

sanity, humanity and science

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Is There Anything Worth Keeping in Standard Microeconomics?

Bernard Guerrien (Université Paris I, France)

The French students' movement against autism in economics started with a revolt against the disproportionate importance of microeconomics in economic teaching. The students complained that nobody had really proved to them that microeconomics was of any use; what is the interest of going through "micro1", "micro2", "micro3", etc., using lots of mathematics to speak of fictitious households, fictitious enterprises and fictitious markets?

Actually, when one thinks about it, it turns out that microeconomics is simply "neoclassical theory". Realizing this, I agree with the French students when they say that:

- 1) In a course on economic theories, neoclassical theory should be taught alongside other economic theories (classical political economy, marxist theory, keynesian theory, etc.) showing that it is just one among several other approaches;
- 2) The principal elements and assumptions of neoclassical theory (consumer and producer choice, general equilibrium existence theorems, and so on) should be taught with very little mathematics (or with none at all). The main reason being that it is essential for students to understand the economic meaning of assumptions made in mathematical language. As they study economics, and not mathematics, students must decide if these assumptions are relevant, or meaningful. But, for that, assumptions must be expressed in clear English and not in abstruse formulas. Only if assumptions, and models, are relevant, can it be of any interest to try to see what "results" or "theorems" can be deduced from them.

I am convinced that assumptions of standard microeconomics are *not at all* relevant. And I think that it is nonsense to say – as some people do (using the "as if" argument) – that relevant results can be deduced from assumptions that obviously contradict almost everything that we observe around us.

The main reason why the teaching of microeconomics (or of "micro foundations" of macroeconomics) has been called "autistic" is because it is increasingly impossible to discuss

real-world economic questions with microeconomists - and with almost all neoclassical theorists. They are trapped in their system, and don't in fact care about the outside world any more. If you consult any microeconomic textbook, it is full of maths (e.g. Kreps or Mas-Colell, Whinston and Green) or of "tales" (e.g. Varian or Schotter), without real data (occasionally you find "examples", or "applications", with numerical examples - but they are purely fictitious, invented by the authors).

At first, French students got quite a lot of support from teachers and professors: hundreds of teachers signed petitions backing their movement – specially pleading for "pluralism" in teaching the different ways of approaching economics. But when the students proposed a precise program of studies, without "micro 1", "micro 2", "micro 3" ... , without macroeconomics "with microfoundations" or with a "representative agent" –, almost all teachers refused, considering that it was "too much" because "students must learn all these things, even with some mathematical details". When you ask them "why?", the answer usually goes something like this: "Well, even if we, personally, never use the kind of 'theory' or 'tools' taught in microeconomics courses (since we are regulationist, evolutionist, institutionalist, conventionalist, etc.) -, surely there are people who do 'use' and 'apply' them, even if it is in an 'unrealistic', or 'excessive' way".

But when you ask those scholars who do "use these tools", especially those who do a lot of econometrics with "representative agent" models, they answer (if you insist quite a bit): "OK, I agree with you that it is nonsense to represent the whole economy by the (intertemporal) choice of one agent - consumer and producer - or by a unique household that owns a unique firm; but if you don't do that, you don't do anything!".

There are also, some microeconomists who try to prove, by experiments or by some kind of econometrics, that people act rationally. But, to do that you don't need to know envelope theorems, compensated (hicksian) demand or Slutsky matrix! Indeed, "experimental economics" has a very tenuous relation with "theory": it tests very elementary ideas (about rational choice or about markets) in very simple situations – even if, in general, people don't act as theory predicts, but that is another question.

Microeconomics: "unrealistic" or "irrelevant" ?

Most of the time microeconomics is criticized because of its "lack of realism". But "lack of realism" doesn't necessarily mean *irrelevance* ; the expression is usually understood as meaning that the theory in question is "more or less distant from reality", or as giving a more or less acceptable proxy of reality (people differing about the quality of the approximation). The idea is implicitly this: "if we work hard, relaxing some assumptions and using more powerful mathematical theorems, microeconomics will progressively become more and more realistic. There are then – at least – some interesting concepts and results in microeconomics, that a healthy, post-autistic, economic theory should incorporate".

That's what Geoff Harcourt implicitly says in the *post-autistic economics review*, no.11, when he writes:

Against this macroeconomic background, modern microeconomics has a bias towards examining the behaviour of competitive markets (as set out most fully and rigorously in the Arrow-Debreu model of general equilibrium), not as reference points but as approximations to what is actually going on. Of course, departures from them are taught, increasingly by the clever application of game theory. Moreover, the deficiencies of real markets of all sorts are examined in the light of the implications, for example, of the findings of the asymmetric information theorists (three of whom - George Akerlof, Michael Spence, and Joe Stiglitz - have just (10/10/01) been awarded this year's Nobel Prize. From Amartya Sen on, the Nobel Prize electors seem to be back on track).

What is Harcourt saying? He is telling us that the Arrow-Debreu model has something to do with "the behaviour of competitive markets"; he is saying that game theory can be cleverly "applied";

he says that there are “findings” made by Akerlof, Spence and Stiglitz. If all this is true, then students have to learn general equilibrium theory (as giving “approximations to what is actually going on”), game theory, asymmetric information theory, and so on. That means that they need micro 1, micro 2, micro 3... courses (consumer and producer choice, perfect and imperfect competition, game theory, “market failures”, etc.).

I don't agree at all with Geoff Harcourt because:

1. The Arrow-Debreu model has nothing to do with competition and markets: it is a model of a “highly centralized” economy, with a benevolent auctioneer doing a lot of things, and with stupid price-taker agents;
2. Game theory cannot be “applied”: it only tells little “stories” about the possible consequences of rational individuals' choices made once and for all and simultaneously by all of them.
3. Akerlof, Spence and Stiglitz have no new “findings”, they just present, in a mathematical form, some very old ideas - long known by insurance companies and by those who organize auctions and second hand markets.
4. Amartya Sen, as an economist, is a standard microeconomist (that is what he was awarded the Nobel Prize for): only the vocabulary is different (“capabilities”, “functionings”, etc.).

But, perhaps, all “post autistic” economists won't agree with me.

It would be good then that they give their opinion and, more generally, that we try to answer, in detail, the question: *Is there anything worth keeping in microeconomics - and in neoclassical theory? If there is, what?*

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Toward a Post-Autistic Economics Education

Susan Feiner (Uni. of Southern Maine, USA and The Hawke Institute, Uni. of South Australia)

Taken together, the articles by Marc Lavoie and Peter Earl (PAE Review, no. 1; 30 January 2002) can be seen as posing a set of interesting, important, and inter-related questions. Lavoie asks, “what are the connections between Post-Keynesian and feminist economics?” While Earl asks, “how can we understand, and so transcend, the resistance on the part of students to a more “pluralistic” approach to economics education?”

Lavoie's investigation of the connections between Post-Keynesian and feminist economics notes the importance of pedagogy, but his essay does not discuss teaching. Earl's discussion of pedagogy refers to critical thinking, and the development of student's capacity to handle intellectual ambiguity, but his discussion does not mention feminist pedagogy. But pedagogy reform in economics, at least in the United States, emerged as an organic concern of feminists seeking to develop a new approach to the discipline.

Beginning in 1985 and running through at least 1997, there were panels at various economics meetings (including the ASSA), conferences, faculty development programs, workshops, seminars, peer reviewed published papers, as well as a number of edited volumes produced by feminist economists and aimed at deep transformation of the teaching of economics. In the early years, feminist interest in pedagogy was manifest in the papers researching the presentation of

topics relating to gender and race in economics textbooks. This work demonstrated the extent to which introductory economics textbooks perpetuated sexist and racist assumptions, reinforced existing biases regarding the perversity of policy aimed at redressing sexual and racial inequality, and basically ridiculed any but the “approved” points of view on these controversial topics.

Quite a number of highly esteemed, mainstream economists were appalled by these findings. With the help of Barbara Bergmann, I recruited such luminaries as Robert Solow, William Baumol, Lester Thurow, Alice Rivlin, and Kenneth Arrow to work with me on The Committee for Race and Gender Balance in the Economics Curriculum. My point here is that “autism” and bigotry need not go hand in hand. With a lot of hard work, a great deal of encouragement and helpful support from many quarters, Robin Bartlett (Denison University) and I secured a series of grants from The National Science Foundation to host faculty development programs to help economics professors integrate the new scholarship on women and people of color into the introductory economics curriculum.

Economics Pedagogy and the Feminist Classroom

From the outset, Bartlett and I knew that the standard “sage on the stage” model of college teaching was not appropriate for bringing these controversial topics into introductory economics classrooms. How did we know this? We were both conversant with what was then the cutting edge “active learning,” “student centered” approach to teaching which has its roots in the feminist revisioning of education.

As Peter Earl quite rightly points out, students come to college knowing all sorts of things, and one of the things they “know” is that the way to demonstrate “learning” is to parrot back what the teacher said. But when students are likely to disagree with the teacher (as many of them often do on the topics related to sex, race and the economy as seen from the eyes of a feminist) they are going to feel manipulated, brainwashed, and angry. When this is coupled with their almost total ignorance, if not complete misunderstanding, of the struggles for women’s liberation and racial justice, what was intended as a class discussion can turn into an awful round of name calling, intolerance, and all around bad feelings. (This is why economics professors often choose to avoid these topics).

In *Feminism and Methodology* philosopher Sandra Harding argues that one of the key distinctive features of feminist research is that the researcher places her/himself and the subject of research “on the same plane.” This epistemological position has direct application in pedagogy.

As we were trying to get economics faculty to rethink the teacher role, we organized the faculty development conferences¹ so that faculty could re-experience the uncertainty, risk-taking, and mutual support that characterizes classes which are open, non or minimally hierarchical, and which actually welcome free discussion. We knew that faculty needed to reacquaint themselves with what were hopefully their own best experiences as students. We hoped that the insights gained from this would lead faculty to realize the need for deep change in the structure of classroom dynamics.

The programs of these conferences² had faculty engage in competitive timed exercises, and then in cooperative, collaborative exercises. We asked participants to reflect on the different feelings these exercises provoked. Here too the recognition that feelings and not just “right answers” are important in learning reflects feminist epistemological commitments. The gulf between this position and the view of personhood (if you can call it that) embodied in Rational Economic Man should be obvious.

Participants also spent a good deal of time reflecting on, and working through, activities designed to highlight the way their own attitudes and histories of sex, gender, race, and ethnicity had shaped them as learners. These sessions were invariably highly charged. Emotions ran high as *economists* recounted personal stories of being shunned, or humiliated for who they were; we

heard stories about the shame people felt when they realized that their parents were racist, homophobic, or anti-semitic; others told of how they had participated in harassing behaviors; still others revealed that they hadn't known that whiteness was itself a racial identity. I cannot count the number of people who told me that these sessions provided some of their sharpest insights into the problems with the mainstream approach.

Providing a venue for self-reflection is also a hallmark of feminist pedagogy. Feminists have long insisted that social position affects knowledge, and that every view is a point of view. Feminist epistemology is clear on this point: recognizing that power and privilege shape knowledge leads to more—not less—rigor and “objectivity” in scientific inquiry.

Faculty had to recognize that they too, were marked by the social processes of race, gender, ethnicity, and sexual orientation. This self-awareness is an essential pre-requisite for creating a classroom where students feel safe enough to self-reveal. All of our students carry a personal history relative to race, gender, class, sexual orientation, and ethnicity. Ignoring the emotional underpinnings of their understandings of diversity and the social conflict attendant on diversity virtually guarantees that a classroom discussion will explode with misunderstanding, disrespect, or worse.

Another reason why it was important to self-disclose around our experiences is that this placed the participants outside their “comfort zones.” Faculty (in general) and economists (in particular) are probably not used to talking about feelings, especially not in relationship to economic concepts. Once they had taken this risk and discovered that the group would support them, they could see for themselves that “the economic is as personal” as the “personal is political.”

Only after we had created an atmosphere of trust and community did we turn to the formidable tasks of reinventing introductory micro and macro-economics. Over the next two days, faculty work groups developed creative exercises, all based on active, collaborative learning, which brought questions of gender and race to the center of classroom economic discussions. I recall a simulation exercise in which students were to research and represent the various people who would be affected if a factory in the Southern U.S.A., shut down in order to reopen in El Salvador. Another group came up with the idea of holding public hearings on Federal Reserve policy, with students representing a wide range of social organizations. Yet another traced the effects of inflation on different occupational groups. One of my favorites was a skit of a romantic couple using Becker's logic to sort out the decision to marry.

A blind eagle in a blizzard could recognize the connections between this approach to teaching economics and feminist pedagogy. But what is the connection to critical thinking?

The topics of gender and race are especially helpful for introducing competing points of view because everyone “knows” that people disagree. As Peter Earl points out, students often believe that disagreement on such issues exist because the “experts” still haven't discovered the Truth. I will go out on a limb here and just flat out insist that you cannot disabuse students of this point of view if your reading assignments are confined to a textbook, regardless of its orientation to economics. That means you need to find articles that students can read—they often need help with this because they are not especially skilled readers—that express different points of view.

Working in small groups during class will help students learn how to read critically. In groups of 3 to 5 have them identify the 4 most important points of each of the articles you've assigned. Make sure they reference each important point to a specific paragraph in the essay. After you've gotten these points on the board (and there should be a goodly number of “most important points” since you have 4 points per group) the class discussion can focus on which of these points are most important and why. By the conclusion of this exercise every student should understand the articles.

Now you have prepared them for selecting the argument with which they agree. A great homework assignment: "why I rejected argument X."

Critical thinking requires the ability to recognize and understand what are often complex arguments. In economics, the points of view associated with the heterodox approaches are quite likely to be diametrically opposed to the views of society with which students are familiar. Getting students to actually "think" about these ideas, rather than see this as an attempt to brainwash them, is tricky. So is getting students to do more than parrot back your politics. As I've argued here, feminism informs a pedagogy which is up to the challenge.

Notes

¹ Robin Bartlett and I were co-principal investigators on two NSF sponsored grants that funded three summer faculty development conferences, open to all professors of introductory economics. We also held follow up sessions at the Allied Social Science Association meetings. I subsequently received another NSF grant that funded an additional three conferences for professors of economics at community colleges, at women's colleges, and at historically black colleges and universities. This later conference became the jumping off point for a Ford Foundation grant aimed at improving economics education at Historically Black Colleges and Universities.

² I apologize in advance for any errors here as I am reconstructing these programs from memory. I am on leave in Adelaide, Australia and all my notes, grant applications, and conference schedules are on computers in Portland, Maine.

References

The inaugural article framing this critique of mainstream education appeared in *The Journal of Economic Education*, See S. Feiner and B. Morgan, Fall, 1987, "Women and Minorities in Introductory Economics Textbooks: 1974 to 1984."

Two relevant essays appearing in *The American Economic Review* are: S. Feiner and B. Roberts, May 1995, "Using an Alternative Paradigm to Teach Race, Gender and Critical Thinking," and S. Feiner and R. Bartlett, May 1992, "Balancing the Economics Curriculum: Method, Content and Pedagogy."

For an explicit discussion of the connections between mainstream method, economic education, and racial/sexual bias see, S. Feiner and B. Roberts, "Hidden by the Invisible Hand: Neoclassical Economic Theory and the Textbook Treatment of Minorities and Women," in *Gender & Society*, June, 1990.

For an excellent discussion of the educational theory of W. G. Perry that Peter Earl drew upon in his article in the last issue of this review, [click here](#).

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Ontology, Epistemology, Language and the Practice of Economics

Warren J. Samuels (Michigan State University, USA)

The post-autistic movement in economics is the latest, certainly a welcome, effort to restructure and refocus the teaching and practice of economics. Limitations of space prevent the articulation of everything that needs to be said about the movement but a few key points can be made, especially regarding some ontological, epistemological, and linguistic concerns.

Some preliminary points:

(1) The practice of economics has always been more diverse than Whig historians have made it out to be. This was true of both the interwar period and the period, following World War II, of manifest neoclassical hegemony. Heterogeneity has characterized economics as a whole, heterodox economics, and orthodox economics.

(2) A driving force within economics is status emulation. Decisions as to department type, membership, publication outlets chosen and rewarded, curricular content, attitudes toward mathematics and econometrics, the sociology of training graduate students, the finessing of criticism, and so on, are driven by considerations of rank and power. Some heterodox economists have undertaken work to impress—be read by—leading orthodox economists rather than to promote their heterodox paradigm. Some economists within orthodoxy have downplayed the radical aspects of their ideas so as to avoid endangering their status.

The combination of heterogeneity and status emulation has resulted in increased hierarchy, including the gradual weakening of heterodoxy and general heterogeneity.

3) Every discipline, every school of thought and every reform movement must confront the tension between being so diffuse that it stands for very little and being so definitive that it appeals only to a narrow and perhaps fanatical group.

(4) Economists have, for almost two centuries, been concerned that the discipline does not speak with one voice. One concern is that a multi-vocal economics would not be perceived to be a science—and during that period of time status emulation has increasingly taken the form of emulating one or another version of what is perceived to be “science.”

I now turn to my principal topics: ontology, epistemology, and language.

Ontology has to do with the ultimate nature of reality and of those objects that putatively comprise reality. With regard to economics, the key questions are, first, is there a fundamental, ultimate economic reality? and, second, if so, what is it?

The realist position is that such an ultimate reality exists. The burden of the realist position is that realists do not agree as to what it is. One must choose between alternative specifications of reality. The idealist position, in partial contrast, is that no such given ultimate reality exists and that it is thereby open to human social construction. The burden of the idealist position is that idealists do not agree as to what it should be. One must choose between alternative specifications of the ideal, socially constructed economy. In the light of such ubiquity of choice, the use and role of ideology in channeling social construction is understandable.

In economics, a further dichotomy exists. The principal approach to the economy within mainstream neoclassicism is that of positing a pure a-institutional conceptual model of “the market” and examining it under the aegis of the neoclassical research protocol, that of seeking unique determinate optimal equilibrium results. The principal alternative approach is to study actual markets and the institutions that form and operate through them. Those who follow the former approach feel that they are reaching conclusions applicable to all economies, even if not to any economy in particular. Those who follow the latter approach both wonder about conclusions that apply to no particular economy and emphasize that—in the allocation of resources, etc.—institutions matter.

The conflict between those two approaches involves both ontology and epistemology. Ontology, in regard to the nature of reality: purely conceptual market or actual institutionalized markets. Epistemology, as to the object, domain or level of inquiry with respect to which principles of “true” knowledge apply.

This should not be an either-or matter. Abstraction is inevitable. There can be different pure a-institutional conceptual models of the market. Some can be orthodox and others heterodox. There can be different modes of putatively actual markets and the institutions that form and operate through them. Some can be orthodox and others heterodox. Individual economists can have different notions of what constitutes interesting and useful objects of study. Kevin Hoover, in his message on the HES list of September 9, 2000 pertaining to autism in economics, correctly

combines the possibility, if not inevitability, of narrow, hyper-focused research that is also, on its own terms, quite accomplished activity.

It seems to me that to some extent economics already is ontologically pluralistic but that it is not enough so.

Epistemology has to do with the rules or criteria by which a statement is to be deemed true. Two approaches, or classes of approaches, to epistemology have been followed. By prescriptivism, the quest is for specific conclusively prescriptive rules; by these rules and by these rules alone may truth be determined. By conditionism, no such singular conclusive quest is contemplated; a variety of rules is formulated, and thinkers make their choice (s) from among them.

Transcending even those rival approaches is a fundamental dichotomy as to the nature of truth: rationalism versus empiricism; and a parallel one as to procedure: deduction versus induction. Without examining these dichotomies closely here, it can be said, first, that both rationalism and empiricism and both deduction and induction are also complements, each mutually influencing the conduct of the other; and, second, that deduction yields not truth—defined as correct description or explanation—but validity—understood as a conclusion properly derived from premises, given the system of logic.

It seems to me that to some extent economics already is epistemologically pluralistic but that it is not enough so.

I would make the same points with regard to theoretical pluralism, including pluralism of models.

I come next to *language*. Here I begin with two dichotomies. The first juxtaposes language as (an effort at) truth from language as (an effort at) power. The former has to do with description and/or explanation as at least an end in itself; the latter has to do with the motivation of belief and/or behavior. The former informs; the latter moves.

The second dichotomy juxtaposes (through the early Ludwig Wittgenstein) language as corresponding, in substance or logical structure, to reality from language as a tool. The former ties and subordinates us to reality; the latter ties and subordinates reality to us.

One's position with regard to these dichotomies will be reflected in how one treats theories of profit, the existence of the Federal Reserve System, and/or cross elasticity of supply.

Other problems of language in economics include the following.

Definitions often assume, embody, and give effect to theories, theories as hypotheses. Definitions not only define words, when the words are used they define the world for us and that definition may misleadingly or incompletely define the world.

Very often terms are used in a primitive or generic sense. Terms like "private," "public," "voluntary," "freedom," "coercion," "property," "morality," "liberty," and so on, are used with unspecified meaning. They are kaleidoscopic, subject to selective perception, and almost invariably given variable specification. Their use facilitates the entry into analysis or argument of selective implicit antecedent normative premises. This allows an author to escape questions of both substantive content and the mode of its determination, thereby usually begging a, if not the, important substantive question, leaving it to each reader to provide substantive content. Such terms are often identified with the status quo somehow selectively perceived--often the point at issue.

Economists generally work with some notion of a pure abstract a-institutional conceptual model of the economy. Economists also tend to identify the status quo with that conceptual model. This can only be done by assuming that the primitive terms of the model are to be understood only in

terms of the status quo. One problem is that the so-called status quo is a matter of interpretation—selectively perceived and identified. Second, the status quo itself is the ultimate object of inquiry. By identifying it in particular, selective terms and identifying it with the pure conceptual model, economists selectively reify the existing system, rendering it more concrete than it really is. A further problem is that the primitive terms of the model itself—such as “competition”—can be given variable specification.

Specific, definitive texts do not necessarily have definitive meanings. Selective interpretation engenders different reifications. As conditions and therefore interests change, different readings of texts are advanced and adopted. All this is part of the role of language in the continuing social construction of reality, a putative reality that is given selective reification.

It seems to me that to some extent economists already are sensitive to problems of language but that they are not enough so.

Such views as I have promoted here can advance post-autistic economics; and a strong post-autistic economics can advance both such views and economics.

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Is the Utility Maximization Principle Necessary?

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Microeconomics and thermodynamics are both based on the idea of exchange. In thermodynamics the irreversibility of exchanges is a key idea and one that my physics students sometimes have difficulty understanding. So about twenty years ago I went looking for examples of irreversibility in economic theory that I could use in my teaching of thermodynamics. What I found, however, was no irreversibility in the neoclassical paradigm. As a physicist this struck me as preposterous and incredible. Without irreversibility, microeconomics might be a wonderful mathematical theory, but it could not offer a theory of economic activity. This encounter marked the beginning of my long-term interest in economic research.

Most economists living today grew up with the idea, even if not always agreeing with it, that there is and should be a master theory, neoclassicalism. [1] Central to this theory are the principles of utility and profit maximization. I am going to argue that in spite of their ever-growing dominance in journals and textbooks (in Hungary they are now taught in secondary schools), these maximization principles are neither sufficient nor necessary conditions for building a mathematical economic theory.

“Childish pleasure”

The founding fathers of modern theoretical economics chose profit and utility maximization as foundational principles for the description of economic decisions, a choice that resulted in a timeless mathematical economics. From its earliest days, however, neoclassicalism has been

subject to empirical and theoretical critiques that have called the legitimacy of its maximization principles fundamentally into question. Already in 1918, Gustav Cassel wrote [2]:

"This purely formal [utility] theory, which in no way extends our knowledge of actual processes, is in any case superfluous for the theory of price. It should further be noted that this deduction of the nature of demand from a single principle, in which so much childish pleasure has been taken, was only made possible by artificial constructions and a considerable distortion of reality."

Cassel's charge of childish pleasure is justified because the existence of the utility and maximizing principles have been refuted from various points of view. Briefly, I will review some of the arguments.

It does not exist

Hall and Hintch in 1939 investigated whether entrepreneurs did in fact conduct the price and output policy that was ascribed to them in neoclassical theory. These Oxford economists chose to use the 'method of direct question' to find this out. The results were clearly negative. Almost all business men followed a 'full cost' pricing rule, that is they took prime (or 'direct') cost per unit as the base, added a percentage to cover overheads (or 'indirect' cost), and made a further addition for profit. [3]

It may not exist

Profit and utility maximization demand perfect information. Moreover they need the perfect knowledge of the future too. Further, as the decisions (and actions) take finite time, in real life the action and the result appear in different environments. Maximization at the moment of decision does not necessarily mean maximization for the result. The world changes. That problem is "solved" via the assumption of equilibrium (not changing environment). This results in a timeless theory. The (in)famous proof of the existence of a general equilibrium state is in some sense a tautology, as it is a built-in conclusion.

It cannot exist

It is an oxymoron for a human being to be an economic agent in the neoclassical sense, because an economic actor cannot behave simultaneously as a profit and a utility maximizer. [4] In standard economics, production and consumption are two different activities done by different actors. But in reality the same human being is often both a producer and a consumer. True, not every consumer is a producer, but all producers are consumers. Both production and consumption require human time, so that in reality any profit and utility maximizing by a producer/consumer would have to be done against the same limited fund of time. Consequently a description of the real behavior of such agents would have to incorporate both dimensions simultaneously. Neoclassical theory does not do this.

It must not exist

It violates the traditional ethical principles of humanity [5].

It does not need to exist (it is not necessary)

There is a general belief that utility maximization principle is needed to ensure an ordering of the commodity space, and that it is the only possible approach. This is not the case. A weaker postulate - the no-loss rule - is sufficient to construct an economic theory [7, 8, 9, 10].

The no-loss rule

The no-loss rule first appeared in the Austrian school when Menger stated the necessary conditions for an exchange. [6] For a free exchange of goods among economizing individuals the following triad of conditions must be fulfilled:

- a. one economizing individual must have command of goods which have a smaller value to him/her than other quantities of goods at the disposal of another economizing individual who evaluates the goods in reverse fashion,
- b. the two economizing individuals must have recognized this relationship, and
- c. they must have the power actually to perform the exchange of goods.

The absence of any one of the above three conditions means that an essential prerequisite for an exchange is missing. The first condition, essential in free economic exchange, is the no-loss rule: an economic individual never acts if that action would result in an immediate loss. The no-loss rule is postulated as a decision rule for economic agents instead of utility/profit maximization. It is extremely important to note that the no-loss rule holds only for the moment of action. The natural and economic environments, as well as the economic agents themselves, are in continuous transition, so that today yesterday's decision may seem to have been a bad decision. The no-loss criteria is weaker than the utility maximum principle. It presupposes only that every economic unit has common sense, and hence does not do anything which impairs its economic state. It does not presume perfect "rationality", that is, it does not suppose perfect foresight, nor does it necessarily follow that the actions taken are optimal.

Some basic features of the no-loss approach

Under this approach an economic system (state, market, etc.) consists of economic agents interacting through exchanges of materials (goods), money and information. An economic agent (EA) is the smallest entity with an implicit or explicit decision-making rule. In most cases the EA is either a firm or an individual. EAs are characterized by the scope of their activities, by their knowledge, their experiences and their stocks. Their the list of stocks (N) may contain money (M), but money is not conceptually necessary.

Every economic activity of an agent is represented as a decision. There are "free" decisions (concerning production and trade - based on the economic interest of the EA) and "forced" decisions. The latter result from physical/biological constraints (e.g., degradation, depreciation) and political constraints (e.g., regulations of the state, taxes, or robbery).

A necessary criterion for every voluntary action (free decisions) is that the agent's economic welfare will not be worse than in the initial state. This no-loss rule only forbids those decisions which would result in a worse economic state than the initial one. That is a fundamental difference from the utility and profit maximization principles. The latter define the actual decision, while the no-loss rule specifies only that an action is allowed or forbidden.

The no-loss rule demands that every economic agent is characterized by a function, called wealth function. $Z(X, \dots, M)$, where X is for stocks, and M for money. The wealth function is a measure, in non-monetary units, of the wealth or welfare of the economic actors. The wealth function reflects the "wealth" state of the economic agent (individual or firm) as self-evaluated. It represents the potential use (including, but not limited to possible current or future consumption), as opposed to the utility function which shows the level of satisfaction from that consumption. In some senses the notion of utility is retrospective (and applies only to individuals), whereas the notion of wealth is prospective and applies equally to firms. The characterization of all agents by a non-decreasing function parallels the traditional treatment of individuals in economics. However, previously firms have never been treated in this manner. The wealth function of a firm means that the firm also evaluates commodities (in terms of its business and technological possibilities) as do individual consumers. The evaluation of stocks of commodities means that the firm is capable of anticipating the possible changes in future wealth that a set of existing stocks affords.

The most important properties of the wealth function are: [8].

- (i) Since wealth is a positive attribute (in the absence of the possibility of net debt), a function that measures wealth must be non-negative. Normally $Z > 0$.
- (ii) Wealth comprises all goods and money, or money-equivalents (like receivables) that are owned outright (net of mortgages, debts or other encumbrances). The terms "own", "owned", "ownership" etc. are shorthand for a more cumbersome phrase, such as "to which the economic agent has enforceable exclusive access".
- (iii) An increase in the agent's ownership of stocks of beneficial goods or money results, *ceteris paribus*, in an increase in the agent's wealth. In case of an incremental increase in the stock of a beneficial good (as opposed to a waste) we can assert $dX > 0$, and $dZ > 0$. Similarly if $dM > 0$, $dZ > 0$.

(iv) An economic agent's wealth can only increase or stay constant (but never decrease) as a consequence of voluntary actions consistent with the no-loss rule. The payment of taxes (for example) is considered to be involuntary and unavoidable.

(v) The wealth function may have the property of homogeneity in the first degree. (Doubling all stocks will double wealth.) This is a useful property when the time comes to select representative mathematical forms.

The no-loss rule defines the direction of economic processes. An agent agrees to a process only if it leads to $dZ > 0$. A force law of economic processes is introduced. The magnitude of actions is proportional to the anticipated wealth increase. The result is a non-linear non-equilibrium dynamic equation system. Computer simulations of a market economy through the history of the individual economic actors can be performed. These simulations provide tools to investigate the effect of different economic policies, institutions, environmental impacts on the economic system. In [10] we have shown how to integrate firms in this model. We have found that the usual general equilibrium solution is only a special case.

Description of economic phenomena with help from the no-loss rule is promising for at least three reasons. Firstly, the no-loss rule has long been a premise for economists. Secondly, the no-loss rule can handle straightforwardly the main elements of economic models -- consumers, producers, commodities, trade and production. Finally, it is a non-equilibrium approach.

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Quo Vadis Behavioral Finance?

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In the science-fiction television and film series *Star Trek: The Next Generation*, there is a species called the Borg, a collective of techno-organic drones acting in concert as a single organism. In their pursuit of perfection, they roam the galaxy in search of other species, whose capabilities they acquire through a process of assimilation -- turning their captives into Borg and effectively absorbing their knowledge into the hive's mind. The first line of every encounter with the Borg is familiar to *Star Trek* aficionados: "Resistance is futile. Prepare to be assimilated."

It seems that this sci-fi dream world is worryingly more than apropos to describe the state of affairs of the field of finance, both as a scientific endeavor and a subdiscipline of economics. Academic finance has been an outgrowth of neoclassical economics, Friedmanian instrumentalism (Friedman, 1953), and Fama's efficient markets hypothesis [EMH] (Fama, 1965, 1970). It is an autistic world, in which there exists this mythical economic individual, the *homo economicus* (or as our European colleagues correctly spell it: *oeconomicus*). This world is called financial economics, or modern finance. Financial economics is an orthodox world where the leaders of the church are vigilant to nip in the bud any criticism, or questioning of this world's methodology.

The only serious challenge to the modern finance dogma over its fifty-year existence has been the appearance of behavioral finance. Behavioral finance got its start with the importation of prospect theory (Tversky and Kahneman, 1974, and Kahneman and Tversky, 1979), a challenge to the axioms of Von Neuman and Morgenstern (1967) on which the psychological makeup of the *homo economicus* is built. At first, De Bondt and Thaler (1985, 1987) showed that contrary to the predictions of the EMH, markets overreact. Many followers also showed under reaction. Both these "reactions" were translated to a real-world strategy referred to as contrarian¹ (See: Dreman, 1998).

Concurrently, others too numerous to mention questioned the empirical proxy of the EMH, the capital asset pricing model [CAPM]. These works showed the presence of statistically significant "effects" that the CAPM could not account for. Discoveries of these effects were lumped under the rubric of anomalies.

In an interview with Fama, appearing on the CAPITALIDEASONLINE.COM website,² Fama expands his views on behavioral finance.

"Well, my good friend, Dick Thaylor [sic., the reference is to Richard Thaler who moved a few years ago from Cornell to Chicago in the latter university's attempt to cover all the bases] is kind of the guru of behavioral finance and every time he walks down the corridor, I ask him a question. The question isn't a complete question, but a person on the street wouldn't know what was going on. My question is always the same: *Now what is it?* He knows what *it* refers to. It's behavioral finance, and the reality is they haven't defined the top. They haven't defined the area. What it is at this point is unkindly speakings, just dredging for anomalous looking things in the data. But the fact is that even in a perfectly efficient market, every data set would be on the foremost phenomenon just on a strictly random basis. So that's not evidence for or against anything. If you don't have a specific view of what behavioral finance is in the way it manifests itself in the behavior of prices and returns, you don't really have anything to work with because everything you observe really can be rationalized in the context of an efficient market. For example, all of these studies on behavioral finance basically look at how prices react to different kinds of announcements. So sometimes, it seems to be the case that prices under react, sometimes it seems to be the case that prices overreact, but that's exactly what you predict in an efficient market. You're going to see drift one way or the other, but it will be random. So if you don't have a theory that predicts when it's going to under react and when it's going to overreact, you don't have anything. It looks to me like an efficient market, just a random price behavior." Professor Fama has a paper coming out soon on the subject, *Market Efficiency Long Term Returns on Behavioral Finance*.

For Fama, the number one count on the list of indictments of behavioral finance is it's less than perfect prediction power. Now, let that paradigm cast the first stone that either established a perfect record of predictions or didn't suffer from the discovery of anomalies. In fact, as far as predictions go, Fama's own research concluded that the CAPM's has no predictive power (Fama and French, 1992). Then what makes the EMH something above doubt and behavioral finance "just dredging for anomalous looking things?"

In the same swoop Fama also promotes a colleague to the dubious rank of "the guru of behavioral finance." This is not only an ill-concealed insult, but also an insinuation that Professor Thaler somehow stumbled into a major university straight from the ashram of behavioral finance (perhaps a Hindu cult?). We are also doubtful that Dick Thaler cannot answer Fama's question, because this is the same Thaler who in a recent article in the *Financial Analysts Journal* (Thaler, 1999, p. 16) had this to say: "I predict that in the not-too-distant future, the term "behavioral finance" will be correctly viewed as a redundant phrase. What other kind of finance is there?"

In the paper the interview refers to, Fama (1998) artfully reduces behavioral finance to the “anomalies literature.” What Fama conveniently forgets is that behavioral finance is not just the anomalies literature, or even over-/underreaction, but the realization that the axioms and assumptions of modern finance/financial economics on which his EMH is built is an autistic world.

Or does he forget? Being conspiracy theorists, it is our belief that the label “the anomalies literature” is a carefully chosen signifier that necessarily puts behavioral finance at a level below the EMH. This is so because one may deal with anomalies as puzzles that eventually must be solved. One may make a note of anomalies for further reference. Or one may just forget about them. The last choice is the one researchers in financial economics seem to select. We conjecture that this choice is influenced by the sociology of the field; that is, the totalitarian control of the orthodoxy over the nobility press on which promotion and tenure depend.

In an almost unique move in the financial economics literature,³ Fama (1998) also cleverly uses the arguments of both Kuhn (1970) and Lakatos (1970) that once a paradigm has been established only a new and more powerful paradigm can replace the old one. What Fama doesn't mention is that the EMH/CAPM is an arriviste paradigm. It is one that, we suspect, is promoted for ideological reasons (the market knows best, keep government out, etc.), and in fact has been often found to be invalid. Because it cannot be falsified, Fama ought to have argued that it should never have been put on the pedestal of a paradigm.

Unfortunately for behavioral finance, its practitioners are drawn like a doomed species into the tractor beam of financial economics, and their work is concentrating on proofs of market efficiency, or lack thereof, using the same statistical methods (and methodology) the proponents of the EMH have been using from time immemorial. An alternative and more promising avenue would be to define behavioral finance's methodology without paying any attention to the vapid issue of whether markets are efficient or not. This is no small task, because the methodology of a science is a complex and multileveled ziggurat (Frankfurter, 2001). However, this is the only way behavioral finance can survive before it is totally assimilated by the Borg. Behavioral finance, therefore, is on the road to Damascus. This is why we are asking the question: Quo vadis behavioral finance?

Notes

¹ The word contrarian was coined to signify a strategy contrary to the teachings of the EMH.

² Or go straight to link: <http://www.ifa.tv/Library/Support/Articles/Scholarly/TextInterviewEugeneFama.htm>

³ Unique in the sense that it invokes the philosophy of science to bolster an argument.

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