The system-wide scope of economic science: a realist interpretation of Robbins’s *Essay* and its implications for recent developments in economics

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**ABSTRACT**
The paper offers a realist interpretation of Lionel Robbins’s *An Essay on the Nature and Significance of Economic Science*. The interpretation draws out deep implications for the understanding of the nature of economics and for the assessment of recent developments in economics such as behavioural economics and agent-based complexity economics. A key point of contrast with previous realist interpretations of this and other classic texts is an emphasis on the economic system as a whole, an emphasis that is found to be shared in common with the *Essay*. The paper argues that: (1) Through its discussion of value and cost the *Essay* correctly identified the context and main object of economic science as the contemporary economic system as a whole; (2) the *Essay* correctly identified, if in broad terms, the method of economic science as what would now be termed ‘systematic abstraction’, a neglected step-by-step method the elaboration of which will be critical to the interpretation of the *Essay*; (3) within the *Essay*’s promotion and elaboration of neoclassical value theory can ironically be found the seeds of the inability of both neoclassical economics and recent developments in economics to realistically theorise the economic system as a whole. The paper concludes that realism regarding the economic system as a whole requires an alternative theory of value to that of neoclassical economics.

KEYWORDS: Robbins; Value; System; Abstraction; Rationality

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1. Introduction

Lionel Robbins’s *An Essay on the Nature and Significance of Economic Science* (henceforth, *Essay*), first published in 1932, is well known for its highly influential advocacy of a ‘means–ends’ definition of economics. By emphasising a pure logic of ‘rational’ choice, so jettisoning any specific psychological or social content from *homo economicus*, Robbins’s *Essay* has been seen as playing a pivotal role in clearing the way for the formalist revolution that was to define post-war neoclassical economic orthodoxy (Fine and Milonakis 2009, Giocoli 2003). However, whilst the *Essay*’s support for a means–ends definition of economics has gained continuing acceptance through economics textbooks, recent developments in mainstream economics are seemingly at odds with the post-war orthodoxy that the *Essay* helped to establish. For example, the increasingly influential findings of behavioural economics appear to falsify the rationality postulate and to challenge the Robbins-inspired view of the need to distance economics from psychology. These apparent developments away from neoclassical orthodoxy have been interpreted by some as a sign of a ‘new revolution’ in mainstream economics, and have led to debate regarding the corresponding implications (both positive and negative) for heterodox economics (Davis 2008, Colander, Holt and Rosser 2007, Fine and Milonakis 2009, Lawson 2009).

This paper will offer a new ‘realist’ interpretation of Robbins’s *Essay* drawing out deep implications for the understanding of the nature of economics and of recent developments therein. A key point of contrast with previous realist interpretations of this and other classic texts (Mäki 2009, Lawson 2003, pp.152-61) will be an emphasis on value theory and on the economic system as a whole, an emphasis that will be shown to be an integral (though often neglected) part of the *Essay* itself. On the new interpretation, the *Essay* placed the subjective theory of value, not the rationality assumption, at the centre of neoclassical economics. Criticism of the rationality assumption was misplaced according to the *Essay* because the rationality assumption was no more than an unrealistic ‘first step’ in the theory of the economic system as a whole, to be discarded in subsequent steps. However, the paper will argue that developments since publication of the *Essay* have contradicted its key arguments. General equilibrium theory developed in the opposite direction to that required by the *Essay*, becoming a watchword for anti-realist formalism. Macroeconomics emerged, but did not replace subjective value theory and so offered no realistic justification for macroeconomic aggregation. The lesson, it will be argued, is that the theory of the economic system as a whole needs an objective conception of value that is able to justify macroeconomic aggregation. This is a lesson that has not been learnt by recent developments in economics.

One point to make at the outset is that the interpretation of Robbins will mainly focus on the *Essay*. Aspects of Robbins’s later work will not be fully addressed. Later sections of the paper look to extend the interpretation and discussion of Robbins’s *Essay* to some important contemporary debates about new developments in economics. The paper is
organised as follows. Section 2 will argue that the Essay advocated a distinctive step-by-step method within which perfect rationality was an unrealistic ‘first step’ assumption to be discarded in later steps. Section 3 will explore in greater detail Robbins’s distinctive method of abstraction and the role of the rationality assumption. It will be argued that the subjective theory of value (not the rationality assumption) was placed by the Essay at the centre of neoclassical economics, as a science of the system as a whole. Section 4 will turn to developments in economics subsequent to publication of the Essay that were opposite to the Essay’s predictions. It will be argued that, by unselfconsciously retaining a purely relative value theory, recent developments in economics such as behavioural economics are unable to offer a realistic macroeconomic theory. Section 5 will conclude with support for the arguments of Fine and Milonakis (2009) and Lawson (2009) that recent developments in economics do not break with the fundamental flaws of neoclassical economics.

2. The rationality assumption and the step-by-step method of economics
One feature of some prominent recent developments in economics is a critique and rejection of the rationality assumption, a critique that is most closely associated with behavioural economics. But does rejection of the rationality assumption constitute a fundamental break with neoclassical orthodoxy as some (e.g. Hausman 1992) have argued? This section will argue that, for Robbins, perfect rationality was an unrealistic assumption that was necessary in the ‘first step’ of theorising the economic system but that had to be dropped once subsequent steps towards a more realistic theory were taken. Whereas J.S. Mill had held that economic theory was completed at its first step, for Robbins the first step of economic theory was fundamentally incomplete because perfect rationality was an unrealistic ‘expository device’. It will be concluded that, from the perspective of the Essay, the critique of the rationality assumption made by recent developments in economics is not of itself a critique of neoclassical economics.

An indubitable assumption?
One reason why Robbins’s characterisation of the rationality postulate can be misunderstood is that the Essay continually and primarily stressed that the basic assumptions of economics were indubitable. In this respect, Hausman (1992) and others are quite right to locate Robbins within the once dominant ‘Senior-Mill-Cairnes’ tradition of economic methodology, stressing deduction from indubitable premises (Blaug 1980, p.87). An example of an assumption that the Essay alleged to be ‘indubitable’, one enshrined in the ordinal utility theory that the Essay championed, was that of the ability of individuals to arrange their ends in order of preference (Robbins 1935, p.75, p.105). However, Robbins knew that this type of assumption alone was not enough for neoclassical economic theory to proceed. Though sometimes leaving the point implicit (e.g. 1935, p.75), Robbins recognised in the second edition of the Essay that the key generalisations of neoclassical economic theory required, inter alia, the assumption not merely of a preference ordering but of a transitive or ‘consistent’ preference ordering. Thus, he wrote:

‘The celebrated generalisation that in a state of equilibrium the relative significance of divisible commodities is equal to their prices, does involve the
assumption that each final choice is consistent with every other, in the sense that if I prefer A to B and B to C, I also prefer A to C.’ (Robbins, 1935, pp.91–2)

But the assumption of perfect consistency, which will henceforth be termed ‘perfect rationality’ following Robbins’s own terminology quoted below, was of a very different type to that of the mere existence of some or other preference ordering.

Importantly, Robbins acknowledged that in reality people were not perfectly rational in their preference ordering. He stated that perfect rationality was among the class of assumptions whose purpose ‘is not to foster the belief that the world of reality corresponds to the constructions in which they figure’ (p.94). This class of assumption was very different, even opposite, to the class or type into which the assumption of the mere existence of a relative scale of preferences falls (the type that ‘have only to be stated to be recognised as obvious’, p.79).

Having gone from the allegedly ‘indisputable’ (1935, p.78) postulate of a preference ordering, to an assumption of perfect rationality that was admitted to be unrealistic, one might expect a lengthy explanation of this new type of psychological assumption. In the event, Robbins’s main relevant argument was compressed into one heroic paragraph, which is reproduced in full below:

‘The fact is, of course, that the assumption of perfect rationality in the sense of complete consistency is simply one of a number of assumptions of a psychological nature which are introduced into economic analysis at various stages of approximation to reality. The perfect foresight, which it is sometimes convenient to postulate, is an assumption of a similar nature. The purpose of these assumptions is not to foster the belief that the world of reality corresponds to the constructions in which they figure, but rather to enable us to study, in isolation, tendencies which, in the world of reality, operate only in conjunction with many others, and then, by contrast as much as by comparison, to turn back to apply the knowledge thus gained to the explanation of more complicated situations. In this respect, at least, the procedure of pure economics has its counterpart in the procedure of all physical sciences which have gone beyond the stage of collection and classification’. (Robbins, 1935, pp.93-4)

Given its brevity, the precise meaning of the above paragraph is open to interpretation. What is clear is that the perfect rationality assumption was not an indubitable postulate as far as Robbins was concerned. However, it could still be that Hausman’s interpretation of Robbins is correct in holding that Robbins, following Mill’s method, regarded perfect rationality as an assumption of the type that ‘is not to foster the belief that the world of reality corresponds to the constructions in which they figure’ (p.94).

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1 This paragraph was inserted into the second edition of the Essay. Chapter 4 in which this paragraph appears was extensively revised by Robbins. Despite the revisions to this chapter, however, Robbins admitted to being ‘acutely aware of its imperfections’ (1935, p.xi).
rationality as a predominant tendency of the system (Huasman 1992, p. ?). In apparent support of this view, the quote above refers to perfect rationality as enabling the ‘isolation’ of ‘tendencies’. However, as argued below, a different explanation is required to make sense of Robbins’s use of the perfect rationality assumption.

**Predominant tendency or ‘expository device’?**

Throughout the *Essay* Robbins reminded the reader that the assumption of perfect rationality (and with it, perfect foresight) implied an essentially static equilibrium theory: the assumptions of perfect rationality and perfect foresight ensured that the flow of economic activity was stable (REFS). Yet, Robbins also continually underlined the economic importance of the uncertainty of the future (as opposed to perfect foresight) by including uncertainty as one of the key indubitable postulates of economics, making reference in this regard to the wider literature on dynamic phenomena:

‘The main postulate of the theory of dynamics is the fact that we are not certain about future scarcities’ (Robbins 1935, p.79).

Robbins’s stress on the importance of uncertainty indicated how, for him, development beyond elementary and static economic theory was required, dropping the unrealistic assumption of perfect foresight and so developing from ‘statics’ to ‘dynamics’. Such development also implied dropping the assumption of perfect rationality (taken in Robbins’s sense as perfect consistency) since perfect consistency of choices\(^3\) through time is impossible without perfect knowledge of the future (Giocoli 2003, p.137). Robbins’s belief in the need for development beyond static economic theory was made explicit in the Preface to the second edition where he affirmed the ‘desirability of transcending the rather trite generalisations of elementary statics’, i.e. of the existing static theory of system-wide resource allocation, but he stressed at the same time that existing theory, though it may be ‘trite’, in fact offered ‘essential static foundations’ for further theoretical developments (1935, p.xii). Robbins felt that his position merely reflected the general views of economists at the time, such as Hayek, Hicks and Knight (1935, pp.88-9, p.119). As we will see shortly, Robbins’s feeling in this regard was both significant and justified.

The dropping of the perfect rationality (i.e. consistency) and perfect foresight assumption to offer a dynamic and fully disaggregated theory of the economy in process was a major preoccupation of economists at the time of the *Essay*. For Robbins and his contemporaries (such as those mentioned above) who attempted to drop these assumptions the basic realist premise was that the economic system in fact existed and involved the coordination of resource allocation through the market mechanism of myriad individuals, firms and prices. The goal was to explain this system, i.e. to depict the real processes or mechanisms, the real ‘system of forces’ (Giocoli 2003, pp.3-6) whereby this coordination was achieved. Though the assumptions of perfect rationality (when understood as perfect consistency) and perfect foresight were not realistic, the system-wide *outcome* depicted in static equilibrium theory - the equation of relative

\(^3\) Note that Robbins did not entertain any disjuncture between preferences and choices (see his definition of rationality quoted above).
marginal utilities (or marginal rates of substitution) and relative prices - was considered to reflect a real tendency. But it was argued that the above two assumptions had to be dropped in order to accurately depict the underlying processes towards and beyond the results that static general equilibrium theory had achieved: ‘towards’ in the sense that the processes tending to equilibrium results were to be better theorised; and ‘beyond’ because the business cycle was to be incorporated, thereby developing and modifying the results of static theory. This was an issue of acute importance following the Great Depression which standard economic theory was as yet unable to fully address (Giocoli 2003, pp.135-99).

In short, Robbins’s discussions of uncertainty and dynamics, and the wider literature referred to in these discussions,4 confirms that, contra Hausman, Robbins did not agree with Mill that economic theory was complete in the sense that it had isolated, once and for all, the predominant tendencies in the economic system. To the contrary, for Robbins the key neoclassical assumption of perfect rationality was not a real, let alone a predominant, tendency. Perfect rationality and perfect foresight were central to the initial step of economic theory, that of stationary equilibrium, but they were merely ‘expository devices’ (1935, p.94)5 rather than accurate depictions of underlying causal factors, so in later steps of theory they had to be dispensed with. Thus there was no full depiction of any underlying causal factor in the initial steps of economic theory according to Robbins. Perfect rationality and perfect foresight took the place of any such depiction. We will explore in the next Section the subtleties of Robbins’s preferred method, and the precise role of the perfect rationality assumption as a first-step ‘expository device’. Firstly, let us state our broad conclusions thus far.

**Conclusions**

Notwithstanding philosophical subtleties to be explored further below the broad characterisation of the rationality assumption in the Essay can be clearly discerned. Quite simply, Robbins’s considered perfect rationality to be an unrealistic simplifying assumption to be dropped in the future development of economic theory. It follows that the critique of the rationality assumption as unrealistic made by present-day behavioural economics is by no means a critique of neoclassical economics understood from Robbins’s perspective.

Three good reasons can be suggested as to why present-day interpreters of Robbins could overlook the interpretation of Robbins that has been offered. Firstly, Robbins only explicitly addressed the perfect rationality postulate in the Second edition of the Essay (denying that it was true let alone indubitable) and his various remarks on the subject in the Essay remain sketchy6 in contrast with his overriding emphasis on the indisputability

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4 And also the fact that Robbins personally influenced many of those who attempted to ‘escape from perfect foresight’ being at the hub of regular weekly meetings with Hayek, Hicks and others at the LSE, and being singled out by Hicks as an influence (Giocoli 2003, p.177, Robbins 1971, pp.123-32).
5 Robbins also included the assumption of pure egotism (i.e. self-interest) as an ‘expository device’ (1935, p.94).
6 For example there is a polemical passage in the Essay that introduces a normative element into Robbins’s account of rationality which Robbins does not tie into the passages focused upon above – see Lawson (2003, pp.152-61).
of the basic postulates of economics, an emphasis that echoes the Senior-Mill-Cairnes tradition. Secondly, as Giocoli (2003) recounts, the attempt by Robbins’s contemporaries to ‘escape’ from perfect rationality and perfect foresight by developing a dynamic and disaggregated multi-agent model was destined to fail, to be supplanted by the highly formal and static approach to general equilibrium theory familiar today and pioneered by Arrow and Debreu (1954) and McKenzie (1954). Thus at least insofar as what became mainstream economics is concerned, the assumptions of perfect rationality and perfect foresight were not dropped and the depiction of real tendencies towards equilibrium remained absent from the Arrow-Debreu-McKenzie model. This failure and the reasons behind it will prove important for discussion of recent developments in economics in Section 4 below. Thirdly, the underlying ontology and precise nature of Robbins’s step-by-step method as interpreted above remains to be elaborated upon. The ontology and method will be discussed in more detail in the next section and will be argued to be unfamiliar to economic methodologists, past and present.

3. Method, value and the system-wide scope of economic science

Present-day economic methodology has largely overlooked the very possibility of an alternative kind of step-by-step method to that advocated by Mill. Yet, Section 2 has argued that there can be no question of Robbins characterising perfect rationality as an isolated real tendency, let alone a predominant system-wide tendency, in the manner that was essential to Mill’s method. Exactly what role, then, did the rationality assumption play? This Section will argue that, for Robbins, subjective value theory was central to neoclassical economic science, as a science of the economic system as a whole. The role and significance of the rationality assumption was primarily to provide a convenient way of comprehending the system-wide implications of millions of individual exchange decisions, in keeping with subjective value theory. In the step-by-step process of theory development, the perfect rationality assumption had to be dropped once it could no longer play that role. Underlying this interpretation of Robbins’s method will be a general argument that Robbins’s approach to abstraction in economics resembled in broad terms a little known method that advocates ‘systematic abstraction’.

The method of abstraction and the system-wide scope of economics

Robbins was explicit about what he saw as the unique ability of neoclassical economic theory to comprehend resource allocation within a highly integrated and complex ‘exchange economy’. He wrote of such an economy that:

‘The implications of individual decisions reach beyond the repercussions on the individual. One may realise completely the implication for oneself of a decision to spend money in this way rather than that way. But it is not so easy to trace the effects of this decision on the whole complex of “scarcity relationships” – on wages, on profits, on prices, on rates of capitalisation, and the organisation of...
production. On the contrary, the utmost effort of abstract thought is required to devise generalisations which enable us to grasp them. For this reason economic analysis has most utility in the exchange economy.’ (Robbins, 1932, p.18)

This focus on the characteristic mode of interconnection of a real and historically specific economic system is a far cry from the interpretation of Robbins’s method as entailing no more than an ahistorical theory of rational choice (Wade Hands 2009, Blaug 1992, Koopmans 1951). Robbins saw the need to capture in ‘abstract thought’ a real and complex system of exchange relations. Like Mill, Robbins stressed the importance of abstraction for comprehending the system as a whole but unlike Mill he saw this system as complexly interrelated rather than as being predominated by just a few mechanisms.

What sort of abstraction can help in comprehending the complex interrelations of a system? Robbins does not answer this question directly. It seems clear that Robbins had taken his methodological investigations as far as, and in fact beyond, his own methodological points of reference (the Senior-Cairnes-Mill tradition, one the one hand, and the Austrian tradition on the other). Fortunately there are alternative methodological approaches that resonate with Robbins’s sparsely stated methodological position, and that can be illustrated through Robbins’s theoretical arguments, as will be explained below.

**Systematic abstraction and the theory of value**

There is a striking resonance between Robbins’s methodological remarks regarding abstraction and a hitherto rather neglected methodological viewpoint advocating ‘systematic abstraction’, a viewpoint that we, and others, have expressed elsewhere (Brown 2007, Brown, Slater and Spencer 2002, Reuten 2000). Specifically we agree with Robbins that the contemporary ‘exchange economy’ (capitalism) is a complex integrated system where any one individual event or causal factor can impact ‘on wages, on profits, on prices, on rates of capitalisation, and the organisation of production’ such that ‘the utmost effort of abstract thought’ is required to fathom the system as a whole. Indeed we have similarly argued elsewhere, in advocating systematic abstraction, that the economist must ‘have the ability to interconnect commodity, money, profit, wages, interest, State, foreign trade, world market, etc.’ in abstract theory (Arestis, Brown and Sawyer 2003, p. 242). We are not suggesting, of course, that Robbins knew of or explicitly drew upon systematic abstraction. Nor that his method was identical with that of systematic abstraction in its full detail. Indeed we will argue that his theory is ultimately unable to meet the full methodological demands of systematic abstraction. We are suggesting, rather, that Robbins’s argument resonates strongly with systematic abstraction considered at a broad level, in particular in the stress on comprehending the characteristic mode of interconnection of the capitalist system through abstraction. In our view, this resonance gives added contemporary significance to Robbins’s *Essay* and unexpectedly creates some overlap with heterodox economics.

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8 Focus on the system as a whole has the peculiarity of being simultaneously a process of analysis (of focusing on something) and of synthesis (it is the mode of interconnection characteristic of the system as a whole that is focused upon). The coincidence of analysis and synthesis in systematic abstraction is a coincidence of opposites that is characteristic of dialectics. Brown et al. (2002) elaborate upon this point, locating systematic abstraction within the broader method of ‘systematic dialectics’.
The kind of abstraction Robbins has in mind is that exemplified by the theory of value. For Robbins, the subjective theory of value was central to neoclassical economics. Robbins recognised that for classical political economy and Marx a cost of production or labour theory of value had instead been central. In Robbins’s view, these different schools of economic thought both undertook a process of abstraction (of focusing something whilst putting other things into the background) in order to understand the system as a whole. Both found that the key initial abstraction require to help explain the system as a whole was the theory of value. Where they differed was in the type of value theory they advocated - neoclassical economics favouring a subjective theory of value, and classical political economy an objective theory of value. The Essay’s discussion of value illustrated the methodological status of value theory as the fundamental abstraction that depicts the way in which a system based upon private exchange coheres, and as the corresponding pivot upon which different economic theories turn, as will be shown below.

As explained by Robbins (1932, p.78), it had been commonplace in classical economics to look upon cost of production as the ultimate determinant of the value of reproducible commodities. Although it was admitted that the value of non-reproducible goods was determined by their scarcity, there was a general reluctance to give any importance to the role of demand in the determination of value. By contrast, the neoclassical theory of value argued that subjective individual valuations concerning final consumption (‘ends’), not social and class-based costs of production (‘means’), were the ultimate driving forces of the economic system. The ontological consequences of the different theories of value could not be greater. As Robbins put it:

‘So long as the theory of value was expounded in terms of costs, it was possible to regard the subject-matter of economics as something social and collective and to discuss price relationships simply as market phenomena. With the realisation that these market phenomena were, in fact, dependent on the interplay of individual choice, and that the very social phenomena in terms of which they were explained – costs – were in the last analysis the reflex of individual choice – the valuation of alternative opportunities (Wieser, Davenport) – this approach became less and less convenient.’ (Robbins, 1935, p.69n)

Thus Robbins (in line with the Austrians) saw the subjective theory of value as decisively changing the conception of the economic system to one that foregrounds individual consumption as the ultimate end fostered by the system as a whole, with general exchange equilibrium as the appropriate initial focus of analysis of that system. As Robbins wrote:

‘Instead of regarding the economic system as a gigantic machine for turning out an aggregate product and proceeding to enquire what causes make this product greater or less, and in what proportions this product is divided, we regard it as a series of interdependent but conceptually discrete relationships between men and economic goods; and we ask under what conditions these relationships are
constant and what are the effects of changes in either the ends or the means between which they mediate and how such changes may be expected to take place through time.’ (Robbins, 1932, pp.67-8)

Robbins therefore saw the neoclassical subjective theory of value as implanting a specific system-wide conception and scope into the essence of economic science. More generally, Robbins clearly saw the theory of value as the linchpin of economics; it was the initial abstraction that captured the way in which the system interconnects. How should economic theory proceed from the starting point provided by value theory (be it a cost or a utility theory of value)? We have seen in Section 2 above that Robbins advocated a step-by-step method, inclusive of the step from ‘statics’ to ‘dynamics’. Robbins’s method of theory development was broadly in line with, and so can be illuminated by, systemic abstraction, as will be explained below.

**The step-by-step process of theory development**

Systematic abstraction recommends that, in order to comprehend the capitalist system, value must first be comprehended at its most abstract and simple level, in terms of the simple exchange of commodities. From this starting point, the way in which the system as a whole interconnects through value relations must then be specified progressively more concretely, introducing money, capital and its various forms such as wages, profits, interest and rent. Each progressive stage reveals the respective role or function of an aspect of the economy within the system as a whole. Critically, the basic picture of the system painted in the more abstract and simple stage of theory should be retained in all subsequent steps of theory development, though in a modified and more complex form.

Robbins’s distinction of ‘static’ and ‘dynamic’ theory illustrates in schematic form this step-by-step process. The initial starting point of the static equilibrium theory of elementary exchange abstracted from production and capital in order to uncover the role of prices in the economic system. The stress on the system-wide focus of economics meant that fully disaggregated general exchange equilibrium was necessary (as opposed to Marshallian partial equilibrium analysis). This starting point established the individualistic, exchanged-based conception of the economic system as a whole made by neoclassical economics, a conception that had to be retained in all further theory development. This starting point more specifically established the equilibrium equality of relative prices with marginal rates of substitution, which also had to be retained in future theoretical steps, if in modified form to take into account disequilibrium dynamics. Once this initial static stage has been successfully completed then dynamic theory could be developed, introducing capital. Such dynamic theory was in its infancy according to Robbins but he confidently predicted that it would fulfil the methodological requirement of retaining the basis of neoclassical economics in subjective value theory though in modified and more complex form. Thus, as we saw in Section 2 above, with the introduction of dynamics then Robbins predicted that a more realistic account of the behavioural processes leading to general equilibrium would be theorised, taking into account uncertainty and learning. He also expected the business cycle to be incorporated into the theory.
As regards the rationality assumption then, for systematic abstraction, at each level of theory development the conception of agency is a ‘thin’ one, derived solely from the socio-economic conditions of action made explicit at that level (on this point see in particular Smith 1990, 1993). The unrealistic assumption of perfect rationality used by Robbins can be understood as a device that illustrates this ‘thinness’. Prior to the introduction of production and capital, there was no essential systemic change so the unrealistic assumption of perfect rationality was admissible. We infer that Robbins felt that deviations from perfect rationality would cancel out over the system as a whole, as that system was characterised at that stage, so the perfect rationality assumption led to valid system-wide conclusions at that stage. The rationality assumption was not claimed as a realistic psychological theory but as a device to derive valid system-wide outcomes of millions of individual decisions within the system overall. However, the rationality assumption (and the assumption of perfect foresight) had to be dropped once dynamics were introduced because uncertainty, which was incompatible with perfect rationality, was essential to the process of capital accumulation, invalidating any system-wide results that were achieved through the employment of perfect rationality and perfect foresight. ..

Problem to find *systemic* sources of disequilibrium (Hayek) .. answer in the government!

**Conclusion**
The Essay’s realism about the system as a whole, combined with subjective value theory, led to the stress on disaggregated general equilibrium theory as bedrock of neoclassical economics. But this theory was by no means considered to be complete. The theory was to be developed, step-by-step, in order to fulfil the realist requirement of grasping real underlying processes. In the process of theorisation, assumptions about individuals were merely devices to aid the theory of the system as a whole, a system comprising a huge number of individuals which meant that these assumptions where never meant to be wholly realistic. The process of theory development meant dropping some of the initial assumptions made about individuals, inclusive of the rationality assumption, once they could no longer serve the function of deriving valid system-wide results.

The arguments of the Essay were founded on an absolute confidence that the development of disaggregated multi-agent theory of underlying processes would happen imminently and indeed was in the process of happening through the work of Hayek, Hicks and others. With hindsight we can see that Robbins’s confidence evident in the Essay was utterly misplaced. The attempt to develop general equilibrium theory in the realist manner expected by the Essay failed – general equilibrium theory proved unable to step beyond the Walrasian auctioneer. Ironically, in light of Robbins’s advocacy of realistic theory development, fully disaggregated general equilibrium theory in the Arrow-Debreu-McKenzie mould became a watchword for anti-realist formalism, the very spearhead of what has been termed the ‘formalist revolution’ in economics (Blaug ????).

Macroeconomics emerged to fill the gap left by the inability of general equilibrium theory to address pressing system-wide issues. But macroeconomics, as is well known, was incompatible with the microeconomic foundations demanded by subjective value
theory (unless the fantastical device of the ‘representative individual’ were to be admitted). We can learn from Robbins’s *Essay* that subjective value theory was and remains the fundamental reason for these still unresolved problems in mainstream economics - or so will be the argument in the next section.

4. Developments in economics since publication of the *Essay*

It was argued above that the *Essay* had advocated a ‘transcendence’ of static general equilibrium theory to embrace dynamics and the business cycle. Instead, post-war Arrow-Debreu-McKenzie general equilibrium theory retained perfect foresight, eschewed disequilibrium dynamics and employed the fictional ‘Walrasian auctioneer’ only to find the resulting system to be generally unstable (Giocoli 2003, p.369-78, Gintis 2007, p.1280). This Section will argue that the neoclassical theory of value lies at the bottom of the failure of neoclassical economics to follow the *Essay*’s recommendation to build up a realistic theory of the system as a whole. Lacking an alternative value theory, it will be argued that recent developments in economics are likewise unable to offer a realistic theory of the system as a whole. This will not be an historical argument, not an argument in the history of economic thought but a conceptual argument drawing from the rich conceptual resources of the *Essay* itself. It will be emphasised, and the *Essay* itself stressed, that subjective value theory confirms a purely relative price theory according to which macroeconomic aggregates such as income, consumption and capital have no theoretical meaning. It will transpire that the purely relative price theory is the most important lasting legacy of the subjective theory of value, one retained by recent developments in economics, and one that vitiates mainstream economics, past and present, as a science of the economic system as a whole.

*Purely relative value theory*

Prices and incomes are key quantities in economics. They are purely relative at first sight. This means that it is not the quantity of money *per se* that is of significance. It is the quantity of money relative to other prices and incomes. In other words, it is the purchasing power represented by money quantities that is of causal significance in economics, not the actual money quantities themselves. The *Essay* convincingly explained that the subjective theory of value of neoclassical economics confirmed the purely relative character of prices *contra* objective value theory. Subjective value theory saw behind prices nothing absolute and objective that could be aggregated and compared through time, just a relative ranking of commodities matched, in equilibrium, by the relative rankings of myriad individual consumers. Robbins lucidly elaborated on this key point. As he put it ‘[a]ny given price … has significance only in relation to the other prices prevailing at that time’, (p. 55) so that, firstly, ‘the addition of prices or individual incomes to form social aggregates … is an operation with a very limited meaning’ (pp.56-7) and, secondly, ‘comparisons of prices have no precise significance, unless exchange is possible between the commodities whose prices are being compared.’(p.59)

His general conclusion was that aggregation and inter-temporal comparison of economic quantities (prices and incomes) ‘have only *conventional* significance’ (p. 57, emphasis in the original).

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9 Robbins is creditably clear on the implications of the relative nature of economic quantities and rightly goes back to Samuel Bailey in this regard (p.56).
Several years later Hayek, the foremost theorist of the failed ‘escape from perfect foresight’ (see Section 3 above), succinctly summarised the underlying point:

‘rates of equivalence (or “values,” or “marginal rates of substitution”) … [attach] … to each kind of scarce resource a numerical index which cannot be derived from any property possessed by that particular thing, but which reflects, or in which is condensed, its significance in view of the whole means-end structure.’
(Hayek 1945, p.525)

In short, the significance of prices lay in system-wide means-ends (i.e. scarcity) relations that could not ‘be derived from any property possessed by’ their bearers and so were purely relative and could not be meaningfully aggregated or compared through time. The problem for Robbins, for Hayek, for neoclassical economics in general, and for the new developments in economics, is that the economic system as a whole is dominated by the change through time of value aggregates measured in monetary terms, as will be argued below.

*Inherent inability to theorise real processes*

The purely relative theory of price underlined by subjective value theory works perfectly in a situation of general equilibrium when all markets clear. In this situation the only causal factors in play are individual decisions based on given relative prices. But in disequilibrium it leads to a fundamental problem. Outside of equilibrium the aggregate level of income and output (in money terms) becomes a variable, and this variable takes on an important role in determining system-wide outcomes. As a result various other aggregates likewise come to play a key causal role, such as aggregate investment and aggregate consumption. No longer are outcomes solely down to individual decisions based on relative prices – unintended consequences of these decisions come into play and a key unintended consequence is that monetary aggregates, most fundamentally aggregate income, become key causal variables in the determination of system-wide outcomes. The problem then is that something entirely meaningless from the perspective of subjective value theory – aggregate income – plays a key causal role in the system.

But it gets worse. In disequilibrium there are fluctuations in the structure as well as overall magnitude of output through time. These will make the fluctuations of all prices through time incommensurable! Thus the key price/money/value aggregates cannot be traced through time because the purchasing power of money from one point in time to the next cannot be compared. And not only the key price aggregates but also individual prices cannot be compared through time – they are likewise inter-temporally incommensurable. Cannot we allow for such variation in the ‘value of money’ by adjusting for inflation? Robbins is correctly emphatic that, given a subjective value theory (and more generally given a purely relative conception of price) then we cannot make such an adjustment because the value of money can mean nothing other than the purchasing power of money: QUOTE. These problems are well-known to economists and economic statisticians but familiarity with a problem does not eliminate it – and no solution has been found, nor could it be given the purely relative theory of price.
The ‘escape from perfect foresight’ outlined in Section 3 above, then, failed for deeper reasons than Giocoli (2003) alludes to. For Giocoli, the escape failed because neoclassical economists unreasonably refused to use specific or ‘ad hoc’ behavioural hypotheses to theorise disequilibrium behaviour, in particular to theorise agents learning from mistakes.10 Our argument uncovers a deeper underlying reason why neoclassical economics cannot embrace real system-wide processes, namely that these processes are dominated by monetary aggregates as they fluctuate through time, when for neoclassical value theory these aggregates and fluctuations are meaningless. It is not the dropping of the rationality assumption that fundamentally leads to an unsatisfactory ad hoc theory of ‘dynamics’ it is simply the lack of any ability to aggregate or trace through time the very magnitudes, i.e., individual and aggregate prices, that are supposed to determine system-wide outcomes. It is quite impossible to develop a general theory of economic change through time because it is impossible to compare key causal quantities before and after the very changes that they effect. This is true whatever modelling strategy is used. No realistic modelling strategy, however sophisticated the maths employed, can yield more than ad hoc results so long as the purely relative theory of price is maintained.

**Macroeconomics to the rescue?**

The critique made above raises an obvious question: how could a theory of value that rules out the salience of the very economic aggregates upon which policy makers rely, continue to constitute the mainstream of the economics profession? One reason for the continuance of neoclassical economics is the longstanding and now generally unstated belief that no viable alternative value theory exists. The labour theory of value is the obvious alternative value theory in the history of economic thought but has long been considered obsolete, for reasons whose prima facie appeal will be challenged below. What in fact emerged (shortly after publication of the Essay), in order to address national economic policy, was ‘macroeconomics’ which, as it developed from Hick’s interpretation of Keynes, modelled but a few ‘markets’ at the level of macroeconomic aggregates (such aggregate consumption, prices, output and employment). In contemporary macroeconomics these macroeconomic aggregates are supplemented with the device of the representative individual, typically a rational (and inter-temporal) optimiser (see, for example, Woodford 2003). Such macroeconomic models have given economists the ability to flexibly address policy questions, without getting bogged down in the difficulties of fully disaggregated general equilibrium theory.11 But this instrumental gain has come at deep and revealing cost in terms of realism and coherence, as will be argued below.

The instrumentally necessary use by mainstream macroeconomics of aggregation, despite and contrary to mainstream neoclassical value theory, ironically returns this branch of economic science to the picture of the production and distribution of an aggregate

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10 In his account of the reaction of post-war neoclassical orthodoxy to behavioural economics, Hausman (1992, pp.273-4) similarly laments an unjustifiable unwillingness to entertain behavioural hypotheses that lack system-wide scope.

11 The clause ‘fully disaggregated’ is important because contemporary macroeconomic models misleadingly go by the title of ‘dynamic stochastic general equilibrium,’ whereas in fact they employ macroeconomics aggregates (ref).
product that was painted by classical political economy, the very picture against which Robbins counter-posed neoclassical economics (see Section 3 above). Given recourse to a labour theory of value then such a picture would make sense as the aggregate product can be measured in socially necessary labour-time, comprehended as the underlying ‘value’ quantity that is expressed (imperfectly) by the visible monetary aggregates. The problem is that mainstream macroeconomics, without a replacement for neoclassical value theory, can have recourse to no such underlying value quantity. Therefore it can paint an aggregate picture of the economy only by recourse to patently absurd fictions such as one or two good models and representative individuals. The choice, here, is not between the labour theory of value and an apparently sophisticated individualistic and subjective theory of value of the sort painted in Robbins’s *Essay* as recounted in Section 2 above. Rather, the choice is between the labour theory of value and a ‘fantasy theory of value’ according to which the economy consists of one or two goods and one or two representative individuals (what Fleetwood 2002 refers to as a ‘toy model’ economy). In short, against the wild fictions of instrumental necessity made by mainstream macroeconomics, the criticisms levelled at the labour theory of value of Marx and classical political economy pale, in our judgement, into insignificance. Of course, the detailed exposition and defence of the labour theory of value is a topic for another paper (see Brown 2008 and Saad-Filho 2002).

But we have yet to consider the much debated new developments in economics. Do they solve the problems in mainstream economics identified above?

**Recent developments in economics**

Davis (2008, p.357) includes the following as examples of relevant recent developments: classical game theory, behavioural game theory, behavioural economics, experimental economics, neuroeconomics, evolutionary game theory, evolutionary economics and agent-based complexity economics. Do the new developments in economics address the problem? To do so would at a minimum require replacement of neoclassical value theory with the identification of some objective quantity (call it ‘value’) which underlies monetary aggregates and from which monetary aggregates cannot stray too far if the system is to reproduce and develop. That is we have to take a step back from mindless modelling. We have to recognise that the causal influence of monetary aggregates that

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12 There are broadly two different ‘optimistic’ interpretations of the ability of recent developments to realistically theorise the system as whole. Gintis (2007) strikingly represents one kind of optimistic interpretation. He presents an agent-based general equilibrium model that he claims provides the missing dynamic processes required for a realistic interpretation of Walrasian general equilibrium theory. If valid, Gintis’s argument would be a step towards meeting the *Essay*’s requirements for realistic system-wide theory (though the step of theorising the business cycle would remain to be taken). The second and contrasting kind of optimistic interpretation argues that that recent developments successfully replace general equilibrium theory (or will do so in the future) rather than successfully develop it (Colander et al. 2007, Davis 2008). Colander (???) for example stresses the difference between general equilibrium models and the new complexity models. He argues that complexity models are at a relatively early stage of development and do not yet yield system-wide conclusions of general validity. Rather, he suggests that any such conclusions will only emerge through many years (he suggests thirty or forty) of development of highly specialised and advanced mathematical models (models that he thinks will be beyond the understanding of even the vast majority of economists). Both kinds of optimistic interpretation will be critiqued below.
arises as an unintended consequence of individual action implies that these aggregates must have some emergent social significance. They cannot be nonsensical entities but must be an emergent representative in this peculiar system of generalised exchange of some socially significant property that their constituents possess in common, such that the system based on these aggregates can reproduce and develop. Yet, the recent developments in economics do not offer an objective value theory. Still basic incommensurability problem. Colander suggests that we have to wait another thirty or forty years or so for the new developments in economics (so complex that only mathematicians trained in their arts can understand them) to finally deliver a realistic theory of the economic system as a whole. Without an objective value theory, Colander will be waiting not for another 30 or 40 years but forever!! It is a conceptual issue not a mathematical one. We conclude that recent developments are no more able than old neoclassical orthodoxy to offer a realistic theory of the system as a whole.

5. Summary and Conclusions
We have attempted to demonstrate the significance of the method of ‘systematic abstraction’, through reinterpretation of Robbins’s Essay. It has been argued that the method offers a novel ontological justification for the step-by-step method in economics, or method of successive approximation. The method is of general relevance to economics – so much so that Robbins’s Essay offered clear illustrations of the broad themes of systematic abstraction many years before the method was made explicit. Finally, our argument has highlighted the inescapable significance of value theory to economics. With systematic abstraction, it becomes clear that a theory of value is presupposed by all theories of the contemporary economic system – commodity exchange, involving value, is the characteristic mode of interconnection of this economy. It is much to Robbins’s credit that he brings out this theme with great clarity, and with accurate reference to the history of economic thought. However, the seeds of the demise of realism in neoclassical economics ironically can be found in the Essay, in particular in the purely relative character of economic magnitudes that Robbins correctly stresses is inherent to neoclassical value theory.

We agree with the arguments of Fine and Milonakis (2009) and Lawson (2009) that recent developments in economics do not break with the fundamental flaws of neoclassical economics, and in particular with the former’s emphasis on value theory. None of the recent developments offer an objective value theory. A key implication of our argument is that an objective value theory that is able to justify economic aggregates, is necessary to any realistic theory of the economic system. Elsewhere we have attempted to pursue this point in justification of the labour theory of value (Brown 2008; see also Saad-Filho 2002). It is our hope that the reader will be motivated to pursue anew this much misunderstood, and undoubtedly complex, theory because it provides the only possible way to realistically grasp the economic system as a whole.
References


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