What did you see?
Different Visions of Economic Methodology

By D. Marshall Meador*

Introduction

How should one go about a “discussion of the structure of scientific practice?” Before asking what it is that scientists do, one might be inclined to ask, “Who is a scientist?” If the answer is “one who does science,” then, inevitably, the next question is, “What is science?” Owing to the fact that many books, articles, and discussions have attacked that question, it will be left aside in this paper. The starting point of this discussion will be a very simplistic definition of science: any activity that seeks to describe and subsequently explain an event. Note that this is a two-fold definition, and both parts are necessary for its completeness. A description of an event is little more than an enumeration of what surrounds the event. The level of complexity may vary, but a detailed, in-depth description is still just a description. To qualify as science, explanation of the event must follow. That the color of the leaves of hardwood trees changes in the temperate zone as the sun crosses the equator from north to south is a description of an event. The explanation of why the color changes at that time brings one into the science of botany.

Events happen. That seems simple enough, and it surprises many that there is any question about the statement that events happen. A description of an event involves a listing of the “facts” involved in the event. The leaf was green, now it is orange. Should be as simple as that, it is a fact that the leaf was green and now it is orange. But as Chalmers explains [Chalmers 1999, 5], facts are slippery, treacherous little creatures. What one “sees” is very often conditioned by the background from which the observer comes. When Chalmers is discussing the thought that “facts” are prior to explanation, he says: “the fact that our perceptions depend to some extent on our prior knowledge and hence on our state of preparedness and our expectations and the fact that observation statements presuppose the appropriate conceptual framework indicate that it is a demand that is impossible to live up to” [Chalmers 1999, 12]. This is known as the problem of “theory-laden” observations. Consider the leaf, why is more appropriate to suppose the color change is related to changes in the internal chemistry of the leaf in response to fewer hours of daylight than to suppose the color change is because some beneficent deity knows that people like a diversity of colors? While that may seem a rather ludicrous comparison to the twenty-first century mind, it is only because the long history and wide-spread acceptance of botanical insights have taught most that the color change is due to some sort of seasonal change which induces

* The author would like to thank an anonymous referee for helpful suggestions.
change within the leaf. Observations in the western world of color changing leaves are conditioned upon education gained early in one’s life.

While the discussion thus far has centered on a leaf changing color, the reader is asked to consider an adult human being purchasing an apple from a roadside stand on the way home from work. Where observation of the leaf posed the problem of one’s prior knowledge and the effect of such knowledge upon the observation, one could watch leaves change throughout one season and across many seasons with little difficulty. The leaves, apparently, do not seem to mind being watched as their color changes. One may pluck leaves from the tree prior to their change, during their change, and after they have fallen from the limbs of the tree, all this with little objection from the leaves. Taking the leaves to a laboratory for microscopic and chemical analysis at various stages of change likewise elicits very little objection from the leaves. Returning to the adult purchasing an apple, suppose now that this adult had been observed stopping several times to buy an apple. A scientist desiring to explain why the person bought the apple will encounter, in all likelihood, some resistance when trying to take the person back to the laboratory for dissection to determine what motivated the apple’s purchase. Taking blood samples to determine glucose levels; examining the stomach’s contents; running brain wave scans prior to, during, and following the purchase; all these efforts to explain the observation will be resisted by the purchaser of the apple. After several attempts to secure such knowledge, the scientist will realize a different approach need be taken to explain why the purchase of an apple was made. Moving to another roadside stand, the researcher waits, and watches, and notices another male human stopping to purchase an apple. This behavior is noticed upon many subsequent days. At long last, the researcher approaches the buyer and enquires as the reason for the purchase. The consumer replies, “I was hungry,” and departs hastily. The researcher decides to continue watching the behavior of the consumer and to enquire each day as to the reason for the purchase. However, that consumer never returns. What should the researcher conclude? Perhaps the fellow was no longer hungry? Or could it be the consumer was never hungry, that he had only been stopping to meet someone with whom he was having an extra-marital affair and failed to ever return for fear the scientist was a private investigator hired by his wife? The point is this contrived set-up is that where leaves, thus far in history, have never objected to being observed, collected, and subjected to various sorts of analysis, human beings have the capability to change their behavior when they perceive that they are being observed.

Owing to the difficulty outlined as regards trying to explain human behavior, the community of academics has typically divided science into two fields, natural science and social science. To seek to explain why leaves change color is a natural science. To seek to explain the purchasing behavior of people is a social science. Because of the author’s prior knowledge, experience, and development, the scope of this paper will be limited broadly to social science and specifically economics. (Unless, of course, it helps prove a point by appealing to some field outside social science or economics.) One should not assume that the author is an expert in
economics; rather the author has been exposed to a great deal of formal social science (especially economic) thought and very little of the formal thought within the natural sciences.

Before setting upon the path to become an economist, the author, upon observing the driver stopping at a roadside stand to purchase an apple, would have come to the conclusion that that person was probably hungry. That is not an explanation, rather it was a supposition based on the author’s prior cultural, social, and educational background, and does not qualify as a scientific endeavor. With descriptions of observations tainted by the framework the observer brings to bear, the question becomes one of determining what constitutes a valid explanation. At his point, it might be that many would suggest that, given similar cultural, social, and educational backgrounds, then observations would be similar, and subsequent explanations derived with little difficulty.

If only things were so simple.

THE BEGINNING OF THE CONFUSION

Someone buys an apple at a roadside stand on the way home from work. Explain.

What the economist (as a social scientist) will seek to explain is a behavior. Depending on the background of the economist, the explanation of the behavior may not only differ, the description or definition of the behavior will differ. Did that someone simply purchase an apple?

- The majority of economists in the western world today would conditionally say yes, but then go on to explain that that person traveling home from work did not simply “buy an apple,” rather that the economic agent was on the consumer side of an act of exchange. Further, this act of exchange was determined at the beginning of the agent’s time horizon with full and perfect knowledge of all other possible purchases, past, present, and future. The decision to exchange at that time for that good was completely independent of the decisions of all other economic agents. Most importantly, that act of exchange was engaged in by the agent because any other exchange possible at any time and place would have diminished that agent’s satisfaction, not only at that moment, but throughout the agent’s entire time horizon. Opposed to this outlook, there are now a growing number who see those acts of exchange occurring in an environment where there is limited and imperfect knowledge. There are also a few who see the act of exchange taking place in a temporal dimension rather than being determined at the beginning of the agent’s time horizon, albeit a temporal dimension where the actions and results of all other points in
time are known and a part of the exchange calculation. These are the economic positivists. They are the dominant group in the field of economic science.

- Another much smaller group of social scientists (the positivists refuse to call these economists) also see the act of buying an apple, but with qualifications. What they observe is a text, a series of events written on the fabric of existence which must be understood rather than explained. The understanding of the text/event is inter-subjective; understanding is arrived at in a process of interaction between the agent and the economist and the larger economic community. These are the economic hermeneuticists.

- An emerging group of economists sees the purchase of an apple at a roadside stand but seek to develop a deeper, stratified explanation of that observation. They seek to explain what structural environment existed that facilitated the interaction of agents, what causal mechanism brought motivated the agent to purchase of the apple, and how the interaction of the buying agent and the selling agent may have affected the structure of “roadside stands.”

**ECONOMIC POSITIVISTS**

Economic positivism is an outgrowth of the philosophical notion of positivism. Logical positivism, as developed by the group of philosophers known as the Vienna Circle, may be thought of as the foundation of the differing strands of positivism that guides social science thinking. The goal of the Vienna Circle was to develop a unified science where the emphasis was on what could be grasped intersubjectively. For them, science had no ‘depths’ and no appeals to any metaphysical concept are allowed. Their emphasis was on experience, or the surface of events. Strict empiricism could make explanations difficult and logical analysis was seen to be the basis of empirical science and meaning was found through a reduction to the simplest statements about the empirically observed. Science was a way of knowing, epistemology was primary. Ruling out any metaphysical statements left ontology, or the question of being, out of science. Ontology was non-existent and only that which could be observed, only the empirical mattered. Knowledge came only from experience and logical analysis was the method of science. Causality was stripped of any idea of influence or necessary connection and redefined as a relation among conditions [Neurath 1973]. As such, science for the Vienna Circle became an activity where logical analysis was applied to observation; the more observations, the better. Observations became a way to verify the analysis.

Problems arise from the verification of observations. How many observations does it take to declare something for certain? Karl Popper, aware that the next observation could undo the
entire framework of analysis, proposed the idea of refutation or falsification as a better criterion for explanation. Popper maintained that no scientific theory was ever final, but if it was framed in such a way as to be potentially falsifiable and survived attempts at same, it was a good explanation [Chalmers 1999, chap. 5]

In addition to the problems of theory-laden observations, the positivists’ program of falsificationism encounters another problem – the Duhme-Quine thesis. Simply stated, theories/explanations are complex, composed of several premises [Chalmers 1999, 89]. A theory that has been falsified may be salvaged by claiming that some small part of the initial conditions was either mis-specified or missing. While attempts are thus made to falsify, any cherished theory may always be salvaged by the researcher. Consider the purchase of the apple at the roadside stand. In attempting to test the theory that the demand for apples is an inverse function of the price of the apples, the economist may track the number of purchases at the roadside stand, noting what the price is at each purchase. Upon running a regression analysis, the economist finds a direct relationship with a correlation coefficient near zero. Rather that scrapping the theory that apple purchases are an inverse function of their own price, the economist will add variables in an ad hoc manner, re-running the regression until the coefficient on price is negative. A relation between price and quantity purchased, more specifically an inverse relationship, is one of the most cherished premises of current economic thought. If no relation can be found, the theory is not wrong; rather the complex web of assumptions which has been built to test the theory is wrong. The economics profession has taken the Duhme-Quine thesis as a road map for survival rather than a criticism of falsificationism. While the problems of the theory-ladenness of observations and of the Duhme-Quine thesis have been highlighted by the post-positivistic movement in the theory of science, positivism is far from dead. Garrison (1986) in a very clever rhetorical exercise pointed out all the problems of positivism and came to the conclusion that if the scientific community is comfortable with the inconsistencies of positivism, then positivism is, indeed, the voice and method of wisdom.

There is no group of scientists more willing to overlook the faults and problems of Popper’s falsificationism than orthodox economists. This is where the majority of currently practicing economists now dwell. As all this relates to economics, Neurath pointed out that “the attempt of behaviorist psychology to grasp the psychic through the behavior of bodies, which is at a level accessible to perception, is, in its principled attitude, close to the scientific world-conception” [Neurath 1973, 315]. Early on in economics, in an attempt to be “scientific,” theorists latched onto behaviorist psychology. By taking the behavioristic stance, methodological individualism became the foundation of economic analysis. Carver (1918) argued that behaviorism fit well into economic theorizing and was necessary if economics was to be called a science. From Carver on, behavioristic thinking transformed a living human being capable of choice into *homo economicus*, an artificial representation of an agent, which engaged in exchange motivated by a deterministic calculation of benefits and constraints [Meador 2002]. Axiomatic reasoning as
developed by Carnap (1958 as a good primer) provided a description for homo economicus. This axiomatic foundation was offered as the explanation, or theory, of economic behavior. Events in the real world were then compared to the predictions which flowed from the construct of the artificially constructed economic agent. When they matched those predictions, economists declared a theory had failed to be falsified and thus represented reality.

Note that economic positivists make no claim to explain anything other than surface events. The purchase of the apple is observed. The explanation of the purchase of the apple is wrapped up in a logically constructed axiomatic system. There have been few claims that the axiomatic foundation of homo economicus represents the real world, but there have been many claims that that foundation is logically tight. Milton Friedman goes so far as to argue that representation of the real world is not a valid requirement for the assumptions upon which theories are based [Friedman 1953, 14]. Is economic positivism troubled? Larry Boland, one of the most fervent proponents of economic positivism, writes: “scientists offering explanations of economic phenomena will be pleased to find that adherence to positivism only requires assurances that the assumptions of one’s model are falsifiable” [Boland 1991].

Was there a purchase of an apple? Yes, but it must be understood as an economic agent, with a completely ordered axiomatic set of preferences and full knowledge of all possible goods and services and their respective prices that were to be offered across the agent’s relevant time horizon, engaged in an act of exchange which had been predetermined according to a strictly behavioristic model.

**ECONOMIC HERMENEUTICISTS**

If a tree falls in the forest and no one is there to hear it, does it produce any sound? Hermeneuticists are likely to respond, “why do you ask, what meaning would it have to you if the tree did or did not fall, if falling whether there was or was not sound?” Hermeneutics requires first the ability to speak in terms of coherence, of making sense or nonsense with respect to the event. Second, the ability to make a distinction between meaning and how meaning is expressed is of great importance. Last, the identification of a subject for whom meaning is intended is required. As Taylor summarizes, “The object of a science of interpretation must thus have: sense, distinguishable from its expression, which is for or by a subject” [Taylor 1985, 17]. Problems do arise in that interpretive approaches to social science are difficult to assess in a systematic fashion. Generality grows from the subtle nuances of expression rather than abstraction. Unlike positivism with its deterministic foundations, hermeneutic interpretations do not set up conditions for predictions [Geertz 1973, 26]. Don Lavoie, an economic hermeneutist, recognizes the critics charge that hermeneutics denies the philosophic foundations to support substantive studies of the
economy [Lavoie 1991, 10]. Madison begins to address some of the problems of economic hermeneutics by inquiring about the nature of economic understanding. Economics has not to do with the natural, but with the human, and “what is human cannot be understood in terms of mere physical, objective processes” [Madison 1991, 39]. The goal of economic inquiry should be intelligibility rather than causal (in a positivistic sense) explanation. Where the goal of social science writ large is the attempt to discern meaningful patterns of relations in human endeavors and action, economics focuses its concentration on meaningful modes of behavior having to do with the production and exchange of goods and services. For the economic hermeneutist, knowledge and understanding is intersubjective. Meaningful patterns of human action cannot be understood within the methodological individualism of positivism [Madison 1991, 41]. In Madison’s own words, the case is best put:

‘Economic reality’, does not exist, in any purely objective sense of the term (if it did there would be no need or place for entrepreneurship). It is dependent on, is the expression of, is the way in which a community of human agents interpret and arrange their collective being – in the same way that what counts as an economic ‘good’ is dependent upon how people interpret their lives and the priorities they set for themselves. Different cultures do this differently, and thus it would not be surprising if the ‘laws’ of economics were to vary from culture to culture [Madison 1991, 51].

Asking again, did the consumer buy an apple at the roadside stand? That would take awhile to determine. The economist would undertake a “deep” study, living among the driver/consumer and the person selling the apples. Gaining their trust and thus becoming an observer/participant, the economist would seek to understand the transaction in a broader cultural context. The structure of the roadside market would be explored and the meaning it held for both the driver/consumer and seller/producer would be uncovered. The final understanding of the transaction would include an explanation of how the various needs were both for both parties; that of the satisfaction of hunger for the consumer and the need for income for the producer. Additionally, it might be uncovered that the presence of the seller helped affirm the consumers sense of security (an adequate food supply), self-esteem (the presence of the seller assures the consumer that someone is below in the social strata), and happiness (the apple tasted good and costs less than those sold at the grocery store). As important, the sellers sense of security was enhanced (income was gained), self-esteem rose (the ability to produce assures the seller’s standing in society as being better than the unemployed), and happiness gained (it was great to earn a living in the great outdoors instead of a stuffy office). In short, while an apple was purchased, it must be understood as an interaction which took place between two humans within a complex setting that allowed both to find meaning to their existence.
ECONOMISTS WITHIN CRITICAL REALISM

Where economic positivists completely deny the admission of any metaphysical statements into analysis and admit only that which can be observed into the realm explanation and economic hermeneutists search only for meaning, a task that requires that someone be present for whom meaning has relevance, economic critical realists insist that things happen. Objective reality exists independent of human observers. Reality consists of three domains: the empirical consists of what is experience, either directly or indirectly; the actual, where events happen whether they are experienced or not; and the real where that which produces events resides [Danemark 2002, 20]. There are two dimensions of reality, the intransitive and transitive. The intransitive is that which exists independently of observation while the transitive dimension is the attempt of science to explain, to theorize. Because science always builds on previous science, the transitive is never permanent; there is no ultimate knowledge [Danemark 2002, 22-23]. When applied to social science, the positivists are left behind as there are some who come to “believe in the power of reason to grasp approximately the essence and the profound significance of things; these ‘essentialists’ adhere as a rule to an organic conception of man and society, whereby both are considered complex entities. [Bortis 1997, 62; emphasis added] The idea of “complex entities” as a description of man and society is how Bortis admits the multi-domain and dimensionality of critical realism to economic science. Prediction is impossible, but trends may be identified.

Where positivists and hermeneuticists are concerned only with epistemology, critical realists place ontology as the foundation of analysis – the determination of being establishes all subsequent analysis. How one knows is subsequent to what exists. Positivists look to falsify theories built up from axiomatic logic by looking only to that which can be observed; knowing replaces any need to explain being. Hermeneuticists look to make sense of the interaction of subjects; knowing is possible because being exists. Critical realists look to find that which exists and upon finding the nature of being then proceed to develop abstractions which explain that which exists; being, reality determines how knowledge develops.

True agency, the ability to do, enters analysis and theory only in the realm of critical realism. Positivists admit only deterministic responses from a behavioristic framework. Hermeneuticists admit interactions only within the context of meaningfulness. Critical realism places an agent empowered with the ability to choose in a framework where things happen. Did the consumer buy the apple? Yes, when the consumer is seen as a biological entity who required food to continue existence (causal mechanism). The consumer had many different food products to choose from, the apple was chosen due to a complex but explainable (in a transitive sense) web of behavior conditioned by the consumer’s life up to the time of the purchase. The consumer was in a production economy where a producer was allowed by a system of property rights to own an orchard. The legal system of the economy was such that the producer was able to dispose of production as the producer saw fit. The roadside stand, a place where producers are able to offer
their apples for sale and consumers are able to purchase, is a structure which conditions economic agents (it gives them a place to get and apple) and which is reproduced by the interaction of those agents.

**WHAT WORKS?**

Where does this take the field of economics? Of the social sciences, economics is perhaps the one with the strongest teleological foundation. Economics as a science is pursued not solely to understand how humans interact with respect to material possessions; rather it is a science whose ultimate aim is prescriptive. The development of economics was from a need to guide the policies of governments as they strove to create, maintain, and expand the material environment of its citizenry.

If that teleological basis is correct, the denial of causal mechanisms and the absolute dominance of the positivist’s axiomatic reasoning and methodological individualism within orthodox economics have served their purpose. The axiomatic foundations of economic positivism do create the ability to predict. The growing replacement of people by machines, as described by Josef Steindl [Lee 1998, chap. 10], is completely justified by economic positivism, despite the widespread alienation and disenfranchisement of thousands of people. However, critical realism raises the possibility that the flat ontology of positivism (deal with that which is observable) may miss some important causal factors operating in society. But the cost of critical realism, with its open system thinking, is the inability to predict. Those who make policy, that is the politicians, may not wish to surrender that ability. Critical realists would argue that without a return to a search for realism and the causal mechanism underlying the economy, despite the impossibility of prediction, the economy may collapse due to policies which contribute to problems rather than solve them.

It would seem that proponents of both camps, positivists and critical realists, each have something to contribute. The positivists are attuned to the needs of policy makers and are good at discovering relationships among economic variables. Critical realists, while still a very young and developing group, seem to be developing a methodology that can uncover causal mechanisms. A future direction for economic methodology should be closer cooperation between those who have the tools to discover causality and those who have the tools to falsify it.


