

# Modern Monetary Theory and a Heterodox Alternative Paradigm

Published online 26th December 2018

Phil Armstrong  
Economics/Research and Development  
University of Southampton Solent  
Southampton, UK  
Engineering Division  
York College  
York, UK

Correspondence  
PArmstrong@yorkcollege.ac.uk

## Abstract

*Orthodox or neo-classical economics failed to predict the global financial crisis (GFC) or even allow for the possibility of such an event occurring. For optimistic heterodox economists the aftermath of the GFC seemed to provide the opportunity to overthrow the hegemonic mainstream paradigm and replace it with a superior alternative; one which provided both better explanations of the operations of a monetary production economy in general and deep insights leading to an understanding of why the GFC might have arisen. However, from the perspective of heterodoxy, this hope proved to be a false dawn; after a brief period of apparent soul-searching, mainstream economists regained their confidence and the paradigm seemed to regain its ascendancy, albeit in a slightly modified form. First, this paper examines the methodology employed by mainstream economists and their attitude to academic freedom in order to establish the reasons behind this outcome. Second, it considers the applicability of critical realism both to the study of economics and to the behaviour of the economics profession itself. Following on from this, the paper goes on to look at the possibility of constructing a heterodox paradigm, explicitly based upon critical realism, which might have the potential to replace current orthodoxy. The nature of such a paradigm and the potential role for Modern Monetary Theory as a key contributor are evaluated and followed by a consideration of the ways to enhance a new approach's chances of acceptance.*

Key terms: paradigm, pluralism, critical realism, heterodox economics, Modern Monetary Theory

| <b>Contents</b>  | <b>Page</b> |
|--|-------------|
| 1. Introduction  | 3           |
| 2. The Methodology of Orthodox Economics                           | 5           |
| 3. Critical Realism and Economics                                  | 10          |
| 4. The Application of Critical Realism to the Economics Profession | 23          |
| 5. Academic Freedom  | 25          |
| 6. Towards a New Paradigm in Economics                             | 29          |
| 7. Conclusion: MMT and a dissenting alternative paradigm.          | 46          |

## 1. Introduction

'Faced with the choice between changing one's mind and proving that there is no need to do so, almost everyone gets busy on the proof'. (Galbraith 1971: 50)

In the aftermath of the global financial crisis (GFC) a degree of uncertainty -or at least disquiet -characterised some elements of the economics profession and the politicians who sought guidance from it. Orthodox, neo-classical/new consensus<sup>1</sup> economics had failed to predict the crisis or even allow for the possibility of such an event occurring. For optimistic heterodox economists the time seemed right for the overthrow of the hegemonic paradigm<sup>2</sup> and its replacement with a superior alternative; one which provided both better explanations of the operations of a monetary production economy in general and deep insights leading to understanding of why the GFC might have arisen. In addition this new paradigm might well be expected to explain observations which were at odds with the predictions of mainstream theory<sup>3</sup>.

However, from the perspective of heterodoxy this hope proved to be a false dawn; after a brief period of apparent soul-searching, mainstream economists regained their confidence and the paradigm seemed to regain its ascendancy, albeit in a slightly modified form<sup>4</sup>. Orthodox economists emerged chastened but largely undeterred; their faith in the paradigm seemed undisturbed and all too quickly the mantra seemed to be 'business as usual'.

---

<sup>1</sup> 'The NCM [New Consensus Macroeconomics] is now firmly established amongst both academia and economic policy circles...it draws heavily on the so-called new Keynesian economics'. (Arestis 2009: 2, parentheses added) It combines rational expectations, explicit micro-foundations and optimization behaviour with other features such as the long-run vertical Phillips curve. (Arestis 2009)

'NCM is the macroeconomic mainstream as it dominates the research, is taught in most of the top universities, receives funding from many important research foundations and has been recently awarded the Nobel Prize. The new Keynesians, in turn, are the most recent dominant school of thought within the mainstream. As a consequence, much of the research and the operational practice of central banks and governments is based on the principles propagated by them, particularly since the 90s'. (Pedrosa and Farhi 2015)

<sup>2</sup> The paradigm concept came to prominence following the publishing of *The Structure of Scientific Revolutions* (Kuhn, 1962). Its exact meaning has been the subject of extended discussion and, in a 1969 postscript, some clarification emerged; it can be interpreted as a shared theory or set of theories and 'shared examples' within what Kuhn described as a 'disciplinary matrix'. (Kuhn 2013: 175-90)

<sup>3</sup> Mainstream economics is characterised by probability-based predictions, exemplified by the 'fan charts' published by the Bank of England (see Appendix A). From this standpoint no outcome is *entirely* ruled out. However, results with very low probabilities of occurring were commonplace during the GFC; NCM was unable to provide an explanation for a wide range of specific outcomes during the GFC (Skidelsky 2010: 30-46). One of the most striking contradictions to the predictions of the New Keynesian or New Consensus view was the *reductions* in long term interest rates (as opposed to the *increases* predicted by NCM) which accompanied the significant increases in public sector deficits for nations with their own sovereign currencies in the aftermath of the GFC.

<sup>4</sup> Modifications included the enhancement of DSGE models, in particular the inclusion of more sophisticated banking and financial sectors and the capacity to model financial crises (Benes, Kumhof, Laxton, 2014).

The paper will first consider the methodology of mainstream or orthodox economics in section 2 and then show how critical realism might be applied to both the study of economics (section 3) and the economics profession itself (section 4). Section 5 considers the importance of academic freedom, section 6 looks at the potential nature of a heterodox paradigm and the possible role for MMT within it, section 7 concludes.

## 2. The Methodology of Orthodox Economics

We might first view the practice of economics through a ‘Kuhnian lens’ (Dow 2017). Kuhn<sup>5</sup> considered the forces at work in the behaviour of scientific communities and rejected the notion that science progresses in an essentially *cumulative* process, as noted by Hands<sup>6</sup> (2001).

‘What Kuhn found, rather than rather a process of incremental development where scientific knowledge grew slowly through the steady accumulation of empirical evidence and inductive generalization (or corroboration of potentially falsifiable conjectures), was that actual development...had occurred through a series of substantive revolutionary transformations, where the old accepted scientific theory was totally abandoned and replaced by an entirely different framework or “paradigm.”’ (Hands 2001: 101)

Kuhn contended that most scientific activity was puzzle-solving within a given paradigm (which he called ‘normal science’<sup>7</sup>). Fundamental questions would need to be answered in order to construct the paradigm and this, in turn, would act as a precursor to the research process.

‘Effective research scarcely begins before a scientific community thinks it has acquired firm answers to questions like the following: What are the fundamental entities of which the universe is composed? How do these interact with each other and with the senses? What questions may legitimately be asked about such entities and what techniques employed in seeking solutions?’ (Kuhn 2012 [1962]: 4-5)

From the point of view of mainstream economics, the ‘fundamental entities’ are the individual, expected utility-maximising agents, interacting with each other in a universal market form. Formal deductivist reasoning is required, underpinned by ubiquitous mathematics. General equilibrium analysis provides the structure within which to frame questions and develop solutions.

Kuhn notes that once these questions have been answered the results are absorbed into work of the practitioners; directing their study.

---

<sup>5</sup> T.S.Kuhn’s seminal work, *The Structure of Scientific Revolutions* was published in 1962 and has prompted the production of an extensive literature aimed at exploring the relevance of his approach to economics (see, for example, Dow 2017)

<sup>6</sup> **D. Wade Hands** is Distinguished Professor of Economics at the University of Puget Sound and a specialist in economic methodology

<sup>7</sup> ‘Normal science’ might be described as the everyday practice of scientists (theorizing, experimenting etc.) within a settled paradigm or ‘disciplinary matrix’ (Kuhn, 1962).

'At least in the mature sciences<sup>8</sup>, answers (or full substitutes for answers) to questions like these are firmly embedded in the educational initiation that prepares and licenses the student for professional practice. Because that education is both rigorous and rigid, these answers come to exert a deep hold on the scientific mind. That they can do so does much to account both for the peculiar efficiency of the normal research activity and for the direction in which it proceeds at any given time.' (Kuhn 2012 [1962]: 4-5)

In the case in economics, given the hegemony of NCM, DSGE<sup>9</sup> models provide a universal structure for analysing questions and providing solutions. They provide the means to resolve disagreements; in other words they are the foundation of 'normal science' in economics.

'any interesting model *must* be a dynamic stochastic general equilibrium model. From this perspective, there is no other game in town. Modern macroeconomic models, often called DSGE models in macro share common additional features. All of them make sure that they are consistent with the National Income and Product Accounts. That is, things must add up. All of them lay out clearly how people make decisions. All of them are explicit about the constraints imposed by nature, the structure of markets and available information on choices to households, firms and the government. From this perspective DSGE land is a very big tent. The only alternatives are models in which the modeller does not clearly spell out how people make decisions. Why should we prefer obfuscation to clarity? My description of the style of modern macroeconomics makes it clear that *modern macroeconomists use a common language to formulate their ideas and the style allows for substantial disagreement on the substance of the ideas*. A useful aphorism in macroeconomics is: "If you have an interesting and coherent story to tell, you can tell it in a DSGE model. If you cannot, your story is incoherent'. (Chari<sup>10</sup> 2010: 2, emphasis added)

Once economists are established as practitioners within NCM, they become comfortable 'talking the common language' of the paradigm even if they are unaware of all the rules of game; the apparent coherence of the paradigm enables them to determine research tasks, confident in the knowledge that their colleagues, operating within the same tradition, even if they do not agree with the conclusions, will recognise the legitimacy of the exercise, as 'normal science'. Such a situation was recognised as general feature of normal science by Kuhn,

'Scientists work from models acquired through education and through subsequent exposure to the literature often without quite knowing or needing to know what characteristics have given these

---

<sup>8</sup> Kuhn sceptical about regarding economics as a 'mature science' given the proliferation of paradigms which characterise it.

<sup>9</sup> Dynamic stochastic general equilibrium or DSGE models.

<sup>10</sup> V.V. Chari is Professor of Economics at the University of Minnesota

models the status of community paradigms. And because they do so, they need no full set of rules. The coherence displayed by the research tradition in which they participate may not imply even the existence of an underlying body of rules and assumptions that additional historical or philosophical investigation might uncover. That scientists do not usually ask or debate what makes a particular problem or solution legitimate tempts us to suppose that, at least intuitively, they know the answer. But it may only indicate that neither the question nor the answer is felt to be relevant to their research. Paradigms may be prior to, more binding, and more complete than any set of rules for research that could be unequivocally abstracted from them.' (Kuhn 2012 [1962]: 46)

'Theory-ladenness'<sup>11</sup> is critical; in other words the question to be answered pre-supposes the existence of the paradigm and the theories it contains. Discrepancies are commonplace and may well generate discussions within the profession. Failure to resolve stubborn problems may well frustrate scientists but they are quite likely to be patient and may well content themselves with other aspects of normal science in the meantime.

'...its object is to solve a puzzle for whose very existence the validity of the paradigm must be assumed. Failure to achieve a solution discredits only the scientist and not the theory...even a discrepancy unaccountably larger than that experienced in other applications of the theory need not draw any very profound response. There are always some discrepancies. Even the most stubborn ones usually respond at last to normal practice. Very often scientists are willing to wait, particularly if there are many problems available in other parts of the field.' (Kuhn 2012 [1962]: 46)

Unexpected empirical results need not lead to paradigm overthrow, indeed, if an 'anomaly' or result inconsistent with the expectations of theory were to be discovered it was usually seen as the fault of scientist or the scientist's facilities rather than the paradigm itself (Hands 2001: 101-2). Revolutions in science are possible but they require a significant accumulation of contradictory empirical findings, often requiring an extended period of time. Kuhn notes the significance of 'crisis'; a period characterised by the existence of just such a body of evidence contrary to the predictions of the established theory. It is this crisis which might lead to the overthrow of the paradigm and its replacement with an alternative. However, Kuhn notes that this is no simple process,

'Let us then assume that crises are a necessary precondition for the emergence of novel theories and ask next how scientists respond to their existence. Part of the answer, as obvious as it is important, can be discovered by noting first what scientists never do when confronted by even

---

<sup>11</sup> 'For Kuhn, scientists do not just "see," they "see as," and it is their shared conceptual framework, that determines what is seen as what. The paradigm provides the lens, or interpretative framework, by which various aspects of the world are observed....there are no "out-of-theory experiences" [Kitcher 1993:133]' (Hands 2013: 103)

severe and prolonged anomalies. Though they may begin to lose faith and then to consider alternatives, they do not renounce the paradigm that has led them into crisis.’ (Kuhn 2012 [1962]: 77)

Kuhn is at pains to stress that simple falsification of a theory is not enough. A weight of evidence might cause a paradigm to be relinquished but this only occurs when a superior alternative is available and the body of support for new theory is great enough to counteract scientists’ inclinations to rely on *ad hoc* modifications to protect the status quo provided by the original paradigm.

‘...once it has achieved the status of paradigm, a scientific theory is declared invalid only if an alternate candidate is available to take its place. No process yet disclosed by the historical study of scientific development at all resembles the methodological stereotype of falsification by direct comparison with nature. That remark does not mean that scientists do not reject scientific theories, or that experience and experiment are not essential to the process in which they do so. But it does mean...that the act of judgment that leads scientists to reject a previously accepted theory is always based upon more than a comparison of that theory with the world. The decision to reject one paradigm is always simultaneously the decision to accept another, and the judgment leading to that decision involves the comparison of both paradigms with nature and with each other.

There is, in addition, a second reason for doubting that scientists reject paradigms because confronted with anomalies or counter-instances. ..By themselves they cannot and will not falsify that philosophical theory, for its defenders will do what we have already seen scientists doing when confronted by anomaly. *They will devise numerous articulations and ad hoc modifications of their theory in order to eliminate any apparent conflict.* (Kuhn 2012 [1962]: 77-8, emphasis added)

The case of economics, in particular the apparent resilience of NCM in the aftermath of the crisis, provides an interesting case-study, illustrating this essentially defensive ‘modification’ process in practice.

‘The subprime crisis allowed the serious flaws within the NCM architecture models to become clearer and to be criticized...*new Keynesians themselves recognized many flaws in their ideas, intensifying the search for answers to the new questions.*’ (Pedrosa<sup>12</sup> and Farhi<sup>13</sup> 2015, emphasis added)

Pedrosa and Farhi note that that, despite the impact to their prestige, NCM economists remain optimistic about the survival chances of their approach; for them all that is needed is *ad hoc* modification to enrich their theory, which although challenging, is well within their compass.

---

<sup>12</sup> Doctor of the Economics Institute of the State University of Campinas (UNICAMP), Campinas, Brazil

<sup>13</sup> Professor of the Institute of Economics of the State University of Campinas (UNICAMP), Campinas, Brazil

New Keynesians maintain that, with a few necessary changes or augmentations their models can be 'fixed'<sup>14</sup>. (Pedrosa and Farhi 2015)

A key strength of the New Keynesian position from a Kuhnian standpoint, is the apparent lack of realistic opposition. Their use of both rational expectations and representative agents combined with their acknowledgement of market frictions gives them a significant advantage over alternative or heterodox schools which reject this approach. The latter and are placed at a significant disadvantage given the current structure of the economics academy and the political structure that both supports it and is, in turn supported, by it. Provided New Keynesians are sufficiently open to modifying their models, especially with regard to accepting the non-neutral nature of the financial system, their position seems secure.

'[I]t is clear that a change is occurring in mainstream macroeconomics. Nonetheless, this new wave of change inside mainstream theory is not greatly distant from the new Keynesians' old format. The inherited RBC [Real Business Cycle] methodology continues to pervade most papers published on macroeconomic theory and policy in the most prestigious journals, and the conclusions have not been substantially changed, with the exception of the non-neutrality of the financial system. Leaving the methodology untouched is unlikely to create revolutionary or more meaningful changes to the main conclusions'. (Pedrosa and Farhi 2015, parentheses added)

Leading proponents of New Keynesianism have largely retained their status and remain eager to support the idea that the consensus still exists despite the crisis. This gathering of their wagons around NCM, whilst rejecting the claims of alternatives, is critical as a means to bolster the status of economics as a relatively mature science which has made and continues to make progress even in the face of apparent adversity.

---

<sup>14</sup> Post crisis augmentation to DSGE models includes a more sophisticated approach to the financial sector (Bene, Kumhof and Laxton 2014) and acknowledging the importance of financial system non-neutrality, in turn providing scope for the use of alternative monetary policy approaches and macro-prudential strategies designed to enhance the stability and efficiency of the financial system as a whole (Pedrosa and Farhi 2015).

### 3. Critical Realism and Economics.

Roy Bhaskar (2008 [1975]) commends the progress made by Kuhn, Lakatos<sup>15</sup> (1970) and others in developing understanding of the community-based nature of the practice of science but he notes that more is required; additional work with an *explicit focus on ontology* is essential, both to provide deeper insights into science as a social activity and to act as a bulwark against positivism.

‘To see science as a social activity, and as structured and discriminating in its thought constitutes a significant step in our understanding of science. But, I shall argue, without the support of a revised ontology, and in particular a conception of the world as stratified and differentiated too, it is impossible to steer clear of the Scylla of holding the structure dispensable in the long run (back to empiricism) without being pulled into the Charybdis of justifying it exclusively in terms of the fixed or changing needs of the scientific community’<sup>16</sup>. (Bhaskar 2008 [1975]: P 9, preface)

He goes on to suggest that the social activity of science presupposes this revised ontology. (Bhaskar 2008 [1975]: 9). Bhaskar then argues in favour of *transcendental realism*; an approach based upon such a revised and explicit ontology. He focuses upon the stratified nature of reality and illustrates this diagrammatically,

|                    | <i>Domain of Real</i> | <i>Domain of Actual</i> | <i>Domain of Empirical</i> |
|--------------------|-----------------------|-------------------------|----------------------------|
| <i>Mechanisms</i>  | ✓                     |                         |                            |
| <i>Events</i>      | ✓                     | ✓                       |                            |
| <i>Experiences</i> | ✓                     | ✓                       | ✓                          |

Source: Table 0.1 (Bhaskar 2008 [1975]: 13)

<sup>15</sup> Lakatos’s seminal text, *The Methodology of Scientific Research Programmes* (1970) provides an alternative approach to Kuhn. He considers that it is not individual theories which are the most appropriate constituents of science but rather the broader and richer concept of the ‘scientific research programme’ (SRP). Blaug summarizes the nature of SRPs, following Lakatos, “all scientific research programmes may be characterized by their ‘hard core’, surrounded by a protective belt of auxiliary hypotheses which has to bear the brunt of the tests.” The hard core is treated as irrefutable the “methodological decision of its protagonists” and it contains besides purely metaphysical beliefs, a “positive heuristic”, and a “negative heuristic”, consisting in effect of a list of “do”s and “don’t”s. The protective belt contains the flexible parts of an SRP, and it is here that the hard core is combined with auxiliary assumptions to form the specific testable theories with which the SRP earns its scientific reputation’. (Blaug 1992: 34)

<sup>16</sup> Bhaskar notes that the latter approach is exemplified by the work of Kuhn and Toulmin (1972)

For Bhaskar, real structures and mechanisms – which he describes as the *objects* of knowledge-exist independently of the events they cause. Bhaskar also contends that, in turn, the occurrence of events is distinct from the empirical experience of scientists themselves as they interpret the results of these events.

‘I have argued that the causal structures and generative mechanisms of nature must exist and act independently of the conditions that allow men access to them, so that they must be assumed to be structured and intransitive, i.e. relatively independent of the patterns of events and the actions of men alike. Similarly I have argued that events must occur independently of the experiences in which they are apprehended. Structures and mechanisms then are real and distinct from the patterns of events that they generate; just as events are real and distinct from the experiences in which they are apprehended. Mechanisms, events and experiences thus constitute three overlapping domains of reality, viz. the domains of the *real*, the *actual* and the *empirical*.’ (Bhaskar 2008 [1975]: 56, emphasis in the original)

Transcendental realism supports the contention that the social activity of science is necessary for the production of knowledge of the structures and the mechanisms present in nature and this natural order, although it is not dependent upon human cognizance, it necessarily finds its expression in human apprehension.

‘Transcendental realism argues that it is necessary to assume for the intelligibility of science that the order discovered in nature exists independently of men, i.e. of human activity in general...According to transcendental realism, if there were no science there would still be a nature, and it is this nature which is investigated by science. Whatever is discovered in nature must be expressed in thought, but the structures and constitutions and causal laws discovered in nature do not depend upon thought. Moreover, the transcendental realist argues, this is not just a dogmatic metaphysical belief; but rather a philosophical position presupposed by key aspects of the social activity of science’ (Bhaskar 2008 [1975]: 26)

Bhaskar is critical of empirical realism which relies upon an implicit ontology, since it is

‘based on the category of experience, as expressed in the concept of the empirical world and mediated by the ideas of the actuality of the causal laws and the ubiquity of constant conjunctions’, ultimately resulting in the three strata of reality being viewed as a unity and thus preventing the development of an effective means of determining the specific circumstances when sense experience or empirical observation might be regarded as worthy of scientific attention. Empirical realism implies that the

‘three domains of reality are collapsed into one. This prevents the question of the conditions under which experience is in fact significant in science from being posed; and the ways in which these

three levels are brought into harmony or phase with one another from being described.' (Bhaskar 2008 [1975]: 57)

Bhaskar suggests that, for the three strata, there is no naturally tendency towards harmony and it is the work of the scientists- as a social activity<sup>17</sup> - to bring this situation about. Without an explicit consideration of ontology, as is inherent in transcendental realism, both the critical distinction between the intransitive domain (of the real and actual) and the transitive domain (of the empirical) is lost and the essential social nature of science within this domain is not recognised (Bhaskar 2008 [1975]: 48). Within this transitive domain, empirical experience is the end product of a social process and transcendental realism makes clear how the work of science- and challenging work at that- is to develop an understanding of the real objects of knowledge, the real and relatively enduring structures and mechanisms which give rise to real events.

'They [real structures and mechanisms] are not unknowable, although knowledge of them depends upon a rare blending of intellectual, practice-technical and perceptual skills. They are not artificial constructs. But neither are they Platonic forms. For they can become manifest to men in experience. Thus we are not imprisoned in caves, either of our own or of nature's making. We are not doomed to ignorance. But neither are we spontaneously free. This is the arduous task of science: the production of the knowledge of those enduring and continually active mechanisms of nature that produce the phenomena of our world. (Bhaskar 2008 [1975]: 47, parentheses added)

From the perspective of critical realism, the real economic structures, mechanisms and emergent powers that constitute the real domain manifest themselves in economic 'events'. Economists then study these events or phenomena in the domain of the empirical in an attempt to develop meaningful knowledge of these real structures and powers. For Lawson<sup>18</sup>, the phenomena thus observed make take the form of partial regularities or *demi-regularities* which require explanation by economists.

'Over restricted regions of time-space certain mechanisms may come to dominate others and/or shine through: non-spurious rough and ready, partial regularities may be observed. Although the social world is open, dynamic and changing, certain mechanisms may, over regions of time-space, be reproduced continuously and come to be (occasionally) apparent in their effects at the level of actual phenomena, giving rise to rough and ready generalities or partial regularities, holding to such

---

<sup>17</sup> A critique of the various ways that economists actually engage in this process follows below.

<sup>18</sup> Tony Lawson of the University of Cambridge is perhaps the world's foremost authority on the relationship between critical realism and economics.

a degree that *prima facie* an explanation is called for.’ (Lawson 1997: 204, parentheses in the original)

Despite the open nature of social systems, for Lawson, the preponderance of these demi-regularities or ‘demi-regs’ provides the basis for meaningful social science<sup>19</sup>. In his later work, Lawson (2003) goes on stress the significance of *contrastive demi-regs* which he first introduced in his earlier book.

‘In *Economics and Reality* I indicated my view that the types of demi-reg that both abound are of some relevance to social scientific advance are very often those which express surprising or significant contrastive patterns.’ (Lawson 2003: 106)

Lawson provides examples (such as lower productivity growth in the UK than continental Europe within a specific time frame) of contrastive demi-regs in *Economics and Reality* (1997) and then returns to them to develop his argument in *Reorienting Economics* (2003).

‘I noted that [in *Economics and Reality*] for a given period of time in recent history, measured productivity growth is observed to have been significantly less in the UK than in certain otherwise comparable industrial countries in the continent of Europe. Of course, such a contrast is only surprising or significant if our theories or current understandings lead us to conclude that the contrasted phenomena stand *a posteriori* in a different relation than might reasonably have been expected. Contrastive demi-regs, then may be surprising and so become the object of study, not just because a contrast is involved but because the contrast in some form makes a somewhat frequent appearance, because it is also a demi-reg with a significant presence over time’. (Lawson 2003:107, parentheses added)

Lawson stresses the idea that the ‘surprise element’ can be the trigger for study and the attempt to postulate a mechanism that may provide an explanation for it.

‘In short, any patterning, any standing out of phenomena which turns upon differences or unanticipated or surprising or implausible relationships of some kind...can serve to alert us to the existence or way of acting of some item previously unknown, unrecognised or perhaps known only implicitly, in some taken for granted way.’ (Lawson 1997:209)

For Lawson, it is impossible to provide a complete and certain causal explanation of any social event and that

---

<sup>19</sup> Lawson (2003) develops the concept further in order to clarify misconceptions which had apparently arisen in his first major book in *Economics and Reality* (1997).

'we can only aim to identify one (set of) causal mechanism(s)...to this end the obvious strategy is to seek out two (or more) situations where the outcomes might have been expected to relate in some manner other than turns out to be the case and to attempt to attempt to determine the reasons. Typically, this will involve identifying at least one mechanism that operates, or does so in a particular fashion, in (one set) of situation(s) only'. (Lawson 1997: 209, parentheses in the original)

By way of example we might consider data for government deficits (as a percentage of GDP) and long term interest rates in the period immediately preceding and following the GFC in table 1, below. It is evident, in general, based on this data, that when nations issue their own sovereign currency and operate under floating exchange rates, the expectation of NCM economists that expanding government deficits as a percentage of GDP tend to cause increased long term interest rates on government debt *is not borne out*. For the nations shown there is no clear relationship between deficits as a percentage of GDP and long term interest rates and, if anything, the general trend of rising deficits is accompanied by falling rather than rising long term interest rates.

Table 1 (countries with their own sovereign currency).

a. Government net lending/net borrowing as a percentage of GDP, surplus (+) or deficit (-) for selected nations, 2006-11 (OECD data)

b. Long term interest rates (secondary market yields of long term -usually 10 year- bonds, annual percentage) for selected nations, 2006-11(OECD data)

| Country                            | 2006 | 2007 | 2008 | 2009  | 2010  | 2011  |
|------------------------------------|------|------|------|-------|-------|-------|
| Australia; govt. deficit           | 2.1  | 2.1  | 0.5  | -4.1  | -4.8  | -3.3  |
| Australia; interest rate l. t.     | 5.59 | 5.99 | 5.82 | 5.04  | 5.37  | 4.88  |
| Canada; govt. deficit              | 1.6  | 1.4  | -0.4 | -4.9  | -5.6  | -5.0  |
| Canada; interest rate l. t.        | 4.21 | 4.27 | 3.61 | 3.23  | 3.24  | 2.78  |
| Japan; govt. deficit               | -1.6 | -2.4 | -2.2 | -8.7  | -7.8  | -8.9  |
| Japan; interest rate l.t.          | 1.74 | 1.67 | 1.47 | 1.33  | 1.15  | 1.10  |
| United Kingdom; govt. deficit      | -2.7 | -2.8 | -5.0 | -11.0 | -10.4 | -9.4  |
| United Kingdom; interest rate l.t. | 4.50 | 5.01 | 4.59 | 3.65  | 3.62  | 3.14  |
| United States; govt. deficit       | -2.2 | -2.9 | -6.6 | -11.6 | -10.7 | -10.0 |
| United States; interest rate l.t.  | 4.79 | 4.63 | 3.67 | 3.26  | 3.21  | 2.79  |

We might now consider the government deficit (as a percentage of GDP) and long term interest rate data for Eurozone member nations in Table 2 (Eurozone nations):

| Country                         | 2006  | 2007  | 2008   | 2009   | 2010   | 2011   |
|---------------------------------|-------|-------|--------|--------|--------|--------|
| France ; govt. deficit          | -2.34 | -2.54 | -3.18  | -7.16  | -6.79  | -5.10  |
| France ; interest rate l. t.    | 3.80  | 4.30  | 3.98   | 3.22   | 2.74   | 2.61   |
| Germany ; govt. deficit         | -1.72 | 0.19  | -0.18  | -3.32  | -4.22  | -0.96  |
| Germany ; interest rate l. t.   | 3.76  | 4.22  | 3.98   | 3.22   | 2.74   | 2.61   |
| Greece; govt. deficit           | -5.95 | -6.71 | -10.18 | -15.14 | -11.20 | -10.28 |
| Greece; interest rate l.t.      | 4.07  | 4.50  | 4.80   | 5.17   | 9.07   | 15.75  |
| Ireland; govt. deficit          | 2.81  | 0.27  | -6.98  | -13.78 | -32.03 | -12.73 |
| Ireland; interest rate l.t.     | 3.79  | 4.33  | 4.55   | 5.23   | 5.99   | 9.58   |
| Italy; govt. deficit            | -3.59 | -1.53 | -2.69  | -5.27  | -4.25  | -3.71  |
| Italy; interest rate l.t.       | 4.05  | 4.49  | 4.68   | 4.31   | 4.04   | 5.42   |
| Netherlands; govt. deficit      | 0.21  | 0.21  | 0.22   | -5.43  | -4.99  | --4.29 |
| Netherlands; interest rate l.t. | 3.78  | 4.29  | 4.23   | 3.69   | 2.99   | 2.99   |
| Portugal; govt. deficit         | -4.33 | -3.01 | -3.77  | -9.81  | -11.71 | -7.38  |
| Portugal; interest rate l.t.    | 3.91  | 4.42  | 4.52   | 4.21   | 5.40   | 10.24  |
| Spain; govt. deficit            | 2.20  | 1.92  | -4.42  | -10.96 | -9.38  | -9.61  |
| Spain; interest rate l.t.       | 3.78  | 4.31  | 4.36   | 3.97   | 4.25   | 5.44   |

To a limited extent these data *do provide support the general expectation of NCM; that higher government deficits lead to higher long term interest rates.* However, this outcome is by no means universal. For France, Germany, Italy and the Netherlands there was no apparent significant relationship between deficit size as a percentage of GDP and long term interest rates; in fact if simple correlation coefficients are calculated for these four countries from 2006-11 the result is negative, i.e, an inverse relationship exists between higher deficits and long term interest rates<sup>20</sup>.

However, for Greece, Ireland, Portugal and Spain, higher deficits seem to be accompanied by higher long term interest rates<sup>21</sup>. Thus, there appears to be a relatively complex 'contrast' which has become manifest; one which may constitute a 'surprise', for mainstream economists at least. First, the expected relationship between elevated deficits and higher long term interest has been notably absent in countries with their own currencies operating under floating exchange rates, and second, even within the Eurozone, the relationship is apparent only in some cases. However from the point of view of the advocates of MMT, this *apparent* contrast is explained by their understanding of the different nature of the real underlying mechanisms at work in the monetary systems for Eurozone member states and those with their own sovereign currency operating under floating exchange rates<sup>22</sup>.

Given that an understanding of MMT removes the supposed element of 'surprise', its advocates are naturally inclined to posit the structures and mechanisms which explain this

---

<sup>20</sup> Correlation coefficients for 2006-11 data for government deficits (as a percentage of GDP) and long term interest rates were as follows; France -0.74, Germany -0.65, Italy -0.2, Netherlands -0.8 (OECD data)

<sup>21</sup> Correlation coefficients for 2006-11 data for government deficits (as a percentage of GDP) and long term interest rates were as follows; Greece 0.2, Ireland 0.44, Portugal 0.2, Spain 0.4 (OECD data)

<sup>22</sup> When a nation has its own sovereign currency and operates under floating exchange rates, 'borrowing' by the state is not operationally required and even if the state decided to borrow, there would not be any straightforward correlation between increased deficits and rising long-term rates (Armstrong, 2016). The government spends first and creates reserves, *ex nihilo*. It is never revenue-constrained as a currency-user might be. The so-called 'borrowing' operation which removes the reserves is voluntary (Mosler, 2012). It could allow any untaxed spending to remain in the system. However, such a policy would result in the overnight rate falling to zero (if no other action was taken, such as the central bank agreeing to pay interest on excess reserves).

MMT distinguishes clearly between these countries and, for example, nations using the euro. Euro-using nations have ceded their money-issuing power to another entity, the European Central Bank. Each nation's government is forced to act as a 'currency user' (rather reminiscent of US states). In this case taxes do fund spending, borrowing from private sector euro holders may be necessary to fund spending, default is technically possible and, in the absence of ECB assistance, the need to sell debt on bond markets may drive yields to very high levels. Thus, in the case of nations such as Ireland, Greece and Portugal, where default risk seemed significantly heightened we might expect bond yields to rise. In contrast, in countries such as Germany, The Netherlands and France where default risk was perceived as being very low demand for bonds remained high. In fact, given fears about the future value of private financial assets and expectations of relatively low short-term interest rate policy settings by the ECB, bond yields for these nations actually fell despite significantly higher public sector deficits as a percentage of GDP.

contrast. However, attempts to do the same have been notably absent in the case of the NCM. Faced with trying to explain the fact that, say, Japan has very low interest rates on government debt despite its relatively high debt to GDP ratio compared to say, Greece, which has a much lower ratio, they rely on an *ad hoc* explanation *par excellence* – that the assumed higher net savings desires of the Japanese domestic private sector and their supposed willingness to lend at lower interest rates than overseas investors provides the explanation. However, mainstream economists are also keen to suggest that this situation may end ‘soon’- without specifying when<sup>23</sup>. They continue with the same contention that, *ceteris paribus*, a positive causal relationship exists between heightened government deficits as a percentage of GDP and increased long term interest rates on government debt, using the cases of Eurozone countries (where nations are must act a currency users in the manner of US states and perceived heightened default risk would be expected to raise bond yields, for example Greece and Portugal) to support their contention but either ignoring data or producing *ad hoc* modifications (such as that used to ‘explain’ the apparent ‘anomaly’ of Japan) when faced with the mass of contradictory data from currency-issuing nations outside the Eurozone. MMT surely provides a more satisfying explanation, based on their understanding of the contrasting mechanisms that apply in euro-using nations and those with their own sovereign, non-convertible currencies under floating exchange rates.

This situation is an illustration of a point made by Lawson; that the inclinations of the researchers and the traditions within which they work underpin both the choice of contrast to focus upon and the explanatory mechanism used to explain it.

‘explanatory projects are inherently dependent on the interests of those involved...the interests of the investigator influence not only the choice of phenomenon to be explained, but also, by selecting the contrast, the particular explanatory mechanism to be researched.’ (Lawson 1997: 209, parentheses in the original)

Lawson is damning in his assessment of the achievements –or lack of them- that have resulted from the work of the economics profession;

‘in the end it cannot be denied that, for the last fifty years or so especially, it is difficult to identify any obvious successes (explanatorily powerful, revelatory, hypotheses) of mainstream academic economics, let alone find results that can be held up to the achievements of the sciences of nature’.  
(Lawson 1997: 225)

---

<sup>23</sup> Mitchell criticises this view in several articles, notably, 2017a (15/08/17) and 2017b (14/06/17).

However, he is careful to suggest that the *fundamental reason for this failure* lies in the methodology employed by the economics academy rather than substantive theory itself. It is its focus on the universal use of mathematical formalism to the exclusion of other approaches—despite the possibility that such methods may well be unsuited to the study of the nature of the subject matter—that is at the root of the criticism from critical realists.

‘The essence of contemporary mainstream economics does not lie at the level of substantive theory as most of its critics suggest, but at the level of methodology. Specifically, the most fundamental feature is a generalised insistence on the deductivist mode of explanation, including an unsustainable commitment to the ‘whenever this then that’ structure of ‘laws’. And it is in this very essence that the perpetual disarray of the subject<sup>24</sup> is rooted. For while the while the generalised usefulness of deductivism is dependent upon a ubiquity of closed systems, the social world, the object of social study is fundamentally open and seemingly insusceptible to scientifically interesting closures, or at least to closures of the degree of strictness that contemporary methods of economics require’. (Lawson 1997: 282).

Lawson sums up the situation in his later book,

‘modern economics is largely characterised by a mismatch between its methods of analysis and the nature of the material it seeks to illuminate’ (Lawson, 2003, p. xviii).

Lawson’s advocacy of a wider use of ‘realist social theorising’, where theory is developed with a method which makes explicit use of ontology and is strongly opposed to ‘a priori dogma’ (Lawson, 2003, p. xx) has gained significant support from heterodox economists<sup>25</sup>, notably Smithin<sup>26</sup> (2010).

Smithin (2010) considers that the nature of the ontology underpinning economic theorising is critical. He contends that ontology should provide the essential foundation of theory. He refers to Lawson’s work (Lawson 2003) in social philosophy and considers that

‘questions of social ontology must come first. That is to say, the first step should be to come to come up with some conclusion on the way the world actually is or has its being’ (Smithin 2010: 38).

---

<sup>24</sup> In personal communication in 2017, Lawson noted the lack of apparent progress made in reorienting economics in way consistent with critical realism since 1997, however, he did consider that more economists were now prepared to discuss methodology which was, at least, heartening.

<sup>25</sup> See Section 5 below

<sup>26</sup> John Smithin is Professor of Economics in the Department of Economics and the Schulich School of Business, York University, Toronto, Canada

For Smithin, the relevant epistemology should follow from the ontology and ethics would be based on a subjective choice between the available options which are actually present in the social reality. The critical realist ontology contends that social structure and institutions are both real and significant. They provide both the environment and preconditions for human actions within a society and are themselves dependent upon human behaviour. Critically, over time, their nature changes and individual and collective action will result in their transformation (Smithin 2010: 44). From the perspective of critical realism, economic theory should be based upon this ontology but, in practice, it is ethics that usually underlay the development of economic theory. However, Smithin notes how the desire to build on an individualist ethical position as an axiomatic starting point<sup>27</sup>- irrespective of its relationship to the actual social structures and behaviours present in reality- has the practical effect of rendering ontology superfluous and theory inapplicable to the real world.

Like Lawson, Smithin highlights the importance of the deeply-held political views of economists to their mode of theorising and that the idea of taking an ethical stance based upon individualism as a starting point for analysis has great appeal, especially for those who consider social classes as an illegitimate starting point for analysis, having no independent existence apart from their constituent parts and those with a deep commitment to a pure deductive method. He recognises how a commitment to individualism in theorising is a reflection of a fear of collectivism in any form. Even thinking, let alone theorising, in terms of classes might be thought of as the thin end of the wedge and the beginnings of a route to the loss of individual liberty.

Smithin notes that an ontology which is merely a reflection of individualist ethics would underpin a particular body of abstract theory which fails to capture the nature of the complex interrelationships within social reality. In contrast, an attempt to base theory on a 'realistic' ontology would need to assign key roles to extant to important institutions – such as, say, the government and the central bank -and recognise how the nature of such social institutions and their relationships is not fixed but changes over time.

Lawson both sounds a positive note and provides a call to arms in this regard, suggesting that

---

<sup>27</sup> Rizvi, *Microfoundations of macroeconomics* (2013) Abu Rizvi's focuses on the microfoundations of macroeconomics. The author critically examines the mainstream insistence that macroeconomics must be based upon microfoundations and considers how such a requirement has formed the basis for orthodox theorizing. He then discusses the arguments for considering macroeconomics as entities in and of themselves, taking examples of the existence of such irreducibility from the natural sciences. He suggests a pluralist way forward, recognising that worthwhile economic analysis is possible when economists recognise that macroeconomic phenomena are 'irreducibly distinct' (PKH, p.57) from their parts. Such an approach is consistent with PK/MMT

if economists reject deductivism and instead embrace realism then economics can yet become a productive science in common with any other scientific discipline.

‘The optimistic message, however, is that if the choice is made in favour of reality rather than deductivism, economics properly conceived emerges as a real possibility. For the social world has been found not only to be open but also structured, consisting in definite and identifiable social structures, powers, mechanisms and tendencies that are responsible for the actual course of social events and states of affairs. In accepting the challenge of seeking to illuminate them economics can yet be a science in the sense of any other science.’ (Lawson 1997: 283)

Although critical realism itself provides an ‘underlabouring’<sup>28</sup> of theory rather than generating specific substantive theory, I would argue that MMT’s approach, postulating real social mechanisms that might result in observed events and accepting the social nature of the study of these phenomena is entirely consistent with the ‘ontological turn’<sup>29</sup> suggested by Lawson in his advocacy of critical realism. Specifically, MMT contains an explicit recognition of how institutional change impacts on the real mechanisms present in an economy. For example, MMT stresses that the social structures and institutions extant under the Gold Standard – those necessary for its survival<sup>30</sup> - determined the actual behaviour of the authorities of observed by economists as policy outcomes or ‘events’. MMT highlights the contrast between these Gold Standard institutions and the nature of contemporary institutions and mechanisms at work in monetary systems when a nation issues its own non-convertible currency where state and central bank must work hand-in-hand on a daily basis.

Lawson rejects the preoccupation of mainstream economics (and indeed science in general) with *prediction*, instead contending that role of economists (and all scientists) should be to provide satisfying *explanation*, which requires the discernment of the structures and mechanisms that result in the observed phenomena. Lawson is also optimistic that, once an understanding is thus established, clear policy advice is likely to be the result.

‘If event prediction is usually infeasible it is in any case not required for a successful science of economics. For it can now be accepted that the primary aim of science is not the illumination or prediction of events at all but the identification and comprehension of the structures, powers,

---

<sup>28</sup> ‘Within economics critical realism has very much played the role of underlabourer for a more fruitful approach to economics explanation (Lawson, C. Peacock and Pratten 1996)’ [1999].

<sup>29</sup> See Dunn 2009

<sup>30</sup> Advocates of MMT contend that, under the gold standard, governments were constrained in their spending by their ability to tax and borrow. If a fiscal deficit existed there would be untaxed spending in the system which could be converted into gold at a fixed rate. In this case the state would need to offer ‘market-determined’ rates to induce holders to buy non-convertible government debt rather than convert into gold (Mosler, 2012)

mechanisms and tendencies which produce or facilitate them. And this understanding is all that is required for policy analysis and (where feasible) policy action. (Lawson 1997: 288)

Furthermore, Lawson then notes that once structures and mechanisms are identified and comprehended policies to redesign or replace them become possible, in turn leading to the potential improvement of the living standards of the population.

‘From this perspective it follows that policies and strategies can be formulated with the objective not merely ameliorating events but also of replacing structures that are unwanted by others that are needed and empowering, of facilitating a greater or more desirable or equitably distributed range of human opportunities.’ (Lawson 1997: 289)

From an MMT perspective, social realities fundamentally changed in 1971 (when Nixon closed the gold window) and new structures, mechanisms and rules now apply for nations with their own sovereign currencies operating under floating exchange rates. An appreciation of the state’s role as a currency-issuing social institution informs MMT, enabling it to be used to assess policy outcomes within a substantive theory framework which recognises a government possesses the power to ensure a nation lives up to its means i.e. it can exploit its monopoly power of the monetary system to enable all resources to be fully employed; an example of how an understanding of the real domain can inform the policy debate and potentially lead to enhanced living standards should policies based on the insights thus developed are put into practice.

#### 4. The Application of Critical Realism to the Economics Profession

In addition to the provision of a compelling method for advancing understanding of the real structures and causal mechanisms present in the economy and utilizing an explicit social ontology to explain the deep-seated causes of economic phenomena, I might suggest that critical realism might just as readily be applied to developing an *understanding of the underlying nature of the economics profession*. Critical realists might suggest that the structures and institutions, relationships and attitudes within the profession are *real* and manifest themselves in *events*, notably, how the profession responds to crises. In periods of 'moderation' where, in general, the predictions and expectations of NCM match reality the real structures and attitudes of the economics profession will remain 'hidden' and nothing of great interest would be apparent to study in the empirical domain. In other words, the psychological attitudes and sociological structure of the economics would remain out of sight (or 'out of phase'); perhaps they might be assumed to be what the profession say they are. However, in a crisis, especially when the predictions of NCM are not in accord with reality, the researcher can observe the behaviour of economists and *retroduce* from this point. In other words the behaviour of the profession would suggest the question -what must the real structure and attitudes of the profession be like in order to generate such responses to crisis?

A contrastive 'demi-reg' was apparent in the aftermath of the GFC. The profession claimed to be essentially positivist in approach. They have described their own practice as consisting of developing theory on the basis of *a priori* assumptions about human behaviour. According to the received view this theory, in turn, allows the profession to develop models which are essentially machines for generating empirically testable predictions. According to their own description of their method, these predictions are potentially falsifiable. However, examination of the reality of mainstream responses to apparent contradictory evidence suggests that they do not practice what they preach. Despite extensive empirical contradictions of their predictions, the profession has, to all intents and purposes, rejected the idea of falsification. Instead they have resorted to *ad hoc* modification and the widespread use of 'immunizing stratagems'. From a Popperian standpoint the economics profession have been guilty of 'bad science'. Such bad science might be considered as being typified by using the *ceteris paribus* clause as a 'get- out' clause without any convincing description of the counteracting mechanisms which might explain actual outcomes.

However, the behaviour of the profession certainly lends support to a Kuhnian view of science. As we have seen, Kuhn describes how a significant level of collective resistance to apparent contradiction is only to be expected. The question becomes 'does our understanding of the

real structures and mechanisms of the economy provide a rational basis for mainstream tenacity in the face of contradictions?’ If we are to accept the arguments put forward by critical realists the answer to this question would clearly be no. Instead, our understanding suggests that this attitude is unjustified and there is little or no rational basis for the retention of the NCM ‘paradigm’. We might reasonably contend that its continued hegemony is based upon ‘Groupthink’ or even ‘mob psychology’- the suggestion of the existence of which generated such disdain from Lakatos<sup>31</sup>.

We might reasonably ask why this situation persists. A clue to one aspect of a possible explanation might lie in the fact NCM profession places such emphasis on consensus and, as we have noted earlier, believes in a ‘monoculture’ (of deductivist methodology, methodological individualism and the use of formal mathematical modelling). In such an environment alternatives are unlikely to get a fair hearing. This issue is important if we agree with the view expressed by both Kuhn and Lakatos; namely, that scientific progress occurs when one theory or group of theories (such as a Lakatosian SRP) are replaced by a competitor, For this to have a good chance of happening, alternatives would have to be at least considered as feasible replacements and the possibility of such an eventuality occurring taken seriously. In any profession the existence of these circumstances requires the support of academic freedom. By this, I mean that although one ‘paradigm’ may be dominant, other approaches are at least allowed to co-exist and its advocates have fair access to influential positions and have their work published in prestigious journals.

---

<sup>31</sup>Lakatos was critical of what he saw as Kuhn’s admission that paradigm overthrow is essentially irrational, ‘*in Kuhn’s view scientific revolution is irrational, a matter for mob psychology*’<sup>31</sup>.’ (Lakatos 1970: 90-91) Lakatos’s accusation was clearly pejorative but it resonates in practice with a concept used by Mitchell (2015). Mitchell notes that, ‘In 1972, social psychologist Irving Janis identified group behaviour he termed “Groupthink”, which is a... mode of thinking people engage in when they are deeply involved in a cohesive in-group, when the members striving for unanimity override their motivation to realistically appraise alternative courses of action [Janis, 1982: 9]. It “requires each member to avoid raising controversial issues” [Janis, 1982: 12]. Groupthink drives a sort of ‘mob-rule’ that maintains discipline within the group or community of decision-makers. These communities develop a dominant culture, which provides its members, with a sense of belonging and joint purpose but also renders them oblivious and hostile to new and superior ways of thinking. For Mitchell, ‘Groupthink’ characterizes the behavior of both NCM and neoliberal organisations such as the IMF. Thus ‘rational’ drivers towards paradigm change in economics are stifled.

## 5. Academic Freedom

'It seems to me that they in proof of any assertion rely simply on the weight of authority, without adducing any argument in support of it, act very absurdly. I, on the contrary, wish to be allowed freely to question and freely to answer you without any sort of adulation, as well becomes those who are in search of the truth.' Vincenzo Galilei, father of Galileo Galilei, in *Dialogue of Ancient and Modern Music* (published 1581, Florence); quoted in Sobel (2000: 17)

I would suggest that the acceptance of pluralism for its own sake is critical for without it, the potential for future progress is restricted. However, it must be accepted that an inclusive attitude to alternative paradigms or 'disciplinary matrices' is not without costs for mainstream incumbents. For a discipline that aspires to be granted 'maturity' status in a Kuhnian sense- such as economics- acceptance of the legitimacy of alternative world views can appear anathema. The desire for a common methodology and even a hegemonic substantive theory can appear attractive to any academy. It reinforces their status and position and condemns potential opponents to the role of mere spectators and essentially powerless critics.

It may well be that such a desire to eliminate potential dissent is not readily apparent, i.e. the advocates of orthodoxy do not actively criticise their potential opponents or even follow any particular overt strategy specifically designed to prevent their ability to flourish. Rather, their attitude is deep-seated, they effectively ignore the opposition, regarding them as unimportant or even as practitioners in another field. In other words, they define their discipline as the activity which they are undertaking giving them the ability to deny the validity of alternative visions. For mainstream economists, economics is the study of resource allocation under conditions of scarcity. It utilises a monist methodology based on *a priori* assumptions concerning the ontological priority of individuals- in other words it employs methodological individualism- and develops its substantive theory from this point. Its methods, as we have seen, are deductivist and formalist *par excellence*. Anything else might possibly be interesting but isn't real economics and needs to find expression in places other than its premier journals and the lecture theatres and research facilities of its most prestigious universities.

Such academic ostracism has the effect of making potential non-conformist or *avante-garde* visions effectively invisible to mainstream academic practice; a point well noted by Bilgrami (2015),

'The dogmatism that interests me is found in submerged forms of academic *exclusion* when we circle the wagons around our own frameworks for discussion so that *alternative*

*frameworks* for pursuing the truth simply will not even become visible on the horizon of our research goals'. (Bilgrami 2015: 19)

Bilgrami makes use of an interesting 'upstream/downstream' metaphor; he contends that the open-minded acceptance of the potential validity of an alternative framework at a point in time at least allows for the possibility that such an approach may provide a realistic rival to orthodoxy at a later date. An overwhelming desire to maintain and refine the status quo characterised by the rejection of possible contenders reduces or even removes this potential threat. This the exclusion, for Bilgrami, constitutes lack of academic freedom or even 'academic unfreedom'.

'Alternative frameworks *do not refute our conclusions directly* with counterevidence or counterarguments, so much as point to other, possibly deeper ways of looking at what we are studying'.

'If they do contain counterarguments and counterevidence to our own claims and convictions these will only surface further 'downstream' well after the frameworks are recognised as possibly fruitful forms of investigation'.

'It is this recognition 'upstream' that the dogmatist in us finds it so hard to confer and it is in this failure that academic 'unfreedom' is located.' (Bilgrami 2015: 19)

Bilgrami considers that the source of the desire to restrict academic freedom is by no means easy to establish, in fact, it may be that the practitioners themselves may be unaware that it is happening and might actually consider themselves to be open-minded. There may be little or no overt pressure from inside or outside a group of orthodox scientists. He believes that careful research is required to establish its root cause; it is often the case that a

'..discipline discourages the development of frameworks outside of a set of assumptions on which there is mainstream consensus-and the political influence on the formation and maintenance of these exclusive assumptions, where it exists, is very indirect indeed, so indirect that it would need a fair amount of diagnostic work to reveal it, since the practitioners themselves are often quite innocent of the influence'. (Bilgrami 2015: 19)

He refers specifically to economics in this context.

'Now there may be no direct influence that forces this refusal to question let alone give up one's assumptions in a discipline such as economics'. (Bilgrami 2015: 20)

As noted earlier, if we acknowledge that scientific progress involves the replacement of one approach with another, the refusal to embrace even the possibility of the future potential of alternatives must surely reduce the potential for paradigm change. It is likely that if scientists who express a desire to work within a different framework are effectively excluded from the core activities of the mainstream community it makes getting a fair hearing all the problematic. Using Bilgrami's metaphor, the rejection of framework 'upstream' means removing a potential source of evidence- which might contradict orthodoxy- 'downstream.'

Of course, paradigm change is still possible but it is much more difficult; the academic status of the dissenters is likely to be lower than their opponents and it would be likely that they would lack equivalent access to the media required to get their message across and be severely hampered in any debate. Essentially dissidents are still in the race but suffering a severe handicap, ultimately increasing the likelihood that a poorly-performing theory or research programme (quite possibly both in terms of explanation and prediction) is more likely to be able to insulate itself and enhance its survival chances by *ad hoc* modification. Bilgrami is scathing in his view of economics in this latter regard.

Bilgrami considers that economics is the

'worst offender in inuring itself against alternative frameworks of thought and analysis' ... I have never come across a discipline that combines as much extraordinary sophistication and high-powered intellect and intelligence with as much demonstrable falsehood'. (Bilgrami 2015: 20)

Dow<sup>32</sup> notes, following McCloskey, that economists engage in two forms of discourse –official and unofficial. Economists must engage in the 'monist' official discourse in order to cement their position within the progression: they are officially 'academically constrained' by the requirement to base their official research and communication on formal deductivism. However, they also engage in an unofficial discourse in order to enhance their arguments.

'Indeed, since a closed system of mathematics allows only for very limited argument and application, mainstream economists can be observed to rely on a wide range of methods in what McCloskey (1983)<sup>33</sup> calls their 'unofficial discourse'. In practise they employ a pluralist methodology.

---

<sup>32</sup> **Sheila Dow** is Emeritus Professor of Economics at the University of Stirling has worked as an economist with the Bank of England and the Government of Manitoba and as an advisor on monetary policy to the UK Treasury Select Committee.

<sup>33</sup> 'Economists have two attitudes towards discourse, the official and the unofficial, the explicit and the implicit. The official rhetorical discourse, to which they subscribe in the abstract and in methodological ruminations, declares them to be scientists in the modern mode. The credo of the Scientific Method, known mockingly among its many critics as the Received View, is an amalgam of logical positivism, behaviourism, operationalism and the hypothetico-deductive model of science. (McCloskey 1983: 484) However, McCloskey adds that there is a second-unofficial- attitude towards discourse; 'that adopted in actual scientific work in economics. It is different from the official modernist rhetoric. What is alarming about the workaday

But the 'official discourse' of academic publication still requires that arguments conform to the closed-system norm of mathematical deductivism. As we have seen, this requirement of the official discourse is used to demarcate science from non-science, an important element of the power relations which operate within the discipline. Publication, funding, hiring and firing are increasingly built on metrics with respect to the official discourse [Dow 2007]' (Dow 2017: 7).

In an earlier article, Dow (2016) points out how mainstream economists may well be required to use unofficial discourse to back up the official communication given that the latter – although required by the academy- is likely to be insufficient for its purpose.

'The evident need for this unofficial discourse demonstrates the inconclusive nature of closed-system argumentation, consistent with an open-system ontology. Even in articles apparently relying on formal, deductivist reasoning, other forms of reasoning are shown to be used as rhetorical devices, designed to persuade as to the meaning and credentials of the formal argument. It may be that awareness of the range of methods actually employed informally by mainstream economists has allowed to brush off accusations of closed-system thinking'. (Dow 2016: 108)

Dow notes how adopting pluralism would involve a recognition of this unofficial discourse; the existence of which is not appreciated with orthodox economics let alone considered to be significant aspect of methodology.

'It is a major issue, which pluralism would address, that the operation of this official discourse in parallel to the very different unofficial discourse is not widely recognised within the mainstream, far less justified methodologically [Dow 2007]'. (Dow 2017: 7)

---

rhetoric is not its content but that it is unexamined and that official rhetoric pops up in mischievous ways'. (McCloskey 1983: 493)

## 6. Towards a new paradigm in economics.

Despite the damaging impact of the GFC on the prestige of mainstream economics, massive challenges still face dissidents. Two issues can be identified; how best to develop a coherent alternative programme to NCM and how best to go about getting it accepted. The two are interrelated, as will become apparent.

As we have noted, the hegemony of NCM has been accompanied by restricted academic freedom, the side-lining of heterodox economics as a whole and the embedding of monist methodology. In contrast to advocates of such an approach who suggest that it is 'more scientific'<sup>34</sup>, Dow (2017) contends that methodological pluralism<sup>35</sup> is more likely to be the basis for developing meaningful knowledge.

'it is inevitable that different ideas will co-exist in economics, not just about theory, but also as to what constitutes reliable knowledge, i.e. different theories of understanding: different approaches understand the evidence of experience differently, apply different types of logic to it and put different emphases on the purpose of the exercise being prediction or explanation. If this is the case, then the search for reliable knowledge inevitably entails plurality'. (Dow 2017: 2)

Dow (2017) notes how there two separate aspects of the argument in favour of pluralism,

*'Support* for such a plurality – pluralism - arises from two main sources. One is that it is helpful to have a variety of analyses to illuminate different aspects of a complex, evolving reality, making economics at a disciplinary level more reliable. The other is the need for economists to be able to recognise the limitations of their chosen approach relative to alternatives, and to explain and defend that approach in debate, making economics within each approach more reliable. As a corollary, restriction of economics to one approach is a less reliable basis for knowledge of the economy'. (Dow 2017: 2)

Thus, for Dow, the existence of methodological pluralism in economics is likely to enhance the discipline's potential to produce meaningful scientific knowledge. Importantly, within a more 'pluralist' academy we might reasonably expect heterodox economists to have more scope to both generate and to argue in favour of their own alternative approach or approaches in opposition to the mainstream or NCM paradigm.

---

<sup>34</sup> Such a view is characteristic of the mainstream or NCM

<sup>35</sup>Dow defines methodological pluralism as the co-existence of several approaches

Dow (2017: 8) goes on to distinguish between three different forms of pluralism in addition to methodological pluralism. First, she considers pluralist methodology where different methodologies are used simultaneously and economists construct theories based on varied perspectives, each of which starts from a different position.

‘An alternative methodology drawing on Keynes’s human logic<sup>36</sup> is retrodution, by which experience (using some methods for representing it) combined with imagination yields ideas about possible causal relations which can then be exposed to analysis and further evidence using a range of methods. Rather than linear deduction, which is vulnerable to any problems with the axioms on which it builds, this approach uses what I have referred to as a ‘Babylonian’ approach<sup>37</sup>, which builds theories on a range of arguments with different starting points’. (Dow 2017: 9)

Following Keynes, Dow notes that such pluralism provides the basis for strengthening the credibility of a contention, specifically where orthodox deductivist reasoning fails to convince.

‘This is a mechanism for increasing weight of argument, a concept developed by Keynes (1921). If deductive argument and evidence are insufficient to demonstrate the truth of a proposition, at least we can have more confidence in the proposition the more relevant evidence we have.’ (Dow 2017: 9)

Dow goes on to consider how Downward and Mearman (2007) show how different approaches can be combined in process of ‘triangulation.’

‘mixed-methods triangulation can be understood as the manifestation of retrodution, the logic of inference espoused by critical realism. As such, it can provide the basis upon which different insights upon the same phenomenon can be sensibly combined.’ (Downward and Mearman 2007: 1)

Downward and Mearman note than the origin of the concept of triangulation lies in navigation but

---

<sup>36</sup> See Dow (2012a)

<sup>37</sup> ‘Babylonian thought...refers to social structure which is understood to be organic, itself an open system. It is thus realist, and indeed holds much in common with the critical realist approach to economics...The Babylonian approach suggests a basis for differentiation in the form of realist ontology adopted- whether an economist understands the economic process in terms of production or exchange, class or the rational individual and so on...Similarly, Babylonian thought provides a rationale for pluralism. It justifies both methodological pluralism...and pluralism of method...If the real world is understood as organic, not governed by universal laws, then there is scope for a range of methodologies. Further Babylonian thought specially supports the use of a range of different methods for different methods for different reasoning’. (Dow 2012b)

'[i]n social research in its broadest sense, triangulation implies combining together more than one set of insights in an investigation' (Downward and Mearman 2007: 80).

Dow notes the multi-faceted nature of triangulation,

'Triangulation can be applied at the level of data, whereby different types of evidence can be drawn from official statistics, survey evidence etc. It can also apply to investigators: different research teams drawing on different disciplines and different skill sets. Similarly, considering a problem simultaneously from the point of view of different theories enhances understanding. Finally there can be triangulation in the sense of drawing on different versions of the same method, or of drawing on different methods (e.g. qualitative and quantitative research)'. (Dow 2017: 9)

Next, Dow notes the importance of ontological pluralism (the existence different views of the essential metaphysical nature of the subject matter) which forms the basis for methodological pluralism.

'Ontological plurality simply refers to an ontology whereby there is not unity in nature - rather the real social world is multi-faceted, complex, evolving - and thus open. If there is plurality at the ontological level, then it is hard (though not impossible) to argue for methodological monism (only one approach). For example, some heterodox economists maintain that there is ontological plurality and argue from that that their approach alone is right and the mainstream approach is wrong. Ontological plurality is a necessary but not sufficient condition for methodological pluralism'. (Dow 2018 personal correspondence, parentheses in the original)

Finally, Dow considers theoretical pluralism which involves promoting a range of theories, which, in principle may be either compatible with a specific approach or not. The first of these is the only sort of pluralism which is acceptable within NCM i.e. a theory may differ from the established one but as long as the new theory is based upon the same axioms as that the theory it seeks to improve upon, or even replace, it has the opportunity of being accepted (Lee [2010] refers to this category of economics theorising as 'heretical; see below).

I would argue that, following Dow, an embracing of pluralism is likely to contribute the development of reliable knowledge and therefore it should be a foundational element of an alternative heterodox paradigm. However, before discussing the possible nature of such an approach, three issues need to be addressed. First, what are the distinguishing features of heterodox economics when viewed as a whole and as a number of distinct communities? Second, to what extent, if at all, can these separate groups be viewed as compatible and thus

collectively contribute to a viable potential alternative paradigm? Third, what role might MMT play within such an alternative vision?

Mearman notes that heterodox merely means 'not orthodox', then suggests that

'Dequech (2007-8)<sup>38</sup> offers a helpful analysis of existing definitions of heterodox and finds that it is difficult to arrive at one which adequately describes the current heterodox community other than 'not orthodox'. (Mearman 2011: 2)

However, Mearman considers there to be more to heterodox economics than merely a criticism of orthodoxy and suggests that it offers specific insights which are absent from mainstream economic discourse,

'This [definition as 'not orthodox'] is rather unsatisfactory because it appears to undersell heterodox economics, which in its traditional composite elements, such as Marxism and Keynesianism, would appear to be more than merely critique. Both Marxism and Keynesianism, for example, contain constructive programmes of economic theory (albeit in an interdisciplinary way), economic method, logic, ontology, politics, ethics, etc. which differ from those espoused by the mainstream economics...perhaps aware of the agenda of not appearing merely critical, several economists have offered explicit or implicit definitions of heterodox economics'. (Mearman 2011: 2-3)

Lee (2009) contends that the different groups that collectively form the heterodox community have each produced meaningful and telling criticisms of mainstream economics. More than that, the separate criticisms form complementary elements of an overall critique of the both the methodology and technical apparatus of mainstream economics.

'In particular, each of the heterodox approaches that are part of heterodox economics has produced critiques of particular core propositions of neoclassical economic theory, while each core proposition has been subject to more than one heterodox critique; in addition, the multiple heterodox critiques of a single proposition overlap in argumentation. Finally, because of the overlapping and interweaving of the heterodox critiques, they provide a general critique and dismissal of the core propositions that leads to rejection and denial of the truth and values of mainstream theory, its laws, methodology and texts' (Lee 2009: 7-8)

---

<sup>38</sup> Dequech (2007) provides a comprehensive analysis of the possible ways to define neo-classical, mainstream, orthodox and heterodox economics from different perspectives, including sociological characterisation.

Lee then refers to O'Hara (2002) and specifies the groups or communities that might be considered heterodox, O'Hara first highlights the particular focus and insights provided by heterodox economists as a whole;

'an emphasis on ethics, morals and justice situated in an institutional setting [and as particular groups] 'Institutionalists bring a pragmatic approach with a series of concepts of change and normative theory of progress, along with a commitment to policy. Marxists bring a set of theories of class and the economic surplus. Feminists bring a holistic account of the ongoing relationship between gender, class and ethnicity in a context of difference...post-Keynesians contribute through an analysis of institutions set in real time, with an emphasis on effective demand, uncertainty and a monetary theory of production linked closely with policy recommendations.' (O'Hara 2002: 611, parentheses added).

Lee then contends that together these groups provide the core of the heterodox community's collective approach.

'Given the definition of heterodox economics as a science of the social provisioning process and the structure of the explanation of the process combined with the pluralistic and integrative proclivities of heterodox economists, there have emerged a number of elements that have come to constitute the provisional and methodological core of heterodox theory<sup>39</sup>. (Lee 2009: 9)

When considering the second issue regarding the potential compatibility of heterodox schools and their ability to fruitfully co-exist within one coherent paradigm or 'disciplinary matrix', a helpful insight is provided by Mearman (2011). When attempting to assess the extent of commonality as opposed to separateness within heterodox economics, Mearman considers two opposing views, described as 'lumpers' and 'splitters'. In this regard the motivation of those involved in describing the nature of heterodoxy becomes critical. 'Splitters' approach heterodoxy with the aim of breaking up a possible whole into parts in order to facilitate analysis. In contrast 'lumpers' look for shared foundations in order to support their desire to discover a commonality which might lead to fruitful work and enhance the chances of meaningful knowledge coming to light.

'However, another pertinent question is whether or not to regard the groups within the heterodox population, or indeed heterodox and mainstream, as separate. In the taxonomy literature, a distinction is often made between 'lumpers' and 'splitters' – those whose instinct is to, respectively, lump together similar but different cases, or emphasise the differences and split them up. Whenever

a category is made, there is a dynamic between the desire to analyse and the desire to lump. The desire to analyse is reinforced by a desire to split. The difference between lumpers and splitters is defined by their emphasis of similarity or of difference.' (Mearman 2011: 25)

In his empirical work, Mearman finds evidence which supports both camps. He notes that the

'empirical evidence here supports either urge: it suggests considerable heterogeneity in that little structure can be found within the community of self-identified heterodox economists. However, in other ways, there are reasons to lump: there is a shared dislike of the mainstream; and concepts such as history are almost universally held. (Mearman 2011: 25)

However, Mearman highlights a desire to 'split' particularly in the methodology literature and adds a notes of caution in this regard.

'It would seem that there has been a tendency in the methodological literature...to split. Splitting is something humans like to do; whether this act is helpful or not is debatable. Given the apparent fuzziness of the categories involved, it seems that splitting ought to be done cautiously, provisionally and open to revision. (Mearman 2011: 25-6)

The 'lumpers versus splitters' debate seems irresolvable in a definitive sense which points to the need to consider the issue from a different perspective. It might be argued that some groups have sufficient common ground to be considered in a collective sense at least for the purpose of some forms of analysis. This is not to say, that differences do not exist, or even that they are unimportant, only that sufficient commonality exists for heterodox groups to combine their approaches and insights so as to yield fruitful results. Other groups may be considered as being so different that working in close cooperation is neither feasible nor desirable and the sense of 'otherness' needs to be maintained.

I would argue that the essential ontology underpinning NCM is such that it could not and should not be synthesized with heterodoxy. In contrast, a desire to associate and share ideas would seem reasonable in the case of heterodox groups which possess a common ontological structure but aim to uncover different aspects of economic reality. If this is the case different heterodox schools might be considered as distinct but complementary elements capable of operating within the same paradigm or 'disciplinary matrix'.

Lee (2009: 9) also notes that critical realism is associated with particular heterodox approaches and Pratten (2013) examines the relationship between Post-Keynesianism and

critical realism and how they might be considered as mutually supportive projects. He stresses that when Post-Keynesians fail to understand the foundational importance of social ontology they may become too prone to suppose that the weakness of orthodox economics merely lies in their theories and that the solution merely requires their replacement with alternative formal models. However, when Post-Keynesians adopt an explicit ontological position the potential for fruitful complementarity is more likely to be realised. Pratten also highlights how the advocates of critical realism regard heterodox economists as sharing an ontological perspective, but concentrating on different aspects of the nature of the economy.

‘The argument the proponents of critical realism advance is that different heterodox traditions share a common ontological vision; where they differ is those aspects of this ontology each chooses to emphasize’ (Pratten 2013: 172)

I would argue that those very heterodox groups that accept the need for an ‘ontological turn’, explicitly utilise a layered ontology and embrace pluralism might successfully co-exist within one community studying economics and, importantly, interact in such a way as to encourage progress by fostering the advancement of knowledge of real economic mechanisms and structures. In addition, I would add that the acceptance of pluralism in all its forms (in Dow’s schema) would enhance its potential to produce meaningful knowledge. Such a community, using a range of substantive theories all of which are ‘underlaboured’ by critical realism<sup>40</sup> would have sufficient common ground to engage in wide-ranging and meaningful internal communication.

It is important to stress that the boundaries between paradigms are not fixed, rather they are moveable and permeable to a greater or lesser extent. Differing ontologies reduce commensurability but do not eliminate it completely.

‘distinctions between ontologies (or indeed paradigms) are not absolute, but rather useful as categorisations by which to understand the discipline and as a basis for mutual understanding. The boundaries of paradigms are permeable and evolving, and yet they hold enough in common for communication to be effective in promoting scientific activity. Different ontologies and all they entail render paradigms incommensurate, each has its own take (none of which can be regarded as ‘correct’) on a common reality. But it is this common reality which ensures that incommensurability is not complete’. (Dow 2017: 6)

---

<sup>40</sup> I would contend that such a community would include Austrian economics. It is hard to support the idea that an Austrian and a Marxist, for example, understand the nature of the economy in the same way (Dow 2004).

From this perspective those heterodox economists who see benefits in concentrating their work within their own specific approach might be seen as those whose activity is emphasized by the 'splitters'. They may be considered as having their own approach -or even paradigm. They may focus intensely on a text (or group of texts) by a single author such as Marx or Keynes. Given science is a social activity, in their actual practice they will spend the majority of their time engaging with economists of the same school. The internal communication within such an approach might be expected to be extensive as the members of the group use the same concepts, effectively 'speaking the same language'.

Refinements of their own theories are effectively prioritized. The negative aspect to such a structuring of heterodoxy is the increase in the number of approaches and the corresponding increase in difficulty in general inter-paradigm communication. Dow, notes that as science is a community-based activity, limiting the number of paradigms is a practical necessity. She notes how the exchange of ideas between economists working within different paradigms is possible, but it is likely to be far from perfect, since those working in one paradigm would require sufficient knowledge of other approaches to debate effectively. From this perspective, increasing the number of paradigms will have consequences for the effectiveness of communication.

'since science proceeds on the basis of scientific communities, there is in practice a limit to the number of approaches which can be sustained. Individual scientists must be able to persuade *some* of their fellows of the worth of their research (even if only for publication and hiring purposes), and so need to be able to communicate within one approach or another. The outcome is what I have termed 'structured pluralism' (Dow 2004a), whereby any discipline operates within a fairly limited range of paradigms, according to the number of communities which can be supported. The alternative of complete relativism is, I would argue, not logistically feasible. Pursuing knowledge is a social activity which requires successful (even if imperfect) communication, which would be precluded by the infinite number of paradigms of complete relativism'. (Dow 2017: 10, parentheses in the original)

There are some economists who favour a deeper sense of heterodox unification, in a sense contending for an 'enlarged' paradigm, stressing ontological similarities rather than ontological or, often, substantive differences. For such economists commensurability and communication between heterodox groups are implicitly more highly valued and any reduction in the 'doctrinal purity' of the social scientific research of any given heterodox school that may result is at least implicitly accepted. In their day-to-day practice they might be expected to engage in a higher proportion of inter-group debate than their colleagues in the former group.

The relationship between one heterodox group and another can be complex and evolving. A case in point is the Marxist reaction to Keynes; and the divisions it ultimately caused between what might be termed Keynesian 'sympathisers' – 'Kaleckian- Sraffian Marxists'- and those who rejected Keynesianism as simply another variant of bourgeois economics with an excessive focus on effective demand. For the latter group-which Howard and King (1992) term 'anti-Keynesian Marxists'- Keynesians paid far too little attention to production and mistakenly concentrated on exchange. Importantly, Keynesianism neglected value theory and was guilty of failing to explicitly recognise the inherent exploitative nature of capitalism. The schism in Marxism is still significant today.<sup>41</sup>

'The real importance of Keynes's ideas for Marxism, however, became clear only once they had been reworked for the long run, and in the context of Sraffa's rehabilitation of classical political economy...Among Marxists, however, there was very soon a great divide, with many regarding Kalecki-Sraffa version of Marxism as nothing more than 'left Keynesianism'. Instead they adopted methodological distinctiveness of Marx's economic thought, the pivotal role of production as distinct from exchange, and the overriding importance of the falling rate of profit, and took up an anti-Keynesian stance. The gulf between these two schools widened, and also included value theory, with 'left Keynesians' and Kaleckians being much readier than their opponents to abandon the labour theory of value in the face of the many problems which arose with it'. (Howard and King 1992: 105)

Howard and King (1992) outline the specific nature of the critique of Keynes - and by implication that of the Post-Keynesian position<sup>42</sup>- which was specified by the anti-Keynesian Marxists. They note a perceived error in Keynes' analysis of the contrast between a pre-capitalist and a capitalist economy.

'In simple or precapitalist commodity production, circulation takes the form C-M-C: the individual producer exchanges one commodity (e) for money (M) in order to buy a different commodity of

---

<sup>41</sup> We might consider this division as rooted in hermeneutics. Kliman (2007; 2012) and Kliman and Potts (2015) explain how it is unreasonable to consider that Marxian theory is 'internally inconsistent' when, given a particular interpretation (namely the temporal single system interpretation or TSSI), it can be shown that Marx's original approach is, in fact, entirely internally consistent and requires no 'improvement' or 'augmentation' as suggested by the Sraffian 'Marxists'.

<sup>42</sup> 'This forthright anti-Keynesianism had its origins in the (pre-Keynesian) work of Henryk Grossmann, and was propagated tirelessly over a almost half a century by his disciple, Paul Mattick. Today it is very widely accepted among Marxian economists. It can best be explained by using Marx's formula for the circulation of capital which was cited, inaccurately, by Keynes in his 1933 draft ...and by ignoring both the transformation of labour values into prices of and fixed capital.' (Howard and King 1992: 102)

equal value (e, not C' as Keynes had it). In capitalism the relationship is M-C-C'-M' (not Keynes's M-C-M'). (Howard and King 1992: 102)

Howard and King explain how the 'anti-Keynesian' Marxist explanation of the process of creation and extraction of surplus highlights the weaknesses in the Keynesian analysis. They first outline the basic nature of the Marxist position.

'The capitalist thus begins with a sum of money (M) which is exchanged for means of production and labour power of equal value (C). These commodities are set to work in production, in the course of which surplus labour is performed and surplus value created. At the end of the production process the capitalist is the owner of new commodities greater in value than those with which he began (e), the difference between C and C' being the surplus value they embody. All being well, he sells them at their labour values and receives an equivalent sum of money (M'), where the difference between M' and M represents both the surplus value produced and the profit which the capitalist has obtained. The rate of profit is given by  $(C' - C)/C$ , which is equal to  $(M' - M)/M$  (Howard and King 1992: 102-3)

Howard and King first consider that, in contrast to the Keynesians who focus their full attention on lack of aggregate demand, the anti-Keynesians show how a crisis can emerge from the capitalist class's inability to generate enough surplus. Second, they note, again in contrast to the Keynesian view, that the potential solution does not lie in state intervention since it produces no surplus itself and merely deprives capitalists of productive resources that they might potentially use to create surplus.

'The claim of the anti-Keynesian Marxists, then, is that crises result from a failure to produce sufficient surplus value, so that  $(C' - C)$  rises less rapidly than C and the rate of profit falls. They are not the result of difficulties at the realisation stage (e-M'). Since the state is not itself a capitalist it produces no surplus value of its own, and its activities constitute the dissipation of that which is produced by productive labour in private, profit-making industry. State intervention reduces the amount of surplus value available to private capital, and simply serves to make things worse; this is the reverse of what Keynesian economics implies'. (Howard and King 1992: 103)

The 'natural' Keynesian response to this exposition is pointed out by Howard and King, who expect that it might involve the accusation that the anti-Keynesian Marxists are relying upon the impact of Ricardian equivalence; a concept which Keynesians, in their opinion, have already discredited. However, Howard and King suggest from the perspective of the anti-Keynesian Marxists, that such a criticism is misplaced. The latter group are not, in fact, denying the possibility that lack of demand might be evident in the crisis. However, they

consider this to be an effect not a cause. The cause remains lack of sufficient surplus, which in turn contributes to a fall in the profit rate leading to a decrease in investment.

'At first glance this is a glaring example of the Ricardian fallacy which Keynes denounced in Marx himself; in assuming that  $M' = C'$  (and  $C = M$ ) it appears to rest solidly upon Say's Law and to deny the possibility of deficient effective demand. In fact this is not so. The anti-Keynesian position does not rule out the possibility that  $M' < C$ . Indeed, this might well be the result of the cutback in investment produced by the decline in the profit rate, which would reduce effective demand and lead to a fall in product prices; it would then be an important factor generalising and deepening the crisis. But, to repeat, for the anti-Keynesians it is only an effect'. (Howard and King 1992: 103)

For the anti-Keynesian Marxists the essence of the crisis is not to be found in the inability of capitalist to realise surplus value rather it is located in production; specifically capitalists' inability to produce sufficient surplus value. Howard and King then describe what they consider the anti-Keynesian Marxists have shown.

'The deeper cause of the crisis lies elsewhere, in the production of surplus value and not in the difficulties of realising surplus value. It is important to be clear as to exactly what the anti-Keynesians have, and have not, established. Quite irrespective of the validity of Marx's falling rate of profit analysis...they have demonstrated that crises *may* originate with the production of surplus value, without there being realisation difficulties'. (Howard and King 1992: 103)

Importantly, however, Howard and King also point out what the anti-Keynesian Marxists have not demonstrated. They contend that anti-Keynesian Marxists have not established that the crisis must always arise in production, only that this *may be its cause*. Thus their analysis is richer in the sense that it moves away from a concentration on lack of effective demand (which is the case for the Post-Keynesians) and is accepting of the possibility of multiple causes of crises in capitalism.

'What they have not shown is that all crises *must* originate in this way. With a constant or even rising ratio between  $(C' - C)$  and  $C$ , the realised profit rate  $(M' - M)/M$  will fall, and a crisis may ensue, if  $M' < C$  due to deficient effective demand. Conversely, a crisis may result from excessive effective demand. In these circumstances the short-run or market prices of means of production, and labour power, rise above their long-run prices of production (which we have assumed to be equal to labour values). Hence capitalists are unable to buy inputs equal in value to  $M$ , so that  $C < M'$ '. (Howard and King 1992: 103-104)

It seems that the anti-Keynesian Marxists have their counterparts within Post-Keynesianism. I might term this group as 'anti-MMT Post-Keynesians'. Martin Watts (2016) provides a detailed study of the nature of this critique as well as considering new-Keynesian criticism of MMT<sup>43</sup> (which is only to be expected). Watts notes that Post-Keynesian support for MMT can be pinpointed and it is therefore reasonable to contend that a degree of sympathy for MMT exists within Post-Keynesianism.

'This view gains some support from a paper in the 'User's Guide' to post-Keynesian economics which upholds the principles of functional finance, and states that 'the capacity of governments to spend is not constrained by their ability to collect tax revenue or by the willingness of the private sector to hold government securities' (Hart and Kriesler, 2015:17-18). (Watts 2016: 3)

However, Watts notes that support for MMT is very far from universal with Post-Keynesianism.

'However a brief review of post-GFC commentary regarding the conduct of fiscal policy by Juniper et al. (2014-15) revealed that many post-Keynesians do not subscribe to functional finance principles and/or are hostile to a Job Guarantee. For example, Sawyer [2003] advocates pump-priming plus incomes policy as a means of securing sustained full employment. (Watts 2016: 3, parentheses added)

One of the most ardent Post-Keynesian critics of MMT within Post-Keynesian ranks is Thomas Palley.

'Palley (2015a) challenges the originality of MMT principles, and claims that MMT 'over-simplifies the challenges of attaining noninflationary full employment' and that other claims are either simplistic or flawed. A considered response was penned by Tymoigne and Wray (2015)<sup>44</sup> which was followed by a further riposte from Palley (2015b)'. (Watts 2016: 4)

I consider that Watts (2016) provides a comprehensive rebuttal of the critiques of Palley (and others) and a strong defence of the possible role of MMT within Post-Keynesianism.

'We suggest that the post-Keynesian theoretical framework would be strengthened by the adoption of chartalist and functional finance principles, which should be informed by an institutionally based understanding of fiscal and liquidity operations and the conduct of monetary policy which is characteristic of the articulation of the principles of MMT'. (Watts 2016: 4)

---

<sup>43</sup> Exemplified by Professor Wren-Lewis of Oxford University (2012; 2016a; 2016b)

<sup>44</sup> Such a debate typifies the criticism that MMT can sometime receive from unsympathetic Post-Keynesians and the replies of MMT advocates.

Watts highlights a lack of scholarly analysis of the ‘fiscal identity’<sup>45</sup> on the part of Post-Keynesian critics as contributing to what he considers to be misdirected antagonism. The weakness of the Post-Keynesian critique can be mainly attributed a lack of understanding of the actual extant institutional arrangements which underpin the operation of the monetary system.

‘We argue that a cavalier interpretation of the *fiscal identity* in some recent articles has been the basis for misleading claims about the conceptual, theoretical and policy insights of Modern Monetary Theory. The interpretation of the *fiscal identity* must be informed by the prevailing institutional arrangements which underpin the conduct of fiscal and monetary policy and liquidity management’. (Watts 2016: 26)

Watts also bemoans the fact that though Post-Keynesians have opposed austerity they have tended to criticise MMT policies without providing an adequate alternative and, in general, from Watts’ perspective, MMT has had little impact upon Post-Keynesian policy recommendations.

‘Finally, we note that while there is a consensus amongst Post Keynesian economists that austerity measures should be eschewed, the critiques of the Employer of Last Resort (Job Guarantee) schemes have not been accompanied by plausible and sustainable full employment strategies<sup>46</sup>. The consequence has been that the MMT perspective has been largely invisible in Post Keynesian policy debates’. (Watts 2016: 29)

When we consider the potential for constructing a new paradigm, we might reiterate the underlying aims of the economists involved as critical. I would argue that recognition of a broadly common ontology ought to lead to open and fruitful debate between heterodox economists from different traditions. In contrast those who stress their ‘otherness’ might be expected to concentrate on intra-paradigm argument which might divert attention from criticism of the mainstream and developing new ideas, or even, if too forceful, lead to fracture within heterodoxy. I would argue that a more integrated and unified heterodoxy is likely to empower the development of a more concerted attack on mainstream economics. At this point it seems clear to me that the insights provided MMT which are ignored by mainstream economists, should have an important role to play in the work of a heterodox paradigm.

---

<sup>45</sup> See Watts 2016: 5-16 for a detailed discussion on this point.

<sup>46</sup> I might argue that this criticism of the Post-Keynesian position might be too harsh; Harcourt (2006: 145-57) sets out a detailed policy designed to *maintain* full employment and price stability. I consider this approach to be based on sound reasoning (Salter 1960) and would advocate its use- but as part of a policy mix, thus making it complementary to, rather than a replacement for, a Job Guarantee system.

I am not suggesting that MMT provides a complete theoretical analysis of all aspects of concern to economists. However, I would argue that MMT's distinctive focus on the operational reality of monetary systems has enabled it to provide a rigorous explanation of the real causal mechanisms at work under fixed and floating exchange rate regimes. The insights following from MMT are, I would argue, both highly significant and different from both mainstream economics and other heterodox schools. An understanding of MMT allows an economist to see the government which issues its own sovereign currency under floating exchange rates as a currency-issuer whose net spending forms part of an ex-post accounting identity and give powerful grounds for rejecting the NCM contention that governments face an ex-ante budget constraint. In its analysis of the policy prescriptions- especially that of an employer of last resort policy- that follow give it a potentially unique and highly valuable role to play.

I would argue that MMT's analysis of this operational reality is essentially compatible with other aspects of heterodox economics, in particular Post-Keynesianism<sup>47</sup> and Marxism<sup>48</sup>, thus a coherent paradigm based around the contributions of these groups would be feasible.

I am not suggesting there would be no disagreements, far from it, rather that the relative commensurability that comes from a commonly held ontology would give us reasonable grounds to expect that the results of the intra-community debates would be positive. If the heuristics suggested by Dow (2017) –discussed below- underpin behaviour I would remain optimistic about the potential for the work carried out within such a paradigm to both create insightful knowledge and even provide an alternative to NCM. However, as we have seen, this may not necessarily be the case if some heterodox economists reject Dow's heuristics or look to generate meaningful knowledge by retaining a relatively narrow focus, refining their own favoured theories rather than looking to contribute to a wider heterodox project.

As a relatively isolated body of work, the influence of MMT is necessarily limited. However, I would argue that that MMT provides sufficient novel insight to justify a prominent role within heterodox economics. Thus, I would contend that it should not be marginalized by its heterodox critics and ought to be embraced within the everyday practice of heterodoxy; in other words, *MMT belongs in any heterodox paradigm*.

---

<sup>47</sup> See, in particular, Wray 1998: 81-85

<sup>48</sup> See Cooper 2013; 2016

It may well be the case that external pressure from a social movement<sup>49</sup> may be an essential driver for paradigm change, however, I would argue that it is also important to note that the probability of a new paradigm being accepted- whatever the extent of pro-change external forces- is enhanced by the presence of academic freedom within a discipline. An academy which welcomes pluralism *per se* is both more likely to see the creation of viable alternatives and, importantly, it is more likely to accept a change of paradigm than one which sets out to maintain the *status quo* and prizes a homogeneity of approach- at least in part due its desire to appear a mature science in a Kuhnian sense. Dow (2017) contends that the presence of several approaches does not make economics 'less scientific.'

'Since the subject matter is complex, accounting for the multiplicity of approaches, inevitably any one approach provides only partial knowledge. Since there are no universal extra-paradigmatic criteria, it is a matter of argument which approach provides the most reliable knowledge. Fostering a range of approaches therefore ensures that economists continue to be aware of the limitations of their own approaches as well as their capacities, and to be able to introduce new ideas as a result of debate'. (Dow 2017: 10)

However, as I have argued, an acceptance of the advantages of the existence of multiple approaches is not to deny the possible benefits of heterodox economists working within a common paradigm, especially as they seek to provide a robust alternative to the hegemony of the mainstream. In addition, heterodox economists should also promote pluralism in general and at least attempt to engage in meaningful discussion with economists operating within a paradigm outside a heterodox disciplinary matrix, including those groups whose approach might not be considered compatible with critical realism and who use a formal deductive approach such as NCM. Admittedly this may be a difficult task. As Dow notes,

'pluralism continues to be stifled by the general mainstream unwillingness to engage in debate about, and defend, the mainstream approach itself, or even acknowledge that other approaches might have their own legitimacy. (Dow 2017: 10)

Dow describes the practical implications of accepting methodological pluralism for the behaviour of economists, describing them in the form of heuristics- both positive and negative. The former consists of the following instructions for methodological pluralists,

---

<sup>49</sup> 'Social movements are defined as networks of informal interactions between a plurality of individuals, groups and/or organizations, engaged in political or cultural conflicts, on the basis of shared collective identities. It is argued that the concept is sharp enough a) to differentiate social movements from related concepts such as interest groups, political parties, protest events and coalitions; b) to identify a specific area of investigation and theorising for social movement research'. (Diani 1992)

'[r]espect the legitimacy of alternative approaches and have an understanding of them. Be prepared to justify your own approach relative to others, [b]e prepared to adapt your approach as events unfold and as a result of debate, [b]e open to drawing on other approaches for ideas, even if they turn into something else in your approach,' (Dow 2017: 10, parentheses added)

The latter include this advice,

'[d]on't dismiss arguments from alternative approaches out of hand, [d]on't insist that all economists follow your chosen approach (but argue), [d]on't attempt to pick elements from different approaches simultaneously without ensuring that they fit into a coherent methodological and theoretical framework [b]ut don't always focus on the meta-methodological level.' (Dow 2017: 10, parentheses added)

Dow summarises the nature of these heuristics as aspects of polite and respectful behaviour for scientists in general and economists in particular. However, she looks deeper and contends that adhering to this behaviour is not merely about ethics but also about knowledge.

'These heuristics can be seen in terms of courteous academic behaviour; indeed one of the arguments for pluralism is the ethical argument for mutual respect (Screpanti 1997)<sup>50</sup>. But it is more than an ethical argument about good behaviour, it is an ethical argument about knowledge. If no one approach can claim truth and the survival of the discipline rests on nurturing a range of approaches, then the ethical argument concerns honesty about the limitations of any one approach. In order to function as economists we must choose one approach or another; our research would be incoherent if we jumped from one approach to another, unless the result was a new synthetic approach. But the onus is on each economist to engage in debate about the relative merits of the different approaches, being able to defend her chosen approach, but also able to understand enough about alternative approaches to engage in more-or-less effective communication'. (Dow 2017: 10-11)

With respect to the disputes between heterodox economists (for example, those discussed above between Marxists and Keynesians/Post-Keynesians and those between many Post-Keynesians and advocates of MMT) the importance of accepting Dow's heuristics cannot be overestimated. Clearly defending and elaborating their own theories is vital to many heterodox economists (this in itself poses no problems and, indeed, may lead to enhanced knowledge), however I would argue it needs to be carried out in scholarly and respectful way, for, in the

---

<sup>50</sup>Ernesto Screpanti is a professor of Political Economy at the University of Siena.

final analysis, if the NCM paradigm is to be overthrown surely a united heterodoxy is best equipped to achieve the result. I would argue that the individual identity of a particular group need not be compromised and rigorous debate, of course, could and should continue, but, ultimately bringing about the end of the hegemony of NCM must be kept at the forefront of heterodox thinking.

Dow also notes the importance of economics education. She is highly critical of the current situation where economics undergraduates are provided with a 'monist' education and an appreciation of pluralism is not considered at all important. New graduates might emerge fully conversant with the neo-classical 'tool-kit' and able to apply deductivist reasoning based on given axioms, however, as Dow notes, following Kuhn, they lack both the means to engage in 'critical thinking' and an appreciation of pluralism in all its forms.

'it is difficult to advise researchers and policy advisers on pluralism if the economics education system is geared to promoting monism. This monism in economics education is all the more insidious in that it discourages critical thinking. Kuhn (1962) explicitly discussed the role of education in propagating paradigms; textbooks provide exemplars to train students to 'think like economists', something which is reinforced by assessment procedures. Not only are students launched on their careers as economists ill-equipped to engage in pluralism, but they have actively been discouraged from doing so. The most important implication of our discussion of pluralism in economics therefore is that it requires a pluralist approach to economics education'. (Dow 2017: 12)

If the 'new generation' fails to see the significance of pluralism, ending the hegemony of neo-classical economics and NCM will clearly be all the more difficult. On the contrary if undergraduates are trained to understand and appreciate the importance of alternative approaches then we might expect, at least, an enhanced opportunity of engineering paradigm shift in the future than is true of the present.

## 6. Conclusion: MMT and a dissenting alternative paradigm.

I have argued in favour of pluralism in all its forms and that a range of approaches enhances the opportunity for the development of knowledge. However, as we have noted, the number of co-existing paradigms must be limited in number given that scientific practice, in this case economics, is a social enterprise. I have made the argument in favour of a common heterodox paradigm. However, I do not consider a paradigm to be a conscious construction; the boundaries of a paradigm are permeable and flexible (Dow, 2017). Rather, I would consider it to be a socially determined structure underlying a mode of scientific behaviour. Following Dymski (2013), I am not arguing in favour of the existence of a ‘shared, heterodox reduced form model’ (Dymski 2013: 438) but rather that the acceptance of the image of a heterodox spiral made of bundles of interrelated ideas linked by the arms of a spiral might provide a foundational notion for a heterodox paradigm.

In the case of heterodox economics, a shared ontological vision provides the basis of just such a constitution. I would further contend that heterodox groups such as Marxists and Post-Keynesians have enough potential to operate within what might be regarded, from this perspective, as a single paradigm *while maintaining their own identity* –via the differing emphases they place on specific aspects of economic theory.

I am arguing against isolationism in heterodox economics and in favour of meaningful debate; rigorous but ethically and respectfully carried out. I would contend that MMT should have a role within a heterodox paradigm; it has roots in both Post-Keynesianism and Marxism<sup>51</sup> and it can be effectively ‘under-laboured’ by critical realism. Critically, the ‘taxes drive money approach’ which underlies MMT enables it to provide insights absent from other heterodox schools, in particular, the explanation of the real causal mechanisms at work in the monetary system. The GFC provided significant empirical support for MMT and enhanced its credibility. I would argue that these deep insights mean that MMT, as an integral part of an alternative heterodox paradigm, is uniquely able to make a contribution to a heterodox assault on the hegemony of NCM.

---

<sup>51</sup> See Mitchell (2015d)

## References

- Arestis, P. (2009), 'New Consensus Macroeconomics: A Critical Appraisal', in [\*Microeconomics, Macroeconomics and Economic Policy: Essays in Honour of Malcolm Sawyer\*](#), Basingstoke: Palgrave MacMillan, p. 99-115
- Armstrong, P. (2015), 'Heterodox Views of Money and Modern monetary Theory (MMT)' <http://moslereconomics.com/wp-content/uploads/2007/12/Money-and-MMT.pdf>
- Arnsperger, C. and Varoufakis, Y. (2009), 'Neoclassical Economics-Three Identifying Features' in E Fullbrook (ed.), *Pluralist Economics*, London: Zed Books.
- Benes, J., Kumhof, M. and Laxton, D. (2014), 'Financial Crises in DSGE Models: Selected Applications of MAPMOD', *IMF Working Paper*, WP/14/56
- Bhaskar, R. (2008/1975), *A Realist View of Science*, London: Routledge
- Bhaskar, R. (2015/1978), *The Possibility of Naturalism*, London: Routledge
- Bilgrami, A. (2016), *Who's Afraid of Academic Freedom?* New York: Columbia University Press
- Blaug, M. (1992), *The Methodology of economics: Or How Economists Explain*, Cambridge: Cambridge University Press
- Chari. V. V. (2010) Testimony before the Committee on Science and Technology, Subcommittee on Investigations and Oversight, U.S. House of Representatives, *University of Minnesota and Federal Reserve Bank of Minneapolis*, July 20 [http://people.virginia.edu/~ey2d/Chari\\_Testimony.pdf](http://people.virginia.edu/~ey2d/Chari_Testimony.pdf)
- Chernomas, R. and Hudson, I. (2017), *The Profit Doctrine: Economists of the Neoliberal Age*, Northampton: Pluto Press
- Cooper, P. (2013), 'Melting some Marx into MMT,' <http://heteconomist.com/melting-some-marx-into-mmt/>
- Cooper, P. (2016), 'The Monetary Circuit & Compatibility of Marx, Kalecki and Keynesian Macro.,' <http://heteconomist.com/the-monetary-circuit-compatibility-of-marx-kalecki-and-keynesian-macro/>
- Dequech, D. (2007), 'Neo-classical, Mainstream, Orthodox and Heterodox Economics', *Journal of Post Keynesian Economics*, Vol. 30 (2), p. 279-302
- Davis, J. (2009), 'The Nature of Heterodox Economics' in E Fullbrook (ed.), *Ontology and Economics*, London: Routledge
- Diani, M. (1992), 'The Concept of Social Movement', *The Sociological Review*, Vol 40, Issue 1
- Dow, S. (2004), 'Reorienting Economics: Some Epistemological Issues' *Journal of Economic Methodolgy*, 11 (3): 307-12

- Dow, S. (2007), 'Variety of Methodological Approach in Economics' *Journal of Economic Surveys*, 21 (3): 447-519
- Dow, S. (2012a), 'Keynes on Knowledge, Expectations and Rationality', presentation at the Centre for Capitalism and Society Microfoundations for Modern Macroeconomics, New York 19-20
- Dow, S. (2012b), 'Babylonian Thought of Thought', in J King (ed.), *The Elgar Companion to Post Keynesian Economics*, second edition, Cheltenham: Edward Elgar, p.15-19
- [Dow, S. \(2016\), 'Neoclassicism, Critical Realism and the Cambridge Methodological Tradition' in Morgan, J. \(ed.\) \*What is Neoclassical Economics? Debating the origins, meaning and significance\*, Abingdon: Routledge](#)
- Dow, S (2017) 'Pluralist economics: is it scientific? In Decker, S., Elsner, W. and Flectner, S. (eds.) *Teaching economics in the 21<sup>st</sup> Century: a state of the art compilation*. London: Routledge.
- Downward, P. and Mearman, A. (2007), 'Retroduction as Mixed-Methods Triangulation in Economic Research: Re-orientating Economics into Social Science', *Cambridge Journal of Economics*, vol. 31 (1), p. 77-99
- Dunn, S. (2009), 'Cambridge Economics, Heterodoxy and Ontology: An Interview with Tony Lawson', *Review of Political Economy*, Volume 21 (3), p. 481-496
- Dymski, G. (2013), 'The Neoclassical Sink and the Heterodox Spiral: Political Divides and Lines of Communication in Economics', in G. C. Harcourt and P. Kriesler (eds.), *The Oxford Handbook of Post-Keynesian Economics*, 2.vols, Oxford: Oxford University Press
- Galbraith, J. K. (1971), *Economics, Peace and Laughter*, Boston: Houghton Mifflin, p. 50
- Kuhn, T. (2012/1962), *The Structure of Scientific Revolutions*, Chicago: University of Chicago Press
- Lakatos, I. (1970), *The Methodology of Scientific Research Programmes*, Cambridge: Cambridge University Press
- [Hands, D. W. \(2001\), \*\*Reflection Without Rules: Economic Methodology and Contemporary Science Theory\*\*](#), Cambridge: Cambridge University Press
- [Harcourt, G. C. \(1982\), \*The Social Science Imperialists\*, London: Routledge and K.Paul](#)
- [Harcourt, G. C. \(2006\), \*The Structure of Post-Keynesian Economics: The Core Contributions of the Pioneers\*, Cambridge: Cambridge University Press](#)
- Hart, N. and Kriesler, P. (2015) 'Post-Keynesian economics: A user's guide', *Australian Economic Review*, 48(3): 321-332.
- [Howard, M. and King, J. \(1992\), \*A History of Marxian Economics, Volume 2, 1929-1990\*, Princeton: Princeton University Press](#)
- Janis, I.L. (1982), *Groupthink: Psychological Studies of Policy Decisions and Fiascoes*, Second Edition, New York: Houghton Mifflin

- Juniper, J., Sharpe, T.P. and Watts, M.J. (2014-15) 'Modern Monetary Theory: Contributions and Critics', *Journal of Post Keynesian Economics*, 37(2), 281-307.
- Keynes, J.M. (1936), *The General Theory of Employment, Interest and Money*, London: MacMillan
- Kitcher, Philip (1993), *The Advancement of Science*, New York: Oxford University Press.
- Kliman, A. (2007), *Reclaiming Marx's "Capital"*, Plymouth: Lexington Books
- Kliman, A. (2012), *The Failure of Capitalist Production*, New York: Palgrave Macmillan
- Kliman, A and Potts, N. (2015), *Is Marx's Theory of Profit Right?* London: Lexington
- Lawson, C. Peacock, M and Pratten, S. (1996), 'Realism Under-labouring and Institutions', *Cambridge Journal of Economics* 20: 1
- Lawson, T. (1997), *Economics and Reality*, London: Routledge
- Lawson, T. (1999), 'Developments in Economics as Realist Social Theory', in Fleetwood, S. (ed.), *Critical Realism and Economics: Development and Debate*, New York: Routledge
- Lawson, T. (2003), *Reorienting Economics*, London: Routledge
- Lee, F. (2009), *A History of Heterodox Economics*, Abingdon: Routledge
- Martin, B. (1998) 'Strategies for Dissenting Scientists' *Journal of Scientific Exploration* vol. 12, no.4, p.605-616
- Mearman, A. (2006). 'Critical Realism in Economics and Open Systems Ontology: A Critique', *Review of Social Economy*, 64 (1): 47-75.
- Mearman, A. (2007), 'Rhetorical dualism and the Orthodox/Heterodox Distinction in Economics', ICAPE conference, Salt Lake City, Utah, June
- Mearman, A. (2011), 'Who do Heterodox Economists think they are?' *American journal of Economics and sociology*, vol.70 (2), p.480-510
- Mingers, J. (2014), *Systems Thinking, Critical Realism and Philosophy: A Confluence of Ideas*, Abingdon: Routledge
- Mitchell, W. (2014) 'Macroeconomic Textbooks Ripe for Composting'  
<http://bilbo.economicoutlook.net/blog/?p=28435>
- Mitchell, W. (2015a), 'Bank of England Groupthink Exposed'  
<http://bilbo.economicoutlook.net/blog/?p=29897>
- Mitchell, W. (2015b), 'When economists ignore the elephant called reality and applicability'  
<http://bilbo.economicoutlook.net/blog/?p=36226>
- Mitchell, W. (2015c), 'Japan is different, right? Wrong! Fiscal policy works'  
<http://bilbo.economicoutlook.net/blog/?p=36631>
- Mitchell, W. (2015d), 'The Roots of MMT do not lie in Keynes'  
<http://bilbo.economicoutlook.net/blog/?p=32396>
- Mitchell, W. (2017a), 'When economists ignore the elephant called reality and applicability'  
<http://bilbo.economicoutlook.net/blog/?p=36226>

Mitchell, W. (2017b), 'Japan is different, right? Wrong! Fiscal policy works'

<http://bilbo.economicoutlook.net/blog/?p=36631>

Mosler, W. (2012), *Soft Currency Economics (II)*, US Virgin Islands: Valance

O'Hara, P. (2002), 'The Role of institutions and the Current Crisis of Capitalism: A Reply to Howard Sherman and John Henry', *Review of Social Economy*, 60 (4): 609-18

Palley, T. (2015a) Money, fiscal policy, and interest rates: a critique of modern monetary theory, *Review of Political Economy*, 27(1), 1–23.

Palley, T. I. (2015b) The Critics of Modern Money Theory (MMT) are Right, *Review of Political Economy* 27(1): 45–61.

Popper, K. (2012/1934), *Logik der Forschung (The Logic of Scientific Discovery)*, London: Routledge

Pratten, S. (2013), 'Post-Keynesian Economics, Critical Realism and Social Ontology', in G. C. Harcourt and P. Kriesler (eds.), *The Oxford Handbook of Post-Keynesian Economics*, 2.vols, Oxford: Oxford University Press

Restivo, S. (1988), 'Modern Science as a Social Problem' *The Sociological Review*, Vol. 33 (3) p. 206

Salanti, A. and Screpanti, E., (Eds.), (1997) *Pluralism in Economics: New Perspectives in History and Methodology*, Cheltenham: Edward Elgar

Salter, W.E. G. (1966/1960), *Productivity and Technical Change* [Cambridge: Cambridge University Press](#)

Sawyer, M. (2003) Employer of Last Resort: Could It Deliver Full Employment and Price Stability? *Journal of Economic Issues*, 37 (4), 881–909.

Screpanti, E. (1997), 'Afterword', in A. Salanti and E. Screpanti (eds.), *Pluralism in Economics*, Cheltenham: Edward Elgar, p. 298-307

Skidelsky, R. (2010), *Keynes: The Return of the Master*, London; Allen Lane

Skousen, M. (2001), *The Making of modern Economics: The Lives and Ideas of the Great Thinkers*, New York: M.E. Sharpe

Sobel, D. (2000), *Galileo's Daughter*, London: Fourth Estate

Solow, R. (2002), 'Is Fiscal Policy Possible? Is it Desirable?' in R. Solow (ed.), *Structural Reform and Macroeconomic Policy*, London: Palgrave MacMillan

Smithin, J.S. (2016) Endogenous Money, Fiscal Policy, Interest Rates and the Exchange Rate Regime: A Comment on Palley, Tymoigne and Wray, *Review of Political Economy*, 28(1), 64-78.

Toulmin, S. (1972), *Human Understanding: The Collective Use and Evolution of Concepts*, [Princeton: Princeton University Press](#)

Tymoigne, E., and Wray, L.R. (2013) Modern Monetary Theory 101: A Reply to Critics. Levy Economics Institute of Bard College, Working Paper no. 778, November 2013.

Tymoigne, E. & Wray, L.R. (2015) Modern money theory: a reply to Palley, *Review of Political Economy*, 27(1): 24–44.

Watts, M. (2016), 'Fiscal Policy and the Post-Keynesians', Paper presented at the AHE annual conference. Glasgow, Scotland, July

Wray, L.R. (1998), *Understanding Modern Money*, Cheltenham: Edward Elgar

Wren-Lewis, S. (2012) 'Sector Financial Balances as a Diagnostic Check', mainly macro, Comment on macroeconomic issues, Friday, 20 July, <http://mainlymacro.blogspot.com.au/2012/07/sector-financial-balances-as-diagnostic.html>

Wren-Lewis, S. (2016a) 'MMT: not so modern', mainly macro, 16 March. <https://mainlymacro.blogspot.com.au/2016/03/mmt-not-so-modern.html>

Wren-Lewis, S. (2016b) 'MMT and mainstream macro', mainly macro, 22 March. <https://mainlymacro.blogspot.com.au/2016/03/mmt-and-mainstream-macro.html>