THEORY CREATION AND THE METHODOLOGICAL FOUNDATIONS OF POST KEYNESIAN MICROEC0ONONICS

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To create a Post Keynesian microeconomics is to be involved in theory creation. However, before theory creation begins, it is necessary to lay down the common sense and philosophical foundations of Post Keynesian economics with compatible methodological guidelines; and secondly to delineate the kind of theory that will emerge and hence the kind of microeconomics that will be created. Thus, the first section of this paper will layout the common sense foundation of Post Keynesian economics, followed by a discussion of its philosophical foundations based critical realism and epistemological relativism. Section three deals with the methodological foundation based on grounded theory methodology, followed by discussion of appropriate data and of the role of case study, mathematics, economic modeling, and econometrics in grounding and grounded theories. The final section of the paper discusses the historical nature of grounded theories and their theoretical implications for Post Keynesian microeconomics.

Common Sense Foundation

Post Keynesian economists approach their study of economic activity with a common sense understanding of the world. By common sense, it is meant a complex set of beliefs and propositions about fundamental features of the world which individuals assume in whatever they do in ordinary life. Thus, for Post Keynesians, they take particular features, characteristics, institutions, and human actors of economic activity as obvious and practical initial starting points for further research. To be obvious and practical

means that the various features, institutions, and actors are considered ingrained and everyday properties of the real world of economic activity and are encountered when observing or participating in ongoing economic activity. On the one hand, the Post Keynesian qua economist can as an observer see them in action as the participants in the economy carry out their activities; or they can directly experience them as direct participants in economic activity. By being a participant-observer, Post Keynesians are able to be close to the concrete form of the economy. Consequently the common sense beliefs and propositions provide the background against which they carry out their research. Hence, this common sense understanding of economic activity informs the methods which Post Keynesians actually use to examine economic activity, particularly with regard to the way it is explained. [Coates, 1996; and Comim, 1998]

One way to characterise the common sense propositions of Post Keynesian economics is to state that the actual economy is a non-ergodic, independent system with human agency and economic-social-political structures and institutions embedded in an historical process. Other propositions, which support and clarify the above, include the views that the actual economy and the society in which it is embedded are both real and exist independently of the individuals it includes; that reality is transmutable, hence the future is unknowable and what is true today may not be true tomorrow; that change comes about through human action interacting with social, political, and economic structures and institutions; that human action is derived in part from ethical, cultural,

political, and ideological beliefs so that economic outcomes are also ethical and political outcomes as well; and that a capitalist society is a class society and the economy is permeated with hierarchical power derived in part from it. The final mutually shared common sense proposition is that the study of particular economic activity cannot be done independently of the whole economy or from the social system in which it is embedded. These common sense propositions do not constitute Post Keynesian economics, but rather provide the basis for its philosophical foundations. [Wilber and Harrison, 1978; Gruchy, 1987; Lawson, 1994; Arestis, 1996; Davidson, 1996; Dow, 1999; Downward, 1999; and Rotheim, 1999]

Philosophical Foundations

Critical Realism

The ontology that is consistent with the common sense propositions of Post Keynesian economics is critical realism.[1] It begins with the propositions that the economic world consists of events which are structured in that they consist of something more than simple empirical experience and are intransitive in that they exist and occur independently of their identification; that all economic events, whether reoccurring or not, are produced by an underlying diverse set of causal mechanisms and structures; and that the economic world is open in that each and all economic events are a result of interacting and counteracting structures and

[1]Various economists have argued that the ontological basis of Post Keynesian economics is critical realism--see Dow (1990, 1999), Kanth (1992), Lawson (1994a, 1999), Arestis (1996), Pratten (1996), Joseph (1998), Downward (1999), McKenna and Zannoni (1999), and Rotheim (1999).

contingently related causal mechanisms. Consequently, Post Keynesian economics has a stratified view of economic reality. On the one hand, there are the surface events and then there are the actual events underlying them. Understanding surface events depends on the explanations of the actual events and that is derived from causal mechanism(s) and economic structures, which constitute the third tier of economic reality. Causal mechanisms and structures are the ontological core of Post Keynesian economics in that when they are identified and understood, the surface and actual events (that is the first two tiers of economic reality) merge into one. Thus for the Post Keynesian economist, identifying structures and causal mechanisms and describing their way of influencing or acting in specific events in the economic world is the scientific undertaking for economists.

A causal mechanism is irreducible, has a relatively constant internal organization, is real, observable, and underlies, hence governs or produces actual events, and acts transfactually (that is acts even when it generates no events which can be recorded). Being irreducible means that the form and organization cannot be disaggregated into its constituent components and still operate as a causal mechanism. In this sense, a causal mechanism is an emergent entity. To have a constant form and organization means that the mechanism can be identified and delineated. Furthermore, the ability to act means that the mechanism has the power to generate qualitative and/or quantitative outcomes; and the triggering of the mechanism comes from human intentionality. This means that economic actors have independent power to initiated

actions and hence set in motion causal mechanisms which generate outcomes that underlie hence govern economic events. Because the causal mechanism utilizes the same processes when producing outcomes, the same outcomes are repeatedly produced.[2] So to say that a causal mechanism acts transfactually producing the same outcome is also to say that its form and internal organization are constant; hence it is a relatively enduring entity.[3] However, even if a causal mechanism produces the same, or transfactual, outcome each time it is in operation, the surface or actual events need not be regular or repeatable, as other contingently related causal mechanisms will be affecting them. Consequently causal mechanisms only have the tendency or possibility of producing regular, repeatable qualitative or quantitative economic events denoted as demi-regularities.

Structure is distinct from causal mechanism in that it helps shape or govern the surface event but does not itself cause it. Otherwise it is similar to causal mechanism in that it is relatively enduring in form and organization, irreducible, and governs transfactually. The structures of an economy have two additional properties: (1) being sustained, reproduced, or slowly transformed by economic and social events that are caused by human action through their causal mechanisms and (2) its form and organization have a historical character. Moreover, all economic

[2]This property of causal mechanisms obviates the need for an inductivist approach for theory creation. [Sayer, 1992]

[3]Thus a causal mechanism fulfills the critical realist's intrinsic condition of closure.

structures are social structures in that they represent and delineate recurrent and pattern interactions between economic agents or between economic agents and technology and natural resources. Thus concrete representation of economic structures include economic and social norms, practices and conventions, social networks such as associational networks or interlocking directorates, technological networks such as the production and cost structures of a business enterprise or the input-output structure of an economy, and economic, political, and social institutions such as markets or the legal system. As distinct entities, neither causal mechanisms or structures can separately cause and govern economic events. Rather they must work jointly where the structures provide the medium or the conditions through which causal mechanisms via human agency act. Thus, as long as they remain enduring, there will be a tendency for regular and repeatable economic events to occur. [Lovering, 1990; Kanth, 1992; Sayer, 1992; Lloyd, 1993; Lawson, 1994, 1997a and 1997b; Ingham, 1996; Lawson, Peacock, and Pratten, 1996; Wellman and Berkowitz, 1997; Fleetwood, 1998; Hodgson, 1998; Joseph, 1998; Dow, 1999; Downward, 1999; and Rotheim, 1999]

Epistemological Relativism

Because reality is transmutable, knowledge of it is historically contingent; hence there are no eternal 'truths' and knowledge is always in the process of being created. Consequently, what is known about economic events of the past need not be knowledge about current or future economic events, with the result that economists are continually engaged in creating

knowledge. This view that knowledge of economic events is historically contingent is called epistemological relativism. The implication of this position is that explanations or theories are also historically contingent. Consequently, there are no ahistorical laws, such as the law of demand, or stylized facts. Moreover, it is not possible to make ahistorical generalizable statements, that is to generalize beyond the historical data and context in which the statements are embedded. A second implication is that theories must be in some sense grounded in historical data in order to tell historical stories explaining historical economic events. The third implication is that the difference between good and not-so-good theories is how well their explanations correspond to the historically contingent economic events being explained. The final implication is that the continual creation of knowledge is a social act carried out by informed actors, that is by Post Keynesian economists, in a socially, historically contingent context. [Sayer, 1992; Lawson, 1997a; Pratt, 1995; and Yeung, 1997]

Methodological Foundations: Method of Grounded Theory

To develop a theory which explains historically contingent economic events, the critical realist Post Keynesian needs to identify and delineate the structures, causal mechanisms, and causal processes producing it. The methodological guidelines suggested by many critical realists to develop theory involves first a theoretical-abstract re-description of the event based on existing qualitative and quantitative material; followed by explaining the event by postulating and identifying the structures

and causal mechanisms producing it;[4] and ending with the theory being checked empirically. However, this is too vague to be used as a way to identify causal mechanisms and structures. In addition, it does not indicate how the causal processes should be delineated and articulated, that is the analytical and literary form the theory should take. Finally, the guidelines suggest that the theory might contain fictitious or empirically ungrounded components derived from analogies and metaphors. A better methodological guideline for Post Keynesians which is also consistent with critical realism and epistemological relativism is the method of grounded theory.[5] [Lawson, 1996 and 1997b; Sarre, 1987; Sayer, 1992; Pratt, 1995; Boyle and O'Gorman, 1995; Yeung, 1997; Runde, 1998; and Downward, 1999]

The method of grounded theory can be described as a process by which theory is 'directly' developed from data and that data collection, theoretical analysis, and theory building proceed simultaneously--see Chart I. The use of the method begins with the economist becoming familiar with, but not dogmatically committed to, the relevant theoretical, empirical, and historical literature which might assist them in approaching the data. Then, he engages in 'field work' by collecting comparable data from economic events

[4]Critical realists call this retroduction.

[5]Grounded theory as such was first delineated by Barry Glaser and Anselm Strauss (1967) and then subsequently developed by them and others--see Strauss (1987) and Strauss and Corbin (1990 and 1994). Similar epistemological guidelines going by the names of holism, pattern model, method of structured-focused comparison, and participant-observer approach using case study method were also proposed and developed at roughly the same time--see Diesing (1971), Wilber and Harrison (1978), George (1979), and Fusfeld (1980).

from which a number of specific categories or analytical concepts and their associated properties are isolated and the relationships between them identified. With the concepts and relationships empirically grounded in detail, the economist then develops a

Chart I

Schema of the Grounded Theory Method

Pre-existing ideas and concepts

Data collected with constant comparisons

Conceptual categories identified from the data

Core categories identified

Core categories developed

Substantive theory/basic social process

Formal theory

theory in the form of a complex analytical explanation based on the data's core concepts. An essential property of the theory is that it explains why and how the sequence of economic events represented in the data took place. In constructing the empirically grounded theory, the economist does not try to simplify; rather he endeavors to capture the complexity of the data by empirically establishing many different secondary concepts and relationships and weaving them together with the core concept into structures and causal mechanisms. This ensures that the resulting theory is conceptually dense as well as having broad explanatory power. The process of

selecting the core concepts and developing the theory brings to light secondary concepts and relationships which also need further empirical grounding as well as suggesting purely analytical concepts and relationships which need empirical grounding if they are to be integrated into the theory. After the theory is developed, the economist will evaluate it by seeing how it explains actual economic events.

Let us consider aspects of the grounded theory method in more detail. First, the collection of data is a complex task which involves not only collecting the data itself, that is counting up pieces of data, but also constantly comparing, analyzing, and interpreting the data collected while simultaneously organizing it into conceptual or generalized categories. The categories which emerge come from the data itself, not after it is all collected, but in the process of collecting it.[6] Consequently each category is tied to or empirically grounded in its data; and since the data is real, observable, so is the category.[7] Moreover, since the data lies in time and history, each category is anchored in a particular historical setting. In addition, the purpose of constant

[6]What grounded theory is not about is forcing data into pre-determined set of theoretical categories; all categories have to be empirically justified.

[7]Observable data is not solely restricted to sense experience. For example, historical documents or field reports contain data which cannot be verified by the reader's sense experience. The same can also be said for oral histories which deal with past events. On the other hand, non-written data, such as informal rules, are not unobservable data in that they can be verbally articulated and hence written down, or filmed and then identified as a later point in time. Thus all data is observable, although the sources and medium in which they exist varies; to be unobservable in this sense is to be no data at all.

comparison of the data is to see if it supports and continues to support emerging categories.[8] Thus, each category which becomes established will have been repeatedly present in very many comparable pieces of data.[9] In this way individual pieces of data which would not be significant on their own obtain a collective significance. The categories which emerge are of two types--one that is derived directly from the data and the other which is formulated by the economist. The former tend to denote data self-description and actual processes and behavior while the latter tend to denote explanations.[10] In addition, each category will have properties also derived from data in the same manner, that is using constant comparisons. The more properties a category has the denser it is. Hence a grounded theory category is not an abstraction; instead of ignoring the complexity of reality, it embraces it.

When it becomes obvious to the economist that the data being collected is not increasing the number of properties of a specific category, he will engage in theoretical sampling. This involves sampling or collecting data which is expected to increase the

[8]Constant comparison can also involve replicating previous studies to see how robust they are.

[9]Another way of putting this is that a category represents a 'pattern' which the economist has recognized in the data.

[10]In either case, the language used to describe the categories may be quite different from the existing theoretical language. In particular, the building of a grounded theory may require the creation of a new language and discarding old words and their meanings. On the other hand, the language used may come directly from the data collected and/or from commonly used language (which is generally not theoretical language). [Konecki, 1989; and Coates, 1996]

density of a specific category by producing more properties as well as increasing the number of pieces of data supporting each of the properties.[11] Theoretical sampling and collection of data for a single category as well as for a range of categories continues until theoretical saturation is reached, that is when no new data regarding a category and the relationships between the categories continue to emerge.[12] The significance of this empirical grounding process is that the categories cannot be falsified since they are derived from the data. If the data collection and theoretical sampling is incomplete then the categories will not be adequately dense and relevant categories might be missing; but they are not empirically falsifiable. On the other hand, if future data emerges which the empirical grounding process shows does not fall into a previously existing category, then that category is not relevant, but it is not empirically falsified.

Once the real, observable categories have been delineated and grounded, the economist, perceiving a pattern of relationships among them, will classify some directly as economic structures and others as components of economic structures. In addition, other categories will be weaved together centered on a particular human action and a set of outcomes. The resulting structures and causal

[11]The point of theoretical sampling is to specifically find data make categories more dense, more complex. Since the aim of the grounded theory method is to build theories based on data collected, the issue of generalizing in a statistical sense is not relevant. Thus theoretical vs. statistical sampling has no importance for the method. [Glaser and Strauss, 1967; and Corbin and Strauss, 1990]

[12]A saturated category is not a function of the number of pieces of data, as it may become saturated after only a small portion of the available data has been analyzed.

mechanisms will be real, observable as opposed to unreal, metaphoric, and hidden. That is, to observe a structure or causal mechanism is to observe the working together of its observed concrete components, including the human actions involved, much as a family is observed through the interaction of its members. Hence structures and causal mechanisms are real, observable precisely because their categories are real and observable.

From the causal mechanisms identified, one will be selected as the primary causal mechanism around which the structures and secondary causal mechanisms with their outcomes are arranged.[13] Thus the primary causal mechanism becomes the story line to be analytically develop in conjunction with the economic structures and secondary causal mechanisms. More specifically, the story line is not a description of present or a recounting of past unique and/or demi-regular economic events, although both techniques of presenting surface economic events are included in the story line; rather it is a complex analytical explanation of those described or recounted events.[14] Even though the basic story line is decided upon, its development will involve further theoretical sampling and collecting of data as new properties for the existing structures and causal mechanisms emerge. Consequently, the story line evolves into an emerging economic theory while at the same time becoming

[13]Criteria for selecting the primary causal mechanism from among a number of possible causal mechanisms include (1) that it appears frequently in the data as a cause of the outcomes; (2) that it has clear implications for a more general theory; and (3) that it allows for complexity. [Strauss, 1987; and Runde, 1998]

[14]The story line can also be described as a narrative, which is a blend of explanation and recounting or description. [Megill, 1989]

increasingly more dense (in terms of properties and empirical grounding) as well as increasingly complex. The complexity arises because of the variations in the categories and in the properties of the categories which make up the theory. The grounded economic theory which eventually emerges is a complex analytical explanation or interpretation of economic events represented in the data. Thus the theory is not a generalization from the data, but of the data; that is, a grounded theory does not go beyond the data on which it is based--it does not claim universality or the status of an empirical-theoretical law.[15] Being a weave of a primary causal mechanism, secondary causal mechanisms, and economic structures designed to explain real economic events in historical time, the theory also consists of real (as opposed to stylized or fictionalized) descriptions of economic events and accurate narratives of sequences of economic events. As a result, the grounded economic theory is an emergent entity, a concatenated theory, in which it is not possible to disassemble into separate parts. Hence the question of logical coherence of a deductivist kind cannot be applied to a grounded theory; instead the coherence of the theory is judged on how well its explanation corresponds to the actual historically contingent economic events.[16]

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[15]Thus, the grounded theory method is not the same as induction; and its practitioners view generalisation as a problemtic and unimportant goal and empirical-theoretical laws as not worth pursuing. [Sarre, 1987; and Sayer, 1992]

[16]The irrelevance of logical coherence means that it is not possible to deduce unknown structures and causal mechanisms from existing ones. It also suggests that attempts to discover the extent of coherence in Post Keynesian economics is misplaced effort; rather the objective should be to discover the extent to which Post Keynesian

Economic theory centered on a single primary causal mechanism is classified as a substantive economic theory since it is an explanation of a single basic economic process which occurs widely in the economy. Fom a number of substantive theories, a formal economic theory can be developed into a general or holistic theory where the relationship or pattern among the substantive theories is its analytical explanation.[17] Like in the process of grounding the substantive economic theory, the formal theory also has to be grounded. In particular, the relationships between the substantive theories which constitute the formal theory need to be grounded in data assisted and directed by theoretical sampling. Consequently, the formal economic theory is empirically specific, historically contingent, and its analytical explanations are not empirical extrapolations. As the economic world is not static, a formal theory is never complete, but undergoes continual modification with ever newer data relating to newly emerging patterns or configurations of economic reality.

There are two aspects of the grounded theory method which need further delineation. The first deals with the role of pre-existing ideas, concepts, and categories, that is the issue that all observations, data, and descriptions are theory-laden. To fruitfully use the method, the economist must become familiar with

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theory is empirically grounded.

[17]A formal grounded theory is not more (or less) abstract than a substantive grounded theory. Because a grounded theory must at all times be grounded, it can not be an abstract theory where the modifier denotes some degree of non-groundness. Hence grounded theories cannot be differentiated according to their levels of abstraction.

the contemporary theoretical and non-theoretical literature, the controversies between economists, and the relevant literature from the history of economic thought. In particular, they need to make a detailed and critical investigation of the pre-existing Post Keynesian ideas and concepts to see which lend themselves to empirical grounding. The economist also needs to be familiar with some of the empirical literature as well as with the relevant literature from economic history. By acquiring a critical awareness of the pre-existing economic theories and empirical findings, he acquires a theoretical sensitivity regarding the data and theoretical concepts he will be examining, comparing, and empirically grounding. As a result, the economist will have the ability to recognize what might be important in the data and to give it meaning as well as recognizing when the data does not support a pre-existing concept or category, requires a large or small transformation of the pre-existing concept or category, or 'produces' a new category. Thus, the grounded theory method not only recognizes that observations, data, and descriptions are theory-laden, it reinforces that latter by demanding that all economists enter into theory building as theoretically knowledgeable and aware individuals, as well as with the conviction that the building of a new substantive economic theory will most likely require them to set aside forever some of that acquired knowledge.[18] By acknowledging the issue of theory-laden

[18]By accepting that it may be necessary to cast aside previously acquired knowledged, the economist can still pursue the grounded theory method even though they may favor particular non-grounded concepts and theories.

observations while at the same time demanding that the economist be sceptical of all pre-existing theory, the grounded theory method is a highly self-conscious approach to economic research and theory building.

The second aspect deals with evaluating a grounded theory. It was noted above that, since the categories which constitute the theory are intimately linked with the data, the grounded theory itself can not be falsified. But it can be evaluated by how well it explains actual economic events, that is how well it has empirically identified and weaved together the causal mechanisms, structures, descriptions, and narrative corresponding to the economic events being explained. Consequently, a grounded theory is, in the first instance, only as good as the categories which make it up. If the data selected does not cover all aspects of the economic event(s) under investigation; if the economist compiles categories and properties from only part of the data collected or forced data into pre-determined categories; if the density of the categories is small or the relationships between categories under-grounded; and/or if the story line of the primary causal mechanism is static, terse, unable to fully integrate structures and secondary causal mechanisms, and relatively uncomplex, then it can be strongly argued that the economic theory is poor, ill-developed, and unable to provide a comprehensive explanation of economic events.[19]

[19]The often heard phrase that "all theory is in some sense unrealistic" is not applicable to grounded theories. All grounded theories are realistic in that they are grounded in every detail in data. A grounded theory may be relatively complete or a much

A second way to evaluate a grounded economic theory is to see how well it deals with new data. That is, the relatively enduring structures, causal mechanisms and their outcomes of a grounded theory are based on data collected in a specific time period. Thus, it is possible to evaluate whether they have remained enduring outside the time period by confronting them with 'new' data. If the new data falls within the existing categories and conforms with the transfactual outcomes, then the structures and causal mechanisms have governed and acted transfactually.[20] On the other hand, if the new data falls outside the existing categories and does not support the transfactual outcomes, then at least some of the structures and causal mechanisms have changed. Consequently, the existing grounded economic theory needs to be modified or replaced by a completely new one. Therefore theory evaluation in the grounded theory method is designed to check the continual correspondence of the theory with the real causes of ongoing unique and demi-regular economic events. Hence, it is essentially a positive way of promoting new theory building when the correspondence between theory and events breaks down.

The fact that a good or poor research process leads to better or worse grounded economic theories indicates that choices made by

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incomplete explanation of an economic event; but in both cases they are entirely realistic. To be unrealistic from a grounded theory perspective is to include non-grounded concepts in the theory, but then it would not be grounded.

[20]This has been called pattern-matching in that the existing theory is seen as a particular pattern of data and narrative and the new pattern of data with its narrative is compared to it to see if they match--see Wilber and Harrison (1978) and Yin (1981a and 1981b).

economists do affect the final outcome. Therefore, within the grounded theory method it is possible to have good but different substantive and formal economic theories for the same economic events. Given the same categories, a different choice of a primary causal mechanism will produce a different theory; or if the same primary causal mechanism is used but integrated with different structures and secondary causal mechanisms a different theory will also be produced.[21] One way to chose between the two theories is to compare their narratives of the actual economic events. A second way is to collect new data and see which of the theories it supports. While the new data may support one of the of the two theories, the grounded theory economist would not be surprised if it promoted modifications and reformulations of existing categories and substantive theories or the creation of new ones altogether. Thus, new data does not necessarily decide between existing theories, instead it may set the process in motion to create a new grounded theory. [Annells, 1996; Glaser and Strauss, 1967; Conrad, 1978; Turner, 1981 and 1983; Charmaz, 1983; Strauss, 1987; Konecki, 1989; Strauss and Corbin, 1990 and 1994; Corbin and Strauss, 1990; Glaser, 1992; Finch, 1998 and 1999; Bigus, Hadden, and Glasner, 1994; Tosh, 1991; Diesing, 1971; Wilber and Harrison, 1978; Fusfeld, 1980; Gruchy, 1987; Wisman and Rozansky, 1991; Boylan and O'Gorman, 1995; Atkinson and Oleson, 1996; and Sayer, 1992]

Methodological Issues

[21]The expectation of the grounded theory method is that the economist will seriously consider alternative combinations of structures and causal mechanisms before settling for a theory.

Data and Case Study

Originally, the grounded theory method was developed as a way to utilize qualitative data to build a theory; however, the use of quantitative data was not excluded. As economists are interested in developing historically grounded explanations of past and present economic events, their possible sources of data include all existing written, recorded, physical, and quantitative records. Since existing data sources provide an incomplete record of economic events, the economist must also utilize different research strategies to create them, such as surveys, interviews and oral statements, ethnographic and industrial archaeology studies, questionnaires, mapping, direct observation, participation in activities, and fieldwork. For example, when it is important to explain how and why particular business decisions are made and who made the decisions, the economist will need to create narrative accounts of relevant lived-historical experiences embedded within the cultural milieu of particular business enterprises. Thus they must examine letters and other written documents, undertake interviews and other oral documentation, and possibly engage in participant observation. Therefore, it is expected within the grounded theory method that the economist engage in both activities, especially as theoretical sampling impels him to obtain particular kinds of data.[22] What constitutes appropriate data depends on the object of inquiry; but it is important that much of

[22]Created data does not pre-exist as some sort of unacknowledged sense experience or as unobservable data; rather being produced, it has no past.

the data deals with process, intentionality and their outcomes. Consequently, categories, hence economic structures and causal mechanisms, are grounded in both qualitative and quantitative data.

The conceptual categories which make up grounded theories are based on an array of comparable data generated by case studies. A case study is defined as an in-depth, multifaceted investigation of a particular object or theme where the object or theme gives it its unity. The object or theme could be historical or a current real-life event and the study relies on several kinds of qualitative and quantitative data sources. For example, the theme of a case study could be the pricing procedures used by business enterprises; consequently a case study could be the collection, comparison, categorization, and tabulation of pricing procedures obtained from various empirical studies along with a critical narrative that examines and integrates the data.[23] Thus, the case study approach is the principle method of qualitative and quantitative data collection and comparison used to develop categories, structures, and causal mechanisms. Moreover, by providing information from a number of different data sources over a period of time, it permits a more holistic study of structures and causal mechanisms.

A case study does not stand alone and cannot be considered alone; it must always be considered within a family of comparable case studies. If the economist is faced with a shortage of case studies, the response is not to generalize from them but to undertake more case studies. Moreover, theoretical sampling is

[23]For example, see Lee (1994 and 1995).

specifically carried out through case studies. In this case, the economist makes a conscious decision to undertake a particular case study in order to increase the empirical grounding of particular categories.[24] Thus a case study could be of an individual business enterprise and the theme of the study could be to delineate the complex sets of decisions regarding pricing, production, and investment and to recount their effects over time. On the other hand, it could be concerned with a particular theoretical point, such as pricing, examined across many different case studies of different enterprises. The different cases not only provide comparable data for comparisons but also descriptions of structures and causal mechanisms and a narrative of the causal mechanism in action over time. A third type of case study is one which explains through an analytical story or narrative an historical or current event. The story would include structures and causal mechanisms which, when combined with the history or facts of the event, would explain how and why the event took place. Hence, this type of case study is both a historical and theoretical story, an integration of theory with the event. Consequently, it provides a way to check how good the theory is and, at the same time, contributes to its grounding and extension. A robust substantive theory is one which can be utilized in an array of case studies of historical and current events. [Smith, 1998; Stake, 1998; Eisenhardt, 1989; Orum, Feagin, and Sjoberg, 1991; Wieviorka, 1992; Vaughan, 1992; Finch,

[24]It is important to realize that a case study which involves the replication and re-evaluation of a previous case study is theoretical sampling. In this instance, the researcher is re-examining an existing case study to see how robust its data and results are.

1999; Yin, 1981a, 1981b, and 1994; George, 1979; Glaser and Strauss, 1994; and Sayer, 1992]

Mathematics and Economic Models

Mathematics and economic models are useful as tools which can contribute to the development and evaluation of causal mechanisms and grounded theory. Their uses are, however, restricted since the tenets of critical realism and the method of grounded theory prescribe that the type of mathematics used and economic models constructed are derived from (as opposed to being imposed upon via analogy or metaphor) the empirically grounded theories being developed. To translate a grounded theory into an economic model, its structures and causal mechanisms have to be translated as far as possible into mathematical language where each mathematical entity and concept is concretely grounded. As a result, the mathematical form of the model is determined and constrained by the empirically grounded structures and causal mechanisms, and hence is isomorphic with the theory. This means that the model's mathematical form is not derived by analogy or based on a metaphor, both of which are not constrained by reality; that the model is an accurate, but reflective, description of the grounded theory and therefore not a simplification of it;[25] that the relationships between the variables in the model are derived from the empirically grounded theory as opposed to being assumed fictions; that the same model is used in both theoretical and applied work; and that the

[25]A model which simplifies a grounded theory does not accurately and concretely denote the structures and leaves the causal mechanisms under-specified, under-embedded and thus ill-defined.

different economic theories have different models. Consequently the mathematical-theoretical arguments and numerical outcomes derived from the model are also similarly determined and constrained. In particular, the outcomes of the model are not logical deductions from given axioms or unique (or multiple) mathematical solutions; rather they are non-logical empirically grounded outcomes. Such mathematical-theoretical arguments and models derived from empirically grounded theories are characterized as rigorous and non-deductive.[26]

An example of a rigorous, non-deductive economic model is a price model based on the input-output table of an economy (see Lee, 1996 and 1998). The table represents a set of structures which can be translated into matrix algebra, while the causal mechanism is the pricing procedures used by business enterprises. Thus the price model of the economy has the concrete and constrained mathematical form of $[R_d][Mp_t + Lw + d] = p_{t+1}$. Each mathematical component of the model is empirically grounded; the relationships between all the model's components are specified by the causal mechanism; and the model's outcomes are empirically grounded prices. Moreover, the mathematical-theoretical arguments derived from the model, such as the existence and implications of the commodity residual, are constrained by its empirical groundness. Thus the empirically grounded price model can be used in applied work as well as to pursue particular theoretical issues.

[26]The contrast to a rigorous and non-deductive mathematical argument and model are those based on non-grounded axioms and whose non-grounded outcomes are logically and consistently derived from the axioms.

Reasons for pursuing economic modeling are threefold. One common use of economic modeling is as an analytical-narrative summary of the economic theory for pedagogical purposes and for discussing economic policy and its possible impact on economic events. In particular it can be a way of visually picturing the economy and its evolving moving outcomes. Economic models can also be used to examine and evaluate propositions found in the theoretical literature. That is, the mathematical-theoretical arguments derived from rigorous economic models can be used to examine whether particular mathematical-theoretical propositions associated with different economic theories and models are also rigorous or have no empirical grounding hence real world existence. Finally, modeling can be used to explore the feasibility of weaving together a particular set of structures and causal mechanism, to see if the theory has 'unexpected outcomes' which need to be empirically grounded, to see whether the resulting outcomes of new data conform to the expected outcome patterns, and to explore the impact of changing structures and causal mechanisms on economic outcomes. In this last case, for example, if a structure is altered so that the economic model produces some different outcomes, those outcomes can then be compared to actual outcomes. If they seem to be the same, then one can considered that the structures of the theory need to be re-examined and the process of grounding the theory renewed. [Weintraub, 1998; Israel, 1981 and 1991; Boylan and O'Gorman, 1995; Boland, 1989; and Carrier, 1992]

Econometrics

The tenets of critical realism and the grounded theory method also constrain econometrics to use as a statistical tool that can assist the development and delineation of causal mechanisms and to evaluate the adequacy of grounded economic theories.[27] The econometric model, as with economic models, will include components for the quantitative representation of structures as well as a components for the causal mechanism; and its particular statistical form will be determined by the causal mechanism determination of the outcomes. In the process of transforming the empirically grounded categories into an economic theory, the economist will provisionally identify structures and causal mechanisms with particular transfactual outcomes. To aid him in his identification, the economist may subject the causal mechanism and its outcomes to econometric testing. If the tests support the existence of the causal mechanism's transfactual outcomes, then the empirical grounding of the causal mechanism is enhanced. Failure of the tests to support such outcomes would, on the other hand, indicate that the causal mechanism and its associated structures are inadequately developed and needed further development. Assuming the testing a success and in light of the other qualitative and quantitative empirical support, the economist can provisionally identify the causal mechanism and its transfactual outcomes. At this stage, he can engage in further theoretical sampling to see if additional qualitative and quantitative evidence

[27]Econometric testing can also be used to evaluate particular claims in the historical literature regarding causal mechanisms and transfactual outcomes--see Lee and Downward (1999) for a particular case study.

support it; and econometric testing can again be utilized in this context. Econometric testing is not about future predictions, as the economy is open and always changing, but about understanding the relationship between the causal mechanism and its transfactual outcomes. If econometric testing of new data fails to support the causal mechanism and its outcomes, then the implication is that the structures and causal mechanisms have changed; it then becomes necessary to re-ground them.

Econometrics is also useful for evaluating grounded theories which may be associated with demi-regularities. In this case, the economic theory will be modeled so as to clearly include all the structures, the primary causal mechanism, and the secondary causal mechanisms. If the testing is a success, then it can be more strongly argued that there exists a demi-regularity associated with the primary causal mechanism of the theory. But if the testing is not successful, then all that can be said is that it is less likely that the theory has a demi-regularity. Hence econometric testing provides a way to evaluate the continual correspondence of the theory with the real causes of ongoing economic events. By doing so, it contributes to the promotion of new theory building when the correspondence between theory and events break down. [Lawson, 1989; Mitchell, 1991; Downward, 1996 and 1999; Downward and Mearman, 1999; Lee and Downward, 1999; Mearman, 1998 and 1999; and Yeung, 1997]

Historical Economic Theory and Post Keynesian Microeconomics

The economic theories that emerge from the grounded theory method are embedded in history; they are derived from and are designed to explain the process of economics events represented in the historical data. In addition, the narrative components of the theories convey the feelings and understanding of the historical economic events being explained. Thus, grounded economic theories are historical economic theories explaining historical economic processes in the context of relatively stable economic structures and causal mechanisms. However because reality is transmutable, the structures and causal mechanisms will change over time, producing as a result changes in the theories. Hence historical economic theories are historically contingent theories. Moreover, given the tenets of critical realism, the surface and actual economic events are indistinguishably merged together in the theories into a single historical narrative. Finally, since historical economic theories are based on the common sense foundations of Post Keynesian economics and hence on the Post Keynesian meaning of economics, they are theories developed from a Post Keynesian viewpoint providing a Post Keynesian interpretative analysis of historical or current economic events. [Tuchman, 1998]

The general implications of Post Keynesian historical economic theories for Post Keynesian microeconomics are twofold. On the one (more negative) hand, ahistorical, atemporal entities and theoretical concepts, such as stylized facts, short and long period positions, equilibrium (and disequilibrium), market clearing, or maximization are not be part of the theoretical content since they do not emerge as categories in the historical data. Moreover,

theoretical concepts which are not empirically grounded, such as utility, asocial preferences, consumer and market demand curves, scarcity and scarce factor inputs (as defined in neoclassical economics), prices as an allocation of resources mechanism, and non-socially embedded conception of the market and market activities are excluded as well. Similarly, non-rigorous economic models, such as production-price models where labor is the only input, with their mathematical solutions or non-grounded outcomes are not part of Post Keynesian microeconomics. In addition, atemporal analysis of such microeconomic areas as production, costs, demand for goods and services, and the determination of the profit mark up combined with the use of atemporal diagrams and models are illegitimate on their own, unaccompanied by temporal-historical analysis, diagrams, and models. Finally, the objective of Post Keynesian microeconomics is not to find and enshrine non-existing ahistorical first principles or primary causes.

On the other (more positive) hand, historical economic theories require that the theoretical content of Post Keynesian microeconomics include the development and delineation of historically grounded structures of the economy, such as the structure of wants, resources, production, prices, classes, and institutional controls (see Means, 1939); the use of rigorous models with grounded non-logical outcomes in historical time; and historically grounded causal mechanisms located in the business enterprise, market institutions, and social institutions. In particular the determinants of the allocation of resources are not located in the market or carried out by the invisible hand, but

found in the investment decisions made by individuals within enterprises and other private and public institutions. Moreover, because economic activity is socially embedded, it is not possible to differentiate between positive and normative economics. Consequently the objective of Post Keynesian microeconomics is not simply to explain the micro-workings and micro-evolution of historically contingent capitalist economies using concepts which are empirically grounded. The explanations must also be socially and politically embedded; hence they must contribute to issues concerning social justice and well-being, that is the common good.

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