator of economies (Hayek, 1944, 1948, 1978; von Mises, 1920). K.W.Kapp's work on the 'social costs' of capitalism is also relevant to the critique of market value (Kapp, 1978). My argument draws upon some of this and subsequent literature relating the issues to the evaluation of the environment (Martinez-Allier et al, 2001; O'Neill, 2004, 2012; Uebel, 2018). However, like Kapp, I prefer to discuss economic evaluation and the forms of rationality it involves rather than planning and markets as they are inescapable regardless of whether economies are coordinated by planning or markets. I also don't want to reduce economic rationality to a problem of 'calculation'.

I shall begin with some preliminary remarks about the differences between valuation and evaluation, their relation to human flourishing, and the strange idea that economic value can be represented by prices. I shall then briefly outline the evaluation of the ends of economic provisioning, and the economic rationality involved in achieving them, and how these relate to market economies. I then introduce and compare economic evaluation in a model of a democratic, largely self-sufficient household economy with that in a catallaxy or market society such as capitalism in order to highlight the restricted and distorted nature of (e)valuation in the latter. In using such a model to critique contemporary economies, it may appear that this amounts to a purely external critique, but as we shall note, many things relevant to a democratic household are already present within actually-existing societies based on catallaxy, and so can be used as a basis for an immanent critique. The remainder of the article develops this critique.

Preliminary Points: Evaluation and valuation

> "We must expect no more precision than the subject matter admits of." (Aristotle, NE, 1094^{a}19)

Although 'valuation' and 'evaluation' are sometimes used interchangeably they are not synonyms. Valuation suggests quantification and measurement, yielding a single figure. Evaluation is more likely to be qualitative and plural – an assessment of the various qualities of an object: for example, how comfortable, durable, appropriately-sized and attractive an item of furniture is. The difference parallels the fundamental exchange-value/use-value distinction, drawn by Marx, where the former takes the form of a ratio between quantities in exchange, or a price. Assessing the use-value of different things requires different standards or criteria, which may be incommensurable, as in the case of those for assessing furniture, bread or hotels (Martinez-Allier et al, 2001). Nevertheless, the absence of a single criterion or measure that fits all of them does not prevent individuals from making reasonable decisions about what mix of use-values they need or want to have. Given that we are complex beings with multiple needs[1], capacities and forms of dependence and vulnerability, there are always many different things to evaluate, requiring different criteria. While it is customary in economic matters to talk of value and valuation rather than evaluation, this immediately narrows down what is involved in making economic decisions to the use of a single cardinal measure such as a price or index or score. I shall argue that this tendency to assume that economic (e)valuation should yield a single precise figure is actually problematic. As Robert Ayres put it:

> "It is the great defect of price theory of economic value . . . that price makes economic value seem very much more definite and quantitative than it is." (quoted in O'Hara, 2001, p.98).

Where there are multiple, and indeed incommensurable, criteria, commensurating them to produce a single measure can restrict rational judgement, even though it may be convenient for some purposes. Teachers know this from the experience of marking essays and attempting to convert judgements of the different qualities expected of an essay into a single mark. To be sure, they may find it useful to provide such a mark in order to give an indication of the overall quality of each essay relative to others, but it is always dependent on a reasoned assessment of several differing qualities; the quantitative valuation is just a stand-in, a makeshift, that can only be justified by referring back to the prior qualitative evaluation.

Because we live in an economy dominated by market exchange, we have become accustomed to the idea that the value of what is exchanged can be measured exactly by the price. If we have a restaurant meal, and the bill comes to say £21.31p then that is what we owe - not a penny more and not a penny less. However, if we are invited to our friends for a meal, we are likely to feel we ought to return the favour at some time, but it is not clear exactly what we should provide and how much. We may in any case feel uncomfortable

[1] For the rest of the article I will use 'needs' to refer to needs and wants.

about calculating too much because it corrodes the sense of generosity that is necessary for friendship. But even if we did want to evaluate what the meal was worth or exactly how much we 'owed' back to our friends it would be impossible to come up with a meaningful measure: the very idea of doing so seems absurd. In pre-capitalist economies, gift relations were much more important than they are in modern society, and they functioned without a precise measure of value (Graeber, 2011). How extraordinary, then, is the assumption that economic value might be summarised by a precise number. The difficulty arises partly because in such a situation we are evaluating not merely a thing – a meal in this case – but what others have done, their situation, and our relationship to them. Here the moral economy is most visible. Things are very different in our contemporary economy, where what is most visible is not fellow producers and what they do but an "immense collection of commodities", as Marx put it, behind which the social relations – not only those of capitalist and worker, but also producer and consumer - are mostly hidden (Marx, 1976, p.125).[2]

Although price is widely treated as a measure of 'value', it should not be seen as a measure of how important, deserving, beautiful, useful (etc.,) things are. If someone asks what a possession of ours is worth, we may wonder whether to suggest a price or to describe its uses and importance to us. If the former, we may feel that what it would fetch on the market would fail to reflect its value to us; our valuations of things and market prices need not coincide. I shall argue that this intuition is correct: price formation is only weakly related to (e)valuation, though in capitalism we are often obliged to treat price as a measure of what things are worth. Nevertheless, there is no doubt that the precision and lack of ambiguity enabled by money and prices is convenient.

In modernist thought, there is a tendency to regard formal rationality using a single cardinal measure as a means of valuation as the exemplar of rationality, while other kinds, involving multiple criteria and qualitative judgements, are scarcely regarded as a kind of rationality at all. There is a wider problem here: modernist conceptions of rationality tend to reduce it to a matter of the 'horizontal' relations among statements or numbers, ignoring the 'aboutness' of reason – the 'vertical' relations to the things it's about. In the latter case, rationality is characterised in the first place by attentiveness to the object or situation and its specific qualities (Sayer, 2011).

An additional misconception - one that was propagated by Weber among others - is that evaluation and value, are simply a 'subjective matter' in the sense of not being susceptible to verification. Of course, evaluations are subjective in a *different* sense in that they are made by subjects, but then so too are factual claims: this does not prevent them from being more or less adequate or objective as representations. We can only survive and flourish if we attend carefully to the objective properties of the resources we use, and to our own needs. Neither of these is merely a matter of wishful thinking. Our subjective judgements of them have at least to be practically adequate for sustaining life and the contingent social and cultural goods of our particular society. Hence, (e)valuation always involves both objective and subjective aspects. But as we shall see, certain kinds of economic organization can restrict or distort this evaluation – as is clearly the case with our life-threatening treatment of the environment.

[2] Services involving emotional labour are a partial exception, for here the product is inseparable from the person.

Bearing these points in mind, we can now distinguish the key kinds of evaluation and rationality relevant to economic activity.

(i) Evaluating ends

The point of economic activity is to provision us with the wherewithal to live, and hopefully to flourish. Economic evaluation concerns how this provisioning is done, but as such it depends on a prior kind of evaluation of how we and the various things we care about are faring. This is an essential, ordinary part of life (Sayer, 2011). Both consciously and subconsciously we monitor these things continually and make adjustments accordingly. To be sure, in everyday life what we do with respect to these different components of our life may have become routinised, but we can also come to feel dissatisfied with how we balance them. We may try to change our diet for example, on the basis of a re-evaluation of different kinds of food and their health and environmental impacts. Sometimes, we engage in 'strong evaluation' where we reassess our basic goals and priorities (Taylor, 1985). Our well-being or flourishing therefore cannot be reduced to a single dimension, like physical health or material wealth, as it is multidimensional: for example, it involves being safe and free from violence, being able to associate with others, having access to education, and so on.[3] In addition to these basic matters, our well-being is also related to the commitments we form to particular practices, each with its own internal goods, and to causes and people; thus, if we become committed to a religion or to an art form or sport, our well-being depends on participating in them and achieving the internal goods associated with them (MacIntyre, 1983; Sayer, 2011). Economic provisioning may therefore need to take account of these. We have several ends and have to balance them somehow without being able to reduce them to a single metric. Further, the various components of flourishing are not substitutable and so cannot be simply traded off against one another; we can't substitute education for nutrition, for example (O'Neill, 2004). There are also thresholds for each element below which our well-being is damaged. The lack of a single index of well-being or flourishing need not prevent us making good-enough judgements about such matters, indeed it wouldn't help even if one existed. Rather, making such judgements involves "giving each good its due", as Elizabeth Anderson puts it (1997, p.104).

(ii) Economic evaluation and rationality

Economic evaluation makes judgements about provisioning by considering what is needed to support our ends in accordance with our evaluation of them, and in relation to constraints of human and other resources. It is therefore primarily *instrumental:* it involves choosing appropriate means to given ends. As such it fits with Weber's definition of 'substantive' rationality as:

> "the degree to which the provisioning of a given group of persons (no matter how delimited) with goods is shaped by economically orientated social action under some

[3] The 'capabilities approach', pioneered by Amartya Sen and Martha Nussbaum and needs-based approaches develop this point (Sen, 1999; Nussbaum, 2011; Doyal and Gough, 1991).

> criterion (past, present, or future) of ultimate values, regardless of the nature of those ends. These may be of a great variety." (Weber, 1978, p. 85).[4]

Here, four qualifications are in order. First, as we shall see, this substantive rationality need not be formal, that is, involving quantitative measures and calculation, though usually there is a need to quantify at least some things, for example, amounts of resources, time available, and so on. In market systems, and especially capitalism, formal rationality is dominant, because capitalist businesses have to pursue a single measurable goal, profit, if they are to survive. In this case, the rationality is not only formal but oriented to the pursuit of an extraordinarily abstract goal whose relation to well-being is contingent – money. Second, although economic rationality is instrumental, the choice of means to the given ends need not escape evaluation against non-instrumental criteria, such as ethical standards concerning workers' well-being, as Weber saw (1978, p.83-4). Thus, it is possible for different kinds of rationality, identified by Weber in different ideal types, to be combined (Uebel, 2018). Third, and related to the previous point, while some fortunate workers may not regard their work in purely instrumental terms, seeing it rather as a source of meaning and fulfilment, the *point* of economic work is nevertheless the product, not the enjoyment of the worker. Fourth, even though provisioning may be achieved through activities which are primarily cultural – for example, cooking a birthday meal for someone – the means for achieving such ends have to be adequate, so economic evaluation is still needed. Hence, although, as anthropologists are likely to point out, some societies do not distinguish economic from cultural practices and may not consciously economise on their use of certain things, they have to provision for themselves somehow and given that resources may not be plentiful, there will inevitably be better and worse ways of doing this. The conventional methods that have evolved are likely to be practically adequate.[5]

Although there are these two levels of evaluation – the first concerning ends in terms of well-being, needs and concerns, and the second relating to provisioning to meet these ends - in practice there may be feedback from the latter to the former, where people adjust their ends to fit their means.

What is commonly called 'value' in economic matters in modern societies is only weakly related to these matters. In everyday discourse in capitalism, if not in political economic theory, 'value' tends to mean price, or else what is felt *should* be the price of something. But market prices are affected not only by what market actors think things are worth but by scarcity, including that deriving from minority control of assets (a consequence of the definition of property rights), and by technical matters such as the efficiency of technologies. Price formation is a matter of the 'hydraulics' of markets and the distribution of economic power - an outcome of the operation of diverse forces, some of them having nothing to do with value or evaluation (See Kapp, 1978).[6]

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[4] I am indebted to Uebel's (2018) clarifications of Weber's analysis of economic rationality.

[5] Hence the substantivist-formalist debate in economic anthropology has tended to overdraw the distinction between provisioning and economising.

[6] Even if prices were influenced solely by buyers' and sellers' valuations, this would not mean that particular exchanges implied commonly agreed values. The parties to an exchange do not have to agree on their evaluations or reasons, indeed exchange implies *different* valuations. As Ludwig von Mises put it:
"The basis of modern economics is the cognition that it is precisely the disparity in the value attached to the objects exchanged that results in their being exchanged. People buy and sell only because they appraise the things given up less than those received. Thus the notion of a measurement of value is vain."

My first claim, then, is that economic value, though generally discussed as if it were a single, measurable thing, is or should be considered as plural - as requiring the evaluation of several different things, according to different criteria.

A household economy and catallaxy compared.

I now want to enlarge on the above points via a comparison of a hypothetical household (or commune) and a 'catallaxy' or system of numerous producers and consumers linked by markets.[7] The former resembles the household œconomy discussed by Aristotle, only here it is an egalitarian, democratic household. It is largely self-sufficient and only marginally involved in producing commodities.[8] Aristotle famously contrasted the household's focus on the production of use-values with economic activity aimed at the accumulation of money, with the latter characterised as irrational - an aberration.

(i) Economic evaluation in a hypothetical household œconomy

In this case, it is clear that the economic problem is one of provisioning to support the household and enable it to flourish. Economic evaluation here does not centre on money. As producers, users and bystanders within the household, its members have a great deal of information about what goes on and what is needed. As a democratically-run organization, members would be expected to give reasons for doing or having A rather than B (see O'Hara, 2001). There can still be conflict in such a setting of course, and they may sometimes encounter genuine dilemmas, particular where resource scarcities are severe. If this money-free economy sounds archaic or far-fetched, remember that within contemporary families or workplace teams, members do not buy and sell services from one another but still have to make judgements about what should be provided and how it should be done.

There are several different things to evaluate in the household. I list 6 below, though there are other possible ways of individuating them:

1. The products or services that are needed or wanted by the household, both in the short run and the long run. It is not only the quantities that have to be considered, but the desired quality of each good and service.
2. The time and effort required to produce them[9], taking into account the capacities of the workers. Even in the absence of competition, productivity is still a consideration for time and resources are likely to be scarce: how much production of a particular kind[10] can be produced per worker per day/by a given time is therefore relevant.

(Von Mises *Human Action,* 1963 [1949], ch. XI, pp. 203-4, cited in Theocrakis, p.39.)

[7] I am not the first to make such a comparison (see Mises' passing comparison of a market economy with a "a farmer in economic isolation" in his critique of socialist planning (Mises, 1920, p.9), though there it is used for a different purpose.)

[8] In Marx's terms, insofar as it produces commodities, it does so in order to get money to buy other commodities (C – M – C), rather than in order to accumulate money (M – C – M').

[9] While labour time is a consideration, labour is only valued if it produces what the household requires. Work on, say, hobbies, is not likely to be regarded as a substitute unless it happens to meet this criterion.

[10] I.e. it is concrete labour that matters here, not an overall average for all kinds of work.

3. The skills involved and the (non-monetary) costs and benefits involved in acquiring them.
4. The difficulty, danger, pleasantness or unpleasantness of the work.
5. Issues of fairness and cultural values: is the allocation of work fair and is the work done in a way that shows due respect and consideration for others? (In a family and indeed in any self-governing small group, the maintenance of relationships as ends in themselves, and not merely as a means to the end of provisioning, is a key goal.) More generally, work and the distribution of its products are also assessed in terms of how they meet the shared standards of behaviour of the community.
6. Environmental constraints and effects: what resources are needed and how scarce and difficult to get are they?; what waste is involved?; and how is the environment likely to be affected?

Thus, economic evaluation in this context is multi-dimensional, covering the work, the worker, the resulting products or services, and their wider effects on the members and others, and on the environment, indeed the full spectrum of 'social costs' as Kapp called them (Kapp, 1978). This feature follows from the household's dependence on its own members for meeting its needs, and it is facilitated by its small scale and transparency. It is also clear that there is no commensurability across these aspects, and no single measure of performance or adequacy. Most clearly, environmental considerations are likely to be complex, covering biophysical systems, and embracing both diversity and interdependence in terms of flows of materials and energy, though the household may not have the knowledge and expertise to be able to take many of these into account. All of these things are evaluated in relation to the needs and values of the household.

From the standpoint of what are regarded as 'economic' matters in contemporary societies 5 and 6 might seem somewhat peripheral: the well-being of workers and the quality of social relations and environmental implications have widely come to be regarded as 'social' or 'environmental' matters, separate from 'economic' ones. But then, the very concept of the economy as something distinct from society or environment is a product of the disembedding of economic activity produced by capitalism.[11] In a household economy, however, the centrality of 1-6 would be obvious and such distinctions would have little meaning. Supporting the well-being and goals of the members as both workers and users would be the overarching objective of its economic provisioning rather than a side issue. The dependence of the household on the social relations among its members including in economic provisioning would be inescapable. And as a largely self-sufficient economic unit its dependence on its immediate environment would also be highly visible. Such is evident in subsistence economies.

Again, if this thought experiment of a self-sufficient household economy seems far-fetched, it is worth noting that equivalents of many of the same issues that are raised in 1 – 6 are to be found in contemporary households in relation to domestic labour, and within public and private organizations, especially in work teams. As mainstream economists are wont to forget, even in capitalist societies, and indeed even within capitalist organizations, much economic work or provisioning takes place without the mediation of markets and involves

[11] See also Kapp, 1978. The common contradiction of workers in capitalism sacrificing their quality of life at work in order to be able to consume more outside work would be avoided.

ongoing evaluation and planning in kind rather than prices. Thus, arguments about housework include not only about what needs doing and who does it, but *how* it is done including whether it is in a way which takes due account of other household members. Even the 6th environmental criterion has its equivalent: e.g. do we clean up after we've done the cooking or leave the kitchen in a mess? In work teams in organizations, workers informally assess their own and others' contributions in terms of whether they pull their weight and do their share of necessary but unattractive tasks, and whether they are considerate to others and respectful. Later I shall argue that even when dealing with market-oriented enterprises, whether capitalist businesses, cooperatives or self-employed workers, we need to consider equivalents of the 6 criteria identified above, though some may be neglected or be difficult to address, particularly in the case of capitalism, where they are at odds with its overarching goal.

(ii) (E)valuation in a catallaxy

The term catallaxy was popularised by Hayek who defined it as "the order brought about by the mutual adjustment of many individual economies in a market" (Hayek, 1978, pp.108-9). Here, Hayek was alluding to Aristotle's use of 'œconomy' to refer to the management of a single household. Whereas the household has a unitary objective, a catallaxy does not, for the economic actors operate within an advanced division of labour and thus have particular, specialized capacities and needs. As Hayek rightly pointed out, such a division of labour implies a *division of knowledge*. This knowledge is partly tacit and embedded in local specialized practices and contexts. Nevertheless, the diverse and ever-changing decisions and plans of the myriad producers and consumers are 'miraculously' coordinated by the market, through price signals, without any central information gathering and control. As Hayek put it:

> "The marvel is that in a case like that of a scarcity of one raw material, without an order being issued, without more than perhaps a handful of people knowing the cause, tens of thousands of people whose identity could not be ascertained by months of investigation, are made to use the material or its products more sparingly; that is, they move in the right direction (Hayek 1948, 87).

Thus, in a catallaxy, price signals are claimed to solve the 'epistemic problem' posed by the division of knowledge (Hayek, 1937; 1942–44, p. 176–7) – a problem which comprehensive central planning cannot solve, as the history of state socialism showed (Nove, 1983; see also Mises, 1920). (Marx and Marxists have often failed to recognize this epistemic problem (Sayer, 1995)). However, while the household/catallaxy difference is hugely significant, we need to make several modifications to Hayek's account if we are to assess its implications for economic evaluation adequately.

1. In some ways Hayek underplays its significance because he relies mainly on a vague concept of 'market' to cover the features of an advanced, *spatially-extended* division of labour comprising millions of producers, consumers and millions of qualitatively different commodities. The resulting economies of specialization and scale have been central to economic development. But such a division of labour is intractable to planning, especially as globalisation has extended it across many different jurisdictions. Most producers specialise in products that form a small, often minute, part of buyers' total purchases, and many have little knowledge of who the ultimate

consumers are, or what their needs and circumstances are. Equally, consumers usually have little information on who produces what they buy and under what circumstances. Even if they are concerned about such matters, it is usually difficult for them to get the information. The geographical separation of production and consumption conceals relevant social and environmental constraints and consequences from us: whereas in our household economy these are mostly local and visible, in a catallaxy causes and effects are horizontally displaced. Thus, while we might regard the powers of market coordination as all the more remarkable, they also foster ignorance and irresponsibility. (Even if participating in the market means that producers degrade their own local environments, it at least provides them with a source of income.) Social scientists have frequently failed to note this crucial role of the *spatial* division of labour in facilitating environmental degradation and our estrangement from nature.

2. In other ways, Hayek exaggerates the role and powers of market coordination via price signals. (Given mainstream economics' use of a market optic – or blinkers – as its mode of abstraction, this is not surprising.) Yet within enterprises producing commodities, decisions on the proportions of inputs that are needed for a particular level of output are governed not merely by their prices but by technical, physical constraints: the baker cannot trade-off yeast against flour as their prices change. To this extent, like members of a household, the firms have to take the use-value, physical characteristics of their resources seriously. Hence, Hayek was wrong to say that price was the only thing market actors needed to know in these circumstances. In addition, market actors trying to plan their actions need to know what future, rather than current, market conditions and prices will be, although the future depends on what they, their competitors and others, do. This situation invites cycles of overproduction, as Marxists have argued (O'Neill, 1998, pp.134ff). Further, while enterprises might be thought of as islands of planning within the market ocean, in our actually-existing catallaxy there are also bridges between some of the islands in the form of supply chains that are hierarchically dominated by major firms and in which output and prices are planned and controlled. These govern relationships involving materially-related products and services, so the chains function as a compromise between the 'despotism' of the technical division of labour one finds in the production of a particular product within an organization and the 'anarchy' of the market-coordinated social division of labour across firms producing different products under separate control. However, these bridges are only possible where there are use-value complementarities between products and techniques. The difficulty of planning the allocation of resources among *un*related activities, such as mining and tourism, means that this is more easily regulated by market prices (Sayer, 1995).

3. Hayek's account of economics and knowledge fails to acknowledge the special nature of scientific knowledge, some of which may be economically-relevant. Unlike the kind of knowledge required by enterprises that Hayek had in mind, science's knowledge claims are universal, rather than specific to particular locations in a division of labour. Although science is divided into specialisms, there is no market exchange among them, for knowledge is not commodifiable. While scientists may

compete, they do so through deliberation to establish what is the case, rather than through selling commodities. Where scientific results are inconvenient for particular commercial interests, private companies may attempt to control the production and circulation of scientific knowledge to protect themselves, but in so doing they undermine science. Subordination to commercial interests or state interference threaten science (O'Neill, 2012). Resisting this is vital – for example, to protect biodiversity from companies producing insecticides or palm oil. While others have made these points in relation to the physical sciences, they can also apply to the social sciences too, as they enable us to better understand the nature and consequences of capitalism, for example. Particular producers in a catallaxy may neither know nor wish to know what the sciences know about their environmental and social impact, but that is precisely why they need to be constrained by extra-market organizations such as states and associations.[12] In a catallaxy the state may not be capable of determining how many widgets of a particular kind will be needed or what each producer of them needs in order to produce them, but it *is* in a position to take action on issues such as CO2 emissions and labour rights.

4. Hayek's idealised model of a catallaxy ignores private monopolies[13] and socially-constructed scarcity, so all market actors appear as price-takers. In practice, a catallaxy is characterized by imbalances of power.[14] Monopoly need not be an all-or-nothing matter: it can vary by degrees (Kalecki, 1971). As long as some people do not own land, for example, there is scope for those who do to charge them rent. And as central place theory showed, where consumers and producers are spatially dispersed, competition can result in local spatial monopolies; space itself has inherent monopoly properties. Moreover, commodified goods and services are not the only thing that have prices, and especially in our contemporary rentier capitalism much economic activity is dominated by the pursuit of economic rents from the control of assets (Sayer, 2014; Birch and Muniesa, 2020). In markets for commodities that are seen as 'investment goods', that is, ones that are expected to attract higher prices in future, actors may decide to buy or sell according to how they think others will value them. In financial markets, even if actors privately think some things are 'overvalued' they may buy them in the belief that they will be able to make a profit by subsequently selling them at a still higher price. Hence, asset bubbles are endemic in the financial and property sectors.

5. Unlike Hayek and many other economists, we must not use the terms catallaxy or market to conceal the huge differences between individual market actors and giant capitalist firms. Equally, we must not reduce markets to capitalism, for they are also

[12] Hayek did acknowledge that some environmental 'negative externalities' can't be responded to on the basis of prices: "Nor can certain harmful effects of deforestation, of some methods of farming, or of the smoke and noise of factories, be confined to the owner of the property in question, or to those willing to submit to the damage for an agreed compensation". (Hayek, 1944, p.44)

[13] However, Hayek did have reservations about some forms of monopoly, particularly industrial patents (1948, pp.113-4).

[14] "Even if economists did not use terms like purchasing power, bargaining power, and monopoly power, it ought to be obvious that the market or price system is a power system" Charles Lindblom, 1966, emphasis added, cited by R.Wade in Post-Autistic Economics.

> compatible with other kinds of social relation of production - the self-employed, petty commodity producers, cooperatives and other not-for-profit organizations producing for markets, and nationalized enterprises like public utilities. We have thus to consider whether particular effects *in* a catallaxy are a consequence *of* the catallaxy and its advanced divisions of labour and knowledge *per se*, or of the particular social organization of enterprises within it.

Bearing these qualifications in mind, what are the key implications of this comparison of household economy and catallaxy for economic evaluation? Most obviously, the development of a social division of labour and knowledge separates production from consumption, so market actors as producers are no longer making decisions about their own needs, or, as consumers, about the work involved in supplying them.[15] By contrast, our household can provision itself without recourse to others. It has therefore no need of a single unit measure to assess its situation, for that would only be useful for comparing with other households.[16] Even within capitalism households do not have to compete with one another in terms of how efficiently they cook or clean.

As Adam Smith saw, the social division of labour develops in step with the development of markets. Thousands of producers and millions of different commodities form vast networks across which products - most of them intermediate goods rather than final goods like bread or cars - are allocated in accordance with shifts in prices. The idea, implicit in proposals for comprehensive socialist planning, of scaling up the economic logic of the household economy and applying it to such a division of labour is deeply flawed. How, without price, can we decide how to allocate the supply electricity or screws or chemicals of particular specifications across huge numbers of diverse users? We cannot. [17]

Instead of the substantive rationality of the household economy, involving practical judgements about its various needs and constraints without the need for a single, common metric, the market enterprise lives or dies according to formal rationality based on a single, abstract cardinal measure – price, which it *has* to treat as if it were the prime measure of economic value, for unless it does so it risks being put out of business by enterprises that are better at reducing costs and maximising income. The bottom line is indeed the bottom line. Anything that compromises the enterprise's ability to earn cash is likely to be treated as inefficiency or waste; hence the demotion of other criteria such as workers' welfare and environmental consequences. While this is clearest in the case of capitalist enterprises, in competitive markets the self-employed, worker cooperatives and not-for-profit organizations may struggle to resist this pressure too. For buyers, the focus is on the

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[15] "Since the producers do not come into social contact until they exchange the products of their labour, the specific social characteristics of their private labour appear only within this exchange.' (Marx, Capital, I, p. 165.)

[16] Mises acknowledged this, but commented "The experiences of a remote and bygone period of simple production do not provide any sort of argument for establishing the possibility of an economic system without monetary calculation." Weber agreed (Weber, 1979, p.101ff).

[17] Ludwig von Mises famously argued that while a socialist economy might arrive at a plan of the final consumer goods it needs, in the absence of market prices it will not be able to plan the activities of the vast networks of production units making the inputs to such goods, and indeed the inputs into those inputs, and so on (Mises, 1920).

product and its price; only exceptionally do concerns about workers' remuneration, work conditions and environmental impact figure in their (e)valuation.

This *restriction* of economic rationality has a certain advantage, for as Hayek saw it limits the amount of information that actors need in order to make economic choices. The 'miracle of the market' is not to be dismissed: it is indeed remarkable that divisions of labour involving millions of products, enterprises and individuals can, to a substantial extent, be coordinated through the price mechanism. Radicals may wish to replace the 'anarchy' of the market with rational centralised planning, and while this may be beneficial for certain sectors (e.g. railways), attempts to replace markets comprehensively have been defeated by the intractability of the spatially-extended, advanced division of labour and knowledge. As I have argued elsewhere, Marx had an insufficiently materialist understanding of such a division of labour: its coordination is anarchic not simply because it is controlled by a host of competing capitalists, but because *whoever controls it*, it is too complex and its needs and capacities too changeable and unknowable to be susceptible to successful comprehensive central planning, let alone democratic planning (Sayer, 1995).[18]

A further feature of a market economy is that, in contrast to the household, market actors do not have to justify their decisions to others. Since markets operate without regard for persons or their reasons, sellers do not ask 'why do you want this?'; as long as the buyer can pay, their money does the talking. This gives individuals more freedom and avoids the risk common in multi-person households and communes of illiberal tendencies in which members zealously police each other's behaviour. (I myself am wary of them for this very reason.) On the other hand, the opacity of a global market system conceals information that is relevant to rational economic evaluation in relation to the well-being of humans and the planet. Market actors become more self-interested than household actors not only because they are free to do so, but because they lack both the information and the kinds of relation to others and to the environment that encourage more socially- and environmentally-responsible attitudes. Mainstream economics treats this restricted form of economic rationality uncritically: there are just 'preferences', reflected in the price we are willing to pay, and for which no reasons need be sought, since they are just 'subjective'. Reason only enters in the limited form of formal instrumental action geared to maximizing financial returns and a tautological, meaningless 'utility'. Substantive rationality is ignored.

While market actors are pressured into treating prices as valuations of commodities, as we noted earlier, prices are only *partly* influenced by actors' (e)valuations; they also reflect economic power in terms of control of resources. Thus, for example, house prices are determined not merely by construction costs and scarcity in relation to demand but by land rent and housing finance. Cheap, loosely-regulated credit has allowed house prices to rise much faster than real incomes and most other goods over many decades, but this has nothing to do either with changes in the way people value housing or the costs of

[18] Actually one doesn't have to follow Hayek's arguments to agree with this: the same conclusion can be reached by recognizing the major diseconomies of scope that are incurred in centralising the management of diverse, unrelated economic activities, or alternatively by learning from research on the problems encountered by centralised comprehensive planning in the state socialist era (Nove, 1983; Sayer, 1995). Mises' argument that such planning would founder on the problem of dealing with the 'higher order goods' that are needed as inputs to produce final consumption goods without the aid of prices (Mises, 1920) is also relevant.

construction. Further, to the extent that individuals have views on what the price or 'proper' value of something *should* be, those views tend to be *adaptive*; thus, we become accustomed to house price inflation and continually re-set our ideas about what price would reflect a house's value. Finally, individuals' judgements of the value of commodities are only influential to the extent that their 'preferences' are backed by ability to pay. There is nothing remotely democratic about markets. The inequalities in income and wealth that markets (and other forces) produce allow the rich to outbid the poor, simply because they can; the economic judgements of those with no money, and hence in greatest need, do not count. For all these reasons, price is a poor indicator of economic value.

For Hayek, all this is beside the point, for he argued that *the justification of prices and markets lies not in the economic valuation of commodities, but in their ability to coordinate the plans and actions of agents across the division of knowledge* (Hayek, 1948). We don't have to agree with Hayek's extravagant claims about the alleged wider benefits of catallaxy to accept this.[19] As a mode of coordination, money and market prices are above all convenient as they economize on information needs, though as we have seen from the point of view of economic evaluation this is also a major drawback. Further, markets provide a 'discovery procedure'[20] – a bottom-up process in which new products can be tried out as and when market actors are able and willing to do so, without needing authorisation from some central planning body. But the important point for the present argument is that since price is not a measure of value, *price-based decision-making should not be regarded as an adequate substitute for substantively rational economic evaluation*, though from a pragmatic point of view it may be innocuous for many product lines. Such market coordination can operate within legal constraints set by governments and other authorities on the basis of a more rational economic evaluation involving all 6 elements noted in our household model.

We can therefore disregard claims common in mainstream economics that intervening in markets to fix certain prices or set quotas (for example to protect natural resources) results in mis-valuation and misallocation of resources. We can still have the benefits of markets and prices as means of coordination where such constraints are imposed, just as they do where there are natural constraints, such as limited reserves of certain minerals. Thus, if we decide to restrict fossil fuel extraction, the market will respond, and encourage investment in alternatives. In this way, markets may, on occasion, be manipulated to achieve goals that follow from non-market economic evaluation, and still perform their coordination function. This is not an argument merely for intervening in markets only where things cannot be priced (i.e. to correct 'market failure') or where there are collective action problems. Rather the point is to achieve goals arrived at by substantive economic rationality – for example, to protect the environment or incomes and work conditions or alter the distribution of property - without losing the benefits of catallaxy as regards economic coordination of the division of labour/knowledge. A catallaxy constrained in this way would still reward

[19] The same goes for his claim that this coordination procedure allows costs and prices to correspond. Many prices include an element of economic rent and hence are unrelated to costs. In these respects, my concessions to Hayek are more limited than those of Mark Sagoff (2007, p.80).
[20] One can acknowledge Hayek's point and still also argue that some important kinds of innovation require central authorisation, planning and funding (Mazzucato, 2013).

producers unequally according to how much their products were in demand and how far they could keep their costs down.

Further, regulation of a catallaxy can extend beyond external constraints on what market actors can do to the internal organization of enterprises, including property rights. It can therefore go beyond what is associated with 'a mixed economy' or regulated capitalism. For example, capital-labour relations could be abolished by giving workers rights of control of their own enterprises. They could still produce commodities and hence be subject to market discipline, but their social relations of production would make a difference to how they responded: for example, they would take more note of worker and local interests and be more likely to consider the long-term.

Conclusion

Rational economic evaluation is necessarily multidimensional, involving assessments of the products or services desired, the amount and nature of the work involved, and the wider effects on workers and others, and on the environment, on which life depends. The tendency for it to be reduced to a single value in market systems merely means that matters of central relevance to economic evaluation are ignored. Hence, as Kapp put it, capitalism is as an "economy of unpaid costs" (quoted in Neve, 2012, p.134). Those unpaid costs are not non-economic: they are merely non-market. Substantive rationality oriented to the well-being of the household is replaced by a narrow formal rationality oriented to an abstract goal, money. Particularly in capitalism, the combination of property relations which deny workers ownership rights over what they produce, competition between enterprises, and spatial divisions of labour that separate production and consumption from their consequences, leads to both the suppression of labour's interests and unprecedented environmental damage. The price system deals with one epistemic problem but hides and increases others. Prices are not a measure of economic value, but rather a convenient means of coordinating our extraordinarily complex social division of labour. Although, as Hayek and Mises argued, such an economy cannot be controlled in the same way as a simple household economy, this does not mean markets cannot be regulated in ways that approximate the moral economic principles of a democratic household. The principle obstacle to such regulation is the power of capital, but markets can exist without capital-labour relations, and can be supplemented by state and other non-market producers. Such an alternative economy is likely to be necessary to save the planet and humanity from capitalism.

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