

## Methodology for Economic Science and Public Policy

A recent article in the Finance and Economics section of the Economist magazine<sup>1</sup> reported that ‘the depression of the 1930s and the stagflation of the 1970s both forced rethinks’ and that ‘efforts are under way to improve macroeconomic models.’ Will new models be a sufficient methodology in economics—a social science?

This paper will collect ideas on methodology from the following economists: Mark Blaug known for his classic study; Tony Lawson who takes a critical realist view; Tomas Sedlacek who links economics to good and evil; Amartya Sen who has also written on social choice and justice; Adolph Lowe who takes an instrumental view of economic science; the sociologist Gibson Winter who sought an ethical basis for social science; and Bernard Lonergan, a philosopher and theologian who wrote on macroeconomics following the crises of the 1930s and the 1970s.

Mark Blaug

Mark Blaug in his *Methodology of Economics* reviews the history of methodology starting with Adam Smith in the 18<sup>th</sup> century. Smith understood Newtonian science as ‘laying down certain principles primary or proved, in the beginning, from whence we account for the several phenomena, connecting all together by the same chain.’<sup>2</sup> Blaug argues that Smith aimed to apply Newton’s scientific method both to ethics and economics. However, in his writing Smith’s methodology is not explicit. He used comparative statics<sup>3</sup> as well as a more historical approach, focusing on the self-interested behavior of economic man in *The Wealth of Nations* while giving a central role to people’s sympathy for others in his *Theory of Moral Sentiments*.

In his discussion of important economists of the 19<sup>th</sup> century such as Ricardo and Mill, Blaug concludes that classical economists ‘appealed fundamentally to their assumptions’ in judging the validity of their theories. The thinking was logical enough but their stories did not predict the economic outcomes of following their theories. These economists viewed this lack of prediction as similar to the case of the general laws of physics, which needed to be adjusted to specific situations. Classical economists regarded economics as a system of pure deductions from a series of postulates derived from inner experience. The postulates themselves were not open to external verification.<sup>4</sup>

The role of postulates in economics was explained by economists of the Austrian school, who used the philosophic notion of *Verstehen* (understanding from within a person by means of intuition and empathy). The Austrian school economists such as Mises and Schumpeter, were less interested in the predictions of economic theory or in mathematical economics generally. Blaug was unhappy about their lack of interest in the testing and predictions of theory. However, Blaug agreed with the Austrians that studying how market processes converge to equilibrium was more important than studying only equilibrium states as the English classical economists had done.

While Blaug himself emphasizes the importance of empirical testing of hypotheses, he also argues that that *Verstehen* enables investigators in the human sciences, in which human behaviour is also data, to enter sympathetically into the human actions being analyzed. Blaug sees that such introspection

could be essential to explanation in the social sciences, but wonders how it can be validated. Blaug also discusses Max Weber's approach that explanation in the social sciences must be considered in terms of the motives and intentions of individuals rather than in terms of cause and effect as in the natural sciences.<sup>5</sup>

Reviewing 20<sup>th</sup> century economic methodology, Blaug notes the much more important interest in prediction and in testing of hypotheses. Economists like Paul Samuelson wanted to derive operationally meaningful theorems—hypotheses about empirical data that could be refuted, at least ideally. This methodology was called 'operationalism' and included some introspection as well as data collection and computation.<sup>6</sup> Economists were well aware of Karl Popper's view that hypotheses in science need to be falsifiable. However, American methodologists like Fritz Machlup argued that economic theories could not be falsified when they hold with a probability of less than one hundred percent because all the conditions stipulated may not apply. Richard Lipsey had a similar view that empirical evidence could help to compare support for different theories. Blaug concludes that the view at the time he wrote was that economics was 'a box of tools, and empirical testing can show, not whether they are true or false but whether or not they are applicable in a given situation.'<sup>7</sup> He himself favours methodological monism, which holds that method in the social sciences should be as close as possible to the method of the natural sciences.<sup>8</sup>

Blaug notes that Schumpeter defined economic individualism as a mode of economic analysis that always begins with the behavior of individuals. Blaug himself concludes that methodological individualism is a desirable heuristic postulate for the social sciences. However, social scientists should not be reduced to silence 'in defining holistic concepts, macroscopic factors, or aggregate variables.'<sup>9</sup>

Blaug discusses the 'is-ought dichotomy' regarding the difference between factual and normative statements. He asks 'how can we tell whether a given utterance is an is-statement or an ought-statement?' He notes that 'an is statement is held to be true because we have agreed among ourselves to abide by certain "scientific" rules that instruct us to regard that statement as true...(However) the acceptance of every fact of science necessarily implies a risky decision made under uncertainty, involving a definite, but unknown, chance of being wrong.'<sup>10</sup> Moreover, ought-statements could be tested by, for example, a political referendum, showing that everyone agrees some action is right or wrong.

Nevertheless, Blaug concludes that the distinction between positive and normative economics ought to be maintained as far as possible. He argues that in economic science there are 'long established...methods for reconciling different methodological judgments' but no accepted way of reconciling different value judgments except via political action and persuasion. Blaug agrees with Max Weber that to get beyond political bias a value free science is needed.<sup>11</sup>

In his conclusion Blaug summarizes some of the ongoing criticisms of methodology in economics. Blaug himself agrees with Wassily Leontief that what is important is attention to the empirical methods of economics. In the end Blaug approves of the methodology of falsification. However, he views

Popper's distinction between science and non-science as a continuum from the physical sciences to poetry and art, with the social sciences lying somewhere closer to the science end.<sup>12</sup>

### **Tony Lawson**

In his book *Reorienting Economics*<sup>13</sup> Tony Lawson of Cambridge University criticizes mainstream economic methodology from the perspective of critical realism which 'acknowledges the...openness of the world but demonstrates that reality is also structured, i.e. it is irreducible to...the actual course of events and...phenomena of experience.'<sup>14</sup> In other words, science is concerned not with patterns or correlations of surface phenomena, but with explaining their underlying causes. Lawson presents a critique of the use of mathematical modelling to understand and predict macroeconomic events. Such methodology is deductive and implies a closed system, while the economy is an open system that is dynamic and depends on human understanding and behaviour. One example Lawson gives of structured reality is a bicycle which also has power in virtue of its structure or mechanism. Lawson defines a mechanism as the way of acting of a structured thing.<sup>15</sup>

Lawson offers a definition of economics that combines those of economic methodologists such as Mill, Marshall, and Robbins: 'Economics is the identification and study of the factors, and in particular social relations, governing those aspects of human action most closely connected to the production, distribution and use of the material conditions of well-being, along with the assessment of alternative really possible scenarios.'<sup>16</sup> Lawson views economic science as that part of social science which understands economic phenomena, which 'at least in part, depend for their existence on human (intentional) agency.' Economic structures are developed by people and they underlie and influence economic situations or states of affairs.<sup>17</sup> Moreover, nature needs to be recognized as a condition of social action. As examples of social structures Lawson includes 'rules, mechanisms, games, modes of exchange as well as hierarchies, positions, and property.' Such structures are factors influencing human behaviour.<sup>18</sup>

However, Lawson also understands that the analysis of the exchange economy can be regarded as the object of a separate science of economics. Uncovering the mechanisms involved in an exchange economy, in which 'coordination is underdesigned... is of a different nature and order of complexity.' Lawson concludes, '...where individuals live together and interact, the conditions of well-being will (need to) be actively produced and perhaps reproduced. In short, in human society behavior will always have an economic aspect and social scientific study will always include a role (if no more than a role) for economics.'<sup>19</sup>

In his 2009 article on the recent economic crisis Lawson shows how the crisis was in large part a failure to understand the changes occurring in financial structures brought about by the imaginations, understandings, judgments, and actions of agents. After reviewing the innovative extension of credit, the new financial products, the permissive evaluations of risk by rating agencies, and the changes in legislation that led to the crisis, Lawson concludes that explaining the crisis must take into account the financial developments associated with financial globalization. 'These developments, notably the fiat dollar system, the ending of capital controls, the free entry and exit of the major banks or operators in

other financial systems, have undermined the capacity of most states to underwrite and control their own financial systems.<sup>20</sup> The financial system evolves in its relational structures, mechanisms and practices. The structural changes may not be captured in mathematical models.

### **Tomas Sedlacek**

Tomas Sedlacek's recent book, *Economics of Good and Evil: the Quest for Economic Meaning from Gilgamesh to Wall Street* argues that although economics is central to human living the notion of *homo economicus* used in mainstream economics is too narrow a concept of human beings and their projects. Insisting exclusively on human rationality is a partial view of humanity which needs to be supplemented by human emotions. Sedlacek turns to Keynes's notion of "animal spirits" as the way emotions are expressed in economics.

Sedlacek explores the notions of good and evil in economics through key points of the history of western civilization. For Thomas Aquinas good can overcome evil as evil is a failure or lack of goodness rather than an independent being or object. So human beings need guidance to outwit evil rather than to destroy it. For Thomas Hobbes human beings tend towards evil and they need control. These differing perspectives support different approaches to governing society. Sedlacek suggests that on the one hand Aquinas's view requires a 'helmsman' to steer the social process while, on the other, Hobbes' view requires more force or control.

Reviewing the Stoic and the Hedonist traditions, Sedlacek notes how contemporary mainstream economics is in the hedonist tradition given its emphasis on individual utility. '...modern economic schools have taken over Mill's utilitarianism, but they have not acceded to his main principle of personal morality, that of the impartial observer. The principle of the voluntary renouncement of utility...for the benefit of the whole is completely foreign in today's economics...It does not involve itself with personal morals, *because* the invisible hand of the market will recast personal vices into general welfare.'<sup>21</sup>

Sedlacek argues that Smith's real contribution to economics is not found in *The Wealth of Nations*, which contains ideas such as the invisible hand, and self interest. Rather, those ideas are found in earlier thinkers from Aristophanes<sup>22</sup> to Thomas Aquinas. Smith's more important writing, Sedlacek argues, is *The Theory of Moral Sentiments*, which contains Smith's notions of sympathy and the impartial spectator. That book's first sentence states, 'How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it except the pleasure of seeing it.'<sup>23</sup> Smith's self interest, then, operates within a broader notion of the self that includes other people.

Sedlacek discusses the issue of residual social evil. Of course, people may egotistically fail to intend the good, which can result in evil. On the other hand, even when people do intend the good, evil may result as well as good. He argues that it is only possible to recognize structural evils ex-post, and concludes that 'although it appears to us now to be miraculous and advantageous, the entire system of market capitalism could itself later prove to be a sinful structure. While it is the most efficient system so far that mankind has used for its common coexistence, it is possible that it will lead us up a dead-end

street, one whose end will have catastrophic results. But this subconscious residual systemic fear of the unknown will subliminally exist in every system and we will never be completely rid of it.<sup>24</sup>

Mainstream economics today reduces human beings to rational agents that respond only to their personal utility function, which is not limited by sympathy or friendship but only by the limits of a person's budget. This approach shifts economics from being a moral science to being merely a mathematically allocative science. Sedlacek does not criticize the use of mathematics but calls for more attention to ethical questions. Human beings need other people throughout their lives. That fact has always been understood to require balancing self-love or egoism with some acknowledgement of the role of others in our lives through sympathy and care of them.<sup>25</sup> Sedlacek argues that our animal spirits motivate us and give us our dreams and purposes, and may sometimes be irrational. A balance of our animal spirits and our rationality make us human and the key human characteristic as Adam Smith stated is our sympathy for others.

His book shows how, from historical beginnings, economic thought has been influenced by philosophers and social thinkers. Today in an age of science, economics is dominated by the language of mathematics, which is a powerful and useful tool as even the Greek philosophers recognized. Sedlacek criticizes, however, some ways in which it is used in economics. Economic inquiry includes people, and mathematics is an insufficient tool in the human sciences. Sedlacek regrets the lack of realistic assumptions and the lack of adequate falsification of empirical results. He sees economics is still strongly influenced by the determinism of Newtonian physics, though for physicists, such determinism has been weakened by quantum mechanics.

Sedlacek supports the role of model building in economics noting that 'Without observers...the world is chaotic until our ability for model thinking...enable(s) us to view the world reasonably...Every great model...always remains a construct...or if you prefer, a story, a myth. A myth we know is not true (our assumptions are not realistic), but we still believe the theory to say *something true* about us and the world.'<sup>26</sup> Because economic theory affects human lives, the link between reality and the models used is important. 'A theoretical economist must forget about the real world..., otherwise he will not get far in his models...But when an economist has to talk...about economic policy he must often forget the exact models...and speak from experience.'<sup>27</sup>

### **Amartya Sen**

In his 2009 book *The Idea of Justice* Amartya Sen includes criticisms of aspects of mainstream economic methodology. In particular, he discusses the rationality assumption, the self interest assumption, and the utility and profit maximization assumptions. Rational choice theory assumes that people's actual choices are predictably rational, an assumption that has been questioned by others such as Herbert Simon, Adam Smith, and Thomas Schelling. For Sen it is sufficient to assume that people in general 'are not altogether alienated from the demands of rationality.'<sup>28</sup> Moreover, 'The essential demands of rational choice relate to subjecting one's choices – as well as objectives, values and priorities – to reasoned scrutiny.'<sup>29</sup>

Sen also proposes that reasoned scrutiny be as broad and impartial as possible. He uses Adam Smith's notion that the person making the decision can take the perspective of the impartial spectator. In our choices we need 'adequate reflection and, when necessary, dialogue with others taking note of more information if and when it is relevant and accessible... we can also scrutinize the critical sustainability of our objectives and values themselves.'<sup>30</sup> He emphasizes understanding the situation and thoughtfully evaluating the options before taking action. Sen calls for a broad understanding of sympathy in our relations with others, one that includes a commitment to doing what can be done to remove the misery of others.<sup>31</sup> Both education and advocacy are important in developing the rationality of individual decisions.

Sen distinguishes valuation from the goal of utility. For him '...valuation is a *reflective activity* in a way that 'being happy' or 'desiring' need not be...' He argues that 'valuation neglect', reinforces 'physical-condition neglect', and makes 'the utility-view of well-being fundamentally deficient.'<sup>32</sup> In his discussion of human living and its requirements, Sen has developed his notion of a person's capability. For him it is essential that people can choose in life according to their values, rather than assuming that they are only interested in goods or money, which Sen calls 'welfarism'.<sup>33</sup> The process in which social decision and action occur is as important as the outcome of the action.

Thus, Sen proposes a comprehensive approach to wellbeing. He argues that primary goods do give people opportunities, but a better basis for studying people's freedoms would be by a comparison of the actual capabilities people have in their lives. A second aspect of freedom for Sen is that it makes us accountable for what we do.<sup>34</sup> In making social choices to reduce injustice, Sen concludes 'the basic general obligation here must be to consider seriously what one can reasonably do to help the realization of another person's freedom, taking note of its importance and influenceability, and of one's own circumstances and likely effectiveness.'<sup>35</sup>

Further, Sen explores the idea of social choice as an approach to social justice. Social choice theory considers the procedures for reaching public decisions that reflect the priorities of people in the society. Social choice theory in economics dates from the French Revolution and has been formal and mathematical. Kenneth Arrow demonstrated that it was impossible to achieve community wide decisions about three or more options through democratic voting based on individuals' preferences, given quite acceptable conditions. Sen argues that having more information available is important to reaching successful social choices as '...outcomes of the social choice procedure take the form of ranking different states of affair from a 'social point of view', in the light of the assessments of the people involved.'<sup>36</sup>

Sen proposes seven criteria as a framework for social choice decisions: the use of comparative assessments, taking note of the possibility of durable conflicts of principle, allowing reassessment, making room for partial resolutions of conflicts, distinguishing conflicts of interest and judgments, allowing for clear presentations and defence of views, allowing for scrutiny of reasoning behind preferences which may require tolerance of each other's values to reach a social choice.<sup>37</sup> Sen understands justice as a human and social good that is approached via a process of social choice, which he distinguishes from reasoning about justice in terms of the idea of a social contract. He argues that

justice can be studied first by ‘the assessment of social realizations...on what actually happens (rather than merely on the appraisal of institutions and arrangements); and second on the comparative issues of enhancement of justice.’ Sen prefers a comparative approach to social justice to a transcendental one which seeks an ideal or perfect form. By comparing two possible outcomes to a given situation, he argues, it would become possible for people to agree on whether a specific action would reduce injustice. His goal is to move away from injustice through social choices ‘making use of the demands of impartiality in open public reasoning.’<sup>38</sup>

Sen also notes that ancient and medieval thinkers on economic matters ‘took ethics as an important part of understanding human behavior.’ This line of thinking was also present in Adam Smith’s notions of ‘humanity, justice, generosity, and public spirit.’<sup>39</sup> Sen argues that Smith has been too narrowly interpreted in mainstream economics. His famous claim that self interest would benefit everyone only referred to the action of exchange, but not to the trust that is necessary to make exchange possible. Nor was Smith referring to the fundamental economic processes of production and distribution.<sup>40</sup>

### **Adolph Lowe**

Another economist that devoted much of his career to work on economic methodology was Adolph Lowe. His book, *Economic Knowledge*<sup>41</sup> stressed the role of economics as a social science. Importantly Lowe criticizes mainstream economic theory for its assumption of *economic man*, who always maximizes receipts or profit and minimizes costs or expenditures, as well as for the assumption that the economy is an equilibrium system in which the law of supply and demand automatically ensures that changes in sales will stabilize prices. Rather, Lowe shares Alfred Marshall’s view<sup>42</sup> that macro-equilibrium is not automatically achievable but a macro-goal ‘on which the decisions of the micro-units could orient themselves.’<sup>43</sup> The macro-goal for the economy would be chosen through the political process and the role of economists would be to ‘prescribe a specific policy as suitable for goal achievement.’<sup>44</sup> Lowe contends that the theory of the market is based on rules of organization rather than being simply a natural process. He criticizes mainstream economics for not sufficiently explaining irregularities in the market system such as occur in business cycles. Theory needs to explain ‘states and processes that...fall short of optimum provision and... of maximum resource utilization.’<sup>45</sup>

Lowe thinks that economic analysis needs to consider market exchanges in terms of two circular flows: ‘a money flow of incomes—expenditures—business receipts—business outlays, which again turn into incomes; and a technical flow moving inversely with the money flow, transforming resources into outputs which as inputs, in the form of consumption and of capital replacement, sustain the steady supply of such resources.’<sup>46</sup> He also notes the importance of capital replacement goods, which ‘become available only in the form of outputs of the production flow itself, and therefore affect its structure considerably.’<sup>47</sup>

Lowe proposes his instrumental-deductive method for economics that argues for coordination of economic theory with political practice. Economic science determines ‘those organizational rules which are appropriate to the realization of a given macro-goal. This is its *instrumental* part, based on regressive inference from the end to the means, or from a given effect to a suitable cause or causes.’ However,

Lowie concludes that 'empirically valid...statements can be derived from regressive and progressive inference only to the extent to which political action...succeeds in approximating reality to the conditions of goal adequacy.'<sup>48</sup>

### **Gibson Winter**

Because of the social issues raised by economists so far reviewed, I consider Gibson Winter's book *Elements of a Social Ethic: The Role of Social Science in Public Policy*. At the beginning of his book Winter states that 'the contributions of social science and social ethics to the creation of social policy require more dialogue between the disciplines than now exists.' The failure of collaboration, he sees, is 'largely because they have failed to clarify the significance of their abstract models for concrete, social process.'<sup>49</sup>

Early social scientists and economists thought the laws in their sciences would be like laws in the physical sciences and would require conformity on the part of humans to make the society or economy work. But social processes are created by people and can be modified and changed by them. Winter argues that 'Wherever human science obliterated the "human" for the sake of its "science" ...paradox and ambiguity beset its formulations...ideological perspectives were promulgated as laws of nature. No field of human science demonstrates this more dramatically than economics.'<sup>50</sup>

For Winter, methodology is crucial to separating science from ideology in the social sciences. They are hard to separate as 'the human sciences are engaged in the social processes which they explore.'<sup>51</sup> Winter argues that in the social sciences people's lived experience is the data against which the models of science are to be measured. 'If the commonsense world is the criterion of adequacy for any science, ideology, or ethic of the social world, then the practical world of *doing* is the paramount reality within which truth is to be sought—the reality which thought seeks to clarify.'<sup>52</sup>

Winter distinguishes between ideology and social science: '*Ideological formulation takes the social and cultural heritage for granted as the source of understanding of personal and social fulfillment, but it selects from this heritage the symbols and meanings which can give more adequate expression to that fulfillment in the midst of social change.* Ideological formulation constitutes the future of the society in the light of the past.'<sup>53</sup> Science by contrast 'is a diagnostic attempt to account for the present (social world) in terms of the past...The predictive work of science is built upon its grasp of the regular relationships between given states of a system and antecedent states; it is thus, even in its handling of the future, building upon regular determinations of a "hypothetical" future state by an antecedent state.'<sup>54</sup> Winter regards science as a subculture within the common culture of the social world. Social scientists use objective methods and rules for accepting hypothetical propositions that are intended to ensure their disinterestedness and their openness to radical doubt.<sup>55</sup>

Winter distinguishes four approaches to social science based on their understanding of human beings, their capacities and their relation with the social world. Each of the four can be useful in the social sciences if the limitation of each approach is recognized so that its use is appropriate. Behaviorist social science is mechanistic arguing that projects of the intentional self are limited by the conditions of the situation and the goal is to adapt. The mechanistic or behaviourist model favours adjustment to the

status quo of a static system.<sup>56</sup> Winter found that neoclassical economics has been based on this style, but also argues that it can be useful in the study of the exchange economy.

The functionalist approach to social science postulates a social whole that is in a moving equilibrium in which part-processes are evaluated as they contribute to the stability and mastery of the system over the conditions imposed by the environment.<sup>57</sup> Societies are equilibrium networks and a social scientist interprets value as action that contributes to the social system's equilibrium. The goal is to actualize the values of the system and increase its facilities. Conflicts, protests, and withdrawals are negative and mean maladjustment. Values are not open to rational judgment and fulfillment for the individual is defined by the cultural and social world. Winter suggests that this approach is useful in retrospective analysis to constitute social identity. The mechanist and functional approaches appeal to those who want to quantify social process and change.

Winter calls for a social science that takes the self and its fulfillment seriously. The voluntarist and the intentionalist approaches to social science allow for an exploration of both. However, the voluntarist style is a political conception which uses basic categories of conflict, compromise, influence, and domination. The intentionalist style assumes the unity of the social experience that can be achieved through projects that imply people living in a world that they constitute according to their intentions, ideas, hopes, and values. The world takes more or less permanent shape in the meanings that people take for granted in their living. For Winter, 'the adequacy of scientific perspectives is testable only by the account which they give of the (everyday) world.'<sup>58</sup>

Winter concludes that 'Insofar as history produces man, a science of man is possible; to the extent that man makes history, human science is a broader aspect of man's freedom to surpass his history...Man is lured constantly beyond the versions of justice, order, and harmony which he has achieved...This historical sense imposes limits on the adequacy of scientific and ethical structures; man's immersion in history means that he seeks clarity and simplicity while living with ambiguities. A science or ethic which transgresses that ambiguity ceases to clarify "lived" experience and substitutes its own creation for man's living world. The solution to historical ambiguity is risk, commitment, and answerability. This is what history is about; it is what man is about in making history.'<sup>59</sup>

### **Bernard Lonergan**

Bernard Lonergan is both an economic thinker and a philosopher and theologian who wrote between the 1930s and the 1980s. I turn first to his cognitional theory and then to his economic writings. His important work, *Insight: a Study of Human Understanding*<sup>60</sup> discusses his approach to scientific methodology for both the natural and human sciences. In discussing empirical method Lonergan notes that in addition to their observations and experiments scientists also develop concepts and theories. Lonergan proposes extending the scientific method traditional in the natural sciences to the human sciences He calls such an approach a *generalized empirical method*, which 'operates on a combination of both the data of sense and the data of consciousness: it does not treat objects without taking into consideration the corresponding operations of the subject; it does not treat of the subject's operations without taking into account the corresponding objects.'<sup>61</sup>

For Lonergan the human sciences 'can afford to drop the nineteenth-century scientific outlook of mechanist determinism in favor of an emergent probability.<sup>62</sup> It can profit by the distinction between the intelligible emergent probability of prehuman process and the intelligent emergent probability that arises in the measure that man succeeds in understanding himself and in implementing that understanding...learn(s) to distinguish between progress and decline and between liberty that generates progress and bias that generates decline ... human science cannot be merely empirical; it has to be critical; to reach a critical standpoint it has to be normative.'<sup>63</sup>

To understand Lonergan's discussion of method in the human sciences we need to understand something of his theory or philosophy of cognition, as well as his distinction between common sense and science. Both are related to the human sciences. As Lonergan summarizes, '...the three levels of the cognitional process operate in two modes. Data include data of sense and data of consciousness. Data of sense include colors, shapes, sounds, odors, tastes, the hard and soft, rough and smooth, hot and cold, wet and dry, and so forth. The direct mode of cognitional process begins from data of sense, advances through insights and formulations to reach reflection and judgment. Thus empirical science pertains to the direct mode of cognitional process. On the other hand, the data of consciousness consist of acts of seeing, hearing, tasting, smelling, touching, perceiving, imagining, inquiring, understanding, formulating, reflecting, judging, and so forth. As data, such acts are experienced; but as experienced, they are not described, distinguished, compared, related, defined, for all such activities are the work of inquiry, insight, and formulation. Finally, such formulations are, of themselves, just hypotheses; and they may be accurate or inaccurate, correct or mistaken; and to pronounce upon them is the work of reflection and judgment. Thus the three levels of the direct mode of cognitional process provide the data for the introspective mode; and as the direct mode, so also the introspective unfolds on the three levels, an initial level of data, a second level of understanding and formulation, and a third level of reflection and judgment.'<sup>64</sup>

Lonergan also discusses the introspective mode of understanding in his book *Method in Theology*. He defines method not as rules but as a series of operations undertaken by a person or persons. The operations are transitive and have to do with objects. The operations express the intentionality of the operator or person involved. 'Just as we move from the data of sense through inquiry, insight, reflection, judgment, to statements about sensible things, so too we move from the data of consciousness through inquiry, understanding, reflection, judgment, to statements about conscious subjects and their operations.'<sup>65</sup> Thus, Lonergan moves from methods that pertain only to objects to a transcendental method that focuses as well on the subject's conscious process. 'When inquiry comes to term, or an impasse, intelligence intelligently yields place to critical reflection, as critically reflective, the subject stands in conscious relation to an absolute—this absolute that makes us regard the positive content of the sciences not as true and certain but only as probable. Finally the rational subject, having achieved knowledge of what is and could be, rationally gives way to conscious freedom and conscientious responsibility.' Our operating intelligence 'exists and functions before we manage to advert to it explicitly, understand it, objectify it...Conscious process is intelligent, reasonable, responsible.'<sup>66</sup>

Lonergan also distinguishes four different modes or patterns of human experience in which human beings respond: biological, dramatic, aesthetic, and intellectual. We are not always in our intellectual

mode pursuing the understanding of ideas, and, in fact, spend much of our lives in the biological mode of eating, sleeping, and exercising. More humanly we may enjoy, or even devote our lives and work, to the beauty of nature, music and art in the aesthetic mode of living. People's dramatic mode or pattern shows itself in the style, culture, and choices that they express in their lives.

Our other patterns of human living transform but do not displace our biological pattern of living, which we share with other animals. Lonergan distinguishes scientists who live in the intellectual pattern when doing their science, and people operating in their dramatic or biological patterns, which are governed by common sense intelligence. Scientists and artists experience and understand in their different ways the intelligible unities of things, while for all of us, in our dramatic and biological modes of living, the real is the objects or bodies that we see before us.<sup>67</sup>

In distinguishing common sense from the sciences Lonergan also discusses common sense as subject. As subjects human beings are intelligent and common sense is a 'specialization of intelligence in the particular and the concrete.'<sup>68</sup> Further questions are restricted to the immediate and the practical because we are interested in things as they relate to us. On the other hand scientists, operating in their intellectual mode intend to develop theories that apply generally or universally. The insights of scientists can be formulated as hypotheses which, if verified by others, can be accepted as an addition to knowledge in a discipline or science. However, acceptance may depend on a resolution of conflicts when the scientific and philosophical judgments of other people differ.

In his discussion of methodology in the human sciences Lonergan notes that there are classical and statistical laws that combine concretely in schemes of recurrence just as in the physical sciences. Such laws can also be subject to emergent probability.<sup>69</sup> However, there are differences between physics and, on the other hand, biology, psychology, and intellectual theory. 'Organic, psychic, and intellectual events are not only recurrent, but also develop. In the course of time conjugate forms<sup>70</sup> advance from generic indeterminacy towards a specific perfection.' Developments with their modes of operation occur in a field that Lonergan calls generalized emergent probability. That process supplies the coincidental manifolds of events in which higher conjugate forms emerge. The genetic sequences can be varied, but must ultimately adapt to environmental changes.<sup>71</sup>

Lonergan also discusses the development of organisms. That development is threefold in man. We develop from birth as a unit differentiated by physical, chemical, organic, psychic and intellectual conjugates that pertain to these different levels or systems of the human organism. The conjugate forms are the understood correlations which ground 'respective flexible circles of ranges of schemes of recurrence.' Such schemes of recurrence are revealed in our behaviour and bodily movements, in the ways we deal with other people and things, as well as in our speech and writing. As discussed above on different patterns of experience, as persons, we operate in different ways according to our focus in relation to experiences. Moreover, our various spheres of development need to be integrated for a successful life.<sup>72</sup> As Lonergan notes, we are our intelligence, our sexuality, our judgments and our dreams. As all organisms grow and develop their higher systems at any stage act as both integrators and operators.<sup>73</sup>

Summarizing his study of human development Lonergan concludes that 'intellectual development rests upon the dominance of a detached and disinterested desire to know...(But) the self, as perceiving and feeling, as enjoying and suffering, functions as an animal in an environment, as a self-attached and self-interested centre within its own narrow world of stimuli and responses. (On the other hand), the same self, as inquiring and reflecting, as conceiving intelligently and judging reasonably, is carried by its own higher spontaneity to quite a different mode of operation with the opposite attributes of detachment and disinterestedness. It is confronted with a universe of being in which it finds itself, not the centre of reference, but an object coordinated with other objects and, with them, subordinated to some destiny to be discovered or invented, approved or disdained, accepted or repudiated.'<sup>74</sup>

Finally Lonergan discusses a dialectical method as essential to the human sciences. His approach to dialectic is not conceptualist but is based on acts of understanding which appeal 'to heuristic structures, to accumulating insights, to verdicts awaited from nature and history.' Acts of understanding 'rise from experiences and are controlled by critical reflection.' His dialectic is also normative 'discriminating between advance and aberration.'<sup>75</sup> Lonergan gives as an example of dialectic 'social events (that) can be traced to the two principles of human intersubjectivity and practical commonsense.' Human beings find in themselves a drive to act intelligently using their common sense, but also have their desires and fears which may lead them in a different direction. Lonergan calls this tension the 'dialectic of community.' It pertains to the history of human relationships and is 'the interplay of more or less conscious intelligence and more or less conscious spontaneity in an aggregate of individuals.'<sup>76</sup>

Moreover, Lonergan argues that dialectic is essential to a generalized empirical method for the human sciences. Dialectic 'constitutes a principle of integration for specialized studies...and it can integrate not only theoretical work but also factual reports; finally, by its distinction between insight and bias, progress and decline; it contains in a general form the combination of the empirical and the critical attitudes essential to human science.'<sup>77</sup>

Lonergan also relates dialectic to logic in methods. '(T)he most general aspects of cognitional context are represented by logic and dialectic. Logic is the effort of knowledge to attain the coherence and organization proper to any stage of development. Dialectic, on the other hand, rests on the breakdown of efforts to attain coherence and organization at a given stage, and consists in bringing to birth a new stage in which logic again will endeavor to attain coherence and organization.'<sup>78</sup>

The history of the sciences has shown an evolution in the understanding of scientific methodology. As Lonergan notes, initially mechanics was regarded as the only science. In the nineteenth century Darwin introduced the notion of probability in evolutionary emergence. Later, Lonergan argues, 'Freud established the concept of psychogenic disease, Einstein removed imaginable space and time, (and) quantum mechanics removed from science the relevance of any image of particles, or waves, or continuous process.' Lonergan concludes that contemporary scientists can think of knowledge, not as taking a look, but as experiencing, understanding, and judging. The real for science is not what is perceived through extroversion but what is verified. What science verifies converges to greater accuracy with better measurement and elimination of probable errors.'<sup>79</sup>

During the 1930s, before he wrote his major works on the methodology of human cognition, Lonergan, shocked by the Great Depression, delved into economic thinking and wrote two essays on economics published later in his *Collected Works*. His primary focus in the essays is on production and the distribution of output.<sup>80</sup> Lonergan analyzes the national exchange economy and its relations to government and trade, as a dynamic system of two integrated circuits of capital and consumer goods. These circuits interact through transfers of money between them and with redistributive sources of finance. Managing the exchange economy, he contends, is like driving a car. There are certain mechanisms that put limits on human behavior. Where the money goes matters. Lonergan concludes, 'One has to place first human society which is served by the economic process, and second the economic process which is to be served by money. Accordingly money has to conform to the objective exigencies of the economic process, and not vice-versa.'<sup>81</sup>

Lonergan returned to his work on economics during the economic crisis of the 1970s. His analytical method 'uses classes based on described similarities only as a springboard to reach terms defined by the correlations in which they stand.' He rejects deduction when it is only 'apodictic demonstration in which first premises are not only true and certain but also necessary so that conclusions are similarly true, certain and necessary.'<sup>82</sup> Lonergan maintains that the channels of monetary circulation can explain inflation, the desire for national export advantage, the politics of deficit spending, and the welfare state. For him the first task is 'to correlate the need for more or less money in the productive processes with the magnitude and frequencies of (production) turnovers. On that basis it will be possible to distinguish stable and unstable combinations and sequences of rates (of money and production)...and so gain some insight into the longstanding recurrence of crises in the modern expanding economy,'<sup>83</sup>

Lonergan also discusses the social sciences in Volume 17 of his *Collected Works*. There, he notes that Gibson Winter goes to social philosophy and social ethics "or *lebenswelt*, what people praise or blame' in order to ground 'social policies and planning. The plans are carried out and the scientists will give us feedback for revising these policies.'<sup>84</sup> Discussing Winter's four methods used in the social sciences, Lonergan argues that the physical style used in the natural sciences would be positive, behaviorist, and reductionist in the social sciences. The functional style used by Talcott Parsons and by Lonergan in his analysis of the exchange economy 'understands social structures and processes by grasping the functions of parts in the whole,' which makes that style intellectualist for Lonergan. He argues that Winter's fourth style is phenomenological. 'Its subjective dimensions are the constituting intentionalities of embodied consciousness; the objective dimensions are the forms in which this world appears for this consciousness.' Lonergan proposes an alternative procedure suggested by Adolph Lowe, which is 'to conceive the social sciences as instrumental: they set forth the limitations to human freedom, showing options that people may choose.' Once political choices have been made in a free society, the social scientist has the knowledge to achieve the desired result.<sup>85</sup>

## **Summary and Conclusion**

Methodology in economics has been based on economic individualism initially focusing on the stability of supply and demand in markets as a mechanism of managing the production and distribution of scarce resources. Macroeconomics is a more recent development and analysis has aimed to connect

it to microeconomics because of its link to individual behaviour and choice and its use of the traditional tools such as supply and demand.

To understand the operation of the macro economy the authors reviewed found that models are necessary. The large economic models used by central banks and governments focus on the short-term changes from quarter to quarter to forestall downturns in overall production and spending through adjustments in monetary variables—the interest rate, the money supply, and sometimes the exchange rate.<sup>86</sup> However, Lawson and Lonergan also propose looking at structures or mechanisms through which markets function. Mechanisms and their relationships are dynamic and can destabilize economic data. Models can understand the mechanics of the economy and its operation insofar as it resembles the mechanics of driving a car or bicycle. There is a dynamic equilibrium to be maintained.

Beyond economic mechanics, economics is a human and social science and public policy is built around the accepted levels of human freedom and choice in different societies. The authors reviewed agreed that human beings are more or less rational, but also have emotions, wants, and needs as well as capacities and skills or capabilities. Their needs or desires include not only their own but also those of other people with whom they share sympathy or whom they regard fairly or as an impartial spectator. That stance can include care of self and others whose needs we know and can help. The authors reviewed all move beyond the narrow rationality and maximization assumptions made by mainstream economics. Such assumptions tend to encourage a ‘me-first’ attitude in social interaction as research in behavioural economics indicates.<sup>87</sup>

The economists discussed acknowledge the role of a moral compass in economic thinking based on socially agreed values or belief in God or ultimate values chosen. However, they distinguished between economic analysis and policy analysis. Economic science, through its understanding of the functional relations among key mechanisms, can inform policy choices. Policy choices are social choices, which depend on history, culture, experience, and common sense. Moreover, societies can move away from injustices by recognizing the potential freedom, rights, and responsibilities of all human beings. Such changes are encouraged through education, skill training, love and care, as well as advocacy and persuasion.

Lonergan in my view offers the most developed analysis of human understanding and being that can be a basis for economic methodologies. Beyond his model of macroeconomic dynamics, Lonergan proposes a generalized empirical method for the human and social sciences. This method follows the methodology of the natural sciences but extends it to address the limitations of *Verstehen* and Max Weber’s approaches to rule formation that Blaug among others noted. All the authors reviewed find that introspection is an essential method for reaching understanding in the social sciences. Lonergan’s dialectical method calls for the dialogue and reflection mentioned by Sen among others.<sup>88</sup>

Lonergan’s generalized empirical method starts from sense data but goes beyond it to include the data of human consciousness. Such data are increasingly facts about human knowing that we can acknowledge through our own introspection and, moreover, are increasingly recognized through cognitive physiology, psychology, and institutional analysis.<sup>89</sup> We can become more aware of the

process in ourselves and others. Because the analysis of the data of consciousness includes an analysis of the subject, oneself as well as others, it offers an additional criterion in dialectical method that allows for a critique of one's own process of understanding and judging as well as that of other scientists or policy makers. One has to ask: Has my questioning been open, or am I biased in my own interest or those of my group or party. What are my assumptions about the common good of society?

Economics, beyond its analysis of models, would then include some attention to economic history to understand the social background, as well as a philosophy of human values agreed by those involved to ground social choice. Kenneth Arrow's 'impossibility' theorem underlines the difficulties. Making social choices calls for us to use our common sense, to be open to further questions, to educate, inform, and collaborate in dialogue with those holding different ideas, to distinguish between differences of interest and of philosophy, to reflect, scrutinize, review, and reconsider our ideas and judgments, to work in small and large groups to move towards a functioning social harmony based on enough trust, as well as shared responsibility or love.

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<sup>1</sup> The Economist Magazine, January 19<sup>th</sup>, 2013, Finance & Economics, 'Economics after the crisis: New model army.'

<sup>2</sup> Adam Smith, *The Principles which Lead and Direct Philosophical Enquiries; Illustrated by the History of Astronomy* in *The Works and Correspondence of Adam Smith* (Glasgow 1980 [1799]) Cited in Blaug, 57.

<sup>3</sup> Comparative statics studies how quantities and prices, in a stable economic system, behave in the neighbourhood of equilibrium.

<sup>4</sup> Mark Blaug (1980) 97

<sup>5</sup> Ibid, 49

<sup>6</sup> Ibid, 105

<sup>7</sup> Ibid, 127

<sup>8</sup> Ibid, 47

<sup>9</sup> Ibid, 49-51

<sup>10</sup> Ibid, 130-131. Words in brackets added.

<sup>11</sup> Ibid, 134-135

<sup>12</sup> Ibid, 12-13

<sup>13</sup> Tony Lawson (2003), 145

<sup>14</sup> Ibid, 143

<sup>15</sup> Ibid, 144

<sup>16</sup> Ibid, 154

<sup>17</sup> Ibid, 147

<sup>18</sup> Ibid, 149

<sup>19</sup> Ibid, 164

<sup>20</sup> Lawson 2009, 773-774

<sup>21</sup> Sedlacek 2011, 255-256

<sup>22</sup> F.A. Hayek cited Aristophanes in *The Trend in Economic Thinking* Edited by W.W. Bartley and Stephen Kresge (London: Routledge 1991) 85. Cited in Sedlacek, 160

<sup>23</sup> Adam Smith, *The Theory of Moral Sentiments*, (London: H.G. Bonn 1853) 3. Cited in Sedlacek, 194

<sup>24</sup> Sedlacek 2011, 266 fn.

<sup>25</sup> Ibid, 268-272

<sup>26</sup> Ibid, 301

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- <sup>27</sup> Ibid, 316
- <sup>28</sup> Sen 2009, 178
- <sup>29</sup> Ibid, 180
- <sup>30</sup> Ibid, 189
- <sup>31</sup> Ibid, 194
- <sup>32</sup> Sen 1999, 119-20.
- <sup>33</sup> Sen 2009, 178. The informational basis of welfare economics has remained narrowly confined to utilities, and utility information is further restricted by the view that interpersonal utilities cannot be compared.
- <sup>34</sup> Ibid, 19
- <sup>35</sup> Ibid, 372-373
- <sup>36</sup> Ibid, 95
- <sup>37</sup> Ibid, 106-110. For Arrow's paradox see *Arrow's impossibility theorem*, Wikipedia, Accessed January 30, 2013.
- <sup>38</sup> Sen, *The Idea of Justice*, 410
- <sup>39</sup> Adam Smith, *The Theory of Moral Sentiments* (Oxford: Oxford University Press 1976) 189. Cited in Sen, 191.
- <sup>40</sup> Sen, *The Idea of Justice*, 184-187
- <sup>41</sup> Lowe 1965, xvii
- <sup>42</sup> Alfred Marshall, *Principles of Economics* (London, 1926) 347. Cited in Lowe, 44
- <sup>43</sup> Lowe, 30
- <sup>44</sup> Ibid, 312
- <sup>45</sup> Ibid, 114-115
- <sup>46</sup> Ibid, 114
- <sup>47</sup> Ibid, 267-268
- <sup>48</sup> Ibid, 252
- <sup>49</sup> Winter 1966, 3-4
- <sup>50</sup> Ibid, 14
- <sup>51</sup> Ibid, 51
- <sup>52</sup> Ibid, 55-57
- <sup>53</sup> Ibid, 67. Italics in the original.
- <sup>54</sup> Ibid, 71
- <sup>55</sup> Ibid, 70-71. Scientists define their interests by the problems of their discipline. Radical doubt questions taken-for-granted premises upon which the everyday world operates.
- <sup>56</sup> Ibid, 205
- <sup>57</sup> Ibid, 182
- <sup>58</sup> Ibid, 198-199
- <sup>59</sup> Ibid, 256-257
- <sup>60</sup> Endnotes refer to both editions (CWE page; 1<sup>st</sup> ed. Page)
- <sup>61</sup> Lonergan 1985, 145. Lonergan's extended method is transcendental. He distinguishes 'three meanings of the term transcendental: the most general and all-pervasive concepts, namely, *ens, unum, verum, bonum*, of the Scholastics; the Kantian conditions of the possibility of knowing an object *a priori*; Husserl's intentionality analysis in which *noesis* and *noema*, act and object, are correlative.'
- <sup>62</sup> 'Emergent probability is the successive realization of the possibilities of concrete situations in accord with their probabilities. The concrete intelligibility of Space is that it grounds the possibility of those simultaneous multiplicities named situations. The concrete intelligibility of Time is that it grounds the possibility of successive realizations in accord with probabilities. In other words, concrete extensions and concrete durations are the field or matter or potency in which emergent probability is the immanent form or intelligibility.' Insight, 195; 171-172
- <sup>63</sup> Insight, 261; 236
- <sup>64</sup> Insight, 299-300; 274
- <sup>65</sup> Ibid, 8-9
- <sup>66</sup> Method in Theology, 15-16
- <sup>67</sup> Insight, 293; 267
- <sup>68</sup> Ibid, 198-199; 175

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<sup>69</sup> 'What is significant for evolution is the probability of emergence of such combinations of variations and not the non-systematic divergence from their probability, which is our meaning of the name, chance...A chance variation is an instance of probability of emergence, so natural selection is an instance of probability of survival...Combinations of variations, which possess probabilities of emergence and survival are relevant to schemes of recurrence. For the concrete living of any plant or animal may be regarded as a set of sequences of operations...There are, then, in each set of sequences recurrent operations, and the regularity of the recurrence reveals the existence and functioning of schemes.' *Insight*, 155-156; 132-133

<sup>70</sup> 'Conjugate forms are implicitly defined by empirically established explanatory correlations. Now just as the conjugate form mass, was reached by Newton, inasmuch as he reduced Kepler's planetary scheme of recurrence to his abstract laws of motion and gravitation, so also the conjugate forms of the organism, the psyche, and intelligence are to be discovered by proceeding from the schemes of organic, psychic, and intellectual recurrence to the underlying correlations.' *Insight*, 485; 459-460

<sup>71</sup> *Ibid*, 485-488; 460-462

<sup>72</sup> *Ibid*, 492-496; 466-472

<sup>73</sup> The integrator represents acquired habits of the organism at the previous stage of development. The operator represents the new capacities to perform at the new stage of development.

<sup>74</sup> *Insight*, 498; 473. Words in brackets added.

<sup>75</sup> *Ibid*, 446-448; 421-423

<sup>76</sup> *Ibid*, 242-244; 217-218. Words in brackets added.

<sup>77</sup> *Ibid*, 268-269; 243-244

<sup>78</sup> *Ibid*, 301; 276

<sup>79</sup> *Ibid*, 449-450; 424-425. Words in brackets added.

<sup>80</sup> Michael Shute, *Lonergan's Discovery of the Science of Economics* (Toronto: University of Toronto Press, 2010)

<sup>81</sup> Lonergan 1998, 101

<sup>82</sup> Lonergan 1999, 9-12

<sup>83</sup> *Ibid*, 54. Words in brackets added.

<sup>84</sup> Lonergan 2004, 138

<sup>85</sup> *Ibid*, 370-371.

<sup>86</sup> Denise Côté, John Kuszczak, Jean-Paul Lam, Ying Liu and Pierre St-Amant, "Simple Monetary Policy Rules in Canadian Macroeconomic Models: A Comparison of the Participating Models" (twelve private and public sector models) Bank of Canada, Ottawa, Canada, October 2002.

<sup>87</sup> See for example the behavioural economics of James Konow, Department of Economics, Loyola Marymount University, Los Angeles, CA. U.S.A.

<sup>88</sup> Sen 2009, Chs. 8-9; See also Boumans & Davis (2010), Chs. 6-7. Lonergan's dialectical method calls for the dialogue and reflection, advocacy and persuasion they propose.

<sup>89</sup> On institutional analysis: *The Economist Magazine*, October 17<sup>th</sup>, 2009, 92; Elinor Ostrom, *Understanding Institutional Diversity*, (Princeton, N.J.: Princeton University Press, 2005)

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