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THE MAP IS NOT THE TERRITORY: A CRITICAL EVALUATION OF CURRENT ECONOMIC THINKING

This paper purports that throughout history, there has been continuous interplay between the ideals of individual disciplines and the prevailing weltanschauung. It then suggests, using examples from the Arts, Physics and Neuroscience, that the current weltanschauung is gradually adopting a systems view. Economic theory provides a map for human behaviour but can never replicate the whole. The map is not the territory. The paper then critically evaluates the effects of a systems weltanschauung on Economic theory and practice. The current age is strongly connected with environmental issues. The attitudes, values and morality of Gen Z (people born after 1995) are very different to those of previous generations. Gen Z demands a stronger ethical/moral aspect to political, social and economic life and environmental principles A systems weltanschauung will combine a RV (which is aware of our physical presence in a undifferentiable, changing world, accepts a greater role for emotions, and uses reason to adjust to the world rather than master it) and a OV (which sets this presence in an individualised abstract way which it uses for planning and possibly controlling reality). It ends with an appeal for an interdisciplinarity of experts to enable the solution of current global problems. The thread to this paper is: first, the meaning of a systems weltanschauung is discussed. The paper then looks for signs and indications for the emergence of such a weltanschauung. This then initiates a critical evaluation of current economic thinking. It is hoped that such critical analysis and reflections will lead to a new level of 'understanding economics' rather than 'economic understanding' which would allow Economics to fulfil its potential as a useful and needed contributor to the global problems of today Systematic learning and education through art and music were regarded as just as important as mathematics to the training of the mind. The ability to think critically was more important than strict vocational training.

Keywords: *Weltanschauung, Systems, Interdisciplinarity, Objectivity, Subjectivity.*

Introduction. Economics consists of theory and practice. Whether one traces its origins to the replacement of goods by paper, to Ibn Khaldun or to Adam Smith, one can see a developing, evolving discipline. This paper addresses the drivers of this development and suggests that it comes from within by critical appraisal and reflection by economists. One needs a peg on which to hang such an appraisal and the authors use the suggestion that at all stages in its history, economics has adjusted to the weltanschauung of the time by critically evaluating current economic thinking and practice. The dictionary definition of weltanschauung as "a comprehensive conception or theory of the world and the place of humanity within it. It is an intellectual construct that provides both a unified method of analysis for and a set of solutions to the problems of existence".

An immediate problem is how to capture the current weltanschauung. It is easier to do so in retrospect. One can identify throughout history weltanschauungs with spiritual, philosophical, rational, and scientific tendencies. To try to define a weltanschauung whilst living in that age is difficult as one is strongly influenced by biases and transitory phenomena. Nevertheless, the authors suggest that there is a current weltanschauung which assumes that there are clearly identifiable problems in the world that can be solved. These problems may be complex, but the application of science and technology will produce solutions. Today, certain modern tendencies such as gender diversity, the woke agenda, Gen Z and the idea of humankind being participators of nature than observers/controllers suggests that a new weltanschauung (which we will term a systems weltanschauung) is emerging which emphasises relationships and interdisciplinarity [54, 67]. It should be noted that a rejection of these views does

not invalidate the purpose of the paper. They provide an opportunity for the evaluation. It is the process of critical self-evaluation that is being promoted. A paper such as this cannot avoid speculation, but speculation is permissible if it is based on research, experience and practice. Readers will not agree with all our statements but that is to be expected as it is only by debate that new economic thinking will develop.

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Literature review. There is a great deal of research on the essence of a Systems Weltanschauung. researched topic. [32, 40, 42] This paper concentrates on two important facets which distinguish it from the scientific paradigm – taking a more relational perspective and interdisciplinarity.

There is a great deal of research on the essence of a Systems Weltanschauung researched topic [32, 40, 42]. This paper concentrates on two important facets which distinguish it from the scientific paradigm – taking a more relational perspective and interdisciplinarity.

Every weltanschauung is consequent to its interpretation of 'reality'. The first line in Wittgenstein's Tractatus [63] is 'The world is all that is the case' i.e., reality has no boundaries; it forms a single ontological unity. The nature of reality has been discussed for centuries. Plato adhered to an idea of 'anima mundi' which believed the world to be 'a

single visible living entity containing all other living entities, which by their nature are all related '. This view, that places the emphasis on relationships between entities rather than the entities themselves, will be termed the relational view (RV). It has strong links to systems thinking and the second-order cybernetics promulgated by Van Foerster [60], sees reality as a process [52, 64] and gives credence to emotions and feelings in decision making. It differs from the scientific paradigm initiated by Descartes, Galileo and Newton which places emphasis on the identification of individual parts, analysis, causality and the repeatability of experiments [4] which will be termed the objective view. (OV) The adoption of an objective or a relational view can define the essence of a *weltanschauung* [15].

The OV treats problems as closed, not open (closed being defined as precisely identifiable with a unique solution.) The RV view sees the holistic, inter-connected nature of reality where the dichotomy between subject and object is blurred, whereas the OV searches for well-defined relationships between identifiable independent objects. The OV and its reductionism breeds dogma and absolutism whereas the RV encourages tolerance and cooperation. The tension created by the presence of RV and OV can often be a creative force [55]. Whenever the OV is dominant, then a feeling that 'things are not right' arise. An awareness of the needs and desires of society is needed, i.e., including experiential (systemic) issues.

Methodology. A systems *weltanschauung* will combine a RV (which is aware of our physical presence in a undifferentiable, changing world, accepts a greater role for emotions, and uses reason to adjust to the world rather than master it) and a OV (which sets this presence in an individualised abstract way which it uses for planning and possibly controlling reality). It attempts a conciliation by recognising the existence of the RV view whilst still retaining the merits of the OV view. It 'squares the circle' resulting in a messier and more ambiguous view than at present, as the perfection sought by the OV will never be achieved. But the diminishment of expectation from the OV will lessen the current disenchantment. Such a *weltanschauung* is non-prescriptive and ambiguous. This is not seen as a weakness but strength, as it allows participation and observation, theory and action, analysis and synthesis to be applied when needed and in the relevant context. It will incorporate both the Systems and Scientific paradigms cultivating a respect for nature (non-human life) and being cautious about control and exploitation. It also embraces self-reference and paradoxes such as the recognition that an object only exists when it is perceived by a subject, making the subject/object dichotomy illusory. All entities exist as both 'parts of' and wholes, making the participator-observer dichotomy also illusory (which has resonances in measurement and data collection.) A systems *weltanschauung* will accept different ways of knowing including mathematical knowledge (that exists in the Scientific paradigm (OV) view and empirical knowledge which rests on experience and intuition and is more akin to the (RV) view. It recognises non-linear behaviour and the existence of both negative and positive feedback loops.

Results. The adoption of a RV leads naturally to the concept of interdisciplinarity. A prime example of interdisciplinarity can be observed in renaissance polymaths such as Da Vinci. The current increase in the amount of knowledge makes it difficult today for a single person to be so endowed but interdisciplinarity can be inculcated into the ethos of problem-solving teams. Current complex problems such as climate change and Covid have shown the need for an interdisciplinary approach to problem solving which has

led to new areas of research and practice **3. Some Green Shoots of an Emergent System *Weltanschauung*.**

The current age is strongly connected with environmental issues [43]. The attitudes, values and morality of Gen Z (people born after 1995) are very different to those of previous generations [14]. Gen Z demands a stronger ethical/moral aspect to political, social and economic life and environmental principles. This is demonstrable by recent protests such the anti-G7 movements, Extinction Rebellion, MeToo, and Black Lives Matter. If one combines this with effect of social media [58], one can see a shift of Gen Z towards a RV. New theories which are ethical and moral (in the sense of saving the planet) are being pursued.

As both OV and RV are simply belief systems which are unprovable (or unfalsifiable in Kuhn's terminology), a full adoption of either view would, in the opinion of the authors, be a mistake, although it is recognised that this statement itself is unfalsifiable! Any changes to economic thinking has to deal with the problem of the two opposing views. Research into how the arts, science and neuroscience have dealt with the OV/RV problem is now presented. Each of these disciplines has taken a different stance, but by reflecting on their solutions, one can gain guidance for the development of Economics.

The Arts From the earliest times, artists have tried to represent reality. A great artist such as Velasquez could capture the minute intricacies of lace, buttons, visual expressions and could therefore be seen as the epitome of the OV. Yet, in each portrait, he has made subjective decisions regarding pose, background, and activity, all of which send tacit signals to the observer. The fame of the Mona Lisa is not only in its technical exactitude but in what it suggests. In such cases there is a juxtaposition of both the OV and the RV. The myths of Homer, the dialogues of Socrates, painting, and music, the dialectics of Hegel to the dilemmas posed by Facebook and Twitter are all examples of the same problem. The ubiquity and constancy of this juxtaposition in such a diversity of experience indicates its importance.

But this is precisely what the great artist does. He is able to bring together clashing colours, forms that fight each other, dissonances of all kinds, into a unity. And this is also what the great theorist does when he puts puzzling and inconsistent facts together so that we can see that they really belong together. And so also for the great statesman, the great therapist, the great philosopher, the great parent, the great inventor. They are all integrators, able to bring separates and even opposites together into unity [38].

In the last century, artists have veered away from the explicit representational mode of painting and become more abstract. The new aim was to capture the experience or feeling of 'the thing' that is being painted. This involves an internal process within the artist which, in turn, is dependent on their culture and past experiences. (RV) A cubist painting by Picasso is not a 'true representation' of reality but attempts to imitate (simulate) an experience in the mind of the observer. The apotheosis of this process of creating meaning for the observer is the Rothko Chapel in Texas. The main room is a hushed octagonal space with grey stucco walls, each filled by massive paintings which at first appear to be made up of solid, dark colours. But a closer look reveals that the paintings are composed of many uneven washes of pigment that create variations in every inch. Stepping back, waves of subtle colour difference appear across the broad surfaces – leading to an unmistakable impression of physical depth. Observers create their own meaning. This has coincided with the rise of the

postmodernist view that there are many different and equally plausible (valid/true) meanings for every event.

Physics The Scientific (Newtonian) paradigm is based on the objective view. Elements are precisely defined and their behaviour is subject to strict logical rules – mathematics being a perfect example. There is a belief in a reality that can be discovered and, philosophically, there is a search for an ultimate truth. The holy grail is the discovery of a 'theory of everything' [21]. Science associates 'meaning' with explanation which requires faith – faith not in the religious sense but faith in the belief that nature can be explained.

The starting position in any discussion is recognition that all discussion ultimately tests upon statements of fact and principle which are assumed to be accepted as true and which cannot be defended by argument if they are denied or questioned [65].

These beliefs have been challenged in the past hundred years by the rise of quantum theory. The search for these illusive entities provided a spur for science and over the last three hundred years, progress has been spectacular. The atom has been identified and has itself been split into constituent parts. This was initially hailed as a great success for the reductionist OV view and the scientific paradigm. Unfortunately, many problems soon appeared such as determining the nature of these subatomic parts which sometimes behaved as waves and sometimes as particles. They also seemed to communicate simultaneously over great distances. (entanglement) and the results of experiments (measurements) appeared to depend on the nature of the experimenter (measurer). For many years there was an often-acrimonious debate (personified by Bohr and Einstein) on how to interpret these strange quantum dichotomies. In 1929, Bohr and Heisenberg agreed on what was called 'the Copenhagen Interpretation' Even though, in recent years, many new interpretations, such as the many-worlds interpretation proposed by American physicist Hugh Everett, the Copenhagen interpretation is regarded as the most widely accepted interpretation [22]. This interpretation broke new ground. It did not select the RV or OV view as the absolute truth but cleverly allowed both views to co-exist [52].

A positive conclusion to transfer to Economics is that the adoption of the Copenhagen interpretation did not lead to an incoherent or weakening of quantum theory. Even though it is built on uncertainty, it is the most proven and useful scientific theory since Newton. It has shown that it is not necessary to take a dogmatic stance regarding dichotomies. Allowing flexibility does not necessarily introduce error. Although, the nature of quantum entities is left ambiguous, Quantum Theory is precise. It can be said that Quantum Physics has achieved a conciliation between the two opposing views which is a pointer in our search to resolve a similar problem for Economics.

Neuroscience is a modern area of research which probes the working of the brain and develops theories about the role and function of thinking [9, 19]. The latest theories of the brain regard it as a processing network which receives input from both external (through the senses) and internal stimuli (through the endocrinal, nervous and immune systems) [1]. This has consequences for its decision-making capability as feeling and emotion are intertwined with reason, logic and rationality. These recent neuroscientific theories are called 'constructivist' which hypothesise that concepts are not summoned from a store in the brain (as previously supposed) but are continually being formed and reformed [1]. This research contradicts two earlier notions: one which allocated specific functions (such as language, logic and feeling) to specific parts of the brain and another

that memories and perceptions are, in some way, 'hard-wired' in the brain [8]. A consequence of the constructivist theory is that our thinking is strongly influenced by our culture/ background and physical experiences which relates to the experiential view of reality (RV).

Another aspect of neuroscience research concerns the geometry of the brain. The physical dimensions of the brain are restricted by the skull, but its shape is intriguing. It consists of two hemispherical shapes (called right and left) bound together by a band called the Corpus Callosum [62]. The research looks for reasons for this split. Would it not have been evolutionally more efficient to have one unified entity? Neural imaging shows that each hemisphere is involved in mental activities which raises the question of how the hemispheres work together. Current experiments using Split-Brain Research indicate that there is indeed a purpose to this configuration. It seems that there is a continuous interplay between them that is important for the way hominids think [7]. Both hemispheres search for meaning but there is a difference in their emphasis and approach. The right hemisphere sees meaning as implicit. Its emphasis is on context, relationships, emotion, and the nuances of expression [39]. Experimental results have shown that the right-hemisphere (RH) places an emphasis on putting together rather than taking apart; on synthesis rather than division; on the wholes rather than the parts. Opposites co-exist in an 'either/or' dichotomy. Individuality is recognised which leads to empathy, humour and irony.

In the left hemisphere, the emphasis is narrower and more focused, taking (abstracting) things out of context and them which enables planning and control. It is relationally mechanical, an assemblance of independent parts, disembodied, relatively distanced from human feeling, explicit, utilitarian, lacking in empathy and insight. Observations from the left-hemisphere (LH) step outside the flow of experience and abstracts from the world, representing it in a form that is less complex, clearer and therefore more easily manipulated. It aggregates parts into categories, stripping away their qualities, separating them from their interconnections which enables it to introduce linear, logical, sequential processes. It posits hidden structures whose discovery becomes its purpose. Consequently, it is compartmentalised, fragmented, static, mechanical, essentially lifeless. Because it is detached from this world, it sees the opportunity to control it. This type of thinking has provided writing, mathematics, development of laws, geography, educational structures, architecture, geometry and physics [41]. The LH way enables one to get things done, to achieve goals by isolating one thing from another. This isolation is often perceived as objective (as it cultivates a distance from the world) but by its nature, it is a subjective activity. There is a drive for manipulation, planning and control and its ruling value is utility. The danger is that if this drive is left unchecked, then assumptions turn into axioms and the belief system becomes an axiomatic one.

Although each hemisphere has differing perspectives, they are not absolute. Human activities are achieved through a synthesis of both without diminishing the individual contributions [6, 48, 53, 61, 66]. The RH sees humans as part of nature whereas the LH categorises 'human life' as distinct from 'non-human life' with the consequences that are apparent today. The brain acts as a unified whole. Human decisions result from the interplay of the observations from the different hemispheres. It is recognised that much of this research is new and is not accepted by all, but it resonates strongly with the 'Copenhagen Interpretation' and serves as

a useful model that can be used in our suggestions for the changes needed in economic thinking.

Features of the new Economic Thinking and Practice

What changes would occur if Economic thinking and practice changed in response to a Systems Weltanschauung? The authors suggest that the changes would be in attitude and awareness rather in the minutia of theory. Taking a relative view of reality means recognising that we exist in a world that is continuously changing. This world does not follow strict causality is highly interconnected and non-linear. The new thinking would recognise that the economic system is at best a model of what is happening. But *'the map is not the territory'* [29]. Interpreting this rather overused quotation in the context of this paper means that although economic theory has built a coherent version of what it perceives as reality and has created excellent econometric tools for measuring and correlating features of this landscape, this version is not the reality it represents, and it does not fully cover reality. The current economic theory is clever enough to anticipate small changes and adapt to them, but as reality is highly non-linear, events will always arise which could never have been foreseen. We label these as 'shocks to the system' but the new thinking should regard them as the norm, The job of economic practitioners (who work for central banks or advise governments) is to navigate the economic landscape in the knowledge that they are finding pragmatic pathways which will continually change but this will always only be an approximation to what is happening. The authors are not advocating large scale changes in economic theory or prescribing different economic curricula but simply entering a plea for humility. There have been sincere and genuine attempts to build economic stability throughout the world and this is a sensible mission, but the humility needed is in the recognition that however comprehensive the theory, it is just a mirror of reality. 'Shocks' will continue to occur and when they do, they will necessitate adjustments to the theory and practice. This process of continual change is endless. This simple recognition (which could be seen as a weakening of the current thinking) will, in fact, be a strength and ensure that Economics is relevant to whatever weltanschauung prevails.

Economic Thinking and practice must eventually conform to the current weltanschauung The author's hypothesis is that for Economics to continue to be relevant, its thinking and practice must conform to the current weltanschauung. There have been examples in the past. In the 19th century, the emergence of colonial empires and the dynamic expansion of the Industrial Revolution resulted in a weltanschauung which favoured a world trading system [12, 23]. However, amongst economists, there was widespread economic /political debate, both for and against. Eventually, economic thinking and practice coalesced around the theories of Ricardo/ Mill and ushered in an age of Free Trade which lasted to 1914. After the war, there was a global readjustment with a return to protectionism and by 1925/6 Keynes had realised that the Free Trade ethos was moribund. By 1945 Keynes was immersed in planning for the post-war reconstruction of the international economic system. Although he agreed in principle with the British Board of Trade and the American State Department on the desirability of reducing trade barriers, he recognised the emergence of a new post war weltanschauung and realised a return to the practice of free trade was unlikely [10]. This is seen in his speech to the Lords in 1945, where he argued: *'Separate economic blocs, and all the friction and loss of friendship they bring with them, are expedients to which one may be driven in a hostile world where trade has ceased,*

over wide areas, to be cooperative and peaceful and where are forgotten the healthy rules of mutual advantage and equal treatment. But it is surely crazy to prefer that'' [20]. There is a continuous feedback loop here. The weltanschauung sets a framework for thinking and practice, but these then feedback and change the weltanschauung. Keynes' thinking on free trade and protection reveals the dynamics of this feedback.

There would be a move from the objective to the relative view. In 1883, the German physicist and philosopher Ernst Mach made a radical suggestion 'not to regard phenomena as manifestations of objects but to regard objects as nodes between phenomena.' and became a prime mover in the promotion of the RV. and heavily influenced later eminent physicists such as Einstein, Heisenberg, and Pauli [36]. No equivalent event occurred in Economics which still predominantly adopts the objective view. As recently as 2015, a survey by Fourcade showed that 58 % of economists take a single economic focus: 'modern-day economists attribute their intellectual standing and autonomy to their reliance on precisely specified and parsimonious models and measures [13].

The propensity to identify parts (OV) leads to rifts and divisions. One division could be the many competing and overlapping economic schools such as the Classical, Marxian, Keynesian, New Classical, New Keynesian and recently Evolutionary Economics and Behavioural Sciences. Another is the micro/macro divide. The micro/macro relationship has been a major source of contention for decades, typified by the Lucas Critique [35] which was an internal debate between economists on whether policy makers, when devising future economic policy, could rely on existing relationships to persist once policies aiming to exploit the relationship are changed. Lucas' critique can be seen as a resurrection of an earlier critique by Keynes who had delivered a stinging review of Tinbergen's pioneering econometric studies for the League of Nations. Regarding Tinbergen's quantification methodology, Keynes questioned whether it was possible to appropriately measure things like expectations, along with political and psychological issues/factors [28]. In this, and many other hitherto unpublished letters, Keynes seems to be taking a 'Machian' role and toying with a relational view for economics whereas Tinbergen's views place him firmly as an objective thinker. He regarded an economist as a 'control engineer' manipulating state variables and searching for solutions [44, 45]. This idea of 'control' fits with an OV as it assumes an identified entity that can be governed. It has no place in a RV. The control engineering aspect of economic policy in the post-Lucas Critique era has been replaced with a Lucas-proof form of policy-making based the idea of forward guidance in monetary policy using developments in macroeconomic theory [49]. Hence there has been some movement toward unification of paradigms in macroeconomics with the new neoclassical synthesis representing the consensus. This consensual approach in monetary policy stills throws up anomalies such as the curious paradox of disinflationary booms.

The new thinking has a different view on models and modelling. One weakness of macro-econometric (DSGE) models has been forecasting/predicting of fundamental financial shocks or regime change such as occurred in the 2008 financial crash [31, 33]. This inability is essentially the criticism proposed by Keynes that economic/econometric predictions are not robust in empirical reality [29, 30]. Can economic models be regarded as valid representations of an objective reality? The authors believe that an abstraction

such as the Phillips curve is not and can never be an exact copy of reality. There can never be absolute precision and certainty as empirical data is likely to be incomplete [51]. The model is always subjective in the sense that it is based on the judgements of its creators.

The Lucas critique effectively argues that unless we can precisely identify the data essential for the modelling microeconomic behaviour, then the aggregative behaviour and policy change is impossible to forecast. Maybe a resolution of the RV/OV dichotomy could be the use of case studies that make observations about behaviour where the parts are identifiable as microcosms of a whole. To some extent, the Lucas critique may be seen as an application of case studies based on elemental behaviour of actors. However, the perspectives offered in this paper indicate that the Lucas critique is a re-interpretation of rational decisions and optimising behaviour in the context of policy change. It may be regarded as a reinterpretation of Goodhart's law [37] which would indicate for issues relating to the perceptions/meanings of data interpretation in the context of aggregative time series analysis, interdisciplinary case studies are required.

Interdisciplinarity thinking is the ability to consider multiple disciplinary perspectives concerning the phenomenon under study, analysis of the strengths and weaknesses of those perspectives, and integration their insights to produce a new, more comprehensive understanding of the phenomenon. Most economists still operate in a belief system where there are 'economic' problems to be solved as opposed to problems which need a contribution from the discipline 'Economics' [5, 11]. An emphasis on the interdisciplinarity approach proposed is not intended to dilute current economic theory. Economics needs expertise – the interdisciplinarity is needed in its practice. The production of the Covid vaccine was a combined effort of experts from Immunology, Virology, Aerobiology, Mechanical Engineering, Virus Epidemiology, Vaccine Science, Microbiology, Mathematical Modelling, Chiropterology and Zoology. Theory must be recognised as only applicable and relevant to the context in which it is being applied and not seen as the ultimate truth. New paradigms such as the information paradigm, proposed by Stiglitz [57] in his Nobel acceptance speech in 2000, are welcomed. Recent developments in Behavioural Science [25] and Evolutionary Economics are inserting a RV into economic methodology. This paper values these contributions and their attempt to braid together the two contrasting versions of reality. Embracing System Thinking does not preclude the use of scientific thinking [30]. Examples from other disciplines have been presented as evidence of the efficacy of this approach. The new thinking should allow the discipline 'Economics' to interbreed with other disciplines and is where the interdisciplinarity is needed, it will be an interdisciplinarity of experts [30].

The new neoclassical synthesis, to some extent includes several sub paradigms from within the macroeconomics mainstream since Keynesian times [18]. The central banks in G7 countries now operate think tanks/monetary policy committees which advise on interest rate determination and meet on a regular basis. The monetary committee of the bank of England is a combination of civil servants and private sector/academic economists and the CEO/Deputies of the Bank who may or may not be economists. For the views of the Central Banks to be heard among the clamour of the new neo classical synthesis, then the voice must be holistic, taking account of economic, political (Brexit), environmental (COP26) and world debt issues [50].

Although in earlier times, they were sometimes portrayed as a council of economic advisors, or "wise men", the central banks now have one major issue to consider, namely inflation [16]. In the 70's, the central banks tended to be politically motivated entities which followed government instruction on interest rates which were often be pro-cyclical in nature [46, 47]. With central bank independence, this changed, and central banking has become more interdisciplinary. Governments rely on a range of expertise from political advisors, economists, populist political trends, environmental accounting methods and insights from natural sciences. The judgement as to the policy outcome is predominantly then a political one. What is clear is that the world has moved on from 1919 and Keynes' view on free trade to a more managed, system of interdisciplinary expertise used in forming socio/politico/economic decisions. There is a difference insofar as central banks e.g., Bank of England/FED have one policy target which is inflation, whereas in the Keynesian days inflation and unemployment were the primary objectives and this has not completely vanished. The difficulties with the new Keynesian Philips curve in theoretical terms are now swept under the carpet and the curve is used as part of the new neoclassical synthesis in determination of the rate of interest to reduce inflation. It now seen as an optimal monetary response to inflation /unemployment [17]. This reflects the benefits when governments bodies are composed of experts from a diversity of academic fields

Conclusion. Adopting this new thinking will have difficulties. Complexity is more like a web or network than a string of causalities. One can follow Ariadne's thread successfully to exit the labyrinth, but the path inwards is full of dead-ends and wrong turnings. A Damascene conversion is unlikely. A relational approach will focus on the differences. '*The tissues between the gaps hold the implicit premises of the system*' [2]. A new practice is produced through a conjoining of experiences and unseen impressions. Maybe nudging techniques that aim to use judgmental heuristics are the answer [59].

One way of dissemination is through education, but this also has difficulties. It is important to discern whether theory informs practice or vice versa. Economic theory is important but interdisciplinary groups result in a merging of paradigms under key economic problem areas. The teaching of undergraduate and postgraduate economics should reflect this but, so far, it is not evident in university curricula. What we find is enhanced specialization in economics/econometrics that Keynes and Tinbergen would recognize. What is missing is further clarification of these paradigms relating to other disciplines in the teaching of economics and its practice. This interdisciplinary is a form of relativism consistent with the Copenhagen compromise in physics, where different perspectives can inform one another in a dialectic that is also reflected in changes in theory and practice. Central banks and monetary policy committees at the highest level, this committee of experts is not reflected in undergraduate teaching. This dialectic needs to inform the teaching of undergraduate economics

Another difficulty is that the present structure of universities is not conducive to inter-disciplinary studies. It is difficult to persuade current 'experts' that their knowledge is not omniscient and to encourage a new wave of economic 'experts' to flourish. There are only a few examples of an interdisciplinary university. One attempt was made in 1811 by Wilhelm von Humboldt when he opened the Humboldt University in Berlin, which soon became the most progressive university in Europe. It had

a holistic structure integrating arts and science, theory and practice. Systematic learning and education through art and music were regarded as just as important as mathematics to the training of the mind. The ability to think critically was more important than strict vocational training. The dictum 'Knowledge is power and education is liberty' was Humboldt's credo. This is reminiscent of the Platonic 'Trivium' [24]. A modern example of interdisciplinarity is Building 20 set up at MIT during the second world war. It was an ideas factory – radar was perfected there and the science of modern linguistics took shape there under Noam Chomsky. It housed labs in nuclear science, cosmic rays, and food technology [3]. Both of these valiant attempts endured a limited lifespan. This paper offers no solutions to these educational problems but feels it is contingent to point them out.

History has shown that even when Economists have been aware of the weaknesses inherent in their theory; their belief systems change very slowly [34]. Nonetheless, this paper is an appeal for economists to commit to a new 'spirit of the age' which will enhance its ability to address the challenges of the modern world.

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КАРТА – НЕ ТЕРИТОРІЯ: КРИТИЧНА ОЦІНКА СУЧАСНОГО ЕКОНОМІЧНОГО МИСЛЕННЯ

Встановлено, що протягом історії існувала безперервна взаємодія між ідеалами окремих дисциплін і панівним світоглядом. Використовуючи приклади з мистецтва, фізики та нейронауки, висловлено припущення, що нинішній світогляд поступово набуває системного вигляду. Економічна теорія надає карту людської поведінки, але ніколи не може повторити ціле. Карта – це не територія. Критично оцінено також вплив системи світогляду на економічну теорію та практику. Сучасна епоха тісно пов'язана з екологічними проблемами. Відносини, цінності та мораль покоління Z дуже відрізняються від світогляду попередніх поколінь. Покоління Z вимагає посилення етичного/морального аспекту політичного, соціального й економічного життя та екологічних принципів. Авторами визначено значення системи світогляду, проаналізовано ознаки виникнення такого типу світогляду, що у підсумку приводить до критичного оцінювання поточного економічного мислення. Висловлено також думку, що такий критичний аналіз і роздуми приведуть до нового рівня "розуміння економіки", а не "економічного розуміння", що дозволить економіці реалізувати свій потенціал як корисного та необхідного внеску в глобальні проблеми сьогодення.

Ключові слова: світогляд, системи, міждисциплінарність, об'єктивність, суб'єктивність.