

NEOCLASSICAL THEORY AND THE TEACHING OF UNDERGRADUATE MICROECONOMICS

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Abstract

This paper explores possible reasons for the long and enduring dominance of neoclassical theory over the undergraduate microeconomics textbook. It proposes that those very attributes of neoclassical microeconomics that raise serious theoretical misgivings constitute the basis for the current hegemony of the standard undergraduate textbook. It further discusses the effects of the standard text on the education of economists in developing countries and conditions of the entrenchment of this text in undergraduate teaching. Finally, it looks at the possibilities of the emergence of alternative textbooks both in the centre and in the periphery of the global academic map.

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1. INTRODUCTION

In his study on the determinants of the performance of undergraduate economics students in a South African university, van der Merwe (2006, 2007) proposes that the paradigmatic basis of undergraduate textbooks and the various contestations about it constitute the context within which any analysis of student performance has to be set. This should open up a debate that started in earnest about seven years ago with the emergence of the “post-autistic economics” movement¹ and is now overdue in the South African tertiary education sector.

The focus of this paper is on the standard undergraduate microeconomics textbook and its role in the teaching of economics. This paper does not address the history of the emergence of neoclassical theory as the dominant discourse of microeconomics. That is a different debate that should be located in an essay on the history of thought in microeconomics. Neither does it look at the debates on the policy implications of this school of thought, although the implications of current undergraduate teaching for policy formulation in developing economies are indirectly alluded to throughout the paper. Rather, it takes the current status of the neoclassical account as a given and tries to explore the attributes that place the microeconomics textbook at the core of undergraduate teaching and the consequences of that positioning.

Throughout the paper, a case is made for the dire need for a shift away from the current standard microeconomics textbook, which is exclusively the preserve of neoclassical

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¹ The Post-Autistic Economics Movement was launched in 2000. In its critique of the hegemony of neoclassical theory, it was preceded by the Association of Evolutionary Economics, the European Association for Evolutionary Political Economy and the Association for Heterodox Economics, among others. However, its impact on the teaching of economics, perhaps because it originated from student bodies, as well as academics, seems to be more marked.

economics, to one which has a plurality of approaches to the analysis of the behaviour of economic agents. The consequences of the reliance of undergraduate curricula on the standard textbook, especially in the case of developing countries, are seen to be significant and damaging to the generation of economics graduates properly equipped to address the challenges of economic development. These consequences seem to be most marked in the case of Africa.

The following section defines the issue that will be addressed. In the course of this exposition, the concept of lock-in technologies is used as a possibly useful allegory for the nature of the phenomenon of the textbook and its consequences. Section 3 looks specifically at the salient features of microeconomic theory that render standard textbooks so attractive to the teaching of microeconomics. In the final section the conditions for a successful emergence of a viable alternative textbook are examined.

2. THE PROBLEMATIC

It is indisputable that undergraduate, and most post-graduate, microeconomics² textbooks are dominated by the neoclassical approach to the field. This position has been established since the 1960s which, in pedagogical time with the rapidly accelerating pace of change, practically places it before living memory. This form of transmission has become so entrenched, with successive generations of students internalising it, that it is difficult to conceive of an alternative pedagogy. At the same time, however, the right of place of neoclassical theory as the mainstream discursive formation of economics and as a determinant of economic policy is increasingly being challenged. This introduces a crisis in the reproductive capacity of economics as a useful discipline that educators need to address as a matter of urgency.

The main elements of the crisis that are of concern are the possibility of dislodging the monolith of the undergraduate text, the specification of its replacement, the consequences of its dislodgement and the management of the interregnum. However, in order to address these elements rigorously, we need to understand the reasons for the emergence of the neoclassical model as the source of the sole language of microeconomics textbooks. This is the main focus of this paper. The debates on the eligibility of this paradigm as the basis of mainstream economics still mostly occur within the sphere of abstruse academic discourse and, at a more popularly accessible level, on the policy prescriptions of alternative schools of thought. One area where the effects of the hegemony of neoclassical economics have, until relatively recently, been largely neglected in the debates concerns the teaching of economics at undergraduate (core course) levels.³ This neglect is unfortunate as the mode of transmission of the foundation courses in economics is a

² The argument in this paper refers to microeconomics where core course texts rarely contain references to debates. In contrast, the notion that economics is a contentious discipline does come across in standard macroeconomics texts all of which at least contain an exposition of the basic Keynesian-Monetarist debate. Lee (2005) points out that most of the critiques of economics textbooks have focussed on macroeconomics.

³ Before the emergence of the post-autistic economics movement in 2000, the two notable reviews of the suitability of neoclassical economics curricula to developing countries are presented in Livingstone *et al.* (1973) and in the special issue of the *Journal of Development Planning*, edited by Bagchi (1994). With respect to the role of these curricula within developed economies see Siegfried *et al.* (1991).

crucial component of the successive ratification of a “culture” of the discipline which has become generally intransigent in its consideration of the relative merits of alternative paradigms and schools of thought.

The potent socialising effect of formal education is one of the basic conventional axioms of sociology and this can be extended to academic training. A successful process of socialisation results in the internalisation of a particular mode of perception of what has been (largely arbitrarily, given the contentions on the issue) defined as microeconomics. This mode becomes part of the neophyte’s identity as a burgeoning economist and, in so far as it is exclusive, becomes the trainee’s entire *weltanschauung* of the discipline. The socialisation process in academia is strengthened by systems of reward and punishment (passing, failing, class of degree) which are usually primarily internal to the educating institution, but are also reinforced by an external peer review framework which is also steeped in the neoclassical approach. The essentially authoritarian nature of academic training, with the textbook as its primary tool, is explicitly rendered in Barnes’ (1982) exposition of Kuhn’s stand on the matter:

According to Kuhn, if one looks at the extended training which precedes research in a developed scientific field, then its most evidently distinctive feature is the extent to which it relies upon textbooks: the accepted terminology of a field, its methods, its findings, its favoured modes of perception, are all conveyed through their use. And credibility of all these components of scientific culture depends not upon the indications of experience lying behind the exposition of the text, but upon the authority of the teacher, and the institutional apparatus which supports it. Scientific training is dogmatic and authoritarian (p. 16).

Indifference curves, marginalist analysis, full information, perfect competition and the entire array of the constituents of the full-information, competitive general equilibrium model cannot be proved or demonstrated against a backdrop of empirical data. They are not even proposed as modes of organising thinking about the subject. In the absence of alternatives they come, by imperceptible degrees, to be treated as objective economic phenomena, as immutable laws governing behaviour, even as facts of life. The ascendancy of the neoclassical paradigm in the teaching of economics at undergraduate levels has therefore, through its exclusiveness, indeed assumed a “dogmatic and authoritarian” nature. This applies most forcefully at undergraduate levels within academic environments which, partly because of the dominance of conventional texts, in general eschew a culture of critique. The lack of a critical culture is exacerbated when an economics programme is divorced from the humanities, and wedded to technical and formal requirements that are particularly demanding of students’ time and effort and of teaching resources.

The main scope of this paper is an examination of possible reasons for the present status of neoclassical economics as the dominant teaching paradigm. We may perhaps use the analogy of lock-in technologies to understand how the progressive entrenchment of the neoclassical teaching paradigm has become a self-reinforcing process, where the cost of switching to alternative curricula has become progressively higher. Not only have textbooks adopted wholesale the conventional language but there has occurred a rapid depletion of teachers who are trained in the use of alternative discourses. Consequently, especially given the fact that only a small proportion of graduates in economics remain in academia, it is often virtually impossible to establish communication in the discipline outside the neoclassical language structure. Those very characteristics which have become the source of most of the serious reservations held against the paradigm are arguably the very features of

undergraduate textbooks which have made them so marketable. It is therefore impossible, and unwarranted, to separate a critique of the dominant position of neoclassical theory in the teaching of economics from a critique of the paradigm itself.

If, to use a common metaphor, the education of university students in economics can be seen as a production process, then it is possible to conceive of a production function relating inputs into this education system to the output of graduates. If this metaphor is accepted then we should, by extension, also accept that a technology governs this production function. For more than four decades the dominant technology has been that of a single paradigm which has shaped the textbooks, curricula, modes of teaching and research and the very language of several generations of graduates in most countries. In the process it has ceased (at least at the undergraduate level) to be treated as one of a range of possible paradigms and has become, rather, the largely unquestioned language of economics.⁴

In assessing a technology we have the option of two approaches. If we start from the neoclassical persuasion, and assume efficient markets, then we would generally conclude that the neoclassical construct itself is the best possible technology, excluding, of course, the possibility of market failure. Within this paradigm, the nature of technology is neutral and treated as exogenous to the system. If, however, we stray slightly from the neoclassical construct and allow doubts to enter our attitude towards the efficiency of markets, especially inter-temporally, then the considerations of lock-in technologies (and switching costs)⁵ and the appropriateness of this particular technology become relevant. In this case technology is treated as an endogenous phenomenon, cumulative and path-dependant. From a prescriptive stance, there would now be a need to develop and adopt technologies which are appropriate to the specific context within which they are to be applied.

At this stage it is important to emphasise that the alternative to the dominance of neoclassical model in the teaching of economics is not a different school of thought *per se*. It is rather the counterpoising of a multi-lingual transmission of the discipline to the present dominance of a single language. The process of transmission would thus become open-ended and explicitly value-dependent. The critique of aspects of neoclassical analysis presented in this paper is therefore particularly grounded in an objection to its doctrinaire predominance in the transmission of the discipline. When used in conjunction with other available modes of analysis, the neoclassical approach can introduce a high degree of rigour, especially in the formulation of hypotheses and the testing of the internal logic of models. The role assumed by this school of thought as the exclusive language of undergraduate economics has proven highly deleterious not only to the teaching of the discipline but also to the appropriate use of the tools deriving from the neoclassical school itself.⁶

⁴ The introduction to Blaug (1988) states categorically that “. . . there is among the overwhelming majority of economists, and by this I mean well over 90%, a core of theory which all learn and *which defines the subject*. This theory, called neoclassical economics, views man, whether he operates individually or in the firm, family and/or any other institution as a rational maximiser of his self-chosen ends” (p. 7, my emphasis).

⁵ The concept of lock-in technologies is based on the recognition that as a certain technology is pursued and refined it becomes progressively more expensive to switch to alternative technologies which, in retrospect, might be seen to have been more desirable.

⁶ In his defence of marginalist theories of the firm Machlup (1967) states that “. . . models have been condemned or rejected because they could not be used for purposes for which they have not

Technologies are deemed appropriate (or otherwise) in terms of the cognisance in their development of the setting in which they are to be applied. The substantial portion of the debate about this issue has revolved around the wholesale importation of technologies from one setting (usually industrialised economies) to another (developing economies) without the recognition that different institutional contexts impose different requirements. The relevance of neoclassical analysis is most suspect with respect to contexts which are undergoing processes of (often turbulent) structural change and transformation. In terms of our debate, the suitability of a specific articulation of economics which has become virtually universal (especially as the break-up of the Soviet Union) varies radically according to the location of particular teaching institutions. Up to a certain point in twentieth century history one could perhaps propose degrees of the inappropriateness of the neoclassical textbook, with developing economies representing the most inappropriate setting and industrialised economies providing the more stable and hence more appropriate contexts⁷. However, with the advent of accelerating globalisation, the demise of the Soviet Union and the radical re-configurations of global political and economic power relations, one can validly maintain that the standard text is now inappropriate in any context.

While the failure of the neoclassical paradigm to address the concerns of developing countries is obviously more conspicuous in a third world setting, the facilities and resources to challenge established paradigms are often much more available at the centre of international academia. The emergence of the post-autistic economics movement is a case in point. However, the failure of the existing mode of teaching undergraduate economics is most apparent, and more costly, in developing economies. Bagchi (1994) states the problem simply:

... just when the need for a proper assessment of the economic issues involved has become more urgent on the part of developing countries (and the former socialist economies), the supply of professionals who are able to tackle such issues in the poorer countries themselves has fallen woefully short of the number required to satisfy that need. (p. 2)

Bagchi suggests a number of reasons for this disparity between the supply of, and the demand for, competent economists, among which are increasing resource constraints on universities in developing economies, as well as the essential irrelevance of undergraduate economics to the problems facing the local economy. However, the fact that these

been designed . . .” (p. 8) and then proceeds to delineate the limits of application of this particular tool of neoclassical analysis. His allegation of “misplaced concreteness” against critics of the marginalist theory of the firm could well be levied against most textbooks in Microeconomics where such (potentially useful) fictions as the rational consumer, perfect competition and monopoly, and the profit maximising firm come across as representations of reality. Paradoxically this situation has emerged as a result of the type of argument pioneered by Machlup himself to the effect that, in spite of substantial reservations regarding its descriptive properties, marginalist analysis is the best (*i.e.* most efficient) that we can hope to have and that the variables it uses can stand in as adequate proxies for others which, while more relevant, are less tractable for theoretical analysis.

⁷ For a specific discussion about the relevance of neoclassical texts to Africa, see Livingstone *et al.* (1973). See Mahmud (1994) for South Asia and Popov (1994) for the former member states of the Soviet Union.

economies are generally without the resources to offer an alternative to the standard texts,⁸ when combined with “dogmatism, conventionalism, the attempt to keep up with the Joneses, the lack of adequate signalling and screening devices” (Bagchi, 1994:8) renders them the most helpless of the possible sources of viable revolt.

3. THE PEDAGOGICAL APPEAL OF THE NEOCLASSICAL PARADIGM

The main allure of neoclassical analysis as the mode of teaching economics is its implicit⁹ claim to universality. Since the first issue of Samuelson’s textbook in 1948¹⁰ the structure of standard undergraduate texts has become virtually identical across its myriad variations.¹¹ In terms of marketability, therefore, the formula has certainly worked well. While different aspects of the neoclassical paradigm may claim the honour of constituting its strongest selling point as far as universality of application is concerned, the ones I have chosen here are also those which, in the absence of alternative paradigms, constitute probable sources of grave methodological failure.

(a) *Marginalism*

The primary neoclassical analytical tool which permeates most of textbook contents is the concept of the margin. The main attraction of marginalist analysis is its ease of presentation and its apparent generality. Regardless of the phenomenon under consideration the marginalist guide to (constrained) optimisation is presented as a simple, intelligible and “obvious” verity. Once the goal-sets which motivate classes of agents have been defined, behaviour which does not accord with prescribed marginalist behaviour either is due to incomplete information on the part of the agent or is dismissed as irrational. Marginalist analysis, using basic mathematical concepts amenable to complex elaboration, is presented, because of the extremity of its level of abstraction, as being independent of particular applications for its validity and thus universally applicable.

This claim to objectivity has rendered the neoclassical construct very attractive to the teaching profession. It obviates the need to engage in a systematic exploration of institutional frameworks and the consequent requirement to place analyses firmly within a socio-political-historical context. It consequently dramatically extends the ground over which any lecturer or programme can range with a certified claim to credibility. At the undergraduate level marginalist analysis depends on the premise of a single-variable objective function. The use of multiple goal sets with the ensuing possibilities of goal conflict would introduce a level of complexity which would be highly disruptive to the

⁸ See Bagchi (1994), on the parlous financial constraints on tertiary education institutions in developing countries.

⁹ Made explicit through Becker’s (1993) claim for economics as the imperial science.

¹⁰ The success of Samuelson’s “Economics” was emulated by Lipsey’s textbook in 1963. Bilas pioneered the intermediate microeconomics textbook as we know it in 1967. Henderson and Quandt introduced the rigorous mathematical rendition of orthodox neoclassical microeconomics at the post-graduate level in 1958. A more “user-friendly” post-graduate text was introduced by Ferguson in 1966. Livingstone *et al.* (1973) assign an even longer heritage to standard texts (p. 18).

¹¹ The classification of topics in microeconomics into consumer theory, theory of production and cost, market structures, factor markets, general equilibrium analysis and welfare economics and the treatments within each of these categories has remained unchanged, except for slightly different emphasis over the past four decades. The elbow room for authors to vary their presentation is therefore obviously quite limited.

assumption of generality and predictive power and is therefore eschewed. This omission divests marginalist analysis of its most exciting possibilities in *a priori* analysis.

Textbooks which have been informed by the neoclassical construct allow lecturers the privilege of a well-defined close-ended system whose particulars they can elaborate to their hearts' content. The promise that these texts hold for students is that, if they can comprehend the simple mathematics and diagrammatic expositions, they would become the initiates of a "science" which, because of its topicality, assures them a voice in the world that matters. Possible reservations regarding the simplistic nature of the paradigm can be assuaged by rendering the mathematical explications more elaborate.¹²

The entrenchment of the neoclassical vision has become so pervasive that it has largely set the discourse for its critiques. Most alternative approaches, which are usually presented at the post-graduate level, are first and foremost alternative in that they have to counterpoise their particular mode of analysis to the established dogma, even to the extent of constructing elaborate defences against the charge of heresy. Thus, *e.g.* the concept of X-efficiency would have been largely insignificant in its current formulation if it were not for the established dogma of the over-riding relevance of allocative efficiency.¹³ Consequently, when they are offered in undergraduate textbooks, such alternative treatments are almost invariably relegated to outlying sections distinct from the main body of the text and are rarely addressed directly in examination papers. A counter argument to this proposition is that the neoclassical paradigm at least sets up a coherent structure which can then be queried, thus generating debate. The rebuttal to this proposition is based on the issue of the degree to which the construct that we aspire to probe has become part of the conventional wisdom. When the construct permeates academic institutions to the degree that the neoclassical paradigm has, it ceases to be a construct and becomes doctrine.

(b) The "ceteris paribus"

One of the major draw cards of neoclassical economics is its assumption of generality which depends on a degree of abstraction unparalleled in the development of the

¹² More complicated mathematical expositions are almost invariably relegated to appendices and footnotes. The overt reason is that most students would be confused by differential calculus and that the body of the analysis can be articulated more elegantly through a verbal and diagrammatic exposition. Mathematics is, however, crucial to the essence of neoclassical models. Its marginalisation in textbooks may therefore also be a prophylactic against the charge of irrelevance often heard in undergraduate classrooms. Beyond the "principles" textbooks, advanced mathematics then becomes a screening device as discussed further on.

¹³ Thus even when the extreme limitations of orthodox neoclassical analysis are recognised and addressed, the ensuing response rarely manages to escape the language of the construct. Lancaster's (1966) offering of an alternative theory of consumer behaviour was so grounded in the language of optimisation, indifference curves and equilibria that it was (deservedly) invalidated by Hendler (1975) and its essential, truly innovative, conceptual breakthrough was largely ignored. The attempt by Stigler and Becker (1977) to use Lancaster's premise of the consumer as a producer again failed for the same reason. Their attempt to extend the applicability of the marginalist approach to consumer behaviour to explain phenomena such as addiction, fashion and tradition without requiring a change in tastes rests on the introduction of human capital into the consumer's production function. They do not, however, define the object of their analysis and a change in human capital implies a change in the object and hence in tastes and preferences.

discipline. The defence of the process of abstracting from empirical data is that it allows for a generality of application which can then be supplemented by specific empirical details to address any actual phenomenon.¹⁴ The choice of *what* to abstract, however, is not a neutral one. Ideology, expediency, and the obsession with mathematical and diagrammatic “elegance” are often the criteria governing the formulation of models informed by the aspiration to generality. Whitehead (1938) specifies the three fundamental criteria for assessing the validity of models:

... in criticising an argument based upon the application of mathematics to particular matters of fact there are always three processes to be kept perfectly distinct in our minds. (a) We must first scan the purely mathematical reasoning to make sure that there are no mere slips in it – no causal illogicalities. (b) make quite certain of all the abstract conditions which have been presupposed to hold. This is the determination of the abstract premises from which the mathematical reasoning proceeds. (c) verifying that our abstract postulates hold for the particular case in question. (pp. 29-30, my brackets)

While the first criterion, the inherent logical integrity of an argument, should be one of the main attributes of neoclassical models, its analytical strength is seriously undermined through the violation of the other two criteria. The *ceteris paribus* assumptions which underlie every aspect of such models can be the source of two grievous types of fallacy which cannot be detected through an examination of the internal logic of a particular analysis. These are *misplaced emphasis* and *false premises*.

As an example of *misplaced emphasis*, we may consider the proposition: “All other things being equal, the temperature in this room is directly related to my body heat”. This is a statement which, given the *ceteris paribus* proviso, is patently true. I may then proceed to lend this proposition weight through mathematical specification. I may elaborate my model through the use of calculus by further proposing that the temperature in the room, while positively related to my body heat, increases at a decreasing rate as my body temperature rises (perhaps because of air leaks). Again this extension is plausible. I may wish to have my model settle at some equilibrium (with which economists tend to be enamoured) and introduce the notion that as my body heat rises I will feel progressively indisposed until, at a certain temperature, I pass out. On fainting, my body heat decreases, and with it the temperature of the room, until I revive and the whole process starts again. The mathematical formulation of this story can be made to look quite impressive and the resulting equilibrium solution of the model pleasantly reassuring. As it stands, the logic of the model that I have proposed and formulated is impeccable. Of course it is largely useless in explaining the determinants of the temperature in this room since the most important ones (time of year, geographical location, etc.) have been swept under the *ceteris paribus* carpet. The price variable in demand theory might well constitute a spectacular example of this phenomenon. The orthodox demand function ignores, under the dismissive *ceteris paribus* label, factors such as advertising, quality differences and the plethora of intricate processes that largely determine consumer tastes and preferences, and purchasing behaviour.

In the case of *false premises*, we may take the proposition that, “all other things being equal”, the incidence of babies is directly and positively related to the passage of storks. On the basis of this premise we can set up a neat little self-regulating population growth

¹⁴ Thus Henderson and Quandt (1958) say that “The more general theories are fruitful because they contain statements which abstract from particulars. Increased understanding is realised at the cost of sacrificed detail. It is then possible to go from the general to the specific” (p. 2).

model to demonstrate the behaviour of population growth rates and determine their equilibria. Thus, as storks bring more babies, human population grows (assuming constant death rates) and infringes on the breeding grounds of storks. Eventually, as the number of storks decreases so does the amount of babies and hence we experience a tapering off of the population growth rate which results in more breeding grounds available for storks, and so on. We can use this model to derive an equilibrium human population growth rate. If we specify the various relationships mathematically we can probably generate a determinate solution. The diagrammatic rendition of the model would certainly be attractive enough to find its way into textbooks.¹⁵

The premise on which this attractive and possibly quite elaborate model is built is patently absurd. Perhaps if it were slightly more plausible, the sheer elegance (and essential simplicity) of the analysis might be seductive enough to carry the day. Critics of the profit maximising model of the firm maintain that a substantial body of economic analysis relating to firm behaviour has been built on a completely wrong premise regarding the basic motive force behind the behaviour of firms. Similarly, the underlying (simplifying!) assumption of full information for all economic agents has largely excluded from textbook treatment a substantial body of analysis significantly more pertinent to the understanding of economic behaviour than orthodox constrained optimisation analysis.

(c) Goal sets and motivation

Whitehead (1938) starkly highlights the main invalidating pitfall in the construction of (mathematical) models when he says:

It often happens, that in criticising a learned book of applied mathematics, one's whole trouble is with the first chapter, or even the first page. For it is there, at the very outset, where the author will probably be found to slip in his assumptions. Further, the trouble is not with what the author does say, but with what he does not say. Also it is not with what he knows he has assumed, but with what he has unconsciously assumed. (p. 31)

The degree of absurdity of the two examples I used above cannot be regulated from within the neoclassical paradigm. The only control on the nature of premises and the omissions is the highly dubitable notion of acceptability by academic peers. The tenet of falsifiability can only go so far. In the case of the "storks and babies" model that I used above, common and scientific knowledge obviously disproves the initial premise. If the premise were not so manifestly erroneous, and if, for a number of reasons it were attractively tractable in the service of elegant modelling, it would be adopted into the mainstream analytical edifice. Over time, as it lays the foundation for extensions and corollaries, it progressively gains power to withstand criticism arising from empirical anomalies. The scope for cumulative distortions over time as the repertoire of any paradigm swells through mathematical elaboration, among other means, is vast.

Mittermaier's (1986) concept of *mechanomorphism* here becomes the quintessential articulation of the consequences of the obsession with mathematics and fully defined systems that has characterised orthodox (especially undergraduate) economics. This concept is the counterpart to the case of anthropomorphism where human qualities are

¹⁵ Postdictively, I would explain the population explosion in Africa or India by proposing that in these continents it is the mynah bird which determines the incidence of babies. Because of the adaptation of this species of bird to an urban environment, and the consequent absence of the threat posed by human beings, we have lost the crucial self-regulating element inherent in our model.

attributed to physical objects and processes. The neoclassical tradition has divested *homo economicus* of all human attributes and has re-specified the object of the enquiry in a mechanical form. The motivation for this act of intellectual violation was partially due to the obsession with elevating economics to the prestigious status of a science.¹⁶ Nelson (1990, 1995), quoting Marshall, argues that another reason may have been the increased complexity that would result from shifting the foundations of economic analysis away from the mechanics analogy to a biological one. The main consequence of *mechanomorphism* is that the nature of the basic economic agent, *i.e.* human beings, is misconstrued. By presuming goal sets and motivations which are either relatively unimportant or essentially false, neoclassical analysis distorts the object of the enquiry to such an extent that the whole analytical edifice collapses. There are also profound moral and ethical implications in this conception of human agencies which renders the set of normative prescriptions deriving from this edifice dependant on specific, highly idiosyncratic, but largely unspecified, value systems.

The perceived gain of the degree of abstraction that marks neoclassical analysis is basically a confession that generality of application can only be purchased by inventing a fictitious world amenable to such analysis and then touting it as having some correspondence to the original empirical object of the analysis. The very act whereby this transformation is brought about is grounded in an un-stated value structure and/or helps generate and ratify it. By depersonalising economic agents and largely ignoring the evolution of institutions the neoclassical construct purports to be independent of any value set. This factor, combined with its essential simplicity of presentation has led to its pre-eminence as the sole language of undergraduate textbooks. This depersonalisation, however, far from being value free, implies a particular view of economic agents which subtly permeates into the normative aspects of the analysis.

Thus, *e.g.* the assumption of independent utility functions excludes the notion of social coherence and proposes an extreme form of *anomie* as the inevitable norm. Extreme selfishness is assumed as the sole motivating factor behind the decisions of economic agents.¹⁷ The treatment of labour as a resource and the presumed schizophrenia in the depiction of human beings as the possessors of their own labour which they then trade on the market is a serious distortion of both actuality and of social values. The discounting of the impediments to the assumed smoothness of the presumed trading process eliminates the essential constituents of the determination of wages. The fragmentation of agents into consumers and producers is again a particular (and highly peculiar) view of human beings and not merely an analytical exigency. Foley (1994) points out that there

¹⁶ The scientific model which reigned during the marginalist revolution was governed by Newtonian physics which, in its hey-day, apparently accounted for all the laws governing physical phenomena. Hence the fixation on determinateness which characterises general equilibrium economics. The revolution in physics, starting with Max Planck which has led to the notion of a stochastic, and even chaotic, universe and which has destroyed the distinction between observer and phenomenon, never seems to have had any demonstration effect on the neoclassical mode of analysis.

¹⁷ Arrow (1987) objects that the absence of social norms which circumscribe behaviour renders invalid any conceivable setting within which economic activity can occur when he says that "(p)eople do not maximise on a selfish basis every minute. In fact the system would not work if they did. A consequence of that hypothesis would be the end of organised society as we know it" (p. 233).

need not be any hidden ideological agenda to render neoclassical microeconomics ideologically biased:

Each of these abstractions in the standard theory is by itself a defensible simplification of reality and can be remedied by appropriately reworking the model. However, taken as a whole, these simplifications add up to a strong ideological position on the dilemmas of industrial capitalism. (p. 101)

Schumpeter (1954) eloquently commented on what he called the “religiosity” of Marxist economics.¹⁸ At least that was due to a value structure which was, at least partially, explicitly specified. The apparently dispassionate fervour associated with the neoclassical paradigm is, by contrast, insidious, given its claim to be value-free.

(d) Empirical legitimisation

Barnes (1982) renders clearly Kuhn’s position on the function of empirical evidence within any given scientific paradigm:

... the actual credibility accorded to theories is not produced by tables (relating predictions and results) displayed in texts. The credibility of everything in texts derives from their status as authoritative sources. Predictions, results and the relationship between the two, are all taken on trust by students because of the context in which they appear. (p. 21, my brackets)

In professional literature the empirical relevance of neoclassical models in particular is generally verified by means of econometrics. In undergraduate textbooks, however, this source of evidence is rarely, if ever, used. Instead the applicability of the models developed in the text is illustrated by means of anecdotal evidence, either using edited actual examples or through fictitious constructs.

There are a number of reasons which may account for the adoption of two radically different approaches to empirical testing. The most obvious is the same as the one used to justify the relegation of advanced mathematics to footnotes and appendices. We may think that the inclusion of econometric analysis would require knowledge of econometrics on the part of the undergraduate student. This, however, should not constitute such a formidable obstacle. The essence of econometrics should be easy to impart, once students have understood the meaning of functional relationships. However, the use of econometric results must be accompanied by discussions regarding the limitations of the techniques which are imposed by data imperfections, the omission of variables which cannot easily be quantified, the contextual setting of any estimation and the consequent hazard of mis-specification of the model. The introduction of these qualifications would introduce a degree of disquiet about the impeccability of the neoclassical account of economic behaviour.

In contrast the recounting of stories to illustrate how models work enables the *raconteur* to edit an account to dovetail the model. None of the reservations attending the evidence offered by econometric results needs to be brought up and the usefulness of the models is therefore offered in the most pristine packaging possible. The stories that are used as illustrations are mostly based on first world examples. This uniformity carries an

¹⁸ “The religious quality of Marxism also explains a characteristic attitude of the orthodox Marxist towards opponents. To him, as to any believer in a Faith, the opponent is not merely in error but in sin. Dissent is disapproved of not only intellectually but also morally. There cannot be any excuse for it once the Message has been revealed” (p. 5).

additional cost, in terms of alienating student from discipline, in a third world setting.¹⁹ Even where local examples are used in developing countries, the form in which they are couched is usually a clone of those used in international textbooks, with a simple transposition of local names.

Bagchi (1994) argues that the “technicization” of economics has perverted the screening devices for economic students:

First, many students have become attracted to economics who do not have a great deal of interest in the real world. They are more at home with computer games and with formal logical problems than with what might trouble ordinary people in day-to-day living. On the other hand, many who might otherwise be attracted to problems traditionally handled by economics are put off by what has become in their perception a closed world of specialists speaking only to one another. (p. 3)

This cost of these filtering mechanisms, in terms of the potential of student forfeited, rises dramatically in settings where an adequate training in mathematics is largely absent at the secondary school level. Here, the screening device of mathematics acts against the majority of students. The elimination of institutional analysis and the historical element, an omission which, as I argue above, is essential for the claim to universality of texts, thus renders the discipline largely inaccessible to a significant portion of students in third world economies. To get through curricula, students effectively have to abandon any aspiration that the activity of learning the body of theory that is presented in lectures will have any function except to get them through examinations. Undergraduate economics in this case no longer forms a part of the university education which the students, or their families, or the state have bought. Rather it becomes a hurdle on the way to obtaining accreditation in the labour market through an academic qualification. In this case the concept of “alienation” becomes appropriate.

Ironically, if the single paradigm textbook is abandoned, the very examples that I have used in this paper may well prove to be useful pedagogical tools. They can be used to explain to students the process of model building and to lay the foundations of *a priori* theorising. If this approach is adopted from the first year of undergraduate programmes, it should provide a sound basis for a critical explanation of neoclassical economics. This would provide for a stronger foundation for the training of mainstream neoclassical economists.

4. CONCLUSION – SOME STRATEGIC CONSIDERATIONS

Routh (1973) quotes Streeton (who uses the terms “model” and “paradigm” interchangeably) as saying that “. . . it takes a model to defeat a model – facts by themselves are too weak”. For a new paradigm to arise, however, there must be a wide-spread perception of the need for a new explanation of the anomalies which

¹⁹ As far back as 1973, Livingstone *et al.*, reporting on a conference on the teaching of economics in Africa, comment that “. . . (i)t is unfortunate and unnecessary that teaching in Africa has perhaps been *more* drawn from textbooks and less from journal articles than teaching elsewhere. As the content of Western textbooks has in the last thirty years been changing much more slowly – if it has been changing at all – than the subject of Economics itself, focussing within microeconomics on static market structure analysis and in macroeconomics on static Keynesian analysis, it is not surprising that African students have not only been bored by the subject during this time but left their universities ill-equipped to tackle the problems subsequently facing them” (p. 18).

established paradigms are only too prone to ignore. This perception may arise because of the sheer weight of the anomalies or because of contentious ideologies. There also has to be, for a successful revolution, a strong and a sufficiently influential power base from which the alternative discourse can be launched. The stronger the established doctrine, the greater is the requirement for a strong countervailing power/knowledge base. In an analogous fashion it will take a textbook to defeat a textbook, but it must be a textbook which commands the necessary market authority to contest the established text.

The costs of switching to an alternative technology in the teaching of undergraduate economics are substantial as a text which caters for the objections raised in this paper will constantly run the danger of the loss of universality.²⁰ There are, moreover, serious obstacles posed by the problem of interfacing within the world of international academia for any educational institution which attempts a solitary substantial revision of its undergraduate economics curricula. This impediment is most dominant in developing economies where students seeking post-graduate qualifications traditionally migrate to universities in first world economies. We can therefore understand that, while accepting the objections presented in this paper, most of the proposed remedies boil down to a list of qualifications to undergraduate textbooks and attempts to repair the damage of the uni-paradigm pedagogical approach for the small portion of students who progress to post-graduate levels. Post-graduate programmes will then still either consist of a re-articulation of undergraduate economics using differential calculus or else use an inordinate portion of the curriculum in “detoxifying” students from the tyranny of a single language for economics. Siegfried *et al.* (1991) recommend that the elective requirement in the last year/s of undergraduate programmes be made stringent enough that the student *has* to broaden her knowledge of schools of thought. The cost of altering introductory and intermediate core course (in terms of required staff/student ratios) was deemed too high. The editor’s note in the *Post-Autistic Economics Review* (2004:23) notes the difficulty in breaking into the economics textbook market, in spite of the increasing widespread recognition by publishers of the need for an alternative text. However, 2007 sees the emergence of a number of such textbooks such as the one by Klamer, McCloskey and Ziliak as an introductory economics text²¹ and Maier and Nelson (2007) as a high school textbook.

Most revisions of economics curricula²² apply at the graduate level. At the core introductory level, however, there is a dire need for a new type of text which, while addressing the serious reservations against the established orthodoxy, is also a *credible* alternative teaching medium for departments of economics in universities located in different contexts. Credibility in this case depends at least as much on a demonstration

²⁰ Dosi (1982, 1991) expressed one of the major reservations regarding alternatives (in his case evolutionary theory of technological change) to orthodox theory, when he said that “. . . (t)here is little hope of developing normative propositions of the elegance and generality that is found in standard microeconomics regarding Pareto-optimality, consumer surpluses, etc. – albeit restricted as they are to stationary or quasi-stationary environments (such as those characterised by steady state dynamics)” (p. 357).

²¹ Reported in Klamer *et al.* (2007).

²² The proposals of the special (1994) edition of the *Journal of Development Planning* on “The Teaching Economics in Developing and Other Countries” all concern graduate education. Apart from curriculum and pedagogic changes, a concrete proposal for a trans-national collaborative graduate course is offered. The curriculum changes that are proposed in all the papers in this publication apply at graduate levels of education.

and emulation effect as it does on the nature of the new style of text – perhaps even more so in the initial stages of its introduction than when, hopefully, it starts gaining acceptance. Given the “catching-up” syndrome plaguing universities in developing economies, as well as the impediments to revolt noted above, it is unlikely that an initiative by any one such institution, or even a collaborative effort among them would, on its own, have any marketing success. Again, while the need for a new text is more urgent in the periphery of academia, the resources and stimulus for change must also come from the centre.

The choice of the alternative mode of teaching economics should not be between the neoclassical paradigm and some other. The alternative economics textbook which can address the innate tyranny of any one dominant paradigm would have to be based on a plurality of approaches to any given phenomenon – a plurality which would apply even in the very choice of what constitutes an economic phenomenon. One possible way in which a multi-paradigm approach to microeconomics can be entrenched in curricula is to design a problem-oriented syllabus. Contradictory as well as complementary methodologies can then be profitably used to illustrate controversies as well as provide an understanding both of the phenomena in question and of the main debates. As the generality of applications becomes tempered by analyses pertaining to local situations the possibilities for interactive teaching should increase substantially.

Within this alternative mode of teaching the trade-offs between generality and applicability of specific economic analyses would not cause concern. Rather the forte of texts would lie in their ability to compare the various explanations of particular phenomena, their degrees of applicability and limitations. This exercise in comparative methodology would be one of the core contributions of such texts to the students’ understanding of economics. The introduction of actual examples drawn from specific settings would then no longer be a pasted on appendage but would form an organic part of the essence of the new text.

The launch of the post-autistic economics movement has created a forum and a unique platform within mainstream academia for dissidents from the orthodoxy which has in its wake encouraged the writing of a number of alternative undergraduate texts. Thus the availability of appropriate textbooks will eventually no longer be the main constraint to the development of the appropriate reproductive base for a multi-lingual economic discourse. Rather, the constraint is what we may tritely call the market positioning of such texts. On a more appropriate tone we may talk about the positioning of these texts within the power/knowledge configuration of economics as a discipline. The long-standing dominance of neoclassical texts is both the symptom and the cause of the delimitation of economics so as to exclude discourses that were within the provenance of political economy. Any feasible attempt to dislodge the hegemony of the neoclassical undergraduate text will have to address and undermine its claim to the definitive statement of the discipline. That is where the characteristics of the neoclassical paradigm that are the cause of the greatest concern to its critics are the strongest foundations of its hegemony.

While the revolt by students and staff alike in core of the industrialised countries is mostly happening at premier tertiary education institutions and, hopefully, spreading out, it is not easy to see this process replicating itself widely in developing economies. This is not of course uniform across the developing world. Latin America, specifically, has a rich reproductive base firmly founded in a long history of development economics. That very base is the most probable reason for the flow of critical work with regard to most aspects

of development, including innovation theory. Similarly, India, with a strong base in development theory, driven as in Latin America by a strong political will to address development challenges within an ideologically divided world, also has a strong internal reproductive base for economic discourses other than neoclassical theory. It is also notable that these two continents also produce a steady stream of excellent mainstream economists.

Africa is perhaps a rather unique case of desolation in this regard. The steady erosion of state support for higher-education institutions as the eighties, in the wake of enforced structural adjustment programmes and combined with the increasing corporatisation of universities since the nineties, has prejudiced the training of economists in Africa. At the same time, the steady, and generous funding from World Bank and IMF backed organisations with the specific mission to train successive generations of neoclassical economists has almost exclusively populated the undergraduate, and post-graduate, teaching of economics with the neoclassical text.

It is essential that, whatever the strategy to offer viable alternatives to the standard text, linkages are made across the global academic map. To revert to the analogy of technology, the burgeoning innovations in the writing of undergraduate textbooks in the centre may well provide the window of opportunity for the “leap-frog” effect in the periphery. However, for this effect to occur within the periphery, there have to exist the appropriate institutional conditions. In the current context it is difficult to imagine that a strong widespread alternative to the teaching of undergraduate economics can emerge solely from established economics departments on the continent and we should think of other locations within the tertiary education map in Africa where such a movement can arise and be viable. Other locations may be those departments that have a strong history of critical enquiry, at least at the post-graduate level, departments other than economics departments that also address development issues and tertiary education institutions which have not historically had a strong component of economics in their curricula. These locations, where the combination of a recognised need for an alternative text is combined with a low-existing “investment” in the standard textbook, may well provide the conditions for the successful emergence of the new approach to the teaching of undergraduate economics.

The arguments in this paper are meant to identify an issue, *i.e.* the need for an alternative undergraduate microeconomics textbook. The actual design of an alternative textbook is the subject of a different debate. Moreover, we need to recognise that such a debate cannot occur without the context of sets of interlinked debates regarding the state of the discipline and the policy implications of various schools of thought, especially within a development context.

REFERENCES

- ARROW, K. (1987). Oral history: An interview. In G. R. Feiwel (ed.), *Arrow and the Ascent of Modern Economic Theory*. New York: New York University Press.
- BAGCHI, A. K. (1994). The teaching of economics in developing countries. *Journal of Development Planning*, 24: 1-14.
- BARNES, B. (1982). *T.S. Kuhn and Social Science*. London: Macmillan.
- BECKER, G. S. (1993). Nobel lecture: The economic way of looking at behaviour. *Journal of Political Economy*, 101: 385-409.
- BILAS, R. A. (1967). *Microeconomic Theory*. New York: McGraw-Hill, Inc.
- BLAUG, M. (1988). *Economics through the Looking Glass: The Distorted Perspective of the New Palgrave Dictionary of Economics*. London: Institute of Economic Affairs.

- DOSI, G. (1982). Technological paradigms and technological trajectories. *Research Policy*, 2: 147-162.
- . (1991). Perspectives on evolutionary theory. *Science and Public Policy* 18(3): 53-361.
- FERGUSON, C. E. (1966). *Microeconomic Theory*. Homewood, IL: Richard D. Irwin, Inc.
- FOLEY, D. K. (1994). Microeconomics. *Journal of Development Planning*, 24: 89-105.
- HENDERSON, J. M. and QUANDT, R. E. (1958). *Microeconomic Theory: A Mathematical Approach*. New York: McGraw-Hill, Inc.
- HENDLER, R. (1975). Lancaster's new approach to consumer demand and its limitations. *American Economic Review*, 65: 194-199.
- KLAMER, A., MCCLOSKEY, D. and ZILIAK, S. (2007). Is there life after Samuelson's economics? Changing the textbooks. *Post-Autistic Economics Review* (online), 42: 2-7.
- LANCASTER, K. (1966). A new approach to consumer theory. *Journal of Political Economy*, 132-235.
- LEE, F. S. (2005). Teaching heterodox microeconomics. *Post-Autistic Economics Review* (online), (31).
- LIPSEY, R. G. (1963). *An Introduction to Positive Economics*. London: Weidenfeld and Nicolson.
- LIVINGSTONE, I., ROUTH, G., RWEYEMAMU, J. F. and SVENDSEN, K. E. (1973). *The Teaching of Economics in Africa: Report of a Conference Held in April 1969 in Dar es Salaam, United Republic of Tanzania*. Sussex: Sussex University Press.
- MACHLUP, F. (1967). Theories of the firm: Marginalist, behavioural and managerial. *American Economic Review*, 57: 1-33.
- MAHMUD, W. (1994). South Asia. *Journal of Development Planning*, 24: 179-189.
- MAIER, M. H. and NELSON, J. A. (2007). *Introducing Economics: A Critical Guide for Teaching*. Armonk, NY: M.E. Sharpe, Inc.
- MITTERMAIER, K. (1986). Mechanomorphism. In I. Kirzner (ed.), *Subjectivism, Intelligibility and Economic Understanding: Essays in Honour of L. Lachman*. New York: New York University Press.
- NELSON, R. R. (1990). On technological capabilities and their acquisition. In R. E. Evenson and G. Ranis (eds), *Science and Technology: Lessons for Development Policy*. Boulder, CO: Westview Press, Inc.
- . (1995). Recent evolutionary theorizing about economic change. *Journal of Economic Literature*, 33: 48-90.
- POPOV, V. (1994). Economic reforms and the teaching of economics in the former Soviet Union. *Journal of Development Planning*, 24: 191-205.
- ROUTH, G. (1973). Methodology. In I. Livingstone, G. Routh, J. F. Rweyemamu and K. E. Svendsen (eds), *The Teaching of Economics in Africa: Report of a Conference Held in April 1969 in Dar es Salaam, United Republic of Tanzania*. Sussex: Sussex University Press.
- SAMUELSON, P. (1948). *Economics*. New York: McGraw-Hill, Inc.
- SCHUMPETER, J. A. (1954). *Capitalism, Socialism, and Democracy*. London: George Allen & Unwin.
- SIEGFRIED, J. J., BARTLETT, R. L., HANSEN, L., KELLEY, W. MCCLOSKEY, D. N. and TIETENBERG, T. H. (1991). The economics major: can and should we do better than a B? *AEA Papers and Proceedings*, 81: 20-25.
- STIGLER, G. J. and BECKER, G. S. (1977). De Gustibus non est Disputandum. *American Economic Review*, 67: 76-90.
- VAN DER MERWE, A. (2006). Identifying some constraints in first year economics teaching and learning at a typical South African university of technology. *South African Journal of Economics*, 74(1): 150-159.
- . (2007). Using blended learning to boost motivation and performance in introductory economic modules. *South African Journal of Economics*, 75(1): 125-135.
- WHITEHEAD, A. N. (1938). *Science and the Modern World*. Cambridge: Cambridge University Press.