

# Philosophy & The Discourse of Economics

## *Why Modernism is no longer Emancipatory for Economics*

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*It is as if economics has never really transcended the experiences of its childhood, when Newtonian physics was the only science worth imitating and celestial mechanics its most notable achievement*

Nelson and Winter, 1985

### Introduction

While many of the practices of economists remain an easy target for criticism by philosophers and postmodern social scientists, it is not certain whether economists are entirely to blame for their austere ways. In fact, if we look carefully at the history of economics, much of the stringency that plagues the neoclassical approach can be traced back to logical positivism and the scientism of early Anglo-American, 'analytic' philosophy. Having attended the 2013 INEM conference (*International Network for Economic Method*) hosted by the Erasmus Institute for Philosophy & Economics, I can safely say that I am not alone in wondering what the future holds for the discipline. To paraphrase Don Ross, Dean of the Faculty of Commerce at the University of Cape Town and the now chairman of the INEM organization, the mere fact that economists within the debate are unaware of *what* the actual problems in their methodology are conveys that the discipline itself is in trouble<sup>1</sup>.

My goal is to examine the development of what has become known as 'Samuelsonian economics'. Samuelsonianism (coined by Deirdre McCloskey (2002)) can be used to refer to what is commonly called the 'neoclassical' or 'mainstream' approach to economic theorizing. In this paper I will argue that it is this attitude toward economics that is hindered by a rather contracted methodology, one which overprivileges quantitative analysis and likewise

eschews alternative heterodox approaches. However, I will show that (to the benefit of economists) the contemporary economic discourse – the rhetoric of quantification – is itself resultant of a broader intellectual movement, what can be called *modernism*. By considering the ways that other 'modern' disciplines have developed, I argue that this method of discourse, with which economists came to preeminence, is reminiscent of an obsolete paradigm<sup>2</sup>.

### Methodology and Discourse

How are we to understand economics? Prior to the outbreak of logical positivism, one could not discern where philosophy began and economics ended<sup>3</sup>. In reading Smith, Hume, or Marx, the notion of political economy was qualitative; it was continuous with moral theory and metaphysical belief. This contrasts with the discipline as it is conceived today, as orthogonal to morality and many of the quirks of human nature. Yet it is no less difficult now to classify economics among the canon of the sciences. Although the theoretical issues are many and varied, the scope of interest for philosophers of economics is bifurcated among two general lines: one branch of inquiry asks whether economics can (and should be) treated as a 'positive' science, similar to the natural sciences like physics and chemistry – 'positive' meaning that science is strictly concerned with fact-gathering and measurement and not with evaluating values or beliefs. In this regard Paul Samuelson (1947/1983: 219) notably stated that 'the scientist does not consider it any part of his task to deduce or verify (except on the anthropological level) the value judgments whose implications he grinds out'. Accordingly, positive sciences adhere to immutable laws which are unfalsifiable and (more importantly) are immune to the emotional disturbances of human judgment<sup>4</sup>.

Another branch of inquiry asks whether economists ought to take into consideration the moral and ethical implications of their assumptions and concomitant theories. For instance, what is the effect that markets have upon individuals' personal autonomy and perception of freedom? Can some markets be noxious? What about the kind of metrics that economists employ – do indices such as Gross Domestic Product/Gross National Product obscure our conception of national improvement and by extension human development? How do we reconcile high national production with low standards of living? Though such inquiries far from exhaust the many issues that are demanding of attention here; the punchline is that, until very recently, such questions were not taken into consideration by economists – or at least not given the due consideration that the majority of non-economists believed they required. Within the discipline, these inquiries were left to the marginalized heterodox cousins of mainstream economists.

It is somewhat ironic then that economists have the intellectual monopoly over the economy that they do. Despite the sophistication of their mathematics and dogged use of regression analyses, economists cannot say much about the economy that is not itself implicit in the parameters and assumptions which they impose. That is to say, when *speaking* about the economy, economists employ a system of rhetoric that is self-referential: it does not explain phenomena the way that physics or chemistry explain phenomena. That is not to say that supply and demand curves, national accounting identities or decision axioms are not demonstrative of extant phenomena; but we must realize that these methods are explanatorily ideal: while these tools are useful insofar as the framework which employs them actually maps the topography of that thing we call the 'economy' – and hence has some use in real markets and real institutions – economists tend to forget that such heuristics are idealizations, not *a priori* truths<sup>5</sup>. If economists conceive of the economy by the very set of concepts that they presume it to be constitutive of, then this seems question-begging. As Deirdre McCloskey (1999: 426) quips, 'It ain't science. It's just logic. It connects assumption A with conclusions C'.

Even within the economics community there is little consensus as to how the economy should be managed (or even how it ought to be conceived!). Consider Paul Krugman's recent controversial New York Times article (2009, September 2nd): the exegesis of the housing market crash

is presented as a subtly scathing critique of Chicago-style, or what he calls 'Freshwater', economic methods<sup>6</sup>. He states that 'the economics profession went astray because economists, as a group, mistook beauty, clad in impressive-looking mathematics, for truth. . . Economics, as a field, got in trouble because economists were seduced by the vision of a perfect, frictionless market system.' However, not even Krugman, an insider and conspicuously influential economist, had *carte blanche* to make these criticisms. David Colander (2011) has since censured Krugman's account of the crisis and his caricature of the American economic scene. Granted, Colander's main contention with the editorial is one of biased scholarship, and not of school loyalties (both men are products of coastal, non-Chicago schools: Columbia and MIT). Yet, it is telling of a greater problem for the discipline when similarly schooled economists do not agree as to how the same historical facts add up. Or worse, what they entail for the future of the economy. The misreckoning this debate embodies anticipates the worries that I will discuss in this essay.

### Modernism as Emancipation

Historians use heuristic labels to identify trends in the social and scientific milieu. Whether we call these handles *epochs*, *paradigms*, *eras*, *periods*, et cetera, the aim is to characterize the unique mentality or *Zeitgeist* that unites a common conception in the form of novelty and new ideas. With the advent of each new epoch we see dramatic shifts in attitudes and beliefs – iconoclastic transformations that affect the ways in which individuals perceive the world. Such paradigms do not merely characterize the way scholars speak to one another, but reveal deep structural shifts in the values and genesis of scientific theories.

According to Hans Robert Jauss the term 'modern' – as a distinguishing mark of historical awareness – was first used in the fifth century. Appearing as the Latin *modernus*, it depicted the present as officially Christian and distinct from the Roman and pagan past (Habermas & Ben-Habib, 1981). Though some historians are careful to restrict 'modernism' to refer only to the seventeenth century Enlightenment, the phrase has appeared throughout history:

With varying content, the term “modern” again and again expresses the consciousness of an epoch that relates itself to the past of antiquity, in order to view itself as the result of a transition from the old to the new. [...] the term “modern” appeared and reappeared exactly during those periods in Europe when the consciousness of a new epoch formed itself through a renewed relationship to the ancients – whenever, moreover, antiquity was considered a model to be recovered through some kind of imitation. (Habermas & Ben-Habib, 1981: 3)

According to Habermas and Ben-Habib, if we reflect on the structures of intellectual development, we see that in most fields – at critical periods in history – there arises a state of self-awareness by which the discipline (as experienced by the collective of its affiliates) becomes vexed: when the restrictive powers of tradition give rise to discontents, individuals inevitably challenge the doctrines and presuppositions which underlie their environment. The evolution of innovative ideas, then, occurs through a reactive and directed response against that milieu. Often the dominant views of the preceding epoch are subverted through deliberate and mutual exchange with adjoining fields (for example, if we consider the historical developments in natural sciences, say, in physics, there appears to be an almost isometric relationship to the historical development of mathematics. It is no surprise then that Euclid, Archimedes, Galileo, and Newton – each of whom made ingenious contributions to physics – were foremost mathematicians).

It follows that if the historical role of modern innovation results from a renunciation and substitution of the doctrines of the distant past, then we can express *modernism* as the reaction to classical antiquity: what has been previously termed ‘classicism’ can be identified by grandeur, self-importance, and by bombastic religiousness and mythology: consider that the very root of classicism is *class*, i.e. ‘first class’, ‘social class’, ‘high class’. Thus, the grandioseness by which classical art, music, and education were celebrated is in fact dependent upon, or rather, set against a background of social and political stratification.

By distinction, modern disciplines as we know them are interpreted as more functional, logical, and secular. In physics, mathematics, and natural philosophy, this has been characterized as a slimming down of explanatory foundations in favor of simple and parsimonious theories. The sciences in

general have been motivated to discover (and/or engineer) proofs whose applications are wide-reaching and would lead to more accurate predictions. Similarly in art and architecture, modernism has replaced baroque and ostentatious designs with purposeful, simplified edifices. This largely emphasized the importance of *concept* as a mechanism guiding creation<sup>7</sup>. In modern art, explorations into the fundamentals of form, color and light abjure the traditional focus upon craftsmanship and realism which were traditionally measured by their ability to recreate and mimic the world, not challenge it.

As Carl E. Schorske has eloquently portrayed it, the modernizing shift in Vienna (1860-1900) began as a prosocial retaliation against the upper crust of Viennese society. What germinated from citizen rebellion resulted in some of Europe’s chief cultural achievements in architecture, psychology (notably psychoanalysis), fine art and music. In *Fin-de-Siècle* Vienna, he describes it as follows:

As early as the eighteenth century, the word “modern” acquired something of the ring of a war cry, but then only as an antithesis of “ancient” – implying contrast with classical antiquity. In the last one hundred years, however, “modern” has come to distinguish our perception of our lives and times from all that has gone before, from history as a whole, as such. Modern architecture, modern music, modern philosophy, modern science – all these define themselves not out of the past, indeed scarcely against the past, but in independence of the past. The modern mind has been growing indifferent to history because history, conceived as a continuous nourishing tradition, has become useless to it. (Schorske, 1981: xvii)

Although we could discuss *ad nauseam* what modernism consists of relative to each of the aforementioned disciplines, this would be to miss the point. I am not concerned with the myriad ways in which the word ‘modern’ has been invoked. Instead, what is common to each discipline we call modern is the deliberate (at times programmatic) self-extrication from the past. In this sense, modernization is emancipatory. Let it suffice then to characterize modernism as the cultural process of self-awareness; it is the procedure by which a common ideology comes to reevaluate and redefine its own essence by reflecting upon the very foundations from which it derives meaning. It is an act of intellectual liberation.

### Early Modernism to Logical Positivism: Philosophy's Impact on Economics

Early modern philosophy has had a palpable role in the development of twentieth century 'analytic' and positivist philosophy. Although this much is evident from a cursory study of the history of philosophy, the impact of early modernism on later Samuelsonian economics is not altogether obvious. An investigation into Descartes' philosophical rationalism reveals how the epistemic foundations of natural science shifted from the empirical-qualitative structures of the former Aristotelian physics to that of mathematical reason. As Kurt Smith (2012) states:

The only properties of bodies with which the physicist can concern him or herself are size, shape, motion, position, and so on – those modifications that conceptually (or *logically*) entail extension in length, breadth, and depth. In contrast to Aristotle's 'qualities', the properties (or modes) of bodies dealt with in Cartesian physics are measurable specifically on ratio scales (as opposed to intensive scales), and hence are subject in all the right ways to mathematics [...] This conception of matter, conjoined with the sort of mathematics found in the Geometry, allies itself with the work of such Italian natural philosophers as Tartaglia, Ubaldo, and Galileo, and helps further the movement of early thinkers in their attempts to establish a mathematical physics. (my italics)

In his *Meditations* (1641/1996), Descartes engages in extreme skepticism over the nature and reliability of knowledge gleaned from sense experience. This methodological doubt involved performing an *epoché* upon the phenomenal world in order to establish clear and distinct ideas – that is, judgments which were presuppositionless and indubitable. The suspension of all judgments rooted in sense experience thus refuted the Aristotelian idea that natural 'qualities' were necessarily veridical, and furthermore refuted a very specific conception of God which was presupposed by Medieval theologians. Instead, the concept of God is rebuilt in his theory based on the indispensable and eternal (ontological) truths which, upon reflection, necessitate God's existence (and furthermore satisfy to prove its benevolence). This justifies that sense experience can be reliable – for we can trust that our sensations, as bestowed by a benevolent

God, do not deceive us – and furthermore, that natural sciences can be preserved. However, what is crucial to this method of *a priori* reconstruction is the radicalization of the self – i.e. the *cogito* – as the epistemic basis of philosophical truth (1986).

As a prolegomenon, Descartes' *Discourse on Method* and *Meditations on First Philosophy* served the intellectual community by providing a method of ahistorical/atemporal scientific analysis. And within the rationalist tradition, Spinoza and Leibniz continued to develop philosophical axioms based on reflective, logico-deductive theories. However, modernism is not limited solely to the reflective *a priori* method. Empiricists, including John Locke and David Hume, employed similar reductive methods to suggest an epistemology based on sense experience. And these developments further influenced Kant and the German Idealists, as well as the contemporary 'analytic' philosophers.

However, in the early twentieth century modern philosophy culminated in the development of logical positivism, known metonymically as the *Vienna Circle*. Logical positivism required that philosophy be an extension of science and hence aim at eliminating any dubious metaphysical assumptions (and by consequence exalted the supposed transparency and tractability of mathematics). This emphasis on transparency required that philosophy impose linguistic frameworks whose axioms and statements correspond directly to the observable world: any claim that was not grounded in sense-experience (i.e. could be empirically verified), or equally, was not conceived via *a priori analytic* statements, was determined to be meaningless. Yet, positivism was not exhausted by philosophy alone; the procedure of the scientific method (supplemented by a Lakatosian reduction of theory falsification<sup>9</sup>) was adopted by many disciplines as way of achieving "balance of continuity and progress" in scientific discovery (Balak 2006: 13-5). However, it is this ostensible<sup>10</sup> notion of mathematical transparency which is most notably associated with Samuelsonianism. Marcel Boumans (2004: 14) states that:

It is often assumed that mathematics is an efficient and transparent language. One of the most well-known supporters of this view was Paul Samuelson (1952). He considers mathematics to be a transparent mode of communication and that it is this transparency that will stop people [from] making the wrong deductive inferences.

In this regard, the positivists rejected Kant's *synthetic a priori* judgment for its metaphysical baggage: Kant's metaphysical realism/transcendental idealism was incongruent with the requirements of strict (empirical) verification (1787/1998). For this reason, it was Hume, not Kant, who was vindicated as an exemplary scientist whose skepticism and unyielding emphasis on scientific induction buttressed the positivist project. Thus, the scientism of the logical positivists had its greatest influence upon economists who were not satisfied with the traditionalist (classical) economics (as espoused by Smith, Ricardo, and later Veblen and Marshall). But this already couches neoclassical economics in later stages of modernism. We must see how, prior to Samuelson, economics developed out of the Scottish Enlightenment – predominantly due to Adam Smith, David Hume, and later John Stuart Mill.

Political economy, as a subdiscipline of social and political philosophy, embraced the presupposition that individuals are occupied solely with acquiring and consuming wealth and the subsequent activities that derive from this primary motive, such as production and distribution (Mill 1884). In this regard, early economics was depicted as a hybrid inductive-deductive method of inquiry which induced and then abstracted from all other human goals and motives (Keynes, 1904/1984). Herein, the aim of science was to investigate the laws that govern these operations, based on the supposition that man is a being who is determined, by the necessity of his nature, to prefer a greater portion of wealth rather than a smaller. In this way, Mill, among others, had conceived of political economy primarily as a science of human behavior; one which assents to the general or universal principle that man is a wealth-maximizing creature. The subsequent forms of this general purpose (production and consumption) are ancillary to this fact. In this regard, political economy was developed as a science of abstracted generalizations about human behavior, much in the same way that geometry is a science of abstracted mathematical figures and their concomitant relationships. Though we may conceive of man as having motives other than consumption of wealth, or conversely, conceive of man as acting in a way that violates these principles, this no less invalidates the necessity of starting from *a priori* assumptions for their convenience and simplicity – or so political economists assumed. However, classical economics still maintained that

careful induction ought to aid these generalized foundations, and in this regard, Keynes, Marshall, and the likes were still influenced greatly by the traditionalist approach to economic methodology.

It was not until the development of modern economics (following the conception of the macro-economy) that economists shifted toward the implementation of arcane, highly technical tools. With the introduction of business-cycle modelling and early econometrics (via Ragnar Frisch, Paul Samuelson, and Jan Tinbergen) the methodology of economics turned away from that of early political economy, thus embodying a more systematic approach toward the quantifying of production and consumption. 'These econometricians,' write Marcel Boumans and John Davis (2010: 31), 'shared the scientific ideals of the logical positivists, having a deeply held belief in mathematical rigor and the empirical testing of theories.'

Though many of the general principles of modern economics were predicated upon the assumptions set forth by classical political economists, the modern era can be defined by its stern scientism – that is, the application of abstract models and impenetrable mathematics. As an intellectual discipline, contemporary economics represents the most formal and dogmatic endeavor of modernity, which reached its apex during the dominance of logical positivism. Paul Samuelson and his successors including Lawrence Klein and Robert Solow were notably influenced by the positivist movement, and this explains the shift from political economy – as a science concerned with qualitative judgments – to neo-classical or mainstream economics as it appears today. But we cannot place all the blame on Samuelson himself – for Frisch and Tinbergen also have a lasting effect on the introduction of statistical inference in econometrics.

Yet, it is not merely positivism pure and simple that has caused such confusion for the discipline. The 'methodological schizophrenia' (to borrow Dan Hausman's useful epithet) of Samuelsonianism is its precarious yet unrelenting commitment to instrumentalism – or, the 'as-if' principle. Generally the instrumental view is regarded as the methodological position that a theory, or rather, assumptions put forth by a theory, are justified *just in case* they are predictive. Thus, a theory need not explain why some cause produced an effect so long as the theory's assumptions about the

concurrency of cause and effect are consistent enough to make useful predictions. And since economics has chiefly been interested in how humans behave, the focus on prediction (rather than true explanation) has had major appeal.

The invocation of the ‘as-if’ principle is most pronounced in the foundations of behavioral economics, game theory and decision theory, where human motivation can be represented by a set of modest assumptions. For instance, von Neumann-Morgenstern rationality supposes that persons are rational if and only if they seek to maximize the expected utility of each possible choice; in turn, all choices can be ranked according to their ordinal utility. This internal ranking is revealed when the agent chooses, thus displaying their preference. The means by which these models represent ‘reality’ is not necessarily based upon *genuine* preference formation which could be hindered by conflicting desires, imperfect information, or (irrational) expectations. Instead, the theory of expected utility merely assumes that persons act ‘as-if’ they are calculating the relative values of all utility functions and then choose accordingly. As branches of micro-economics have developed, the precision with which such models have sought to capture the decision-making process have evolved by the manipulating parameters of whatever game or decision set agents are confronted with, or by introducing various caveat-terms for features like uncertainty, risk, and altruism. But, these models suppose that humans act ‘as-if’ they are rational, informed, and cognitively equipped to make complex calculations, and this has created a rather strange version of the starkly positive science postclassical economics purported (or at least pretended) to be. Consider the following remark made by Gary Becker (1976: 7):

The economic approach does not assume that decision units are necessarily conscious of their own efforts to maximize or can verbalize or otherwise describe in an informative way reasons for the systematic patterns in their behavior. Thus it is consistent with the emphasis on the subconscious in modern psychology.

While it is taken to be the case that persons are not actually the calculating machines that economists make them out to be, this quote

nonetheless reveals what economists like Becker conceive economic agents to be: decision units – agents preprogrammed to satisfy rational-choice assumptions. But, there is little consolation to be found in the ‘as-if’ methodology if the Samuelsonian takes it as fact that the ‘economic approach’, the agent’s tendency toward maximization, is akin to a Freudian drive.

### Post-Positivist Philosophy: On the Importance of Language and Social Ontology

What we have learned from the last half-century in post-positivist (not to be confused with postmodern) philosophy was that the Vienna Circle and its scientism were hopelessly inflexible; their inexorable methods were too limited to capture the intricacies and nuances of human life (including the many social institutions which further influence how individuals conceive of the economy and hence their economic decisions). I use the term ‘post-positivist’ to refer to multiple schools of thought, each of which privilege a unique methodology and set of motivating principles. While these schools may differ on their respective approaches toward a new method of philosophizing, the characteristic commonality is the rejection of logical empiricism and the underlying assumption that an analytic-synthetic distinction is sufficient to carve the epistemic joints of science. Quine (1953) famously exposed the problems inherent to this distinction, arguing that the very foundations of epistemic and metaphysical modality depend on extricating this dogma. A paradigm case of the post-positivist insurrection is Ludwig Wittgenstein. Wittgenstein was extolled by positivists for his publication of the *Tractatus Logico Philosophicus* which sought to expound the limits of the world through thought and language. However, despite its many merits, he subsequently revoked the conclusions he drew from the *Tractatus*, and moreover rejected the entire method espoused by the positivists. Wittgenstein re-evaluated the role that language played in common parlance, advancing (among other theories) that a word’s meaning is its use; that family resemblances – not essences – help to explain conceptual similarities; and *most importantly*, that the future of

philosophical investigation must abandon its fondness for rule-following. Wittgenstein's retraction of his earlier "dogmatic" sentiments and his austere criticism of rule-governed philosophical inquiry was definitive of a new intellectual culture.

Like Wittgenstein, philosophers ranging from Martin Heidegger to John Searle have investigated the very structures of reality which previously had been taken to be fundamental and obvious as the starting point in many social and scientific endeavors. This has been undertaken through a variety of philosophical methods, the majority of which have taken language and linguistic analysis to be of central importance. The hermeneutic approach of Hans-Georg Gadamer (1975), devised in the spirit of Heidegger's meta-ontology and further developed by Jürgen Habermas (1984, 1988), provided a conceptual scaffolding for conceiving of a linguistic based social-science, one which eschews the *a priori* assumptions of early modern philosophy as well as the strict empiricism of later positivists for an interpretive theory of communicative action. Though Habermas' motivation to remain true to the spirit of the Enlightenment diverged from Gadamer's more critical project, their joint influence within the field of philosophical hermeneutics conveyed an important insight: *that a science of social beings needs to critically examine language and the linguistic commonalities of those beings.*

Albeit, while the hermeneutic approach of the later German philosophers offered some reassurance that social sciences could be conceived of as more than an extension of the humanities (Habermas took care to distinguish his theory of communicative action from traditional conceptions of hermeneutic interpretation couched in the *Geisteswissenschaften* – or 'human sciences'), there has, unfortunately, been little development in 'harder' social sciences that has taken the linguistic turn seriously. This notwithstanding, if we consider Descartes' *epoché* and the subsequent movements in early-modern philosophy to be indicative of a transcendental unrest – that is, a markedly new consideration for the conditions necessary for any empirical judgment – then many of the forthcoming post-positivist philosophies can be understood by their collective distrust of *certainty*.

The tragedy of modernism is that it takes itself too seriously – the demand for indubitable truth always presupposes some foundation or ideological backdrop upon which clear and distinct ideas can be deter-

mined. As later philosophers have pointed out, the Cartesian *epoché* wrongly presumed that the cogito – *the self-knowing subject* – was capable of performing cognitive and linguistic acts within a self-imposed, conceptual vacuum. Descartes' skepticism about the external world failed to doubt those very constructs that are necessary for a rich philosophical analysis – namely, a concept of language (or some kind of prelinguistic cognitive grammar), social and cultural affiliations, etc. If we grant that the later positivists were as steadfast in upholding the analytic-synthetic distinction as was Descartes concerning the epistemic validity of clear and distinct ideas, then it is easy to see how positivism fell out of fashion. Echoing this point, McCloskey (1983: 483) explains that 'the program [of positivism] failed, and in the meantime probable argument languished. In Richard Rorty's words, following Dewey, the search for the foundations of knowledge by Descartes, Locke, Hume, Kant, Russell, and Carnap was "the triumph of the quest for certainty over the quest for wisdom."' As a model for sound scientific practices, the program of positivism was misled by the pursuit of truth and epistemic certainty.

### The 'Post-Autistic' Movement and the Critique of Samuelsonian Discourse

Along with McCloskey, Arjo Klamer and Steven Ziliak are two notable economists who have both expressed a great deal of criticism of the Samuelsonian tradition. Their joint effort within the post-autistic movement reflects many of the same worries that post-positivist philosophers had regarding their self-assured predecessors. What has made mainstream economics metaphorically autistic is its introverted and egotistical approach toward scientific inquiry; economists have become indoctrinated to conceive of the economy through the rhetoric of quantification: regression coefficients, point elasticities, multiple correlation analyses, Phillips curves, equilibrium prices. The autistic model consumer is not a human being, but *Max U* – a 'sociopathic' agent who seeks only to maximize expected utility (Klamer *et al.*, 2007). *Max U*'s psychology can be determined by his set of utility functions and algorithmic decision models.

This conception of ‘the economy’ lacks the qualitative features that traditional political economists sought to preserve. We are then led to ask: is the ultra-formality of mainstream economics as scientific as it proclaims to be? If so, then this is hostile to the conception of science that many other scientists claim as their *modus operandi*. McCloskey (1999: 425) states that ‘[economics], for all its promise, is in very bad shape because it has fallen into a cargo-cult version of science in which qualitative theorem-making runs the “theory” and statistical significance without a loss function runs the “empirical work”<sup>11</sup>.’ She continues:

Economics in its most prestigious and academically published versions engages in two activities, qualitative theorems without entries for the world’s data and statistical significance without loss functions. These two look like theorizing and observing, and have the same tough math and tough statistics that actual theorizing and actual observing would have. But neither of them is what it claims to be. Qualitative theorems are not theorizing in a sense that would have to do with a double-virtued inquiry into the world. In the same sense, statistical significance without a loss function is not observing. (1999: 426)

To put it in less abstract terms, the means by which economists perceive the actual economy is through a hyperquantified lens of computation and simulation. All aspects of the phenomenal economy – the literal market places populated with real flesh and blood agents – are codified into convenient representations. For all its rigor, it is not science (at least, not in the same sense that chemistry and physics are science). It is some kind of logic of economic theorizing based on a considerably small number of assumptions, but it is not the study of the economy in itself. In no way does the Samuelsonian conception of the economy resemble that with which the lay-person involves him/herself. This is especially perplexing if we consider that the economy depends for its existence upon the actions and engagements of individuals.

While I do not disparage the richness and sophistication of the various tools economists use, I am adamant that the discipline is beset by a rather indulgent self-image, which privileges its own rhetorical position. The economy can be conceived of as more than a set of models

and simulations; its composition depends just as much on the actions of non-economists as it does on its scientific analyses performed by properly trained statisticians. But the discourse is asymmetrical: there are the academics, who favor a certain set of periphrastic devices and *topoi* (e.g. equilibria, utility-maximization); and there are the lay-people, whose behavior, either knowingly or unknowingly, are constitutive of the economy. For the lay-person, the economy is not something that exists on a blackboard, but is a confluence of modes of being. These modes *are* the meanings that the word ‘economy’ evokes for them. These meanings range from ‘a digit on a paycheck’, or ‘an extra kilo of rice’, to ‘percentage-point of interest’. When I say that discourse is asymmetrical, I mean that the language of economics does not consider these peripheral meanings with which the economy presents itself to non-academics. That is not to say that words like ‘digit’, ‘kilo’ or ‘percentage’ do not presume a modicum of mathematical understanding by non-economists; but instead, that the pervasiveness of the language of mathematics is no justification for reducing the discourse of economics to the limited rhetoric of quantification.

Ontologically speaking, the discourse of non-economists is as integral to understanding the economy as is the academic economists’, whether this is via metaphor, institution, or equation. I am not making the bold statement that the ontological status of the economy is exhausted by language and linguistic acts alone. But economists’ blatant disregard for the significance of language and social idioms – in a word: the communicative actions that bestow meaning for individuals – is parasitic upon the broader conception of what economics is the study of. The cardinal sin that economists of the Samuelsonian tradition have committed is the confusion of mathematical discourse with ontological reality – while mathematics explains the economy, *it is not constitutive of it*. Consider the following passage from Klammer *et al.* (2007: 2):

Economics is a plurality of conversations, but with a few honorable exceptions today’s textbooks don’t deign to mention the fact. The actual economic conversation is heterogeneous. Yet the textbooks are startlingly homogeneous. The actual economic conversation is conducted by feminists and libertarians, empirical Marxists and postmodern



Keynesians, historical institutionalists and mathematical Samuelsonians. But most of today's textbooks teach Samuelsonianism pure and simple, period. They are dogmatic, one voiced, unethical.

But what does Klamer mean by 'Economics is a plurality of conversations'? 'Postmodern Keynesians' and 'historical institutionalists' hardly sounds like the manner of speaking that non-academics use to describe themselves, let alone how economics impacts their daily lives. So, what benefit is it to the study of the economy to consider these other academic conversations? The reason, I argue, is because it is precisely the scope and aim of alternative, heterodox schools to privilege diverse methods of discourse. While "empirical Marxists" and laissez-faire libertarians hold antithetical views toward one another, they satisfy to cover a broader range of possible modes of being, both of which lack proper representation in the neoclassical, Samuelsonian paradigm. While the conversation may sound equally as abstract between a mathematical Samuelsonian and empirical Marxist to the uninitiated, we must remember that it is not what the conversation 'sounds like' that is important for non-academics, but what the conversation is *about*. For this reason, neoclassical rhetoric is dangerous if it fails to consider that 'decision units' are more than ink on a page, or curves on a supply/demand graph. This is why academics who represent feminists, Marxists, libertarians, institutionalists, etc. must also have their place in the economics conversation.

### Other Considerations: Applied Philosophy of Science & Economics Imperialism

My interest here has been to show that economics is not immune to the fluctuations of history, and that its methods can be traced to an era of overly confident scientism. However, some readers may be critical of the claims that I have made thus far either because they accuse me of portraying a strawman of neoclassical economics by criticizing Samuelsonianism; or it may be asserted that I have not properly considered alternative developments in the field which do seek to supplement blackboard-theorizing with sociological and behavioral experiments. I would like address these issues:

First, it must be stated that many of the problems that philosophers of economics are concerned with have as their origin the complications and paradoxes found in the canon of philosophy of science. These challenges include, among other theoretical issues, the general problem of measurement<sup>12</sup>, fact-value entanglement<sup>13</sup>, theories of sound evidence<sup>14</sup>, and a host of inquiries that invoke the use of higher-order linguistic frameworks and logical analyses. In the study of economics these armchair issues become palpable because they can be readily applied to concrete practices, where subjects can be surveyed (unlike the subjects of many biological sciences) and moreover consequences may be directly observable (unlike quantum physics and some branches of mathematics).

We can examine, then, as demonstrative of the above challenges, the problem of *quality change*<sup>15</sup> as it relates to the analysis of the standard costs of living. As has been previously investigated by Julian Reiss (2008), economists mistakenly validate the qualitative aspects of cost-of-living indices (COLI) by consulting and overdetermining consumer price indices (CPI). This is problematic given that CPI and COLI are categorically distinct metrics; the former describes the consumption of the average household and the latter refers to the price of a bundle of goods that an individual household is willing to pay for subsistence living. While there might be a conditionally dependent relationship between the two, it is unclear whether or to what degree one can be indicative of the other without *presupposing* that the two are coextensive. While making use of a consumer price index for a cost-of-living analysis does not violate any laws of logic or natural science, it does require that economists presuppose much about the statistical relevance of the average costs of living, faithful census and data collection, and (most controversially) the robustness of utility and subjective well-being as suggestive of persons' actual welfare. Not only is quality change plagued by the general problem of measurement, but it also implicates how macro-level phenomena can be precariously dependent on tenuous microfoundations. But how does an issue like quality change relate to the possibly committed strawman?

Throughout this presentation I have (admittedly) not been clear in delineating wherein blackboard economics is most pervasive. That is, I have not made it explicit whether the matters of contemporary discourse

refer to microeconomic or macroeconomic theorizing. I respond to this charge by claiming that the sins of Samuelsonianism can be found in both camps. And it is much easier to see this by considering how (à la Hausman) the methodology is schizophrenic in the ways it draws inferences.

As stated above, quality change refers to a potential shift in living standards by imposing an interface between quantity measurement (CPI) and quality analysis (COLI). Though COLI is a quantitative measurement, i.e. it refers to the cost of a particular size of a bundle of goods, the experience of that bundle and the subsequent interpretation of that experience is *qualitative*. But, economists do not like to work with subjective properties and thus COLI serves as a tractable marker for explaining what persons prefer. The difficulty arises when individual preferences over consumption bundles are extrapolated (based on the deductive assumptions about the rational behavior of individuals) and this representative household is then aggregated over a large number of supposedly similar households. The indexation of costs-of-living is thus an inductive appraisal of the average consumption amount based on an essentially deductive preference model.

So, what is at stake here? On the one hand, COLI is predicated on utility – as a de facto measurement of subjective well-being – to justify household consumption levels. Under the umbrella of neoclassical microeconomics, expected utility theory is regarded as highly athletic: ‘as-if’ maximization is justified on the pragmatic assumption that given the correct parameters and modest set of behavioral assumptions, any agent can be shown to maximize some form of utility, whether evinced as wealth, social preference, happiness, etc. On the other hand, when economists inductively derive the expenditure of an average household on consumptive bundles, this is a macro-level assessment. Thus, if CPI tracks changes in the price of a specific bundle of goods over time, then the fluctuations of price indices are assumed to be determined by the willingness of persons to spend X amount on the bundle of goods at that time. Note, I am not claiming that quality change is an instance of methodological individualism (however, this remains a hot-button issue in the methodology of economics). But, it is the case that quality change exposes precisely how economists indoctrinated by blackboard tactics will employ both inductive and deductive methods of analysis as it suits their needs: and this

shows how the discourse at both levels continues to implement idealistic assumptions about the veracity of revealed preferences (as deductive choice methods) and accuracy of statistical analyses (based on simulations and inductive inferences from sample sets).

The other consideration I anticipate is that perhaps Samuelsonianism is not representative of the most cutting edge, experimental branches of economics. It would thus be unfair to level this criticism against behavioral studies that deal directly with cognitive and neurological studies, ones which could have unparalleled influence on the trajectory of future economics. In response to this claim, I present two cases from the burgeoning field of neuroeconomics.

Recent work in the field of neuroeconomics has generated some controversy regarding the role that certain economic concepts play in actual decision-making processes. This has caused many to re-evaluate whether economics can learn from cognitive and neurological studies of the brain; or conversely whether it is neuroscience which ought to adopt the explanatory mechanisms of economic theory to make sense of the data. The first interpretation is referred to as the ‘neuroeconomics critique’; the latter has been dubbed ‘economics imperialism’. Both of the following cases I present are guilty of the latter.

In the first case, Faruk Gul and Wolfgang Pesendorfer (2005) rebuke recent evidence<sup>16</sup> whereby neuroscientists sought to map brain states in order to ‘track’ the presence of utility in subjects. In response to the rather novel findings – that utility is a plurality of brain states which are contingent on the type of satisfaction an agent experiences – Gul and Pesendorfer argue against the commitment that facts and concepts about human behavior (such as utility maximization or risk aversion) hold unequivocally across disciplines. This means that, against the evidence that utility is not a single, ‘one-size-fits-all’ metric of satisfaction, economics need *not* reconsider that there are multiple ways of realizing expected utility. They maintain that, though psychologists have certain intuitions about human behavior and specialized methods for mapping these intuitions, it does not follow that these intuitions supervene on the principles of economic theory. More likely is the case that psychological explanations of brain activity are built upon very different notions of ‘preference satisfaction’

or ‘risk aversion’ – that is to say, that their concepts of utility or risk may be fundamentally different from that of economics. Thus, rather than to admit that utility is a much more nuanced and complex thing, Gul and Pesendorfer are adamant that cognitive scientists and psychologists have a different understanding and hence *use* for the scientific data that supports a multitude of uses for the term ‘utility’. In short, Gul and Pesendorfer maintain that the neuroeconomics critique (that economics can learn from neuroscience) is false.

The second neuroeconomics case comes from the decision-theoretic experiments of Paul Glimcher *et al.* (2005). Specifically, their experiments sought to map encoded neurons to determine the preference-profiles of subjects. Glimcher *et al.* concluded that the brain in fact operationalizes an expected utility calculation analogous to that of rational choice theory – they refer to this as *physiological expected utility*. The upshot of their discovery is that actual decisions should be tractable in the neural architecture of subjects making both descriptive and prescriptive aims of expected utility theory realizable. Glimcher’s avowed motivation was to capture the *subjective* expectations that agents have when faced with decisions – this motivation is attributed principally to Bernoulli (1738/1954) and Savage (1954). The importance of Bernoulli’s model (for physiological expected utility to have potential merit) expressed that two variables from the external world were modified by processes *internal* to the decision maker and that the product of these computations was then represented and used to make choices. Yet, they concede that despite the ‘significant uncertainty’ about the precise form of Bernoulli’s stated internal computation, current neurobiological evidence seems to strongly support this early claim, namely that expected utility *is* computed through an internal mechanism. For this reason, economic theory is better suited to explain the neural firings in the brains of subjects faced with decision problems. Again, this is an instance of economics imposing theory on external disciplines, not *vice versa*.

Both of the cases above constitute what has been called economics imperialism. While the very term is a debated one, I regard the examples as telling of a mentality that stems from the same history which birthed Samuelsonianism. While Glimcher’s experiments are less volatile to the

mutual exchange of ideas among disparate fields, Gul & Pesendorfer represent a commitment to the purity of economic theory – that economics is equipped with the tools it needs to explain human behavior. What is gathered from neurological studies is ancillary, and at best, supplementary to the assumptions held by neoclassical economists. It thus represents a part of the discipline which is unyielding to the spirit of scientific enquiry.

### Concluding Remarks

It has been my goal to show that the ‘blackboard’ mentality of neoclassical economics is excessively quantitative and thus too rigid to investigate fully the structures of the economy. However, we must realize that the intransigent personality of neoclassicism has its roots in pre-Samuelsonian positivist philosophy. Logical positivism and early-twentieth century ‘analytic’ philosophy had by Samuelson’s heyday already evolved from an early-modern, post-Enlightenment Cartesianism, which pursued certainty to the exclusion of practical wisdom. Descartes’ concept of clear and distinct ideas underscores what is meant to be emancipatory about modernism: that a logical and secularly-reasoned approach toward science should liberate truth from pernicious and unwarranted dogma. It is for this reason that mathematics, as a tractable and transparent language, has been the primary mode of economic theorizing over the last century. The irony, however, is that these very methods have held economics captive and prevented it from developing further. While natural sciences such as physics and chemistry can afford to be, and by virtue of their content *ought to be* positive, economics is an entirely different kind of science. ‘Blackboard’ economics functions as if mathematical entities are the sole contents of the discipline, and for this reason invoke positivist methods. But this is mistaken. If Popper is correct, and mathematical objects are merely ‘quasi-matter’, then these objects are only a *means* by which the actual subject of economics is expressed. In the spirit of traditional political economy, then, it is fundamentally a discipline of human action. And as humans – not Beckerian decision units – we are imbedded in an amalgam of social institutions that include language and linguistic commonalities, social dispositions, imperfect knowledge and

idiosyncratic behavior. For these reasons, the analytic tools handed down from modernism have not been emancipatory for economics; instead, they have imposed an exceedingly restrictive scientific regime which undervalues these institutions.

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*'Philosophy & the Discourse of Economics' was written for the EIPE course 'The Culture of Economics', taught by prof. dr. Arjo Klamer.*

## Notes

1. This remark was made 'off the cuff' during a plenary discussion for the INEM panel members.
2. I use the term 'paradigm' very loosely here. I am fully aware of its significance in the history and philosophy of science. In this paper I refrain from directly referencing Kuhn (1970) to avoid any confusion that may ensue from his specific use of paradigm shift in scientific revolution.
3. This is not meant to diminish or ignore the integral role that early economists had on the development of a separate, more quantified science of the economy. This list includes, among many others, the work of Alfred Marshall, William Stanley Jevons, Thorstein Veblen, Carl Menger, Vilfredo Pareto, to name a few. However, my aim in this paper is not to offer a historical analysis as such; it is to look at specific parts of the history of economics, parts which have caused the discipline to propel itself in an unambiguous direction.
4. Whether we conceive of (the aim) of science from the perspective of Kuhn, Popper, Lakatos, or other, the generalized argument that positive science ought to be value-free is of significant importance concerning the normative implications of economics. Friedman (1966) famously discusses the possibility of positive economics, which has since incurred numerous publications in response. Recently, the case for positive economics has spurred debates related scientific realism (Mäki, 2009; Reiss, 2012) and fact-theory-value entanglement (Dasgupta 2005, 2007; Putnam & Walsh 2007, 2009). Though, the literature on realism vs. instrumentalism is a vast and decades old debate.
5. While a priori truths are ideal, not all idealizations are a priori true.
6. In the article, 'freshwater' is used to denote Chicago-style economics whereas 'saltwater' refers to more coastal programs. This geographical metaphor is not a strict or even commonly regarded distinction – rather it is a convenient explanatory heuristic for Krugman's presentation of the rift among styles of economic training.
7. See Carl E. Schorske (1981) for further discussion regarding the effects of modernization.
8. Although the epoché is principally associated with Edmund Husserl regarding his method of phenomenological reduction (i.e. the 'bracketing' of biases which affect one's experience of the phenomenal world), the term in fact has a historical basis in ancient Greek philosophy, as employed by the Skeptics (Brittain, 2008). Although I do not attribute to Descartes Husserl's specific method of phenomenological reduction, the epoché satisfies to capture the institution of hyperbolic doubt with regard to sense-experience.
9. However, as Imre Lakatos' mentor, Karl Popper (1959) was an adamant critic of positivism – namely of the principle of verification – due to what he saw as the unanswerable problem of induction (Okasha 2002).
10. Boumans also notes that Popper regarded mathematical objects as 'quasi-matter' and therefore not always transparent. He states, 'This is shown by the fact that formalisms can be interpreted in different ways' (Boumans 2004: 14).
11. McCloskey makes reference to the 'loss-function' as it relates to statistical significance. For the non-economist, a loss-function can be understood most simply as an 'estimator' applied to a statistical model which is intended to map, that is anticipate, the actual loss experienced in the context of a particular applied problem. In *The Loss Function Has Been Mislaid: The Rhetoric of the Significance Tests*, McCloskey argues that misuse of statistical significance in a majority of economics publications can be attributed to this missing element. She quotes Abraham Wald, stating: 'The question as to how the form of the [loss function] should be determined, is not a mathematical or statistical one. The statistician who wants to test certain hypotheses must first determine the relative importance of all possible errors, which would entirely depend on the special purpose of his investigation' (as cited in McCloskey, 1985: 203).
12. In principle, this is an epistemic issue: On the one horn, economists seek to define a veridical instrument of measurement; on the other horn, without preconceived instrumentation, they cannot study the variables in question. This would imply that certain preconditions – i.e. conceptual frameworks, axiomatic truths – must be met in order to embark on scientific inquiry at all. Thus, the general problem of measurement is one of circularity.
13. Aforementioned in the introductory section. For further information, see Hilary Putnam (1989).

14. For classic discussions on the nature of scientific evidence, see Carl Hempel (1945, 1958, 1962), Nelson Goodman (1983), and Wesley Salmon (1984).

15. The problem of quality-change refers to the variation in quantity or price of a bundle of goods which causes a disproportionate change in the subjective experience of that bundle. Because CPI measures price changes in relation to their effect on the cost-of-living index, they are conflated with qualitative judgments, namely utility measurement. This means that price changes incur a curious evaluation, or rather translation, into functional utility. See Reiss (2008).

16. This issue concerns the use of neuroeconomic evidence in favor of supporting changes to normative economic methodology. The issue, as it is presented in *The Case for Mindless Economics*, involves an analysis of and rejection to what is called the 'neuroeconomics critique', which states that data from neuroscience can be insightful for understanding economic behavior. The neuroeconomics critique supposes that brain sciences are in a privileged position to experiment with individuals in artificially constructed economic situations, and this evidence may change the way that economists interpret game- and decision-theoretic models. See Camerer, Loewenstein, and Prelec (2004, 2005) for more discussion.

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