The background of the cover is a complex architectural blueprint in white lines on a dark teal background. It features various geometric shapes, including circles, rectangles, and lines, suggesting a technical or engineering drawing. The lines are of varying thickness and some form a grid or pattern.

Routledge Advances in Heterodox Economics

MICROECONOMIC THEORY

A HETERODOX APPROACH

Frederic S. Lee

Edited by Tae-Hee Jo



Microeconomic Theory

Microeconomic Theory: A Heterodox Approach develops a heterodox economic theory that explains the economy as the social provisioning process at the micro level. Heterodox microeconomics explores the economy with a focus on its constituent parts and their reproduction and recurrence, their integration qua interdependency by non-market and market arrangements and institutions, and how the system works as a whole.

This book deals with three theoretical concerns. Due to the significance of the price mechanism to mainstream economics, a theoretical concern of the book is the business enterprise, markets, demand, and pricing. Also, since heterodox economists see private investment, consumption, and government expenditures as the principal directors and drivers of economic activity, a second theoretical concern is business decision-making processes regarding investment and production, government expenditure decisions, the financing of investment, the profit mark-up and the wage rate, and taxes. Finally, the third theoretical concern of the book is the delineation of a non-equilibrium disaggregated price-output model of the social provisioning process.

This book explores the integration of these various theories with a theoretical model of the economy and how this forms a theory that can be identified as heterodox microeconomics. It will be of interest to both postgraduates and researchers.

Frederic S. Lee was Professor of Economics at the University of Missouri-Kansas City, USA until he died in 2014. He played an essential role in developing heterodox microeconomic theory and in building a global community of heterodox economists over his thirty-year professional career. He was the founding editor of *Heterodox Economics Newsletter* (2004–2009) and the editor of *American Journal of Economics and Sociology* (2009–2013). Lee published over 172 journal articles, book chapters, and books, including *Post Keynesian Price Theory* (1998), *A History of Heterodox Economics* (2009), and *Handbook of Research Methods and Applications in Heterodox Economics* (2016).

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Routledge Advances in Heterodox Economics

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Preface

The origin of this book can be traced back to my graduate days at Rutgers University (1978–1981) when I thought about writing my dissertation on Post Keynesian microeconomics. This grandiose project was quickly reduced to writing a historical and comparative analysis of the administered, normal cost, and mark-up price doctrines; and even this project was further reduced so that my eventual dissertation was on ‘Full Cost Pricing: An Historical and Theoretical Analysis’ (1983). After completing it, I spent the next fifteen years working on the administered and mark-up price doctrines; my price doctrines project was published in 1998 as *Post Keynesian Price Theory*. However, I never gave up on my grandiose project of writing a book that would set out Post Keynesian microeconomics much in the same way that neoclassical microeconomics is delineated in advanced textbooks and scholarly monographs. In particular, I envisioned Post Keynesian microeconomic theory as a complete alternative to neoclassical microeconomics. My first attempt at such a book was a set of lecture notes I wrote for a course on the introduction to microeconomics that I taught in 1979–1980 while still a graduate student at Rutgers. The notes dealt with production, cost, and pricing of the business enterprise, the determination of market prices, input-output framework of the economy, Sraffian price equations, convergence of market prices to long-period prices, distribution, and the wage-profit frontier. The distinction between Post Keynesian and Sraffian economics, which much is made of today, simply did not exist for me or for those few others, such as the late Alfred Eichner (who was my dissertation advisor and mentor), working in Post Keynesian microeconomics. In particular, at this time Eichner had begun working on his ultimately unfinished text, *The Macrodynamics of Advanced Market Economies* (1987), in which the microeconomics was an infinitely more developed but conceptually not much different than my notes.

While Eichner maintained this particular Post Keynesian-Sraffian vision of microeconomics, I started deviating from it while still at Rutgers. As I was energetically discussing the convergence of market prices to long-period prices one day with Nina Shapiro (also on my dissertation committee), she calmly asked me, “How do I know that they will converge?” as she was unconvinced by the mathematical argument I was putting forth. With the question posed, the genie was out of the bottle, at least for me, for if convergence means anything in this context, it

must mean the movement of actual market prices in historical time to long-period prices. But in historical time, anything can happen and generally does. Hence, there is no necessary reason for convergence, which in turn means that long-period positions have no connection to real world economic activity and, therefore, cannot theoretically contribute to explaining it. Consequently, I rejected long-period positions and, to be consistent, short-period positions as well. Moreover, my concurrent research on full cost/normal cost pricing led me to reject the concept of market clearing and to replace it with the concept of a non-clearing market where, in the context of a circular production economy, there are continuous market transactions in historical time so the market is never cleared. Stuck in historical time, I began articulating a microeconomic theory without equilibrium, long- and short-period positions, market clearing, and any notion of certainty (see Lee 1984; 1985; 1994; 1996; 1998). But this did not mean that I rejected all of the Sraffian contributions: the disaggregated input-output representation of production and the economy, circular production and the commodity residual, interdependent price equations, and the possibility of prices being determined independent of supply and demand curves remain important components of my work on microeconomic theory. For example, my work on production and costs of the business enterprise (Lee 1986) was designed to be compatible with input-output models.

Influenced by Paul Davidson and Jan Kregel (both of whom I took courses from while at Rutgers) combined with my research on Gardiner Means meant that I had almost no choice but to explicitly embed my microeconomic theory in a monetary production framework. While this dissolves the wage-profit frontier of a non-monetary Sraffian model, it does not do away with the issue of how the surplus goods and services get produced and then divided up between the various classes. However, adopting the view that a capitalist economy is a non-ergodic, historically grounded, monetary, circular, and surplus production economy generated two major interrelated theoretical issues blocking my quest to produce an alternative microeconomic theory. The absence of demand curves and the principle that markets clear implied that prices do not coordinate economic activity or allocate inputs among productive activities – so I was faced with questions: What do prices do? What are markets? How are market transactions regulated? And what does coordinate economic activity? Drawing on my dissertation and early work (Lee 1984; 1985), the answer I came up with to the first question is that prices reproduce the business enterprise which quickly led me to adopt the Marxian view and notation of $M-C-M'$ as part of its characterization and then later adding to it the institutionalists' notion of the going concern. The answers to the next two questions – markets are social institutions and transactions are regulated by cooperation among business enterprises – came over a fifteen-year period as I examined business histories of trade associations and enterprises, became engrossed in the workings of the US gunpowder market and trade association for the period of 1865 to 1890, and stumbled upon the economic sociology literature concerning markets as social structures and business networks. What became apparent to me is that my evolving views of markets and transactions were old hat to institutionalists and in fact almost indistinguishable from long-established

institutionalist arguments. If only the Rutgers economics department had a Walton Hamilton or at least a Bill Dugger! The answer to the last question was, as my Post Keynesian background would suggest, the production of the surplus in the form of investment, consumption, and government goods and services. It is business production, investment decisions, and government expenditure decisions that create and coordinate economic activity, and these decisions are reached largely independent of concerns about prices, rates of profit, or interest rates (which imply that cost minimization, profit maximization, and production-cost duality have no meaning).

The second related issue concerned the theoretical implications of production as a circular and surplus producing process. The first and most significant implication is that the neoclassical concept of scarcity had no definitional, organizing, or other meaningful role in the microeconomic theory I was building. This fundamental theoretical rejection of neoclassical theory, while common among heterodox economists of the 1970s who took the time to examine Sraffa, is unfortunately ignored today by younger heterodox economists. Without scarcity defining and grounding the method used to explain the social provisioning process, then prices are no longer scarcity indexes and, most importantly, the economics of the social provisioning process ceases to be the study of the allocation of scarce resources among competing ends. Instead, as elegantly argued by David Levine (1978) and Heinrich Bortis (1997), production and distribution are social activities, and the study of social provisioning involves the study of social relationships, not theoretically non-existent scarce resources. Consequently, human activity and agency in the guise of acting persons (drawn from social economics) underpin all economic activity and social relationships, social organizations, and established patterns of social activity (or institutions as institutionalists would say) dictate the particular forms economic activity takes. That enterprise and market activities of buying, selling, hiring, firing, producing, investing, and innovating are clearly social activities – that is, combinations of social relationships and agency in action – do not, however, mean that there is only one possible way to delineate them, such as Marxian value theory. Brought up on the Classical-Dobbian-Sraffian view of the labor theory of value, I dismissed it (but not the Marxian concern with the social) and decided to stay in the ‘objective’ world of commodities. This decision was reinforced by my Post Keynesian background in which investment and government expenditures generate profits (not the exploitation of labor) as well as coordinate economic activity. But this world of commodities was a by-product of social activities and this I felt was both the central organizational and defining feature of the microeconomic theory I wanted to develop. Yet, how to develop such a theory was, for a long time, a puzzle to me.

Dismissing short- and long-period positions, equilibrium, optimality, minimization, maximization, scarcity, and traditional value theory as central organizing features for the theory, what I wanted to develop was, in hindsight, a drawn-out debate I was having with myself over its appropriate methodological foundations (although for a long time I viewed it strictly in terms of theoretical rejection). When I moved to the United Kingdom in 1990, the British Marxists and Post

Keynesians were engaged in methodological discussion over critical realism that simply did not exist in the United States at that time. Not being terribly interested in methodology or understanding much of the debate in any case, I just ignored it. But then Paul Downward wrote a critique of my work on pricing (Downward and Reynolds 1996) using fancy words, such as open-system theorizing and process-truth, that I did not understand. But I knew our work on pricing was compatible and therefore was greatly puzzled by his comments. Then one day I got in an extended discussion with Steve Fleetwood (my colleague at De Montfort University) over history versus critical realism; and in the end, he convinced me that methodology was important and that critical realism was the appropriate ontological basis of the microeconomic theory I wished to write. This led me to do further research on the methodology of theory creation and the end result was the adoption of the research strategy of the grounded theory method. With the critical realism-grounded theory approach, it was now possible to delineate a microeconomic theory organized around social activities and which clearly contributed to explaining the social provisioning process of a capitalist economy.

The diverse heterodox influences on my thinking and theorizing since my first lecture notes on microeconomics has transformed what initially was a Post Keynesian approach into a heterodox one. Marxian, institutional, and Sraffian influences combined with Post Keynesianism, critical realism, and social economics mean that the microeconomic theory delineated in this book has gone through a transformational synthesis that makes it an emergent heterodox theory, albeit only a provisional one. This has two implications. The first is that the integrative approach produces arguments that do not include or are critical of theoretical concepts and arguments that are cherished by many heterodox economists. Consequently, when some of the material in the book, such as the heterodox theory production and costs for the business enterprise, was submitted to heterodox journals for publication, the referees quickly condemned and dismissed it. Of course the critics never actually produce an alternative heterodox theory of production and costs but continue to rely on neoclassical production and cost theory. Secondly, the microeconomic theory presented in the following pages is incomplete because the possible contributions of ecological and feminist economics as well as other heterodox approaches are largely absent, and because not all subject areas are covered, most notably distribution of income and workplace control. Their absence in the book is not due to unimportance or irrelevance on their part, but to recognition by me that my grandiose project is indeed too grandiose for me to complete. The omissions I hope will attract brash heterodox economists to complete what I started if not dramatically develop and extend it. For the success of my book is not to be measured in the number of copies sold or the number of citations in journal articles, but in how quickly it gets superseded. As Eichner made quite clear to me through his own actions, it is not so much what I write that is important, but that what I write opens opportunities for other economists to make contributions to the development of heterodox economics.

In addition to the above named economists, there are many others whose comments and support have made this thirty-five year journey possible: Steve Dunn, Peter Earl, Stephanie Kelton, John King, Marc Lavoie, Warren Samuels, Andrew Trigg, my graduate students at the University of California-Riverside who kindly let me learn Sraffa while I taught it to them, and my students at De Montfort University and University of Missouri-Kansas City who have suffered through my lectures which are the basis for this book. Taking the road less traveled is an intellectually and emotionally difficult journey. With the support of my wife, Ruth, the journey was possible; without her there would have been no journey at all.

Lastly, earlier versions of several chapters have been published in academic journals and books. They have been amended or updated for the present book.

Chapter 1 includes material that originally appeared in Lee, F. S. (2002), "Theory Creation and the Methodological Foundation of Post Keynesian Economics," *Cambridge Journal of Economics* 26 (6): 789–804; and Lee, F. S. (2016), "Critical Realism, Method of Grounded Theory, and Theory Construction" and "Modeling as a Research Method in Heterodox Economics," in *Handbook of Research Methods and Applications in Heterodox Economics*, edited by F. S. Lee and B. Cronin, 35–53, 272–285, Cheltenham: Edward Elgar.

Chapter 2 includes material that originally appeared in Lee, F. S. (2011), "Modeling the Economy as a Whole: An Integrative Approach," *American Journal of Economics and Sociology* 70 (5): 1282–1314; and Lee, F. S. and T.-H. Jo (2011), "Social Surplus Approach and Heterodox Economics," *Journal of Economic Issues* 45 (4): 857–875.

Chapter 4 includes material that originally appeared in Gu, G. C. and F. S. Lee (2012), "Pricing and Prices," in *Elgar Companion to Post Keynesian Economics*, 2nd edn, edited by J. E. King, 456–462, Cheltenham: Edward Elgar.

Chapter 6 includes material that originally appeared in Lee, F. S. (2012), "Competition, Going Enterprise, and Economic Activity," in *Alternative Theories of Competition: Challenges to the Orthodoxy*, edited by J. K. Moudud, C. Bina, and P. L. Mason, 160–173, London: Routledge; and Lee, F. S. (2013), "Post-Keynesian Price Theory: From Pricing to Market Governance to the Economy as a Whole," in *The Oxford Handbook of Post-Keynesian Economics*, Vol. 1, edited by G. C. Harcourt and P. Kriesler, 467–484, Oxford: Oxford University Press.

Chapter 7 includes material that originally appeared in Lee, F. S. (2012), "Heterodox Surplus Approach: Production, Prices, and Value Theory," *Bulletin of Political Economy* 6 (2): 65–105.

Frederic S. Lee
August 2014

As Fred Lee mentioned in his preface, this book has a long history which goes back to his graduate days at Rutgers University (1978–1981) where he studied with Alfred Eichner, Nina Shapiro, Paul Davidson, and Jan Kregel – the most important figures in the formation and development of Post Keynesian economics

in the United States. In particular, it was Fred's "discovery of Alfred Eichner" in 1977 that is "the most important in my entire academic career" (Lee 2015, 318). Fred recalled in his tribute to Eichner that "he was the first economist I met who really encouraged me in my work on pricing and thought that I was not a complete fool" (Lee 1991, 26). The relationship between Fred Lee and Alfred Eichner parallels the relationship between Eichner and Joan Robinson, as Eichner dedicated his last book, *The Macrodynamics of Advanced Market Economies* (1987), to her: "To Joan Robinson who, by first putting together into a coherent whole the alternative post-Keynesian paradigm, showed us the path out of the Valley of Darkness that is the neoclassical theory." Were he alive today, Fred would have dedicated the present book to Eichner.

This book, *Microeconomic Theory: A Heterodox Approach*, is Fred's 'grandiose' project which took about forty years to come to its fruition. If he were an ordinary economist, he could have finished it in 2003 (which is the initial deadline of the manuscript under contract with Routledge, and we know that Fred was a most responsible person). Unlike most self-interested economists, he put this book aside and engaged in other works that were, he thought, more important than his own research – just to mention a few, his work on ranking journals and departments and on Research Assessment Exercise in the UK (both of which became part of his 2009 book, *A History of Heterodox Economics*), creating and editing *Heterodox Economics Newsletter*, editing *American Journal of Economics and Sociology*, managing a heterodox doctoral program at the University of Missouri-Kansas City, organizing conferences and seminars, and supervising doctoral dissertations. He undertook all these activities because he believed that there would be no demand for heterodox economists, no opportunity for students to learn heterodox economics, and hence no future of heterodox economics, if heterodox economists did not carry out what's required for the survival and reproduction of heterodox economics. Certainly, he showed through his actions and writings that neoclassical economics in which people are always self-interested and the world is self-adjusting is nothing but a fairy tale.

Until I took Fred's microeconomics course in 2003, I had no idea of what heterodox microeconomics was. Like most students then and now I was interested in macro, money, and financial crises (it was partly because I witnessed the Asian crisis in 1997 when I was a student in Korea, as those students who are now interested in macro-financial issues went through the 2007–2008 crisis and the following recession). To my surprise, for the first time in my study of economics, I found that microeconomic theory made sense to me because he provided theoretical frameworks to analyze the real world and real people that we have contact with every day, as well as how the economy is structured and managed by acting persons and organizations. More importantly, his lectures and a body of literature therein enlightened me that it is possible to develop a historically-grounded heterodox microeconomic theory that is assumed to be impossible or non-existent.

The reason I am talking about my own experience is that the primary purpose of this book is precisely to show both heterodox and mainstream economists that

heterodox microeconomic theory is possible, although it is in the process of developing like any other theory, and it offers novel explanations derived from actual history as to how the business enterprise, the state, the household, and market governance organizations make decisions and carry out deliberate actions in the uncertain and transmutable world; how those ‘micro’ decisions and actions are intertwined with ‘macro’ outcomes; and, eventually, how we analyze the capitalist economic system and its provisioning process. Fred had never claimed that his theory was “the” theory. Rather, he wanted other heterodox economists to develop a better heterodox theory by way of his own work. He would have been happy to see that his theory is criticized and improved by younger heterodox economists.

Let me describe what I have done as the editor of this book. In January 2015, I was able to see the unfinished manuscript. The first three chapters were complete. However, the following four chapters were either partly completed or roughly drafted with notes and outlines. For those incomplete chapters I utilized already published articles and book chapters of Fred’s and edited them for the sake of this book. Those reproduced materials are listed at the end of Fred’s own preface. For Chapter 8, I added the edited transcript of Fred’s last microeconomics lecture delivered at the University of Missouri-Kansas City, instead of writing the conclusion in my own words or leaving the book without a conclusion. Except for Chapter 8, all the chapters are what Fred initially planned, although I have made some minor changes and corrected obvious errors in each chapter. In addition, I have recreated or updated all the figures and tables, edited mathematical symbols and equations in order to make sure that they are used consistently throughout the book, and added an “Editor’s note” where an explanation regarding the text is necessary. I have also added two appendixes. Appendix 1 is Fred’s heterodox microeconomics course syllabus with a list of readings (last updated in 2013), and Appendix 2 is the problem set for the course. These two appendixes would help develop a heterodox microeconomics course if one wishes to do so.

Lastly, I wish to thank Ruth Lee for allowing me to edit the book and John F. Henry for correcting my errors in an early version of Chapter 8. I am grateful to Andy Humphries, Elanor Best, and Anna Cuthbert at Routledge for being patient and supportive throughout the editing process.

Tae-Hee Jo
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Notations and abbreviations

Notes: Scalars in *italic*, vectors in **bold**, matrices in UPPERCASE roman, variables in *italic*, abbreviated words in UPPERCASE or lowercase roman.

a	Vector of direct intermediate input technical coefficients
a *	Vector of intermediate input production coefficients
a _{ec}	Vector of enterprise intermediate input technical coefficients for the accounting period
<i>a</i> _k	Vector of the amounts of intermediate inputs needed to produce the maximum flow rate of output of the <i>k</i> -th plant
<i>a</i> _k *	Vector of intermediate production coefficients at <i>q_e</i> flow rate of output
a _{se}	Vector of managerial intermediate input technical coefficients in absolute amounts for the accounting period
a _{sek}	Vector of managerial intermediate input technical coefficients for the <i>k</i> -th plant in absolute amount for the accounting period
a _{sef} *	Vector of shop intermediate input production coefficients for the <i>f</i> -th production period at <i>q_e</i> flow rate of output
a _{sekf} *	Vector of plant managerial intermediate production coefficients for the <i>f</i> -th production period and <i>q</i> flow rate of output
ACSTP	Average shop technique of production
AEE	Average enterprise expenses
AOHC	Average overhead costs
APMTP	Average plant's managerial technique of production
ASE	Average shop expenses
ASP	Average structure of production
ASTP	Average shop technique of production
B ₅	Amount of banking sector liabilities paid off by ruling class households (LB _{HRC}) and the working and dependent class households (LB _{HWDC})
B' _{f1}	Portion of profits of the <i>f</i> -th production period in the <i>t</i> -th accounting period set aside for use as working capital in the next accounting period

B'_{f2}	Portion of profits of the f -th production period in the t -th accounting period set aside for expanding capacity in the next accounting period
c_{it-1}	Reduction in NEATC in the t -th accounting period due to the technically new plants introduced in the previous accounting period, $t-1$
CETP	Cost of the enterprise technique of production
CSTP	Cost of the shop technique of production
d_i	Depreciation pricing coefficient
\mathbf{d}	Vector of depreciation pricing coefficients
D_E	Depreciation of the economy
\mathbf{e}	Sum vector
EADC	Enterprise average direct costs
$EADC_B$	Enterprise average direct costs at the budgeted flow rate of output
EADLC	Enterprise average direct labor costs
EADMC	Enterprise average direct intermediate costs
EADSP	Enterprise average direct inputs structure of production
EALC	Enterprise average labor costs
EAMC	Enterprise average intermediate costs
EATC	Enterprise average total costs
$EATC_B$	Enterprise average total costs at the budgeted flow rate of output
$EATC_{it}^a$	Actual EATC of the i -th enterprise in the t -th production period
EE	Enterprise expenses
EPADC	Emergent plant average direct costs
EPDCP	Emergent plant direct costs of production
ETP	Enterprise technique of production
FA_{SRC}	Amount of government bonds purchased by ruling class households
FA_{BE}	Amount of government bonds purchased by bank and non-bank enterprises
\mathbf{FA}_{S1}	Vector of FA_{SGB1} and FA_{SDD1}
\mathbf{FA}_{S2}	Vector of FA_{SGB2} and FA_{SDD2}
FA_{S2}	Stock of financial assets-government bonds associated with the production of bank loans (\mathbf{Q}_{3L})
FA_{S5}	Stock of financial assets-government bonds associated with household activities
FA_{SBL3}	Stock of bank loans
FA_{SDD1}	Stock of demand deposits associated with the production of \mathbf{Q}_1
FA_{SDD2}	Stock of demand deposits associated with the production of \mathbf{Q}_2
FA_{SDD5}	Stock of demand deposits associated with household activities
FA_{SGB1}	Stock of financial assets-government bonds associated with the production of \mathbf{Q}_1
FA_{SGB2}	Stock of financial assets-government bonds associated with the production of \mathbf{Q}_2
FA_{SGB3}	Stock of financial assets-government bonds associated with the production of bank loans (\mathbf{Q}_{3L})

FA_{SGB5}	Stock of financial assets-government bonds associated with household activities
g	Flow rate (or amount) of output per production period
g^a	Actual market growth rate
g_a^a	Actual market growth rate after the change
g_b^a	Actual market growth rate before the change
g_a^*	Steady market growth rate after the change
g_b^*	Steady market growth rate before the change
G	Matrix of intermediate inputs consisting of produced resources, goods, and services
G^*	Augmented G matrix
G_i	Vector of intermediate inputs used in the production of the i -th output (Q_i)
G_{11}	Matrix of intermediate inputs used in the production of Q_1
G_{21}	Matrix of intermediate inputs used in the production of Q_2
G_{31}	Vector of intermediate inputs used in the production of bank loans
Gp_1	Value of the intermediate inputs by product used in the production of the social product
GOV_E	Total government expenditures
GP	Amount of government payments
GP_d	Government income payments to the dependent class
GP_E	Government interest payments to business enterprises (GP_{ib}) and banks (GP_{iB})
GP_{ib}	Government interest payments to business enterprises
GP_{iB}	Government interest payments to banks
GP_{ih}	Government interest payments to households
h_i	Vector of labor pricing coefficients at normal capacity utilization
H	Matrix of labor pricing coefficients that are invariant with respect to short-term variations in output
HII	Household interest income
$HPADC$	Hybrid plant average direct costs
$HPDCP$	Hybrid plant direct costs of production
i_B	Rate of interest on current bank loans
i_{Bp}	Rate of interest on past bank loans
$i_{Bp}FAH_{SBL3}$	Interest income made on loans to the household sector
$i_{Bp}FA_{SBL3}$	Interest income from bank loans
i_D	Rate of interest on demand deposits set by the banking sector
i_DFA_{SDD5}	Interest income from demand deposits
i_DLBH_{S3}	Interest payments made on household demand deposits
i_DLB_{S3}	Interest costs of demand deposits to the banking sector
i_G	Rate of interest on government bonds
i_GFA_{SGB3}	Interest income from government bonds
k	Mark-up for overhead costs and profits
k_{mu}	Degree of capacity utilization

\tilde{k}_{mu}	Full capacity utilization of the plant
k_{mue}	Degree of capacity utilization of the product line where \tilde{q}_e is the enterprise's maximum flow rate of output when all plants are used and producing at full capacity
\mathbf{k}	Vector of fixed investment goods associated with PS
\mathbf{k}_d	Vector of fixed investment goods across all plants that are 'directly' used in the production of the product line
\mathbf{k}_{hp}	Vector of fixed investment goods associated with the hybrid plant
\mathbf{k}_{se}	Vector of fixed investment goods associated with STP
$\mathbf{k}_{spk}, \mathbf{k}_{epk}, \mathbf{k}_{hpk}$	Vectors of fixed investment goods for the segmented plant, emergent plant, and hybrid plant
\mathbf{K}_{F4}	Vector of the flow of government fixed investment goods into \mathbf{K}_{S4}
\mathbf{K}_{S1}	Matrix of the basic goods sector stock of fixed investment goods used in the production of \mathbf{Q}_1
\mathbf{K}_{S2}	Matrix of the surplus goods sector stock of fixed investment goods used in the production of \mathbf{Q}_2
\mathbf{K}_{S3}	Vector of the stock of fixed investment goods used in the production of bank loans
\mathbf{K}_{S4}	Vector of the stock of government fixed investment goods used in providing government services
\mathbf{l}	Vector of direct labor input technical coefficients
\mathbf{l}^*	Vector of labor production coefficients
\mathbf{l}_{ee}	Vector of enterprise labor technical coefficients for the accounting period
\mathbf{l}_{se}	Vector of managerial labor input technical coefficients in absolute amounts for the accounting period
$\tilde{\mathbf{l}}_k$	Vector of the amount of the labor inputs needed to produce the maximum flow rate of output of the k -th plant
$\tilde{\mathbf{l}}_k^*$	Vector labor input production coefficients at q_e
\mathbf{l}_{sef}^*	Vector of shop labor input production coefficients for the f -th production period when the flow rate of output is q_e
\mathbf{l}_{sekf}^*	Vector of plant managerial labor input coefficients for the f -th production period and q flow rate of output
\mathbf{L}	Matrix of labor skills
\mathbf{L}^*	Vector of all the labor skills
\mathbf{L}	Vector of total labor skills employed in the private sector
\mathbf{L}^*	Vector of total labor skills employed in the economy
\mathbf{L}_{11}	Matrix of labor skills used in the production of \mathbf{Q}_1
\mathbf{L}_{21}	Matrix of labor skills used in the production of \mathbf{Q}_2
\mathbf{L}_{31}	Vector of labor skills employed in the banking sector
\mathbf{L}_{41}	Vector of labor skills used in providing government services

L_w	Wage bill by product incurred in the production of the social product
L^*w	Total wage bill of the economy
$L_{31}w$	Wage bill by product incurred in the production of the bank loans
$L_{41}w$	Government's wage bill
LB_{BE}	Amount of liabilities ($LB_{S1,2}$) paid off by non-bank enterprises.
$LB_{S1} (LB_{S1})$	Vector (scalar) of the stock of liabilities-bank loans associated with the production of Q_1
$LB_{S2} (LB_{S2})$	Vector (scalar) of the stock of liabilities-bank loans associated with the production of Q_2
LB_{S3}	Stock of financial liabilities-deposit accounts of business enterprises and households
LB_{S4}	Stock of financial liabilities (national debt) associated with providing government services (GS)
LB_{S5}	Stock of liabilities-bank loans associated with household activities
M	Matrix of material pricing coefficients that are invariant with respect to short-term variations in output
m_i	Vector of material pricing coefficients at normal capacity utilization
M_{wc}	Cash advanced in the form of working capital
$NEATC$	Normal enterprise average total costs (or EATC at the normal flow rate of output)
$NEATC_d$	Normal enterprise average total costs of the dominant enterprise in the market
$NEATC_f$	Normal enterprise average total costs of the price following enterprise in the market
$NEATC_{i0}$	NEATC for the i -th enterprise in the initial accounting period
$NEATC_{it}$	NEATC for the i -th enterprise in the t -th accounting period
OHC	Overhead costs
p	Price of product or of a single product line
P_{ej}	Enterprise price of the j -th good
P_e^H	Price charged by the high cost enterprise
P_{it+1}	Actual market price for the i -th good at time $t+1$
P_m	Market price
P_{mj}	Market price of the j -th good
P_t	Price of j -th good in the t -th accounting period
p	Vector of state money prices of all resources, goods, and services
p_1	Vector of prices of intermediate inputs
p_2	Vector of prices of surplus goods and services
p_{1t}	Vector of input prices at time t
p_{ee}	Vector of enterprise intermediate input prices
p_{se}	Vector of managerial intermediate input prices
P_B	Production at budgeted output

P_n	Production at the normal flow rate of output
PADC	Plant average direct costs
PADLC	Plant average direct labor costs
PADMC	Plant average direct intermediate costs
PMTP	Plant's managerial technique of production
PS	Plant segment
PSDCP	Plant segment direct costs of production of a product line
q	Flow rate of output
q_B	Budgeted output
q^*	Steady state market growth rate
\tilde{q}	Plant's practical maximum flow rate of output when all PSs are utilized
q_e	Enterprise's flow rate of output for k plants with each plant producing at full capacity
\tilde{q}_e	Enterprise's maximum flow rate of output when all plants are used and producing at full capacity
\tilde{q}_k	Maximum flow rate of output of the k -th plant
q_{jkt}	Enterprise's market share (or share of flow rate of output) in the f -th production period
\tilde{q}_{jkt}	Enterprise's maximum flow rate of output for producing the j -th good
q'_{jnt}	Normal flow rate of output (j -th good) for the f -th production period in the t -th accounting period
q_m	Market flow rate of output
q_{m0}	Initial market flow rate of output
q_{mt}^a	Actual market flow rate of output
q_{mt}^*	Steady market flow rate of output
Q_i	i -th product
Q_d	Diagonal matrix of the total social product
Q_1	Vector of intermediate resources, goods, and services
Q_2	Vector of final goods and services for consumption, investment, and government use
Q_{2C}	Vector of consumption goods
Q_{2G}	Vector of government goods
Q_{2I}	Vector of investment goods
Q_{3L}	Amount of bank loans made to enterprises and households
$Q^T \mathbf{p}$	Total value of the total social product
$Q_1^T \mathbf{p}_1$	Total value of the intermediate inputs
$Q_2^T \mathbf{p}_2$	Total value of the social surplus
$Q_{2I}^T \mathbf{p}_2$	Total value of investment goods
$Q_{2G}^T \mathbf{p}_2$	Total value of government goods and services
$Q_{2C}^T \mathbf{p}_2$	Total value of consumption goods and services
r	Profit mark-up
r_d	Profit mark-up of the dominant enterprise

r_f	Profit mark-up of the price following enterprise
r_i	Profit mark-up for the i -th good
R_d	Diagonal matrix of profit mark-ups
rr_{ij}	Amount of the j -th resource reserve available for the production of Q_i
rr	Vector of resource reserves associated with PS
rr_d	Vector of resource reserves across all plants that are ‘directly’ used in the production of the product line
rr_{hp}	Vector of resource reserves associated with the hybrid plant
rr_{se}	Vector of resource reserves associated with STP
rr_{spk?} , rr_{epk?} , rr_{hpk}	Vectors of resource reserves available for the segmented plant, emergent plant, and hybrid plant
RR_{F4}	Vector of the flow of government resource reserves into RR_{S4}
RR_{S1}	Matrix of the amount of resource reserves available for the production of Q₁
RR_{S2}	Matrix of the amount of resource reserves available for the production of Q₂
RR_{S3}	Stock of resource reserves used in the production of bank loans
RR_{S4}	Vector of government resource reserves available for providing government services
s_{ce}	Vector of enterprise yearly salaries
S	Vector of surplus goods and services
SALC	Shop average labor power costs
SAMC	Shop average intermediate costs
SP	Segmented plant
SPADC	Segmented plant average direct costs
STP	Shop technique of production
TC	Total costs
TC _B	Total costs at budgeted output
TC _n	Total costs at the normal flow rate of output
TR	Total revenue
TR ₃	Total interest income of the banking sector
TR _B	Total revenue at budgeted output
TR _n	Total revenue at the normal flow rate of output
TRR	Target rate of return on capital assets
VCA	Value of the capital assets
w	Vector of state money wage rates
w_{se}	Vector of managerial labor salaries
x_i	Mark-up to cover an allocated part of i -th overhead cost
z	Mark-up for overhead costs
z_i	Overhead mark-up for the i -th good
z_{it}	Percentage change in EATC due solely to a change in the i -th enterprise’s level of output in the t -th production period
Z_d	Diagonal matrix of overhead mark-ups

Greek and other symbols

θ	Targeted profit mark-up
π_t	Target profits
Π	Total gross profits of the economy
Π^*	Total profits after taxes
Π'	Total net profits of the economy
Π_1	Total gross profits of the basic goods sector
$\mathbf{\Pi}_1$	Vector of profits for each intermediate input
Π_2	Total gross profits of the surplus goods sector
$\mathbf{\Pi}_2$	Vector of profits for each surplus product
Π_3	Total gross profits of the banking sector
Π_D	Gross dividends
Π_D^*	Dividends after taxes
Π_R	Gross retained earnings
Π_R^*	Retained earnings after taxes
τ_i	Income tax rate
τ_p	Profit tax rate
\oplus	“combined with”
:	“given”

1 The making of heterodox microeconomics

Economics is the science of the social provisioning process

Economics as a discipline is a specialized, scientific, factual body of knowledge that endeavors to develop theoretical explanations of real economic activities that connect acting persons qua households with the flow of goods and services needed to sustain their existence and promote their well-being over time. Thus economic activities are enmeshed with others to form an interdependent, intertwined system of production and consumption. Similarly, acting persons are not isolated, but are enmeshed in various social relationships that cannot be stripped away. Together they imply that the economy is an emergent system of social-economic activities that generate an array of surplus goods and services (over what is used up in production) needed to sustain households and their social relationships, and thus society as a whole – in short, the economy is about social provisioning. Consequently, economics is about developing theoretical explanations of the process by which the economy provides social provisioning – that is, *economics is defined as the science of the social provisioning process*. For any factual field of inquiry or scientific research field to exist, it must have a research community whose members exist in a society that at least tolerates, if not supports, their research activities. Moreover, its object of study must be real (as opposed to fictitious or non-existent) and relate to the problems and issues that are the focus of the research community. Finally, the methods used by the researchers to study the objects and address the problems and issues need to be grounded in the real world. Economics as a research field has a research community, albeit one divided between mainstream and heterodox economists, that is located within a society that supports it more (for mainstream economics) or less (for heterodox economics). The two sub-fields of economics, mainstream and heterodox economics, have some overlapping objects of study and problems and issues to address, but much less overlapping of research approaches and methods used to study the objects and issues, which ultimately generate quite distinct theoretical and hence rival explanations of the social provisioning process. What makes mainstream and heterodox economics distinctly different is that the former, at a fundamental level, is not capable of developing coherent theoretical explanations of the social provisioning process that are grounded in the real world.¹

2 *The making of heterodox microeconomics*

This claim merits further but brief discussion. First, the objects of study of mainstream economics, such as preferences-utility, marginal products, demand curves, rationality, relative scarcity, and homogeneous agents, are ill-defined, have no real world existence, and, where relevant, are non-quantifiable and non-measurable.² Consequently, the issues and problems for which the objects are relevant, such as competitive markets, efficiency, and constrained optimality, are either fictitious in that they are unrelated to the real world or, if the issues and problems are clearly located in the real world, such as prices and unemployment, the objects have no bearing on their existence. Secondly, the methods used by mainstream economists to develop theoretical explanations addressing the issues and problems, such as deductive methodology and ontological and methodological individualism, generally include fictitious objects and utilize concepts that have no grounding and hence no meaning in the real world. Together, they clearly suggest that it is not possible for mainstream economists to conjure up any theoretical explanations relevant to the provisioning process that takes place in the real world. In addition, the mainstream theory of the provisioning process that is the core area of study of mainstream economics (Hirshleifer 1985, 53) and is itself also quite problematical. The core propositions of the theory, such as scarcity, preferences and utility functions, technology and production functions, rationality, maximization/optimization, market clearing, equilibrium, ontological and methodological individualism, heterogeneous agents, and positivist and deductivist methodology, have all been subject to intensive heterodox critiques; and in many cases there are multiple, overlapping heterodox critiques of core propositions.³ But even if these critiques are ignored, it is well-known that it is not possible to generate internally coherent explanations or stories or parables of market activity (such as the pervasive urban legend of the market as a self-adjusting mechanism) at either the micro or macro level; even if particular stories (represented in terms of models) of market activities are accepted, such as general equilibrium, game theory, or IS-LM, they have been shown, on their own terms, to be theoretically incoherent and empirically unsupported. The combination of critiques and incoherence means that none of the mainstream theoretical concepts or, more generally, its theoretical language and narrative story can be transferred to heterodox economics (Rizvi 1994; Lawson 1997a; Keen 2001; Ackerman and Nadal 2004; Lee and Keen 2004; Petri 2004; White 2004; Palacio-Vera 2005).

The above arguments suggest that mainstream theory lacks truth and value and contributes nothing (not even terms such as equilibrium, demand curve, or short period) to explaining the social provisioning process in a capitalist economy. Hence, it is not surprising that mainstream theory has become increasingly separated from its subject matter and progressively engaged in articulating properties of worlds within the model that have no connection to the real world. Nor is it surprising that its method of evaluating its fictional theories is to compare the projected fictional outcomes of a fictional model to actual data as if this had any meaning. Finally, it is not surprising that mainstream economists are increasingly defining economics as a particular method of inquiry without factual content. Given the fictitious nature of mainstream theory, it arguably represents bogus,

false, or pseudo-knowledge because “it refers to non-existents or because it represents existents in an utterly false manner” (Bunge 1983, 195). Thus, mainstream theory is not a rival scientific theory to heterodox theory because it is not ‘scientific,’ although it remains a non-scientific rival much like Creationism is a non-scientific rival of the theory of evolution.⁴ The fact that it is considered part of the research field of economics indicates the extent to which economics is a highly contested discipline where non-scientific aims and attitudes still play a significant role. Therefore, economics is perhaps a proto-science or semi-science with heterodox economics representing pockets of an almost mature science (Bunge 1983; 1985; 1998; Mahner 2007; Lee 2013a).

Heterodox economics

As stated above, economics is the science of the social provisioning process, and that scientific endeavor is best carried out by heterodox economists. Heterodox economics refers to a specific group of theories aimed at explaining it, to economic policy recommendations predicated on the theories, and to a community of economists engaged in this theoretical and applied scientific activity. Heterodox economic theory specifically focuses on human agency in a cultural context and social processes in historical time affecting and directing resources and their usage, consumption patterns, production and reproduction, and the meaning (or ideology) of economic activities engaged in social provisioning utilizing empirically grounded concepts and a critical realist-grounded theory methodology. However, for the occurrence of such scientific activity, there must exist a research community of heterodox economists and its existence must be, to some degree, supported by society at large.

Community of heterodox economists

The scientific research community of heterodox economists is grounded in a social system of work that produces scientific or economic knowledge that contributes to the understanding of the economy as the social provisioning process. Moreover, this system of work is largely embedded in educational systems and their employment markets. So, although economic research and employment can be found in a variety of non-educational institutions, such as governments, private or public research institutes, trade unions, and advocacy organizations, the reproduction and expansion of the community is primarily tied to the academy. This means that the social system of work for heterodox economists is (as for mainstream economists) located in university economics departments. In particular, the department is the local employment market, establishes the career structure, is the organizational locale for teaching students and training future heterodox economists, and is the site for the production of heterodox scientific knowledge that must be publishable in referred journals, books, and other reputable outlets.⁵ In addition to university departments, there are other organizations that support and compliment the social system of work and support and promote the development

4 *The making of heterodox microeconomics*

of heterodox economic theory, including journals, book publishers, professional associations, and informal groups. Their importance is that they help sustain through their material property, financial support, and organizational activities the various heterodox departments within the heterodox community. In turn, the departments, connected by various social networks, provide the positive critical rivalry necessary for intellectual creativity within the community.

The social network of heterodox economists consists of direct and indirect social relationships between heterodox economists. The relationships or social ties include correspondence; intellectual and social interactions at conferences, in seminars, or with students, such as teacher-student relationship; and belonging to the same mailing lists, subscribing to and publishing in the same journals, attending the same conferences and seminars, and supporting a common course of action. Thus, a social network produces a connected and integrated body of specialized individuals who develop a common set of arguments, are concerned with a common set of questions and topics, and develop common standards for judging the arguments, answers, and discourse. In other words, the network acts as a chain of intellectual discourses where intellectual interaction through face-to-face situations at seminars, in conferences, or over dinner brings together the intellectual community; focuses members' attention on and builds up vested interest in their own theoretical, historical, applied, and empirical topics and problems; and ties together written texts and lectures that are the long-term life of the community and gives it distinctiveness. The concatenated discourse that emerges from the face-to-face interaction keeps up the consciousness of the community's agenda and purpose by transcending all particular occasions of the interactions – that is, the discourse that emerges ensures that the community's purpose and agenda continue to be advocated independently of any individual member of the community or any specific face-to-face interaction. The discourse also has another impact in that it is the communicative process that creates thinkers within the community (Lee 2009a).

Heterodox economic theory

The intellectual and theoretical roots of heterodox economics are located in heterodox traditions of Post Keynesian-Sraffian, Marxist-radical, Institutional-evolutionary, social, feminist, and ecological economics, all of which emphasize the social surplus; accumulation; justice; social relationships in terms of class, gender, and race; full employment; and economic and social reproduction.⁶ Hence, as a scientific research field, heterodox economics is concerned with explaining, proposing, and advocating changes in the historical provisioning process of producing the social surplus that provides the flow of goods and services required by society to meet the reoccurring needs and promote the well-being of those who participate in its activities. That is, *heterodox economics is a historical science of the social provisioning process*, and this is the general research agenda of heterodox economists. Drawing from all heterodox approaches, its explanation involves human agency qua acting persons embedded in a transmutable

and, hence, inherently uncertain world with fallible knowledge and expectations and in a cultural context, as well as social processes in historical time affecting resources, consumption patterns, production and reproduction, and the meaning (or ideology) of market, state, and non-market/state activities engaged in social provisioning. This implies that agency can only take place in an interdependent social context which emphasizes the social and deemphasizes the isolated nature of individual decision-making; and that the organization of social provisioning is determined outside of markets, although the provisioning process itself in part takes place through capitalist markets. Thus, heterodox economic theory is a theoretical explanation of the historical process of social provisioning within the context of a capitalist economy; hence, it is also a historically contextualized explanation. It is, therefore, concerned with explaining those factors that are part of the process of social provisioning, including the structure and use of resources; the structure and change of social wants and corresponding consumption patterns; the structure of production and the reproduction of the business enterprise, household, state, and other relevant institutions and organizations; and the distribution of income among households. In addition, heterodox economists extend their theory to examining issues associated with the process of social provisioning, such as racism, gender, ideologies, and myths.

Because heterodox economics involves issues of ethical values, social philosophy, and the historical aspects of human existence, heterodox economists feel that it is also their duty to make *heterodox economic policy* recommendations to improve human dignity – that is, recommending ameliorative and/or radical social and economic policies to improve the social provisioning for all members of society and especially the disadvantaged members. Moreover, they adopt the view that their economic policy recommendations must be based on an accurate historical and theoretical picture of how the economy actually works – a picture that includes class and hierarchical domination, inequalities, social-economic discontent, and conflict. The distinction between theory and policy is not the same as the positive-normative distinction found in mainstream economics. Heterodox theory is an explanation of how the social provisioning process *actually* operates, not how it is supposed to operate under ‘ideal conditions’ while heterodox policy aims at altering the actual process to achieve a particular historically contingent outcome. Thus, the ethos embedded in heterodox economic theory is that the social provisioning process is to be accurately explained so that it can be changed – an accurate explanation is not the same thing as a value neutral explanation, which implies that derivative economic policy is not value or ethically neutral (Polanyi 1968; Foster 1981; Gruchy 1987; Stevenson 1987; Dugger 1996; Bortis 1997; Hodgson 2001; Power 2004).

Theoretical core

Since the economy is an emergent system with various sub-systems, the heterodox theory of the social provisioning process is also an emergent theoretical system with various theoretical sub-systems. This implies that it cannot be divided

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into disjointed sub-systems of microeconomics and macroeconomics, which in turn are based on quite different theoretical arguments. In particular, the core theoretical elements generate a three-component structure-organization-agency heterodox economic theory that culminates in an economic model of the economy as a whole and hence, the social provisioning process.⁷ The first component of the theory consists of the productive and monetary schemata of the social provisioning process, and together they are the schema of the structure of a real capitalist economy. The former represents the circuit of production as an inherent circular process in that the production of goods and services requires goods and services to be used as inputs. Hence, with regard to production, the overall economy (which includes both market and non-market production) is represented as an input-output schema of resources, material goods, and services combined with different types of labor skills to produce an array of resources, goods, and services as outputs. Many of the outputs replace the resources, goods, and services used up in production, and the rest constitute a surplus to be used for social provisioning – that is, for consumption, private investment, government usage, and exports. The latter is a schema of the structural relationships between the wages of workers, profits of enterprises, and taxes of government and expenditures on consumption, investment, and government goods as well as non-market social provisioning activities which are facilitated by a flow of funds or state money accompanying the production and exchange of the goods and services. Together the two schemas produce a monetary input-output model of the social provisioning process where transactions in each market are state-money transactions; where a change in the price of a good or in the method by which a good is produced in any one market will have an indirect or direct impact on many different markets throughout the economy; and where the amount of private investment, government expenditure on real goods and services, and the excess of exports over imports determines the amount of market and non-market economic activities, the level of market employment and non-market laboring activities, and consumer expenditures on market and non-market goods and services.

The second component of heterodox theory consists of three categories of acting organizations and institutions that are embedded in the monetary input-output structural model of the economy. The first category is particular to a set of markets and products and consists of the business enterprise, private and public market organizations (such as trade associations and government marketing boards) that manage competition in resource, good, and service markets; and the organizations (such as trade unions) and institutions (such as minimum wage laws) that regulate the wages of workers. The second category are organizations that are spread across markets and products or not particular to any market or product and includes the state and various subsidiary organizations as well as particular financial organizations – that is, those organizations (such as Congress and the central bank) which make decisions about government expenditures and taxation, and determine the interest rate. Finally, the third category consists of non-market organizations and institutions that promote social reproduction and includes households and the state.⁸ The significance of organizations is that they are where

agency qua the acting person, the third component of heterodox theory, is located. That is, agency, which consists of decisions made by acting persons, concerning the social provisioning process and social well-being takes place through these organizations. And because the organizations are embedded in both instrumental and ceremonial institutions, such as gender, class, ethnicity, justice, marriage, ideology, and hierarchy as authority, an agency acting through organizations (that is acting organizations) affect both positively and negatively (but never optimally) the social provisioning process. The integration of the structural and agency components produces a descriptive economic model of the social provisioning process; and then placing the model within a historical-social framework creates a historically, grounded schema of the economy as a whole.

Heterodox microeconomics

As argued above, the position adopted in this book is that heterodox economic theory is an emergent whole, and the economy is conceived as a disaggregated interdependent system.⁹ This starting point sidesteps much of the debate regarding the microfoundations of macroeconomics or the macrofoundations of microeconomics. At the same time, it rejects the possibility that economic activity of the economy as a whole can be understood independently of the real acting persons qua organizations and institutions, and of their actions that generate the economy-wide economic activity, and that the whole can be completely reduced to the individual acting person. With their embeddedness in a socially and activity-wide interdependent economy, it is not possible to ‘understand’ the decisions and actions of individual acting persons isolated from other acting persons and from the rest of the economy.¹⁰ This has the consequence that acting persons join together to form emergent acting organizations and institutions, such as business enterprises, the state, households, trade associations, and trade unions, which can neither be aggregated upwards or disaggregated downwards. What this means is that heterodox microeconomics is not about explaining individual behavior regarding decisions and choices.

To theorize about the social provisioning process in terms of a disaggregated, interdependent economy, it is necessary to delineate and explain its constituent parts and their reproduction and recurrence, their integration qua interdependency by non-market and market arrangements and institutions, and how the system works as a whole. This implies examining how changes in one part of the economy produces changes in other parts as well as the economy as a whole. Heterodox microeconomics is thus concerned with delineating and explaining the constituent parts or sub-systems of the economy and their interdependencies, while heterodox macroeconomics is concerned with the economy as a whole and changes that occur as a result of changes in various parts of the economy. As a result, the macro outcomes, such as variations in output and employment and differential access to social provisioning, are grounded in and hence compatible with the micro sub-systems that connect the economy into a whole. More significantly, this means that all economic activity is simultaneously a micro-macro activity.

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Thus, dealing with the business enterprise and changes in antitrust laws is not *per se* microeconomics and dealing with government expenditure decisions and fiscal policy is not *per se* macroeconomics, which means that fiscal policy in principle is of no more or less important than antitrust policy; rather, they are differently important.¹¹

The sub-systems include the business enterprise and other private business organizations, such as trade and employer associations, the household, trade unions, and state-public organizations, while the interdependencies include technological-production relationships between enterprises, private investment-government expenditures and profit-employment, wages-capitalist income and workers-capitalist consumption patterns, state expenditures and taxes-financial assets. Heterodox microeconomic theory thus involves working with the sub-systems and interdependencies to develop analytical narratives – that is, theoretical explanations that contribute to understanding the social provisioning process. In principle, heterodox microeconomics consists of a wide range of theories, such as the business enterprise, the household, the state, markets, and urban development, and social welfare. For this book, however, the scope will be limited to theorizing about the more traditional sub-systems and interdependencies. Because of the significance of the price mechanism to mainstream economics, one theoretical concern of the book is the business enterprise, markets, demand, and pricing. Also, since heterodox economists see private investment, consumption, and government expenditures as the principle directors and drivers of economic activity, a second theoretical concern is business decision-making regarding investment, production and employment, government expenditure decisions, the financing of investment, the profit mark-up and the wage rate, and taxes. Finally, the third theoretical concern of the book is to complement the schema of the economy as a whole with a historically grounded model of a going economy as a whole, which includes the economic model of the social provisioning process, a price model, and an output-employment model. The integration of the ‘micro’ theories of the business enterprise, markets, demand, investment, finance, and the state with the economic model of the going economy forms a nexus of what can be identified as heterodox economic theory of the social provisioning process.

There are also some emergent theoretical issues in the heterodox microeconomic explanations of the social provisioning process – that is, the origins of the social surplus (or the questions of the origins of profits, wages, and rents) and access to the provisioning process (or the question of producing and distributing the surplus). Through dealing with these issues, the theoretical narrative of the provisioning process is transformed into a theory of value. That is, a theory of value is a narrative that is linked to a quantitative analysis (usually a schema and a model or a concatenated set of models) that succinctly explains why and how the particular goods and services that constitute the social provisioning process get produced and the households, business enterprises, and the state get access to them.

As shall be developed in the following chapters (in particular, Chapter 7), the ruling class determines the surplus goods and services they want and hire the

surplus labor to produce them; the production of surplus goods and services for workers are an unintended by-product. That is to say, the production decisions are controlled by the ruling class. This means that the capitalists' decision to produce consumption goods and services for workers governs the workers' access to the social provisioning process by simultaneously creating the wage rate as an income category. In a similar manner, the capitalists' and state's decisions to produce fixed investment and consumption goods and services for the capitalists and for the state govern the capitalists' and the state's access to the social provisioning process by simultaneously creating the profit mark-up and state money as income categories. In short, because the capitalist class and the state determine the production of the surplus along with wage rates, profit mark-ups, and state money, they govern the real direction of the capitalist economy, control the volume of and access to the social provisioning process (while the price system plays a secondary role of governing the access of particular capitalists and workers to social provisioning and ensuring the reproduction of the business enterprise), and maintain the capitalist (dominate)-worker (subordinate) social relationships necessary for capitalism to exist. What this clearly implies is that the creation and distribution of the surplus is effectuated through the social relationships that sustain the ruling class, while the trappings of market forces are a veil that obscures them; more strongly put, it is social relationships coupled with social agency that are the primary movers of economic activity and the provisioning process while the role of markets and the price system play both a secondary role and an obscuring role. Heterodox microeconomics pierces this veil and reveals what is hidden and obscured; in doing so, it makes it clear that heterodox economics is shunting economics to the classical-Marxian track that has been advanced, developed, and changed by Institutional, Post Keynesian, social, and other heterodox contributions.

Methodology of heterodox economics

Heterodox economic theory is not a pre-existing doctrine to be applied to an invariant economic reality. Rather, there are many heterodox theoretical arguments that appear to contribute to its construction, but there is no reason why they should command blind acceptance; in any case, they fall short of making a comprehensive theory. Consequently, new theories are needed to fill the gaps and omissions. In either case, there needs to be a basis for accepting the theories as reasonable scientific theoretical contributions to explaining the social provisioning process. This suggests that the development of heterodox theory requires theory creation and theory evaluation. Scientific theory creation requires a philosophical foundation on which a research strategy for theory creation and evaluation is based. Such a combination is, however, either not recognized by many heterodox economists or, when recognized, underdeveloped, as in the case of critical realism and abduction. Moreover, issues about research methods are, with the exception of analytical statistics (such as econometrics), generally minimized while the historical nature and the role of the historical narrative in heterodox theories are ignored all together. The objective of this section is to delineate a particular integration of a

realist philosophical foundation centered on critical realism with the well-known research strategy that is usually associated with qualitative theorizing and the method of grounded theory to produce a critical realist-grounded theory approach to theory creation and evaluation that directly engages with a variety of research methods (such as data triangulation, case study, analytical statistics, and modeling) and historical theorization.

Philosophical foundation

Being both participants in and observers of the social and economic activity around them, heterodox economists approach their study of economics with a common sense understanding of the world. By common sense, it is meant a complex set of beliefs and propositions (many of which are historically grounded) about fundamental features of the world that individuals assume in whatever they do in ordinary life. Thus, they take particular features, characteristics, institutions, and human actors of economic activity as real, obvious, and practical initial starting points for further research. To be real, obvious, and practical means that various features, institutions, and actors *qua* acting persons¹² exist; they are ingrained everyday properties of the world of economic activity, and they are encountered when observing or participating in ongoing economic activity. In particular, heterodox economists can, as observers, see them in action in the economy, or they can directly experience them as participants in economic activity. In short, they interact with what they study. By being a participant-observer, they are able to be close to the real, concrete form of the economy. Consequently, their 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 heterodox economists actually use to examine economic activity, particularly with regard to the way it is explained – it is impossible for any heterodox economist, or indeed any researcher, to approach the study of economics with a ‘blank mind’ (Mäki 1989; 1996; 1998a; 1998b; Coates 1996; Dow 1999; 2001).

Heterodox economists characterize their common sense propositions by stating that the real (actual) economy is a non-ergodic, independent system with agency and economic-social-political structures and institutions embedded in a historical process located in historical time. Other accepted and articulated propositions that support and clarify the above include: the actual economy and the society in which it is embedded is real and exists independently of the heterodox economist; the economy is transmutable, hence its future is uncertain and unknowable; ends are neither entirely knowable nor independent of the means to achieve them; economic outcomes come about through acting persons interacting with social, political, and economic structures, and hence are ethical and political outcomes as well; and a capitalist society is a class society and the economy is permeated with hierarchical power derived in part from it. The final common sense proposition is that the study of a particular economic activity cannot be done independently of the whole economy or from the social system in which it is embedded. Mutually

shared among heterodox economists, these common sense propositions provide the basis for its ontological realist foundation (Wilber and Harrison 1978; Gruchy 1987; Lawson 1994; 1999; Arestis 1996; Davidson 1996; Dow 1999; 2001; Downward 1999; Rotheim 1999).

From the common sense propositions, heterodox economists conclude that the economy works in terms of causal-historical processes. Moreover, because they accept the ontological constraint implicit in this, a specific form of realism, *critical realism*, is the ontological basis of heterodox economics. Not only do they posit that economic phenomena are real, heterodox economists also argue that their explanations or theories have real components, refer to real things, represent real entities, are judged good or bad, true or false by virtue of the way the economy works, and are causal explanations – in short, heterodox theories are factual theories.¹³ As a causal explanation, heterodox theory provides an account of the process as a sequence of economic events and depicts the causes that propel one event to another in a sequence. In addition, while accepting that theories are evaluated on the accuracy of their explanations, heterodox economists also accept *epistemological relativism*, which is that explanations of economic events are historically contingent. That is, accuracy and historical contingency are not separate in heterodox theory. Finally, to ensure that their theories are causal explanations of real things, the *method of grounded theory* is utilized as a research strategy to create and evaluate economic theories (Ellis 1985; Mäki 1989; 1992a; 1996; 1998a; 1998b; 2001).

Critical realism

Critical realism (CR) starts with an account of what the economic world must be like for economic analysis to be possible. Thus its fundamental claim is that the economic world is causally structured, which means that economic theories are historical and narratively structured. CR begins with four propositions, the first being that the economic world consists not only of events and our experiences, but also of underlying *structures* and *causal mechanisms* that are, in principle, observable and knowable. Second, it is argued that economic events, structures, and causal mechanisms exist independently of their identification. Third is the argument that all economic events are produced by an underlying set of causal mechanisms and structures. Finally, as an *a posteriori* observation, it is commonly noted that the social world is open in that economic events are typically produced as a result of interactions of numerous, often counteracting structures and contingently related causal mechanisms. Consequently, there is a three-tier view of economic reality. The first two tiers are the ‘empirical’ events of experience and impression and the actual events underlying them. Understanding the former depends on the explanations of the ‘actual’ events that are derived from causal mechanisms and economic structures, which constitute the third tier of economic reality. The causal mechanisms and structures together are the ontological core of heterodox economics in that when they are identified and understood, the empirical and actual events are jointly understood. Moreover, because causal historical

processes are knowable and observable, so are the causal mechanisms and structures. Thus for heterodox economists, identifying structures and causal mechanisms and describing their way of influencing or acting on specific events in the open economic world are their scientific undertaking – they put critical realism into practice, thereby making the unknown knowable and the unseen observable, although it will not be perfect.¹⁴

A causal mechanism in the context of heterodox economics is irreducible. It has a relatively constant internal organization whose components are intentionally, not mechanistically, related. It is real, observable, and underlies (and hence governs or produces) actual events. It acts transfactorially – that is, it has effects even when it does not generate discernible actual events.¹⁵ Being ‘irreducible’ means that the form and organization cannot be disaggregated into its constituent components and still function as a causal mechanism. In this sense, a causal mechanism is an emergent entity in that its properties and powers cannot be completely traced to its individual components. To have a constant form and organization means that the mechanism can be empirically identified by stable patterns of behavior and organizational format, and hence empirically observed and delineated. Furthermore, the ability to act means that the mechanism has the power to generate qualitative and/or quantitative outcomes; the triggering of the mechanism comes from agency, human intentionality via the acting person, which is embedded in, yet distinct from, the form and organization that constitute the mechanism. This means that the causal mechanism cannot be thought of as a machine or ‘mechanistic’ – that is, not completely structurally determined. Thus, economic actors qua acting persons have independent power to initiate actions (and so make the system open), thereby setting in motion causal mechanisms that generate outcomes that underlie, and hence govern, actual economic events. Because the causal mechanism utilizes the same processes when producing results, the same results are repeatedly produced; conversely, a causal mechanism does not produce accidental, random, or transitory results.¹⁶ To say that a causal mechanism acts transfactorially to produce the same results is also to say that its form, internal organization, and agency are constant, thereby making it a relatively enduring entity (meaning that it can be slowly transformed over time). Hence, if the same causal mechanism operates in different situations, it will produce the same, or transfactorial, results each time it is in operation; but the empirical and actual events need not be regular or repeatable, as other contingently related causal mechanisms may be affecting them. So, in a system with multiple independent causal mechanisms, a single causal mechanism only has the tendency to produce regular, repeatable, qualitative or quantitative actual economic events denoted as ‘demi-regularities.’

A structure is different from a causal mechanism in that the former does not include agency; hence it can only help shape or govern the actual event. Otherwise, it is similar to a causal mechanism in that it is real, observable, relatively enduring in form and organization, irreducible, and governed transfactorially. The structures of an economy have two additional properties: (1) being sustained, reproduced, and slowly transformed by economic and social events that are caused by acting persons through their causal mechanisms; and (2) their form and organization

have a historical character. Moreover, all economic structures are social structures in that they represent and delineate recurrent and pattern interactions between acting persons or between acting persons and technology and resources. 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 nor structures can separately cause and govern actual economic events. Rather, they must work jointly where the structures provide the medium or the conditions through which causal mechanisms act. So, as long as they remain enduring, there will be a tendency for regular and repeatable actual economic events to occur. In fact, in a transmutable world where the future is not completely knowable, acting persons are only possible if causal mechanisms and structures are relatively enduring so that they can connect their acts to outcomes; for if acting persons could not see themselves producing transfactual results, they would not act¹⁷ (Mäki 1989; 1998b; Lovering 1990; Kanth 1992; Sayer 1992; Lloyd 1993; Lawson 1994; 1997a; 1997b; 1998a; 1998b; 1998c; Lawson, Peacock, and Pratten 1996; Ingham 1996; Wellman and Berkowitz 1997; Hodgson 1998; 2000; Joseph 1998; Dow 1999; Downward 1999; Rotheim 1999; Fleetwood 2001a; 2001b).

Epistemological relativism

Epistemological relativism is the view that knowledge of economic events is historically contingent. That is, because the social and economic activities of interest to heterodox economists change over time, knowledge and understanding of them is historically contingent; hence, there are no eternal ‘truths,’ and knowledge is always in the process of being created, even for past events. Consequently, what is known about actual economic events of the past need not be knowledge about current or future economic events. As a result, heterodox economists are continually engaged in creating new knowledge, new explanations to take the place of those that cease to refer to real things, represent real entities, and explain actual economic events. Thus, CR explanations or theories are historically conditioned and hence historically contingent, which implies that, for heterodox economists, there are no ahistorical economic laws or regularities. Moreover, it is not possible to make ahistorical, general statements with absolute certainty beyond the historical data and context in which the statements are embedded. Another implication is that theories must be, in some sense, grounded in historical data in order to tell historical stories explaining historical economic events. A third implication is that the difference between good and not-so-good, between true and simply plain wrong theories is how well their explanations correspond to, if not ‘embody,’ the historically contingent economic events being explained. Finally, epistemological relativism implies that the continual creation of knowledge is a social act carried out by informed actors – that is, by heterodox economists – in a socially, historically contingent context (Sayer 1992; Pratt 1995; Lawson 1997a; Yeung 1997).

Research strategy: method of grounded theory

To develop a critical realist empirically grounded theory that analytically explains causally related, historically contingent economic events, the critical realist heterodox economist needs to identify and delineate the structures, causal mechanisms, and causal processes producing them. The research strategy for creating causally explanatory theories that is also consistent with realism, critical realism, and epistemological relativism is the *method of grounded theory*.

The grounded theory method (GTM) is a process by which researchers create their theory ‘directly’ from data (which is defined below), and in which data collection, theoretical analysis, and theory building proceed simultaneously (see Figure 1.1). The use of the method begins with the economist becoming familiar with, but not dogmatically committed to, the relevant theoretical, empirical, and historical literature that might assist them in approaching, understanding, and evaluating the data relevant to their research interest. Then, one engages in fieldwork by collecting comparable data from economic events from which a number of specific categories or analytical qua theoretical concepts and their associated properties are isolated and the relationships between them identified. With the theoretical concepts and relationships empirically grounded in detail and hence empirically justified, the economist then develops a theory in the form of a complex analytical explanation based on the data’s core concepts. A theory is thus a conceptual system that accurately and correctly describes the items and objects that constitute economic events, and then the economist uses these concepts to fashion an analytical explanation of the events (Brown 2001). The essential property of such a theory is that it explains why and how the sequence of economic events represented in the data took place. Hence, the economist does not attempt to construct a simplified or realistically deformed empirically grounded theory by ignoring or rejecting particular data. Rather, the economist endeavors to capture the complexity of the data by establishing many different secondary concepts and relationships and weaving them together with the core concepts into structures and causal mechanisms. This ensures that the resulting theory is conceptually dense as well as having causal explanatory power. The process of selecting the central theoretical concepts and developing the theory brings to light secondary concepts and relationships that 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 evaluates it by seeing how it explains actual economic events. Let us now consider aspects of the GTM in more detail.

Pre-existing ideas and concepts

Any researcher undertaking a project of economic theory creation is already aware, to one degree or another, of various ‘competing’ economic theories. So the question is: how aware should they be of the ‘local’ research frontier of the project as well as what lies behind it? To use the GTM fruitfully, the heterodox economist must be familiar with the contemporary heterodox and mainstream theoretical and

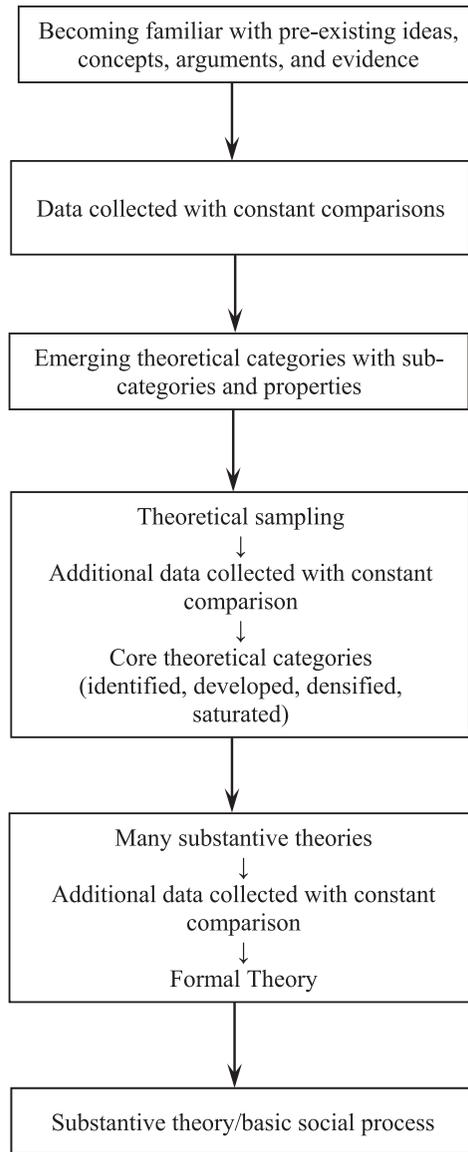


Figure 1.1 Schema of grounded theory method

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 heterodox ideas and concepts to see which might 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, they attain a theoretical sensitivity regarding the data and theoretical concepts they 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 do not support a pre-existing theoretical concept or category, hence requiring a large or small transformation of the pre-existing concept or category, or ‘produce’ a new category. Thus, the GTM not only recognizes that observations, data, and descriptions are conceptually *qua* theory laden, it also reinforces the latter by demanding that all economists enter into theory creation as theoretically knowledgeable and aware individuals, as well as with the conviction that the creation of a new substantive economic theory will most likely require them to set aside forever some of that acquired knowledge. Consequently, the economist can still pursue the GTM even though they may favor particular non-grounded concepts and theories. Hence, the grounded theory economist is not a neutral observer sifting through given ‘facts’ that present them, through some sort of immaculate conception, with a theory without a moment of forethought; rather, the economist is actively and reflectively engaged with it and is aware of the possibility of ‘observer bias’ (Olsen 2012, 65–71). By acknowledging the issue of conceptually-laden observations while at the same time demanding that the economist be skeptical of all pre-existing theory, the grounded theory method is a highly self-conscious, engaging, and open-minded approach to economic research, data creation-collection, and theory building and evaluation.

Data, constant comparisons, and theoretical categories

The development of theoretical categories is a complex task that starts using various research methods to collect analytically and theoretically unembedded different kinds of quantitative, qualitative, and historical information that is believed to be relevant for the task at hand. Information is obtained from interviews, surveys, and other types of questionnaires, oral histories, historical and current documents, videos, images, ethnographic investigations, and other forms of participant observations, experiments, and site visits. Through comparing, analyzing, and interpreting the information while simultaneously organizing it into generalized categories *qua* theoretical concepts, information is transformed into data. This has three implications: the first being that data is created rather than pre-existing, which means that the economist has direct and reflective relation to it. Secondly, not all information gets transformed into data. Through critical evaluation of it, some information may be deemed not relevant, while other information may be found as inaccurately reflecting reality relevant to the task at hand. The third implication is that data is not restricted to just sense experience. For example, historical documents or field reports contain data that cannot be verified by the reader’s sense experience. The same can also be said for oral histories that deal with past events. On the other hand, non-written data, such as informal rules, hierarchical power,

and expectations inside the business enterprise, are not unobservable in that they can be verbally articulated and hence written down, filmed and then identified at a later point in time, or observed as institutions – that is, as observable patterns of behavior, hence capable of being recorded. Thus all data is observable, although the sources and medium in which they exist vary; to be unobservable in this sense is not to be real and hence to be no data at all. Hence, the theoretical categories that emerge come from the information *qua* data, not after they are all collected, but in the process of collecting them. Consequently, each category is tied to or empirically grounded in its data; since the data is real, observable, and measurable, so is the theoretical category. Moreover, since the data lie in time and history, each theoretical category is anchored in a particular historical setting. In short, a grounded theory category is theoretical and actual, grounded in real time, and historically specific (Olsen and Morgan 2005; Olsen 2012).

The purpose of constant comparison of the data is to see whether they support and continue to support emerging categories.¹⁸ Thus, each theoretical category that becomes established is repeatedly present in very many comparable pieces of data derived from multi-sources; in other words, a category represents a ‘pattern’ that the researcher recognizes in the data generated by replicatory or comparable studies. Consequently, categories are created by the researcher rather than ‘discovered’ in the data; hence, categories are conceptual outcomes that arise from the researcher’s immersion in the data. It is in this sense that categories emerge from the data (Dey 2007). In this way, datum that would not be significant on its own obtains a collective, emergent significance. The categories that emerge are of two types: one that is derived directly from the data and the other that is formulated by the economist. The former tends to denote data self-description and actual processes and behavior while the latter tends to denote explanations. In either case, the language used to describe the categories may be quite different from the existing theoretical language. As a result, 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; Coates 1996). Finally, each category has properties also derived from data in the same manner – that is, by using constant comparisons. The more properties a category has, the denser and hence the more realistic it is. A grounded theory category does not ignore the complexity of reality; rather it embraces it.

Theoretical sampling and saturation

In the process of collecting data, the economist may feel that what is being collected is not revealing additional properties of a specific kind that they believe, owing to their familiarity with the relevant theoretical, empirical, and historical literature, might exist. As a result, they engage in theoretical sampling. This involves sampling or collecting data that are expected to increase the density of a specific category by producing more properties, as well as increasing the number of pieces of data supporting each of the properties, hence making it more

definitive and analytically useful.¹⁹ 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. 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. The significance of this empirical grounding process is that the theoretical categories cannot be unrealistic, hence false, since they are derived from the data. If the data collection and theoretical sampling is incomplete, then the categories are not adequately dense, as relevant properties are missing; thus such categories are incompletely realistic. On the other hand, if future data emerge which the empirical grounding process shows do not fall into a previously existing category, then that category is not relevant, but it is not empirically false.

Structures, causal mechanisms, demi-regularities, and grounded theories

Once the real, observable theoretical categories are delineated and grounded, the economist, perceiving a pattern of relationships among them, puts critical realism into practice by classifying some directly as economic and social structures and others as components of them. Continuing the practice, other categories that center on acting persons' motivation and action and a set of outcomes are woven together into a causal mechanism; and finally, some categories are identified as demi-regularities. The resulting structures, causal mechanisms, and demi-regularities are real and observable as opposed to unreal, metaphoric, and hidden. So, to observe a structure or causal mechanism is to observe the working together of its observed concrete components. Hence structures, causal mechanisms, and demi-regularities are real and observable precisely because their categories are real and observable.

Given their research interest, the economist selects from the causal mechanisms identified, one as the central causal mechanism around which the structures and secondary causal mechanisms and their outcomes are arranged. Criteria for selecting the central causal mechanism from among a number of possible causal mechanisms include its frequency in the data as a cause of the outcomes, its implications for a more general theory, and its allowance for increasing the number of interrelationships between the structures and causal mechanisms. Thus the causal mechanism is central to the narrative being analytically developed in conjunction with the economic structures and secondary causal mechanisms. More specifically, the narrative is not a description of the present or a recounting of past unique and/or demi-regular economic events, although both techniques of presenting empirical and actual economic events are included in the narrative. Rather, it is a complex analytical explanation of those described or recounted events. Even when the basic narrative is decided upon, its development will involve further theoretical sampling and collecting of data as new properties for and interrelationships between the existing structures and causal mechanisms emerge. Consequently,

the narrative evolves into an economic theory while at the same time becoming increasingly denser (in terms of the increasing number of interrelationships between the structures and causal mechanisms).

The critical realist-grounded theory (CR-GT) that eventually emerges is an intrinsically complete or closed (but ‘externally’ open via its causal mechanism) analytical explanation (which is inclusive of but not reduced to models, graphs, and other forms of representations of the data) or interpretation of the actual economic events represented in the data. Thus the theory is not a generalization from the data, but of the data; more specifically, 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. This means that the GTM is not the same as induction. That is, the GTM establishes (or creates) structures and causal mechanisms (which must exist for scientific research to be possible according to CR) from the data with the point of arguing that the relevant economic events, assuming that the structures and causal mechanisms remain relatively enduring, remain relatively ongoing as well. Consequently, the CR-GT approach is also not a deductivist research strategy, with the implication that it cannot be evaluated or judged in terms of logical coherence of a deductivist kind. Rather, the coherence of a CR-GT is evaluated and judged on how rigorously – that is, strictly exact or accurate – its explanation corresponds to the actual historically contingent economic events (Sarre 1987; Sayer 1992).

Since the theory is a clear theoretical account of empirical and actual events that occur in historical time, the critical realist’s three-tier view of economic reality collapses into a single integrated tier for the CR-GT heterodox economist. In other words, reality is built into the theory (as opposed to having a non-grounded theory representing reality). With the grounded theory in hand, the heterodox economist can directly ‘see’ the causal mechanisms and structures and ‘hear’ the acting persons determining the empirical and actual events – the mysterious, random, and unintelligible is replaced by clear explanation. Moreover, being a weave of a central causal mechanism, secondary causal mechanisms, and economic and social structures designed to explain actual economic events in historical time, the theory also consists of realistic (as opposed to stylized, fictionalized, or idealized) 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 that cannot be disassembled into separate parts that compose it.

Economic theory centered on a single central causal mechanism is classified as a substantive economic theory since it is an explanation of a single basic economic process that occurs widely in the economy. From a number of substantive theories, a more holistic or macro economic theory is developed in a concatenated manner where the relationship or pattern among the substantive theories is its analytical explanation. That is, the holistic theory is built up from substantive theories; it has no prior existence. As in the process of grounding the substantive economic theory, the holistic theory also has to be grounded. In particular, the relationships between the substantive theories that constitute the macro theory need to be grounded in data assisted and directed by theoretical sampling. Consequently,

the macro economic theory is grounded, historically contingent, and its analytical explanations are not empirical extrapolations. Moreover, it is no more (or less) abstract than a substantive grounded theory. Because a grounded theory must at all times be grounded, it cannot be an abstract theory where the modifier denotes some degree of non-groundness, such as the use of fictional categories or the elimination of data. Hence, grounded theories cannot be differentiated according to the levels of abstraction.

Evaluating grounded theories

Since the categories and their relationships that constitute the theory are intimately linked with the data, the grounded theory itself cannot be falsified. More specifically, because a grounded theory is developed with the data rather than prior to it, it does not stand independently of the data. Thus, it is not possible to test for the truth or falsity of a grounded theory by checking it against the data from which it is constructed. But a grounded theory is evaluated by how well it explains actual economic events – that is, how well it identifies empirically and weaves together the causal mechanisms, structures, and descriptions into a narrative of the economic events being explained. In short, a grounded theory refers to real things, represents real entities, and is evaluated on how well it rigorously accounts for the causal manner in which the economy actually operates. The evaluation process takes place within a community of scholars where delineating tentative drafts of the theory are presented to colleagues at conferences and seminars for critical comments; more refined presentations of the theory are published where colleagues have the opportunity to point out inadequacies. Through this cooperative process the community of heterodox economists arrives at, hopefully but not necessarily, adequate theories (and therefore, this process illustrates the social nature of knowledge construction). Consequently, a grounded theory as socially constructed knowledge is, in the first instance, only as good as its theoretical categories. If the data selected do 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 forces data into pre-determined categories; if the density of the categories is small or the relationships between categories are not identified or under-grounded due to incomplete data collected; if the economist chooses the ‘wrong’ central causal mechanism; and/or if the narrative is static, terse, unable to fully integrate structures and central/secondary causal mechanisms, and relatively un-complex, then the commentary of critics will make it clear that the economic theory is poor, ill-developed, and hence to a greater or lesser extent less-realistic and unable to provide a comprehensive and convincing explanation of actual economic events. That is to say, 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 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.

A second way to evaluate a grounded economic theory is to see how well it deals with new data: data are taken seriously and the continued validity of previously developed knowledge is always questioned. The relatively enduring structures, causal mechanisms, and their outcomes of a grounded theory are based on data collected in a specific time period. So, it is possible to evaluate whether they have remained enduring outside the time period by confronting them with 'new' data derived from replicating studies, especially data from actual events that at first glance appear to fall outside existing categories and not to support demi-regularities and expected transfactual results. If the new data fall within the existing categories and conform to the transfactual results – that is, the pattern of data and the narrative of the new data match that of the existing theory – then the structures and causal mechanisms have been relatively enduring (Wilber and Harrison 1978; Yin 1981a; 1981b). On the other hand, if the new data fall outside the existing categories and not supporting the transfactual results – that is, the pattern of the data and narrative do not match the existing theory – 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 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 theory development and reconstruction as well as new theory creation when the correspondence between theory and events breaks down.

The fact that good or poor research practices lead to better or worse grounded economic theories indicates that choices made by economists do affect the final outcome. Therefore, within the GTM it is possible, although not likely, to have good but different substantive and macro economic theories for the same economic events. Given the same theoretical categories, a different choice of a central causal mechanism produces a different theory; or if the same central causal mechanism is used but integrated with different structures and secondary causal mechanisms, a different theory will also be produced. However, since heterodox economists are critical realists, and their theories concern causal historical events, they do not accept the possibility that there are multiple valid grounded theories explaining the same economic events; hence, they reject the possibility that there is no empirical evidence that could distinguish between two incompatible grounded theories. Thus, following the same procedures as above, the way forward for the grounded theorist is to collect new data to see which of the two theories they support supplemented by critical commentary from colleagues. Hence, although the procedures used are the same and the data collected are, in principle, the same, checking the continual explanatory adequacy of a grounded theory is a different activity from choosing between two different grounded theories, for the former produces a historically linked sequence of grounded theories, while the latter concludes that one of the two theories is not an explanation after all (Glaser and Strauss 1967; Diesing 1971; Conrad 1978; Wilber and Harrison 1978; Fushfeld 1980; Turner 1981; 1983; Charmaz 1983; Ellis 1985; Gruchy 1987; Strauss 1987; Konecki 1989; Megill 1989; Corbin and Strauss 1990; Mäki 1990; 2001;

Strauss and Corbin 1990; 1994; Tosh 1991; Wisman and Rozansky 1991; Glaser 1992; 2007; Sayer 1992; Bigus, Hadden, and Glaser 1994; Hunt 1994; Boylan and O’Gorman 1995; Annells 1996; Atkinson and Oleson 1996; Emigh 1997; Runde 1998; Dey 1999; 2007; Finch 1999; 2002; Lewis and Grimes 1999; Pentland 1999; Tsang and Kwan 1999; McCullagh 2000).

Summary of the critical realist-grounded theory approach

The CR-GT approach to theory creation and evaluation overcomes the perceived shortcomings of CR and the GTM: the former has little to say about theory, while the latter lacks the ontological foundation and so appears to be little more than an inductive research strategy. However, CR provides the ontological realist foundation for the GTM and identifies its objects for empirical grounding – structures and causal mechanisms, while the GTM provides the research strategy by which they are empirically grounded. The theory resulting from the CR-GT approach is a conceptually dense analytical explanation of the actual events represented in the data; its relatively enduring capability in this regard can be evaluated by confronting it with new data. Hence the CR-GT approach is not based on deductive or inductive logic, but on a reflective form of scientific knowledge creation data that is interactively fused with the creation of theory. So the theory is of the data, not separate from it; if new data support the theory, the former become part of the latter; while if the new data do not support it, then those data become part of a new theory with different structures, causal mechanisms, and perhaps demi-regularities.

Issues of research methods

The GTM of theory creation effectively dismisses not only the traditional issue of the ‘realisticness’ of assumptions, but also the role of assumptions in theory creation and development. The reason is that assumptions are by definition not grounded in the real world, so their use for theory creation cannot be part of the GTM. Consequently, the degree of their realisticness or their adequacy as a logical axiomatic foundation for theory is not a concern. This implies that logical coherence is irrelevant for evaluating grounded theories. Moreover, because the role of theoretical isolation (such as partial analysis) in traditional theory building and theorizing is dependent on assumptions (such as *ceteris paribus*), their absence in the GTM means that grounded theories are not isolated theories that exclude possible influencing factors. The combination of CR, with its relatively enduring structures and causal mechanisms, and epistemological relativism, and the GTM produces theories that include all the relevant factors and influences, are historically contingent, and exist in ‘real’ space and time. To deliberately exclude some factors would leave the mechanisms, structures, and theories insufficiently grounded; to claim to establish laws and certain (timeless) knowledge would remove the mechanisms, structures, and theories from the real world economic events they are to explain. Thus, the integration of critical realism and

grounded theory results in theories and theorizing fundamentally different from the traditional mode. In particular, it means that heterodox economic theory is not an axiomatic-based approach to theory creation, does not use deductivist methods to create theory, and rejects every research strategy of theory creation that is not empirically grounded. On the other hand, their integration invites the utilization of many different research methods (rather than just econometrics) and types of data.²⁰ This, however, raises some methods and data issues centering on using mixed research methods and data triangulation, on using of the case study method in theory creation, on using analytical statistics, and on using schemas, models, and mathematics (Spiethoff 1953; Mäki 1989; 1992a; 1992b; 1998b).

Mixed research methods and data triangulation

A CR-GT consists of a heterogeneous array of structures, a primary and some secondary causal mechanisms. Various research methods are needed to collect the various kinds of data. The diversity in terms of research method and data is inevitable, since some structures are based on statistical data while others are based on social-relational data; the causal mechanisms require some data that clearly reveals intentionality qua decision-making. The use of different kinds of data derived from using different research methods to construct a CR-GT is called *mixed research methods and data triangulation*. More specifically, the CR-GT approach requires the use of mixed methods and data triangulation, since no one type of research method-data is sufficient for theory construction.

For example, to construct a critical realist-grounded explanation of a particular set of past and present economic events, such as pricing and price stability, the use of historical and quantitative methods to examine existing written, recorded, physical, and quantitative records and artifacts is warranted. Since these methods and data sources might very well prove insufficient for the task at hand, it is necessary to use other research methods – such as surveys, interviews and oral histories, industrial archaeology investigations, mapping, direct observation, participation in activities, fieldwork, and statistical analysis – to create new data. In this context, subjective evaluations and interpretations of future possibilities constitute a particular kind of data that require particular research methods to observe and record. When it is important to explain how and why particular pricing decisions are made and who made them, the economist needs to create narrative accounts of relevant lived-historical experiences embedded within the cultural milieu of particular business enterprises. Thus the economist needs to examine letters and other written documents, undertake interviews and other oral documentation, and possibly engage in participant observation in which the economist may directly engage with, for example, the enterprise in the process of collecting data that is used in the pricing decision. So what constitutes appropriate research methods and data depends on the object of inquiry. Consequently, real, observable, and measurable theoretical categories, hence real, observable, and measurable economic structures and causal mechanisms that constitute the CR-GT, are grounded

in the data via different research methods obtained from various sources (Thurmond 2001; Goulding 2002; Olsen 2003; Downward and Mearman 2007).

Case study

The theoretical categories that 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 is ontologically real and gives it its unity. The object or theme can be historical or a current real-life event and the study may use several kinds of data sources. For example, the theme of a case study may be the pricing procedures used by business enterprises; consequently, the case study will involve the collection, comparison, categorization, and tabulation of pricing procedures obtained from various empirical pricing studies along with a critical narrative that examines and integrates the data. Thus, the case study approach is the principle method of 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, the case study 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 specifically carried out through case studies in that the economist makes a conscious decision to undertake a particular case study in order to increase the empirical grounding of particular theoretical categories.²¹ Thus a case study may be of, for example, an individual business enterprise, and the theme of the study may be to delineate the complex sets of decisions regarding pricing, production, and investment and to recount their effects over time. On the other hand, a case study may be concerned with a particular theoretical point, such as pricing, examined across many different case studies of different enterprises. The different case studies provide not only 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 the case study is a narrative that explains a historical or current event. The narrative includes structures and causal mechanisms which, when combined with the history or facts of the event, explains how and why it took place. Hence, this type of the case study is both a historical and theoretical narrative, an integration of theory with the event. Consequently, it provides a way to check how good a CR-GT is and, at the same time, contributes to its further grounding and extension. A robust substantive CR-GT is one that is based on an array of case studies of historical and current events (George 1979; Yin 1981a; 1981b; 1994; Eisenhardt 1989; Orum, Feagin, and Sjoberg 1991; Sayer 1992; Vaughan 1992; Wieviorka 1992; Smith 1998; Stake 1998; Finch 1999; 2002; Scheibl and Wood 2005).

Analytical statistics

Analytical statistics (as opposed to descriptive statistics) is the use of statistical methods to examine various types of quantitative and qualitative data for the purpose of assisting in delineating structures, causal mechanisms, transfactual outcomes, and demi-regularities; in evaluating CR-GTs for their accuracy in explaining past and present economic events; and in evaluating claims in the historical literature regarding causal mechanisms, transfactual outcomes, and demi-regularities. Analytical statistics includes various forms of regression analysis *qua* econometrics (for example, average economic regression and vector autoregression) and factor analysis (for example, cluster analysis and qualitative comparative analysis). Constrained to a critical realist causally-related world of structures and causal mechanisms and the GTM insistence of not making inferences beyond the existing data, the use of analytical statistics, especially econometrics, is restrained. For example, in the process of transforming categories into an economic theory, the heterodox economist provisionally identifies and associates structures and causal mechanisms with particular transfactual outcomes. In so doing, the economist subjects the causal mechanism and its outcomes to econometric evaluation or testing. The econometric model used includes components for the quantitative representation of structures as well as components for the causal mechanism; its particular statistical form is determined by the causal mechanism. As a result, the model is provisionally intrinsically closed. If the econometric tests of the given data support the existence of the causal mechanism's transfactual outcomes, then the empirical grounding of the causal mechanism is enhanced. A failure of the tests 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 empirical support, the economist can provisionally identify the causal mechanism and its transfactual outcomes. At this stage, they can engage in further theoretical sampling to see if additional qualitative and quantitative evidence supports it; econometric testing can again be utilized in this context. Thus, in the CR-GT approach, econometric testing is about understanding the relationship between the causal mechanism and its transfactual outcomes (given structures) and not about future prediction or about making inferences beyond the data to a larger population from which it was 'drawn' – that is, it is about significance testing. 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 can also be used to evaluate grounded theories that are associated with demi-regularities. In this case, the economic theory is econometrically modeled so as to include all the structures, the primary causal mechanism, and the secondary causal mechanisms. If the evaluation 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 examination 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 empirical connection between theory and events breaks down (Lawson 1989; Yeung 1997; Downward 1999; 2003; Downward and Mearman 2002; Olsen and Morgan 2005).

Schemas, modeling, and mathematics

From a critical realist perspective, the real economic world is a structural-causal analytical narrative; because of this, it is also a historical analytical narrative. As part of the overall narrative there can be a schema or a model that represents some structures in terms of quantitative-mathematical relationships and includes causal mechanisms and agency. In this regard, because the real world consists of structures and causal mechanisms, it contains schemas and models or there are models in the world. Consequently, to engage in modeling, it is necessary to create the world in the model that is empirically grounded from the real world in that it has the same structures, causal mechanisms, and agency that exist in the real world. Therefore, through the use of the method of grounded theory, the model in the world becomes the world in the model. So heterodox economists work with CR-GT models where the real world ‘constrains’ the model; that is to say, heterodox economists require their CR-GT along with abstractly-directly representing models to abstractly-directly represent the actual structures and causal mechanisms with their agency of the phenomenon under analysis to generate outcomes that are part of the real world. In this manner, a heterodox CR-GT, abstract-direct-representation (ADR) modeler aims to create a model that is a complete real-world representation of the phenomenon under analysis, which contains no fictitious components.²² Such an approach to modeling is quite distinct from the approach used by mainstream economists (Weisberg 2007).

Representing by a schema or modeling a subject matter is a distinct yet hierarchical activity. A schema takes the form of an analytical, abstract diagram that focuses primary attention on the quantitative relationships of the core concrete structures that clarify the complex relationships associated with the subject matter. Being empirically grounded, a schema establishes relationships between quantities that in turn facilitate the modeling and theorizing of the subject matter. What is significant about a schema is its claim to abstractly, directly represent the relatively enduring structural relationships among the quantities under investigation, thus restricting the kind of modeling and theorizing that is possible. In short, a schema establishes, from the beginning, the analytical limits of how the subject matter can be understood, and theorized about.

Within the CR-GT-ADR approach, the schema represents the ontological vision and the substantive nature or relatively enduring relationships of the economic event under examination. Thus, it provides the empirical foundation of the model that the latter cannot exceed. Models represent mathematical relationships between quantities; thus they are associated with schemas that represent only

structures, but they can be integrated into schemas that have causal mechanisms and agency so the latter become part of the model. Consequently, the model is open and hence need not have a solution based solely on structures. Once created, the model is capable of being ‘manipulated’ by the modeler or the agents associated with the model via the subject matter under investigation. In this manner, the narrative explanation of the subject matter is worked out in conjunction with the model and its underlying schema. As a result the subject matter is directly embedded in the schema-model and the schema-model is in the subject matter – that is, the world in the model and the model in the world.

Models have a dual role in heterodox theory. First, a model is used to assist in developing the narrative of the heterodox theory. In this case, the model is an analytical exploratory tool that starts with empirically grounded structures and causal mechanisms and ends with rigorous outcomes. For example, if the empirical data that is being used to develop the theoretical narrative suggests a particular quantitative relationship between a set of variables, then attempting to model and hence evaluate the relationship is one way to help develop the narrative. Thus heterodox models are integral to the construction of heterodox theory. The outcome is that models are directly embedded in the theoretical narrative rather than having a narrative of their own. Secondly, once the models and narrative are developed, they can be used to evaluate new data or explore the robustness of the narrative under different hypothetical conditions. In this case, heterodox models contribute to the filling out of the narrative as well as assisting it to adapt to new data and slowly changing structures and causal mechanisms. A CR-GT-ADR model also has a role in examining and evaluating theoretical propositions associated with different heterodox theories. Hence, a proposition, which is articulated in a manner that can be modeled and that is asserted to be true, can be examined by an empirically grounded model. The outcome of such a ‘modeling examination’ provides support or not for the proposition.

As noted above (and also discussed in the next section), the method of grounded theory compacts the scale of reality and therefore the degree of detail and specificity required of the narrative. When applied to model-construction, the world in the model is also compact as well as empirically grounded. Consequently, the model is small enough to examine the issue at hand while maintaining the diversity of structures and its manipulability through the agency embedded in the causal mechanisms by the modeler.

The starting point of building a model is the array of structural relationships and causal mechanisms to be examined relative to particular outcomes. The next step is to determine what real world structures should be used to frame the model and what causal mechanisms with particular types of agency need to be included. Moreover, the empirically grounded structures must be relatively enduring, and the agency via the acting person working through the causal mechanism must also be relatively enduring and make the decisions that generate the rigorous outcomes emanating from the model. The result is a model that abstractly and directly represents the real world under examination, rather than being similar to, a surrogate of, an imitation of, analogous to, mimic of, or an outright falsification of the real

world. Because of the acting person who can make a great variety of decisions, the model is open to different rigorous outcomes, as opposed to a single deterministic outcome. Hence, it is possible for the modeler to develop different analytical narratives for different decisions as a way to examine the structural properties of the model.

With the world built into the model, the evaluation of the model consists of two distinct components, the model itself and its output. The former concerns how closely the internal structures and causal mechanisms of the model matches those in the real world – that is to say, how close the model's ADR of the real world is to the actual real world. This means that it is possible to reject a model based on what it is – that is, on its empirical grounding and ADR – prior to any evaluation of its output.²³ The latter involves evaluating the differences between the rigorous outcomes that are grounded in the real world with the actual real world outcomes.

Working the CR-GT-ADR model is a form of theoretical exploration, or, more specifically, a research method for developing and extending heterodox economic theory. This is done in a number of ways. Starting with the empirically grounded model that has been developed and its relatively enduring structures and causal mechanisms, the working of this 'core' model consists of focusing on agency within the primary and secondary causal mechanisms because it can make decisions. In this manner, it is possible to see the different kinds of rigorous outcomes that are produced through the structures and causal mechanisms of the model. While appearing as a form of comparative statics, it is not because it does not involve changes in the structures and causal mechanisms (that is, the 'givens' of the model) but only changes in agency decisions that are consistent with their embeddedness in their causal mechanisms.²⁴ Thus, the variations in the core model's rigorous outcomes do represent plausible outcomes in the real world if the same decisions are made. Hence, we have reasoning within the model and through the model to the real world. The modeler could, upon reflecting on different theoretical arguments, also institute specific demands on the model to see what the rigorous outcomes would be relative to the core model. This could involve imposing uniform decisions on the agents or emphasizing the agency of a secondary causal mechanism over the agency of the primary causal mechanism. In both cases, the outcomes will provide the modeler with a better theoretical understanding of the core model and its contribution to the development of heterodox theory.

Historical change takes place through the interactive changes in structures and causal mechanisms, which implies changes in how agency is carried out. To explore the world of historical change and begin thinking of different possible analytical ways of narrating it, the core model can be explored and manipulated to provide different possible outcomes and hence narratives that can be compared to the core model's output and its narrative. This can be done by varying the structures and causal mechanisms independently or both together. The core model's variations include emphasizing secondary structures or causal mechanisms over the primary ones, reducing the causal mechanisms to a single one, altering structures and causal mechanisms, having agency decisions affect structures, having the changing structures affect causal mechanisms and hence agency decisions,

all of which affect the outcomes which can be compared and analyzed relative to the core outcomes. In all cases, the variations must be empirically plausible if not to some degree empirically grounded, as opposed to outright empirical fictions. Through the variations and the subsequent comparing of the outcomes with the outcomes of the core model, it is possible to determine which structures and causal mechanisms of the core CR-GR-ADR model are the ones that give it its essential properties and hence its theoretical identity and the ones that contribute little or may even contradict its essential properties. This helps the modeler to strengthen the core model and the analytical narrative that goes along with it as well as providing an insight to identify historical change when it is occurring.

The heterodox CR-GT-ADR modeling approach has the world in the model grounded in the real world. Hence, the mathematics in the model is constrained by the real world. That is, model building involves converting the relevant empirically grounded structures and causal mechanisms (which embody accurate measurements and observations) in the real world into a system of mathematical equations and language. As a result, the mathematical form of the model is determined and constrained by the empirically grounded structures (such as the input structures of an input-output model) and causal mechanisms (such as investment decisions by business enterprises), and hence is isomorphic with its empirical data (as well as the theory), which means it is intrinsically closed but externally open via the causal mechanism. The requirement that the mathematics be constrained by the real world means that only certain types of mathematics, such as arithmetic and linear-matrix algebra (especially when used in an arithmetical mode), can be used and that the measurable and observable outcomes of the model are determined, constrained, and real (as in the real world).²⁵ Hence, the model generates non-logical, empirically grounded outcomes that are in the real world, although not necessarily equivalent with the actual outcomes of the real world; that is because the mathematics of the model is of the world itself. When this is the case, the model and its outcomes are characterized as rigorous and non-deductive. This is similar to the late nineteenth century view that mathematical rigor is established by basing the mathematics on physical reasoning resulting in physical models. However, the difference for heterodox modeling is that rigor results when the mathematical model is based on social reasoning represented by the CR-GT-ADR approach (Burchardt 1931, 528–532; 1932; 2013, 5–11; Israel 1981; 1991; Weintraub 1998a; 1998b; 2001; 2002; Boumans 2005, 21–23; Morgan 2012; Martins 2014).

Historical character of heterodox economic theories

The common sense propositions combined with critical realism exclude, as part of heterodox theorizing, ahistorical, atemporal entities and theoretical concepts; atemporal diagrams, given known ends independent of means or processes to attain them; models and other forms of analysis unaccompanied by temporal-historical analysis; and the utilization of ahistorical first principles or primary causes. Being outside of history, historical time, and an unknowable transmutable

future, these ahistorical entities and concepts are also rejected by the GTM as fictitious since they do not emerge as categories in the historical data. Consequently, ahistorical theories with their ahistorical concepts are not connected to the range of economic events they intend to explain and hence are not capable of explaining them. In contrast, the concatenated integration of the common sense propositions and critical realism with the grounded theory method – that is, the CR-GT approach – prescribes that heterodox theorizing include the delineation of historically grounded structures of the economy and the development of historically grounded emergent causal mechanisms. Consequently, CR-GT theories are *historical theories* in that they are historical narratives that explain the present or past internal workings of historical economic processes and events connected to the social provisioning process in the context of relatively stable causal mechanisms (whose actions and outcomes can be temporally different) and structures. So, the simultaneous operation of primary and secondary causal mechanisms with different time dimensions ensures the existence of historical economic processes that are being explained. But even when the primary causal mechanism concludes its activity, the historical processes do not come to an end for the secondary, and other causal mechanisms can also have an impact on the structures so that the slowly transforming structures (and their impact on causal mechanisms) maintain the processes.

Historical processes are organized and directed by multiple independent structures and causal mechanisms and are what constitutes historical time. Since those same structures and causal mechanisms also change slowly, historical processes change as well, implying that there are no end points, ‘constants’ to which the processes tend or lock-in, evolutionary pathways that must be followed irrespective of agency, or cyclical ‘movements.’ In short, historical change is non-teleological, non-historicist, non-cyclical, and, hence, can just only be change. With historical process and historical change as intrinsic properties of historical theories, such outside-of-history concepts and methods as equilibrium, optimization-maximization-minimization, short-period/long-period positions, centers of gravitation, market clearing, states of rest, or comparative statics *cannot be utilized to organize and direct economic inquiry and to narrate economic events*. These concepts are sometimes theoretically justified in the context of a layered view of reality and economic events, since it allows some structures and mechanisms to exist essentially outside of time and historical process. At other times, they are justified in terms of slow moving variables (structures and causal mechanisms) and fast moving variables (outcomes) where the latter do not have an impact upon the former. However, the interplay and linkages between structures, causal mechanisms, and outcomes means that the distinction between the two kinds of variables is not sustainable and that, consequently, historical outcomes are not based on accidental, random, or autonomous factors; hence no structures, causal mechanisms, and outcomes are independent of historical processes. In short, it is not possible to start with a static theory and dynamize it into a theory that explains historical processes – no amendments to an outside-of-history theory can transform it into a historical theory.

Historical economic theories are possible because, as noted under critical realism, all historical events are, due to the existence of structures and causal mechanisms, narratively structured. There are no accidental or uncaused events – that is, events without a narrative. Hence, heterodox economists do not impose narratives on actual economic events to make sense of them, but derive them from the events via the GTM. Moreover, as long as historical events are narratively structured, subjectivity, uncertainty, and expectations do not introduce indeterminacy into heterodox theories. In addition, being a narrative, theories have a plot with a beginning, middle, and end centered on a central causal mechanism and set within structures and other causal mechanisms. Therefore, antedated events prompt the causal mechanisms to initiate activity to generate particular results and hence start the narrative; and it comes to an end when the causal mechanisms conclude their activity. Finally, the storyteller of the narrative is the heterodox economist whose objective is to help the audience – which include fellow economists, students, politicians, and the general public – understand theoretically how and why the actual economic events transpired²⁶ (McCullagh 1984; Carr 1986; Norman 1991; Appleby, Hunt, and Jacob 1994, Chs. 7, 8; Dey 1999; Pentland 1999).

As narratives linked with critical realism and centered on causal mechanisms and structures, CR-GTs as historical heterodox theories are not completely aggregated or disaggregated, nor are they devoid of explicit human intentionality and activity. That is, because causal mechanisms embody data from many case studies, they aggregate economic reality or, put differently, compact the scale of reality and therefore the degree of detail and specificity required of the narrative. However, the degree of aggregation is limited because of the existence of structures and causal mechanisms that cannot be aggregated or disaggregated and human intentionality and activity that are both differentiated and specific. As a result, for the CR-GT approach, heterodox economic theories are neither an aggregate theory where the differentiation among the causal mechanisms with agency and structures disappear, nor such a disaggregated theory so that causal mechanisms with its agency and structures are individual-event specific and hence of little interest.²⁷ The impossibility of aggregating emergent entities to produce representational aggregate entities – that is, aggregate entities with the same properties and behavior as the individual entities – means that heterodox economic theory must consist of linked causal mechanisms and structures. Thus, heterodox theories tell quasi-aggregated narratives explaining the many and overlapping actual economic events occurring in a differentiated economy.²⁸ The fact that the narrative is embedded in the events as opposed to mimicking them (as is the nature of non-CR-GTs) is perhaps the most compelling reason to use the CR-GT approach for theory creation.

The making of heterodox microeconomic theory

Heterodox economic theory is an encompassing theoretical explanation of the social provisioning process within the context of a capitalist economy and therefore is concerned with explaining those factors that are part of the process;

heterodox microeconomic theory is one component of the whole. To use the CR-GT approach to develop a microeconomic theory means first delineating the empirically grounded causal mechanisms and structures that make up the constituent parts of the economy and their interdependencies; and secondly developing theories or analytical narratives of how they contribute to explaining the social provisioning process. Thus, the research and referencing requirements for developing an empirically grounded microeconomic theory are significant; in some instances, the necessary empirical evidence does not yet exist. Consequently, the microeconomic theory presented in the subsequent chapters will only be partially empirically grounded, leaving further work for heterodox economists to do. But what will become apparent is that the empirical stipulation of the structures and causal mechanisms has a significant impact on a number of theoretical issues and arguments in heterodox economics. That is to say, the use of grounded theory only 'permits' specific structures and causal mechanisms to emerge, which in turn limits the range of theoretical models, arguments, and narratives that can contribute to understanding the social provisioning process in actual capitalist economies. This means that various arguments, models, and theories that had a historical explanatory role in heterodox economics are to be put to the side. This will inevitably generate misgivings among heterodox economists as they may well ask 'what theory, friends, is this?' It needs to be recognized that all knowledge is contestable and that even respected arguments and theories by great heterodox economists are not immune to questioning and being discarded.

To start the process of theory creation, the next chapter delineates a theoretical picture of a capitalist economy that will serve as the foundation for developing an empirically grounded microeconomic theory of the social provisioning process as well as an empirically grounded model of a going economy as a whole. This involves delineating the core structures of a capitalist economy relevant to the social provisioning process and locating within them the organizations, institutions, and agency that direct, engage in, or facilitate the economic events that result in social provisioning. And the economic events of specific interest are those that affect the production, pricing, demand, and distribution of goods and services. The structures help shape and govern economic events while the organizations and social institutions (that are located in the structures) house the causal mechanisms in which agency through the acting person is embedded. What these structures, organizations, and agency determine is the kind of heterodox microeconomic theory that is developed. The core structures include the productive structures and the structure of the linkages between incomes and the surplus, which together make for the monetary structure of the social provisioning process, while the core acting organizations and social institutions relevant to the social provisioning process and embedded in the structures are the business enterprise, the state, the household, and market governance organizations such as trade associations, cartels, employers' associations, and trade unions. Together, the structures and causal mechanisms qua agency produce the core economic model of the provisioning process.

The subsequent chapters represent four of the central components of the theory – the business enterprise, the business enterprise and the market, market governance, and the economy qua social provisioning process as a disaggregated, interdependent whole. More specifically, the first three core areas concentrate on delineating ‘micro’ structures and causal mechanisms and developing substantive and macro or holistic theories of the business enterprise (Chapters 3 and 4), of market demand (Chapter 5), and of market governance (Chapter 6). With the structures, causal mechanisms, and substantive theories in place, the final step is to develop a holistic heterodox microeconomic theory (Chapter 7) that brings together the constituent parts of the economy and their interdependencies. This will involve integrating the economic model of the social provisioning process, the causal mechanism with agency-based price model, and the causal mechanism with agency-based output-employment model into a model of a going economy as a whole. Then it will be possible to develop analytical narratives of the social provisioning process. In particular, the theory and the model together will then be used to delineate the impact of the ‘micro’ – that is, prices, profit mark-ups, finance, and the surplus – on the overall level of economic activity and hence on social provisioning.

Notes

- 1 There is a debate within heterodox economics on whether heterodox and mainstream economics are really different or to some degree compatible and commensurable (Lee 2011b; 2011c; 2013a). Those who advocate the latter position discount the theoretical critiques and ignore the clearly articulated statements by various heterodox economists, especially Marxists, radical institutionalists, and Post Keynesian-Sraffians, who claim the former position.
- 2 In some cases, concepts and their derivative symbols are presented in such a way so as to look like they are quantifiable, such as the utility function and ‘U’ for total amount of utility. However, ‘U’ is not well-defined, has no dimensions, and its units of measurement are not stated. This is a case of *pseudo-quantitation* (Bunge 1998; Mahner 2007).
- 3 To illustrate, consider the heterodox critiques of the mainstream concept of scarcity. The Post Keynesians argue that produced means of production within a circular production process cannot be characterized as scarce and that production is a social process (Bortis 1997); the Institutionalists view that natural resources are socially created to enter into the production process (De Gregori 1987); and the Marxists argue that the scarcity concept is a mystification and misspecification of the economic problem (Matthaei 1984) – that is, it is not the relation of the individual to given resources, but the social relationships that underpin the social provisioning process. The three critiques are complementary and integrative and generate the common conclusion that the concept of scarcity must be rejected, as well as the mainstream approach to the study of the social provisioning process in terms of the allocation of scarce resources among competing ends in light of unlimited wants. This is the basis of the popular statement that the only thing heterodox approaches have in common with each other is their opposition to mainstream economics. But if they have similar and overlapping critiques, then there is a good possibility that their positive analyses of the social provisioning process are also similar and integrative to some extent. This is, after all, the basis for heterodox economics.

- 4 Other characteristics of a scientific research field include intimate relations (as opposed to imperialistic relations) with other research fields, direction of scientific activity determined internally to the research field as opposed to accommodating to government, ecclesiastical, or business demands, and an ethos of free search for truth rather than an ethos of ideological faith, a quest for power or consensus, or an enforced blindness of the research community to alternative theories. Mainstream economics falls short on all three accounts, most notably in countries subject to national research assessment exercises and where state power is used to legitimate particular approaches in a research field (Bunge 1998; Mahner 2007; Lee 2009a; Lee, Pham, and Gu 2013).
- 5 This suggests that heterodox economists are relatively indistinguishable from their mainstream brethren except for their scientific output. There is, however, a difference. Being theoretically different often brings the individual heterodox economist under attack if he/she works in a predominately mainstream department. It also brings heterodox departments under attack by university administrators (and often times supported by mainstream economists) who are concerned about department rankings and the production and teaching of ‘improper’ or low-value knowledge. For a detailed history of such incidents, see Lee (2009a) and Lee, Pham, and Gu (2013).
- 6 Since its beginnings in the 1960s and particularly since 1990, heterodox economists have been melding together various aspects of different heterodox approaches (see Lee 2009a; 2010a).
- 7 A number of elements constitute the theoretical core of heterodox theory. Some elements are clearly associated with particular heterodox approaches as noted by Phillip O’Hara:

The main thing that social economists bring to the study [of heterodox economics] is an emphasis on ethics, morals and justice situated in an institutional setting. Institutionalists bring a pragmatic approach with a series of concepts of change and normative theory of progress, along with a commitment to policy. Marxists bring a set of theories of class and the economic surplus. Feminists bring a holistic account of the ongoing relationships between gender, class, and ethnicity in a context of difference. . . . And post-Keynesians contribute through an analysis of institutions set in real time, with the emphasis on effective demand, uncertainty and a monetary theory of production linked closely with policy recommendations.

(O’Hara 2002, 611)

However, other core theoretical elements – such as the socially embedded economy, the economy as an emergent system comprised of sub-systems, circular production, and cumulative change – emerge from a synthesis of arguments that are associated only in part with particular heterodox approaches. For a more detailed discussion of heterodox ‘metaparadigm’ theory building, see Lee (2009a; 2010a); also see Gioia and Pitre (1990) and Lewis and Grimes (1999).

- 8 To simplify the representation and modeling of the economy as a whole, religious and secular private non-market organizations – such as charities that contribute to and support the household, while important in many capitalist economies where the state does not support households, especially poor households – are not included.
- 9 This position has a long lineage reflecting the influence of Karl Marx, Michał Kalecki, and Piero Sraffa; since 1970 a number of heterodox economists have contributed to this tradition, including Kregel (1975), Pasinetti (1981; 1993), Eichner (1987a), and Bortis, (1997; 2003). As a result, much of what is covered in this book can also be found in the works of these authors. This is particularly the case for Alfred Eichner’s work.
- 10 This implies that the problem of the fallacy of composition does not haunt heterodox economics.

- 11 The position adopted here to bridge the micro-macro divide is similar to some of the pre-1970 attempts to ground macroeconomics on appropriate neoclassical microfoundations. One difference is that neoclassical microeconomics is theoretically incoherent, so that the overall project of building microfoundations of macroeconomics is more or less doomed to fail (Hoover 2012).
- 12 As will be further discussed in the next chapter, the acting person is a theoretical conceptualization and representation of decision-making and implementation by a going concern organization, such as a business enterprise or institution, such as a household. It has an ongoing, repeated pattern of culturally particular, ethically informed social relationships. Moreover, the acting person is reflexive in terms of its decisions and thus visualizes the possible impact of its actions. Finally, it can determine the extent to which its decisions qua actions achieve the desired outcomes.
- 13 The contrast to a factual theory is a theory that is concerned exclusively with conceptual objects (such as scarcity) that have no connection to the real world or with theoretical objects (such as utility functions) that are explicitly divorced from the real world.
- 14 This implies that the acting person qua decision-making is an objective activity as opposed to a purely subjective one, as found in the work of radical subjectivist Austrian economists and in variants of mainstream economics. Hence, preference for 'subjective' structures over 'objective' agency and causal mechanisms in modeling and theorizing by some heterodox economists is rejected (Sraffa 1960; Pasinetti 1981; 1993; Kurz and Salvadori 1995; 2005; Lewis 2005).
- 15 Because its components are intentionally related, a causal mechanism cannot be thought of as a machine or 'mechanistic' – see Cartwright (1995) and Dupré (2001) on machines and economic thinking.
- 16 This property of causal mechanisms obviates the need for an inductivist approach for theory creation (Sayer 1992).
- 17 The Sraffian-classical long period methodology is also based on slowly changing structures; however, it does not include 'slowly changing' agency and the interaction between agency and structures. As a result, the theoretical entities determined by the structures are distinct from the actual entities that are determined by agency, such as long period prices and actual market prices. The critical realist structure-agency methodology eliminates this distinction so that the entities are both theoretical and actual. This means that actual market prices are 'structurally' stable but also change slowly over time.
- 18 Constant comparison can also involve exact replicating previous studies to see how robust they are.
- 19 The point of theoretical sampling is specifically to find data to make categories denser and 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 (Glaser and Strauss 1967; Corbin and Strauss 1990).
- 20 For a survey of research methods and their application for heterodox economics, see Lee and Cronin (2016).
- 21 It is important to realize that a case study that 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.
- 22 'Abstract,' in this context, means to 'summarize' or directly represent the actual structures and causal mechanisms in the real world, much like an abstract of a book or article. This is in contrast to the use of abstracts by mainstream economists. They use it as a way to remove the real world from the model so as to be able to introduce fictional concepts into it. In order to differentiate the two uses of abstract, I am using 'direct representation' to denote the former meaning of abstract.
- 23 Many modelers find this mode of evaluation unacceptable because it prevents them from using their outcomes to legitimize the model that produced them.

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- 24 For a similar form of modeling, see Setterfield (2003).
- 25 Other types of mathematics could be used if the structures and causal mechanisms warrant it.
- 26 The historical character of heterodox economic theories is closely aligned with the view of economic theories espoused by the German Historical School (Spiethoff 1952; 1953; Betz 1988).
- 27 The outcome of a grounded theory approach to constructing causal mechanisms is a rejection of methodological individualism. While acting persons make decisions based on subjective and objective evaluations of a somewhat uncertain future and generate outcomes, for theoretical purposes their decisions and outcomes are aggregated and embedded in a causal mechanism. Hence, the empirically grounded role of the subjective and the uncertainty in the causal mechanism is observable, persistent, and systematic.
- 28 See Dopfer and Potts (2008, 21–26) for a similar argument regarding meso and macro.

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