Method: Journal of Lonergan Studies, n.s.
13, no. 2 (2022)

ON THE OPERATIVE PRESENCE OF EIGHT TASKS IN ECONOMICS

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This paper follows up on Lonergan's claim that the functional division of labor pertains to any sphere of scholarly human studies. By adverting to samples from the economics literature, eight fundamentally distinct tasks can be identified. This provides data on a historically emergent eightfold methodological structuring that allows for, and indeed, calls for ongoing growth in ranges of genera and species of methods. Evidence further suggests that, once the eight tasks are adverted to, a gradually emerging functional collaboration in economics will attain a new effectiveness in history.

Keywords

disciplinary, interdisciplinary, transdisciplinary, omnidisciplinary, methodological, economics, task, mode, functional specialties, functional collaboration, implementation, communications

1. Introduction

This article regards two areas of concern for *Method: Journal of Lonergan Studies*, namely, economics and methodological foundations of economics. Following up on Lonergan's dense writings about functional specialization, the main purpose of this paper is to invite attention to data that reveals a pre-emergent functional structuring in economics.

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However, historical context has included thought about interdisciplinarity, and so I begin with that topic.

In recent decades, in almost all areas of inquiry, there has been a growing interest in the advantages of interdisciplinary collaboration.[2] But what is "interdisciplinary collaboration"? In 2005, the National Academies provided a preliminary and provisional description:

> [any] mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice.[3]

However, there have been, and continue to be, competing philosophical definitions of "disciplinary," "interdisciplinary" as well as (for instance) "multidisciplinary," "weak" and "strong" "transdisciplinary,"and "interdisciplinary economics."[4] "Interdisciplinarity (ID) and transdisciplinarity (TD) denote a spectrum of experience and the literature reveals a strong tendency to problematize these concepts rather than accepting [sic] a single definition or understanding. Both are contested terms and there are

[2]Dorothy Noyes, Bizer Kilian, and Regina Bendix, *Sustaining Interdisciplinary Collaboration: A Guide for the Academy* (Champaign, IL: University of Illinois Press, 2017), Project MUSE, muse.jhu.edu/book/51744.

[3]National Academy of Sciences, *Facilitating Interdisciplinary Research* (Washington, DC: The National Academies Press, 2005), 2.DC: The National Academies Press, 2005.

[4]Andrew Barry, Georgina Born, and Gisa Weszkalnys, "Logics of Interdisciplinarity," *Economy and Society* 37, no. 1 (February 2008), 20-49; Andrew Barry and Georgina Born, eds., *Interdisciplinarity. Reconfiguration of the Social and Natural Sciences*, 1st ed. (Milton Park, Abingdon-on-Thames, Oxfordshire: Routledge, 2014); Benjamin Dube, "Why Cross and Mix Disciplines and Methodologies?: Multiple Meanings of Interdisciplinarity and Pluralism in Ecological Economics," *Ecological Economics* 179 (January 2021), 106827; Ben Fine, "Economics and Interdisciplinarity: One Step Forward, N Steps Back?" *Revista Critica de Ciencias Sociais* 119 (September 2019), 131-148; Vitor Neves, "Economics and Interdisciplinarity: An Open-Systems Approach," *Brazilian Journal of Political Economy* 37, no. 2 (April 2017), 343-362; Basarab Nicolescu, "Multidisciplinarity, Interdisciplinarity, Indisciplinarity, and Transdisciplinarity: Similarities and Differences," *RCC Perspectives* 2 (2014), 19-26; Clive L. Spash, "The Shallow or the Deep Ecological Economics Movement?," *Ecological Economics* 93 (2013), 351-362; Clive L. Spash, "A Tale of Three Paradigms: Realising the Revolutionary Potential of Ecological Economics," *Ecological Economics* 169 (March 2020), 106518. \\uc0\\u8221{} {\\i{}Revista Critica de Ciencias Sociais} 119 (September 2019).

differences between the two."[5] Conceptual differences aside (and, in fact, a main reason for thought on the topic), it is generally recognized that collaboration between or among what traditionally have been called "disciplines" can yield new and important results.

So far, the various definitions are in terms of "disciplines" as traditionally defined. Accordingly, for this paper, I refer broadly to all such efforts with the name "x-disciplinary." In other words, "x" can be any prefix to "disciplinary" that is intended to suggest some kind of collaboration between or among disciplines, where "disciplines" are as traditionally conceived. In addition to yielding new and important results, circumstances of the past century suggest that some kind of x-disciplinary collaboration also is an emerging need globally. For it is now commonly acknowledged that specialization according to disciplines has resulted in "tunnelings" and "fragmentation"[6] that, in part, have been contributing to ongoing crises of our times. Accordingly, the United Nations 2020 "Human Development Report" recommended that we "reorient our approach from solving discrete siloed problems to navigating multidimensional, interconnected and increasingly universal predicaments."[7]

Alas, in practice, that is easier said than done. And the challenge deepens considerably when we take note of the fact that, as observed in that same report, "areas of research are dynamic – continually emerging, melding, and transforming. . . . [And] what is considered interdisciplinary today . . . [is] disciplinary tomorrow."[8]

There are additional non-trivial aspects to the problem. While not often adverted to, irrespective of modern philosophical definitions, and despite Aristotle's view that "all other sciences than mathematics have the name of science only by courtesy, since they are occupied with

[5]Bianca Vienni Baptista et al., "Preliminary Report of Literature Review on Understandings of Interdisciplinary and Transdisciplinary Research" (Brussels: European Union, December 2019).

[6]See, for example, Stefano Balietti, Michael Mäs, and Dirk Helbing, "On Disciplinary Fragmentation and Scientific Progress," *PLOS ONE* 10, no. 3 (March 2015), e0118747; and Benjamin Dube, "Why Cross and Mix Disciplines and Methodologies?: Multiple Meanings of Interdisciplinarity and Pluralism in Ecological Economics," sec. 2.

[7]Pedro Conceicao, "Human Development Report 2020. The Next Frontier. Human Development and the Anthropocene" (New York: United Nations Development Program, 2020), 5.

[8]NSF Staff, "What Is Interdisciplinary Research?" 2021, https://www.nsf.gov/od/oia/additional_resources/interdisciplinary_research/definition.jsp.

matters in which contingency plays a part,"[9] "interdisciplinarity" has been with us from the beginning. Aristotle observed that "[t]he faculty of thinking then thinks the forms in the images."[10] This is verifiable in experience and, among other things, alerts the modern reader to the fact that mathematical understanding, for example, is a "layered" biological and intellectual achievement.[11] Archimedes weighed a crown in water and shared his results with King Hieron to solve a practical problem. Galileo used brass, wood, and water clocks, thus relying on engineering methods of his day. Modern anthropologists use computers and carbon-dating, made possible thanks to advances in physics, chemistry, and modern technologies. Economists use statistical methods, differential equations, and computational schemes developed by applied mathematicians. Engineers build bridges and super-tower buildings using materials developed by modern materials science. The entire geo-historical academic enterprise involves and draws on physics, chemistry, biology, psychology, perception, wonder, imagination, intellect, society, culture, technologies, ecologies, and more, and applications of all kinds. Furthermore, there would seem to be no way to prescribe limits to inquiry or to the emergence of ever new interdisciplinary and then (as already noted often occurs) new disciplinary collaborations.

Evidently, the question is not whether or not to work in ways that are x-disciplinary but to somehow embrace all disciplines. In fact, it would seem that the notion of "discipline" may be artificial, or at best descriptive.[12] To be sure, boundary conditions include the psychological and the institutional.[13] If, however, we look to past, present, and ongoing collaborations, as will be brought out in this paper, there are methodological invariants, identification, and implementation of which

[9]W. D. Ross, *Aristotle's Prior and Posterior Analytics. A Revised Text with Introduction and Commentary* (Oxford: Clarendon, 1949), 14.

[10]J. A. Smith (tr.), Aristotle, *On the Soul* (Web Atomics, 1994), III, 7, 431b 2, http://classics.mit.edu/index.html.

[11]See note 113.

[12]Why "at best"? For readers familiar with Lonergan's work in metaphysics: "Only in the intermediate scientific stage are relations divided into predicamental and transcendental, and even in that state such a division is not very suitable." Bernard Lonergan, *The Triune God: Systematics*, 1st ed., vol. 12 of Collected Works of Bernard Lonergan (Toronto: University of Toronto Press, 2007), 725. But looking to the future, see note 122.

[13]Noyes, Kilian, and Bendix, *Sustaining Interdisciplinary Collaboration: A Guide for the Academy*.

will be key to the possibility of a globally effective[14] "omnidisciplinary" economics. Note that, while pointing to the new ethos, the name "omnidisciplinary" is temporary and eventually will be replaced through progress in the new methodology.

To be concrete, then, a focus of this paper is x-disciplinarity as it has been and is being manifested in economics.[15] Recent bibliographic results suggest that, despite shifts in recent decades toward being "more open . . . to the influence of management, environmental sciences, and to a lesser degree a variety of social sciences and humanities . . . economics remains the least outward looking discipline with management among all the [social sciences and humanities] . . . and it is too soon to claim that [economics] has completed an interdisciplinary turn."[16] Similar patterns have been found in the literature on methodology in economics.[17] A different database reveals "the interdisciplinary nature of behavioural economics."[18] At first blush, these results may seem to be contradictory. If, however, we look not merely to citation clusters but to contents of works cited, and their intended purposes, bibliographic studies shed light on the fact that, in economics, ever new forms of division of labor occur.

Approximately fifteen years prior to these bibliographic studies, thinking about the ongoing multiplication of division of labor in economics, the historian Roncaglia posed the following question: "[C]an we forge ahead along different paths?"[19] He continued, as follows:

[14]Bernard Lonergan, *Phenomenology and Logic: The Boston College Lectures on Mathematical Logic and Existentialism,* vol. 18 of the Collected Works of Bernard Lonergan, ed. Philip J. McShane (Toronto: University of Toronto Press, 2001).

[15]For additional context see, for example, John B. Davis, "Specialization, Fragmentation, and Pluralism in Economics," *The European Journal of the History of Economic Thought* 26, no. 2 (March 2019), 271-293.

[16]Alexandre Truc et al., "The Interdisciplinarity of Economics" (Montreal, Universite du Quebec a Montreal, August 2020), https://www.epistemopratique.org/en/publications/the-interdisciplinarity-of-economics/ https://francoisclaveau.openum.ca/files/sites/69/2020/12/SSRN-id3669335.pdf.

[17]Alexandre Truc, Francois Claveau, and Olivier Santerre, "Economic Methodology: A Bibliometric Perspective," *Journal of Economic Methodology* 28, no. 1 (January 2021), 67-78.

[18]Snorre Sylvester Frid-Nielsen and Mad Dagnis Jensen, "Maps of Behavioural Economics: Evidence from the Field," *Journal of Interdisciplinary Economics* 33, no. 2 (August 2020), 226-250.

[19]Alessandro Roncaglia, *The Wealth of Ideas. A History of Economic Thought*, 1st ed. (Cambridge University Press, 2005), 508.

> [T]he division of intellectual labour has led to the formation of specialised fields, each now enjoying a life of its own. The range of these fields appears to expand over time: macro and microeconomics; history of thought, public finance, economic policy; monetary economics, industrial economics, the economics of energy sources, labour economics and so on. It is a situation that may well in part respond to the didactic need to divide an ever-vaster corpus of knowledge into various courses for teaching at university level (and if this were all, there would be no need to worry, provided some form of rotation of lecturers among the various courses were brought in to keep the necessary connections between them alive). In a large measure, however, the phenomenon has its origin in the activity of research itself. In this case, too, we may be faced with an inescapable answer to a real problem, namely the multiplication of analysis techniques and research results and thus a dramatic increase in the quantity of written material we must take into account when dealing with any specific issue. However, the tendency to a growing division of economic research into separate sectors increases the sense of confusion . . . nor is it exempt from risks.[20]

Roncaglia was not the only one to ask such questions. Lonergan is well known for his work in theology and philosophy. What is not well known outside of Lonergan Studies is that his background included modern mathematics, logic, and physics, that he had a lifelong interest in economics,[21] and that a major concern of his was the problem of collaboration in sciences, economics, humanities, and theology. (In Chapter 20 of *Insight*,[22] in various contexts, Lonergan explicitly touches on the problem sixty-five times.) What also is not widely known is that, in February of 1965, Lonergan broke through to a methodological solution of the collaboration problem. He identified an eightfold structuring, the core elements of which can be found in all areas of inquiry.

Once the structuring is implemented, the core elements will become eight functional specialties: functional research, interpretation, history, dialectics, foundations, doctrines, systematics, and communications,

[20]Roncaglia, *The Wealth of Ideas. A History of Economic Thought*, 508.

[21]Michael Shute, *Lonergan's Early Economic Research: Texts and Commentary*, ed. Michael Shute, 1st ed. (Toronto: University of Toronto Press, 2010).

[22]Bernard Lonergan, *Insight: A Study of Human Understanding*, vol. 3 of the Collected Works of Bernard Lonergan, ed. Frederick E. Crowe and Robert Doran, 1st ed. (Toronto: University of Toronto Press, 1992).

respectively.[23] The discovery was initially communicated in "Functional Specialties."[24] The first four functional specialties are "past-oriented," the second four are "future-oriented" (or "forward-oriented"); and they are all "progress-oriented." As Lonergan points out, the structuring is a model but not merely a model.[25] For (a) it is a historically emergent structuring that, among other things (b) can yield "cumulative and progressive results"[26]; (c) in its maturity promises to "overcome or, at least counterbalance the endless divisions of field specialization"[27]; and (d) can be found in "any sphere of scholarly human studies."[28]

Additional historical context will be helpful. Unaware of Lonergan's already-published work on the collaboration problem, Arne Naess (father of the deep ecology movement) described four "levels" in ecology that are "in close contact with each other."[29] These essentially correspond with the four forward-oriented functional specialties that, with an advanced "control of meaning,"[30] Lonergan also sometimes spoke of as being on "levels." The book on the theory of literature by Wellek and Warren[31] draws attention to, but does not further develop what, for the theory of literature, are the eight main tasks that Lonergan later identified in general. Rahner observed that Lonergan's "theological methodology seems to . . . be so generic that it really fits every science."[32] Investigating the significance of Lonergan's discovery, Anderson, Benton, Brown,

[23]Bernard Lonergan, "Functional Specialties: Breakthrough Page, SKU/Archive #: 47200D0E060 / A472 V71" (Milwaukee: Bernard Lonergan Archive, Resources in Lonergan Studies, February 1965), bernardlonergan.com. If we let "functional" be understood, then we can ease terminology by using a capital letter to name each of the eight *functional specialties*: Research, Interpretation . . . and Communications.

[24]Bernard Lonergan, "Functional Specialties in Theology," *Gregorianum* 50, no. 3 (1969), 485-505.

[25]Bernard Lonergan, *Method in Theology*, vol. 14 of the Collected Works of Bernard Lonergan, ed. Robert M. Doran and John D. Dadosky (Toronto: University of Toronto Press, 2017), 4.

[26]Lonergan, *Method*, 8, 9, 17, 22, 345, 346.

[27]Lonergan, *Method*, 123.

[28]Lonergan, *Method*, 336-337.

[29]Arne Naess, "Deep Ecology and Ultimate Premises," *The Ecologist* 18, no. 4/5 (1988), 130-131.

[30]See Lonergan, *Insight: A Study of Human Understanding*, vol. 3 of the Collected Works of Bernard Lonergan, chs. 16-17.

[31]Rene Wellek and Austin Warren, *Theory of Literature* (New York: Harcourt, Brace and Company, 1949).

[32]Karl Rahner, "Some Critical Thoughts on 'Functional Specialties in Theology,'" in *Foundations of Theology*, ed. Philip McShane (Notre Dame: University of Notre Dame Press, 1971), 194.

McNelis, and Quinn each draw attention to the operative presence of, as well as the potential long-term advantages of adverting to, the eight tasks in law, language studies, legal studies, housing science, and physics, respectively, and of collaborating accordingly.[33]

For this paper, it will be convenient to use Philip McShane's brief descriptions (not summaries) of the eight tasks:[34]

1. Research: finding relevant data, written or other.
2. Interpretation: reaching the meaning of such data, the meaning of those that produced it.
3. History: figuring out the story, connecting the meaning of the writings and the doings, etc.
4. Dialectics: coming up with the best story and best basic directions.
5. Foundations: expressing the best fundamental (in the sense that they are not tied to any age, time, etc.) directions.
6. Policies: relevant basic pragmatic truths, somewhat like the core of national constitutions or of tribal legends.
7. Planning-Systems: drawing correctly and contrafactually on the strategies and discoveries of the past to envisage ranges of time-ordered possibilities.
8. Communizings [sic]: local collaboration reflection that selects creatively from ranges of possibilities.[35]

[33]Bruce Anderson, *"Discovery" in Legal Decision-Making*, vol. 24, Law and Philosophy Library (Dordrecht: Springer Netherlands, 1996); John Benton, *Shaping the Future of Language Studies* (Vancouver: Axial Publishing, 2008); Patrick Brown, "Functional Specialization and the Methodical Division of Labor in Legal Studies," *Method: Journal of Lonergan Studies,* New Series 2, no. 1 (2011), 45-66; Sean McNelis, *Making Progress in Housing: A Framework for Collaborative Research* (Milton Park, Abingdon, Oxfordshire: Routledge, 2014); Terrance Quinn, *The (Pre-) Dawning of Functional Specialization in Physics* (Hoboken, NJ: World Scientific Publishing Co. Pte. Ltd., 2017). Among McShane's many works on functional collaboration, for economics see, for example, Philip McShane, *Pastkeynes, Pastmodern Economics. A Fresh Pragmatism*, 1st ed. (Vancouver: Axial Publishing, 2002).

[34]The numbered listing is as it appears in Philip McShane, *Economics for Everyone. Das Jus Kapital*, 1st ed. (Edmonton, AB: Commonwealth Publications, 1995), 121; 3rd ed. (Vancouver: Axial Publishing, 2017), 114-115.

[35]Coined by Philip McShane, the names Policies, Planning-Systems and Communizings are descriptive; and Communizings is a neologism. I do not presume to know McShane's meanings. But the focus here is on the eight tasks, as described.

But now, as Lonergan observed and as experience reveals,

> [f]ormal comprehension . . . cannot take place without a construct of some sort. In this life we are able to understand something only by turning to phantasm; but in larger and more complex questions it is impossible to have a suitable phantasm unless the imagination is aided by some sort of diagram. Thus, if we want to have a comprehensive grasp of everything in a unified whole, we shall have to construct a diagram in which are symbolically represented all the various elements of the question along with all the connections between them.[36]

This paper, therefore, includes two key diagrams. Figure 1 indicates the cumulative and cyclic structuring of the eight tasks. The structuring is progress-oriented but not strictly chronological. There will be ongoing "internal communications" between functional specialties. This will be discussed further, in Section 11. Discussion: Toward Implementation.

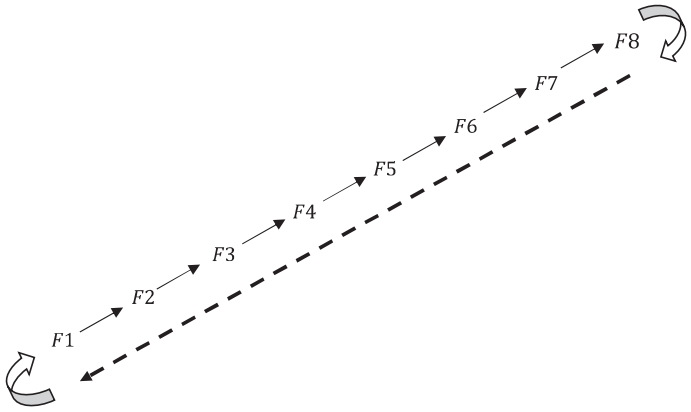

Figure 1. The cumulative and cyclic structuring of the eight functional specialties in economics, and the academy. The functional specialties named by Lonergan have been labeled as follows: *F*1 for Research, *F*2 for Interpretation, and so on. (See note 23.) The arrows and slope in the figure indicate the dependence of tasks on prior tasks, and the possibility of cumulative and progressive results. (See note 26.)

[36]*Bernard Lonergan, The Ontological and Psychological Constitution of Christ,* vol. 7 of the Collected Works of Bernard Lonergan, ed. Michael G. Shields (Toronto: University of Toronto Press, 2002), 151.

Each of Sections 2-9 provides data revealing one of the eight "modes" of thought already operative in economics. In this article, the word "mode" is a convenient name for one's poise in each task. This paper, then, focuses on types of task and modes of thought rather than, and irrespective of, the potential import of (a) particulars of views in economics or (b) perspectives on Lonergan's discoveries in economics.[37] Although, as indicated in McShane's 2010 article in the collection just cited, as well as in the Editor's Introduction to *For a New Political Economy*,[38] the structuring discussed in this paper eventually will ground implementation of Lonergan's economics. Note also that there is no need here to be comprehensive. For present purposes, it is sufficient to provide even modest data from the field, so long as that data illustrates the operative presence of the eight modes. Section 10 hints at the need and possibility of corresponding development in control of meaning. It includes observations of "inadvertent multi-tasking" that, at this time in history, is prevalent in the economics literature and, as such, regularly is counterproductive.

Section 11 includes the second diagram. Subsuming the first diagram, the second diagram will be accessible after having worked through the prior sections of the paper. It is an expression of an open heuristics for all modes of functional communication in a progress-oriented economics, and more. The meaning of the second diagram is not that scholars will be artificially confined to one of sixty-four types or modes of communication. The heuristics, rather, is open. Much as the chemical periodic table provides a basis for vast ranges of past, present, and emerging chemical compounds, Figure 2 provides a basis for emerging ontic and phyletic modes of thought and communication.

There is the question of how to read this paper. Part of what is needed is that we enter into, and provisionally identify modes of statements obtained from the economics literature. For readers familiar with Lonergan's works, this is an exercise in elementary *descriptive* generalized

[37]See, for example, Richard M. Liddy, ed., *Forging a New Economic Paradigm, The Lonergan Review*, vol. 2, 1 (South Orange, NJ: Seton Hall University, 2010).

[38]Philip McShane, "The Implementation of Lonergan's Economics," *The Lonergan Review* 2, no. 1 (2010), 374-376; and Bernard Lonergan, *For a New Political Economy*, ed. Philip J. McShane, 1st ed., vol. 21, Collected Works of Bernard Lonergan (Toronto: University of Toronto Press, 1998), xxix-xxxi.

empirical method.[39] Functional specialization per se remains a future possibility and so it is in a necessarily loose sense that the dominant mode of this paper can be said to be C59. More precisely, it could be called "proto-C59."

2. Research

From elementary particles studied at CERN to primates studied at the Max Planck Institute, unexplained data and other anomalies invite the attention of researchers. In fact, similar patterns of inquiry are found in economics. One scholar asks, "What really caused the Great Recession?"[40] In the third section of "GDP Is Not a Measure of Human Well-Being,"[41] Kapoor and Debroy draw attention to ways in which the "GDP falls short." They contrast actual results with expectations and norms of practice that continue "to this day."[42] The authors then "move the problem forward." That is, while Kapoor and Debroy draw attention to the possibility of "alternative metrics to complement GDP in order to get a more comprehensive view of development and ensure informed policymaking that doesn't exclusively prioritize economic growth,"[43] they do not attempt the further work of determining what the alternative metrics should be. This is not to find fault with the paper but merely to

[39]"Generalized empirical method operates on a combination of both the data of sense and the data of consciousness: it does not treat of objects without taking into account the corresponding operations of the subject; it does not treat of the subject's operations without taking into account the corresponding objects." Bernard Lonergan, *A Third Collection*, 2nd ed., vol. 16 of the Collected Works of Bernard Lonergan (Toronto: University of Toronto Press, 2017), 136. This may, at first, cause some difficulties for readers who are accustomed to employing methods comparable to combinations of textual and conceptual analysis. Helpful introductions to generalized (or equivalently, balanced) empirical method are provided in Philip McShane, *Wealth of Self and Wealth of Nations: Self-Axis of the Great Ascent*, 2nd ed. (Vancouver: Axial Publishing, 2021) and John Benton and Terrance Quinn, *Journeyism. A Handbook for Future Academics*, 1st ed. (Toronto: Island House Press, 2022) (which reaches into modern contexts).

[40]Nicholas Snowden, "What Really Caused the Great Recession? Rhyme and Repetition in a Theme from the 1930s," *Cambridge Journal of Economics* 39, no. 5 (2015), 1245-1262.

[41]Amit Kapoor and Bibek Debroy, "GDP Is Not a Measure of Human Well-Being," *Harvard Business Review*, 2019, https://hbr.org/2019/10/gdp-is-not-a-measure-of-human-well-being. Modern economies have lost sight of the fact that the standard metric of economic growth, gross domestic product (GDP), merely measures the size of a nation's economy and doesn't reflect a nation's welfare.

[42]Kapoor and Debroy, "GDP Is Not a Measure of Human Well-Being," par. 7.

[43]Kapoor and Debroy, "GDP Is Not a Measure of Human Well-Being," par. 13.

draw attention to one of its functions. It contextualizes an anomaly in ways that might be helpful in the (further) task that is explanation.

Anomalies can be highly intricate. And so, for instance, there are works that draw attention to aspects of global trends of increasing GDPs[44] that, contrary to what mainstream models imply, have included increasing inequity, recurring booms and busts, debt crises,[45] volatility, and countless other economic difficulties.[46] But data in economics is not limited to what can be gleaned from economic process, global finance, ecologies, and societies. Data in economics includes what is written about, and for, economics. And so, at any given time, also of special interest are texts, the meaning of which is in some way puzzling and might contribute to progress. For instance, the "General Theory,"[47] as it has come to be called, is one of the most influential economics books in history, yet its lack of clarity still causes economists to debate "what Keynes was really saying."[48]

3. Interpretation

Where Research identifies data to be explained, there is the further task of explaining. There is, for instance, the circular flow model.[49] Taking a different approach, with an eye on patterns of actual production and consumption, Schumpeter observed that "[i]t is good to classify goods in

[44]World Bank, "GDP (Current US$)," *World Bank National Accounts Data, and OECD National Accounts Data Files* (Washington, D.C.: The World Bank, 2021), https://data.worldbank.org/indicator/NY.GDP.MKTP.CD.

[45]Samira Meier, Miguel Rodriguez Gonzalez, and Frederik Kunze, "The Global Crisis, the EMU Sovereign Debt Crisis and International Financial Regulation: Lessons from a Systematic Literature Review," *International Review of Law and Economics* 65 (2021), 105945.

[46]Hossein Askari and Abbas Mirakhor, "Recurring Financial Crises. The Causes," *The Next Financial Crisis and How to Save Capitalism* (New York: Pelgrave Pivot, 2015), 16-34; M Ahyan Kose et al., "Debt and Financial Crises: Will History Repeat Itself?" (VOX EU CEPR, March 2020).

[47]John Maynard Keynes, *The General Theory of Employment, Interest, and Money*, 1st ed. (Springer International Publishing, 2018). Reference added, not given in source text.

[48]The editors of *Encyclopedia Britannica*, "John Maynard Keynes," *Encyclopedia Britannica*, June 2021, https://www.britannica.com/biography/John-Maynard-Keynes.

[49]Antoin E. Murphy, "John Law and Richard Cantillon on the Circular Flow of Income," *The European Journal of the History of Economic Thought* 1, no. 1 (September 2006), 47-62; Don Patinkin, "In Search of the 'Wheel of Wealth': On the Origins of Frank Knight's Circular-Flow Diagram," *The American Review* 63, no. 5 (December 1973), 1037-1046.

'orders,' according to their distance from the final act of consumption."[50] Kalecki suggested, similarly, that we can "subdivide the economy into two sectors providing investment goods and consumer goods, respectively. In each sector, we include the production of materials and fuel will be allocated between the sectors according to the uses that are made of them in production."[51] By adding "compartments" to the circular flow model, there are now 3-, 4- and 5-sector models. A recent refinement of the circular flow model is in an attempt to also account for new-product research and development, leakages and injections, Schumpeterian creative destruction, swarming, and business cycle downturns.[52] An attempt to explain the "2001 recession and the recessions of the previous three decades in detail" is given in the 2001 "Congressional Research Service Report for Congress."[53] Lonergan claimed that there are *two* circular flows, linked through "cross-over payments."[54] Paul Krugman devoted much of his work to understanding patterns in finance, and international trade. There are the gravity equations, "used as a workhorse for analyzing determinants of bilateral trade flows for [more than] 50 years since being introduced by [(Isard[55]; Poyhonen[56]) and] (Tinbergen J. S.[57])."[58] The "gravity equation for trade flows is one of the most

[50]Joseph Schumpeter, *The Theory of Economic Development*, 1st ed. (Piscataway, NJ: Transaction Publishers, 2012), 16.

[51]Michael Kalecki, *Collected Works of Michal Kalecki*, ed. Jerzy Osiatynski, tr. Chester Adam Kisiel (Oxford: Oxford University Press, 1990), 23.

[52]James E. McClure and David Chandler Thomas, "The Impact of New-Product R&D on the Circular Flow," *The American Economist* 64, no. 1 (May 2018), 45-59.

[53]Marc Labonte and Gail Makinen, "CRS Report for Congress. The 2001 Economic Recession: How Long, How Deep, and How Different from the Past?" (Washington, D.C.: Congressional Research Service, August 2003), https://www.everycrsreport.com/files/20030825_RL31237_046de8aae9ec5fd63271b503426d4b160b165e3c.pdf.

[54]Bernard Lonergan, *For a New Political Economy,* vol. 21 of the Collected Works of Bernard Lonergan, ed. Philip J. McShane, 1st ed. (Toronto: University of Toronto Press, 1998), 46, 258.

[55]Walter Isard, "Location Theory and Trade Theory: Short-Run Analysis," *The Quarterly Journal of Economics* 68, no. 2 (May 1954), 305-320.

[56]Pentti Poyhonen, "A Tentative Model for the Volume of Trade between Countries," *Weltwirtschaftliches Archiv* 90 (1963), 93-100.

[57]Tinbergen J. S., *Shaping the World Economy: Suggestions for an International Economic Policy* (New York: Twentieth Century Fund, 1962).

[58]Keith Head and Thierry Mayer, "Gravity Equations: Workhorse, Toolkit, and Cookbook," in *Handbook of International Economics*, vol. 4 (Elsevier B.V., 2014), Introduction, 131-195.

successful empirical models in economics and has long played a central role in the trade literature."[59]

These are merely a few examples of attempts to explain economic data. But a distinction needs to be made. Circular flow models are meant to explain what happens when production, consumption, and monetary flows occur. Gravity equation models, by contrast, are for determining patterns and trends in occurrence, in international trade. More precisely, gravity equations are used to determine empirical probabilities of the occurrence of international trade (about which patterns of rates of actual aggregates vary randomly).

In other words, just as in any science, in addition to the work of defining events and aggregates of events, there has also been progress in determining when, where, and how often such events or aggregates of events occur; and such progress also contributes to our understanding of economics. We find similar pairings at all levels, including finance. For example, option contracts are defined; but the Black-Scholes-Merton model (developed from random walk theory) provides empirical probabilities for their values.

As observed in Section 2, data to be understood includes writings of economists. And so there is also the ongoing challenge of growing in understanding what economists, scholars, and scientists mean or have meant, especially when aspects of their writings are puzzling and potentially significant. In somewhat popular fashion, the book *What Would the Great Economists Do? How Twelve Brilliant Minds Would Solve Today's Biggest Problems*[60] draws attention to the hermeneutical task in economics. For an example of specialized interpretation, see "On a turning point in Sraffa's theoretical and interpretative position in the late 1920s."[61]

[59]Thibault Fally, "Structural Gravity and Fixed Effects," *Journal of International Economics* 97, no. 1 (September 2015), 22011. For a review article see, for example, Mahfuz Kabir, Ruhul Salim, and Nasser Al-Mawali, "The Gravity Model and Trade Flows: Recent Developments in Econometric Modeling and Empirical Evidence," *Economic Analysis and Policy* 56 (December 2017), 60-71.

[60]Linda Yueh, *What Would the Great Economists Do? How Twelve Brilliant Minds Would Solve Today's Biggest Problems* (Stuttgart: Macmillan Publishers, 2018).

[61]Pierangelo Garegnani, "On a Turning Point in Sraffa's Theoretical and Interpretative Position in the Late 1920s," *The European Journal of the History of Economic Thought* 12, no. 3 (September 2006), 453-492.

4. History

Where interpretation attempts to explain data, there is a further task. One economics historian gives a partial description of their work, and its value, as follows:

> At different moments in time, [different] economists have forged their tools with quite different ends in view. In the history of economic ideas four major analytical traditions – the classical, Marxian, neo-classical, and Keynesian – stand out. Each was organized around a different set of questions. The circumstances that spurred their formulation have been considerably altered by subsequent events. Nevertheless, many of the central questions on which the pioneer formulators of these 'master models' [sic] focused are re-asked at later moments in time. When this occurs, we again encounter the theoretical problems with which they wrestled. The study of these systems thus has a perpetual relevance. The more we know about their capabilities and their limitations, the better equipped we are to deal with similar questions when we re-open them.[62]

Evidently, part of what Barber intends is not "history for history's sake," but historical understanding that would have the potential to help humanity now, and in the future. And so, in the Epilogue of his book he observes that

> [t]he house of economic theory has many mansions. In this book we have considered the structure of four of them. Future generations, no doubt, will witness the building of new additions. Nevertheless, the structures already available provide ample room for adaptation to problems quite different from the ones their original designers had in mind.[63]

For another example, let us go to the economics historians Hunt and Lautzenheiser, who draw attention to similar aspects of their work:

[62]William J. Barber, *A History of Economic Thought* (Middletown, CT: Wesleyan University Press, 2009), 15.

[63]Barber, *A History of Economic Thought*, 259.

> At no time in recent history would it seem more important to understand the history of economic thought from the perspective of the divergences that have occurred in its history. By studying the history of economics in this way, we believe a greater understanding can be gained of the current state of economic theory and the policies that flow from it.[64]

The book by Hunt and Lautzenheiser is broad in its heuristics. It looks not only to the development of ideas, but to changing social circumstances and institutions. The authors draw attention to the fact that historians are cognitive, social, political, and moral; and, therefore, claim that "we can never fully understand the cognitive, scientific element in an economist's theory without some understanding of the evaluative and ideological elements of the theory."[65]

Roncaglia makes rather similar observations:

> It is the historian who defines different research currents and schools of thought, and who draws lines between them. Artificial as they may be these distinctions are not arbitrary, but the fruits of serious scientific work using the necessary philological tools.[66]

Historical studies in economics also include "environmental economic history,"[67] "historical approaches to political ecology,"[68] and much more. In other words, the scope of historical inquiry is vast, ranging from general history to special topics, with no apparent limit. We can also observe that, relative to Research and Interpretation, History builds on and subsumes prior work. As examples reveal, in historical studies, the range of inquiry is not merely ideas and events of the past but includes lives and times and reaches to identify time-ordered sequences of ideas and events that have been related developmentally, socially, ecologically,

[64]E. K. Hunt and Mark Lautzenheiser, *History of Economic Thought. A Critical Perspective* (Armonk, NY; London, England [Routledge]: M. E. Sharpe, 2011), xvii.

[65]Hunt and Lautzenheiser, *History of Economic Thought. A Critical Perspective*, xix.

[66]Roncaglia, *The Wealth of Ideas. A History of Economic Thought*, 511.

[67]James Fenske and Namrata Kala, "Environmental Economic History" (London: Center for Economic Policy Research, February 2017).

[68]Diana K. Davis, "Historical Approaches to Political Ecology," in *The Routledge Handbook of Political Ecology*, ed. Tom Perreault, Gavin Bridge, and James McCarthy (Milton Park, Abingdon-on-Thames, Oxfordshire: Routledge, 2015). \\uc0\\u8221{} in {\\i{}The Routledge Handbook of Political Ecology}.

for better or for worse, at stages of economic development, and whatever else might be found relevant for understanding historical sequences.

A final illustration reveals a further aspect of historical studies in economics that also provides a convenient segue to the next section of this paper. As one might expect, different basic views and horizons lead to different historical understandings. For example, as illustrated in the work of Colander, historians who draw on complexity and systems theories shed a special light on sequences of economic theories. And so, Colander "provides [his] . . . overview of selected economists' change in rankings when they are considered within a complexity framework."[69]

5. Dialectics

A quotation here can help capture the mood. "Economists are accustomed to division. [An] aphorism says that if ten economists are asked to interpret a passage of the Bible, they will produce ten different interpretations, eleven if one of them were John Maynard Keynes."[70]

As the previous section reveals, preliminary identification of such division is the purview of historians. However, there is the further task of contextualizing, of working out and, if possible, to some extent resolving fundamental differences. This is a crucial task that partially determines how scholars move forward to new initiatives.

Toward illustrating the problem, recall that in

> a general critique of nineteenth-century political economy, Peirce moves to considering views specifically expressed by Simon Newcomb in his *Principles of Political Economy*. Near the end of the Principles, Newcomb presents policy implications of economics. Peirce strongly objects to these policy implications and the conception of human motivation on which they are based.[71]

[69]David Colander, "A Thumbnail Sketch of the History of Thought from a Complexity Perspective," in *Complexity and the History of Economic Thought: Perspectives on the History of Economic Thought. Selected Papers from the Economics Society Conference, 1998*, ed. David Colander (London and New York: Routledge, 2000), 36.

[70]M. Tonveronachi, "Ending Laissez-Faire Finance," in *Classical Economics Today: Essays in Honor of Alessandro Roncaglia*, ed. M. Corsi, J. Kregel, and C. D'Ippoliti (London: Anthem Press, 2018), 19.

[71]James Wible, "Complexity in Peirce's Economics and Philosophy: An Exploration of His Critique of Simon Newcomb," in *Complexity and the History of Economic Thought*, ed. David

Such was their disagreement that "Newcomb stifled Peirce's career on five significant occasions, which left Peirce in poverty and ostracized from academic and social circles for the last three decades of his life."[72]

More recently, there was the spirited but far more collegial Sraffa-Hayek exchange,[73] a "colourful and intense controversy between the Austrian economist Friedrich August von Hayek (1899–1992) and the Italian economist Pierro Sraffa (1898–1983) in the *Economic Journal* in 1932."[74] Sraffa's critique resulted in Hayek's theory being sidelined by the economics community, at least for a time.

Years later, in his Nobel Prize speech in 1974, "The Pretence [sic] of Knowledge," Hayek detailed why he thought that there were fundamental problems in contemporary economic method, and claimed that "as a profession, we have made a mess of things."[75]

In 1988, Amartya Sen wrote the following: "I would argue that the nature of modern economics has been substantially impoverished by the distance that has grown between economics and ethics."[76] He goes on to lament that

> [a] social state is described as Pareto optimal if and only if no-one's utility can be raised without reducing the utility of someone else. This is a very limited kind of success, and in itself may or may not guarantee much. A state can be Pareto optimal with some people in extreme misery and others rolling in luxury, so long as the miserable cannot be made better off without cutting into the luxury of the rich.[77]

Colander (London and New York: Routledge, 2000), 93.

[72]Wible, "Complexity in Peirce's Economics and Philosophy: An Exploration of His Critique of Simon Newcomb," 75.

[73]David Glasner, "The Sraffa-Hayek Debate on the Natural Rate of Interest (with Paul Zimmerman)," in *Studies in the History of Monetary Theory. Controversies and Clarifications.* (London: Palgrave Macmillan, Cham, 2021), 403-427; Michael Syron Lawlor and Bobbie L. Horn, "Notes on the Sraffa-Hayek Exchange," *Review of Political Economy* 4, no. 3 (1992), 317-340.

[74]Christian Ydesen, "The Hayek-Sraffa Controversy in 1932 – a Philosophy of Science Perspective," in *European Journal of Economic Thought* 23, no. 5 (2016), 814.

[75]Friedrich von Hayek, "Friedrich August von Hayek. Nobel Prize Lecture (1974): The Pretence of Knowledge" (Stockholm: Nobel Prize Outreach, November 2021), https://www.nobelprize.org/prizes/economic-sciences/1974/hayek/lecture/.

[76]Amartya Sen, *On Ethics and Economics* (Hoboken, NJ: Wiley, 1988), 7.

[77]Sen, *On Ethics and Economics*, 35.

In 2018, Kregel observed that

> [t]he theoretical foundations of what has come to be called "market fundamentalism" suffer from an internal contradiction that renders it useless as a basis for economic policy. This is not a problem of abstraction or reliance on simplified models. It is the ubiquitous presence of the simultaneous assumption of uniformity and diversity.[78]

These are just a few somewhat random illustrations of individuals taking a stand on the potential value, or not, of particular works, methods, or views. Sometimes this is explicit and wide-reaching, such as in the content and consequences of the Sraffa-Hayek debate, or in the writings of Amartya Sen. While not generally adverted to there is, then, an already-operative task in economics that draws on but goes beyond historical analysis, as such. Whether adverted to or not, prior to going on to new work, there are personal evaluations of prior works and views regarding their potential for contributing to progress in economics. The key observation, then, is not that there is evaluation. For evaluation and debate occur in all tasks. The key observation, rather, is that evaluation sometimes is the main task and that, in some cases, it regards the need and possibility of progress.

6. Foundations

This section has two parts. The first and longer part goes toward revealing the need and possibility of a fifth task. Points of entry from the literature are selected to reveal the fact that (whatever we wish to call them) we all have "foundations" and that, whether or not adverted to (and while foundations can change), foundations are a "basis" of ongoing inquiry and applications in economics. The second part is brief. It provides a few comments regarding the fifth task, which will be a future achievement in the academy.

One way to begin is to observe that fundamentally new directions can emerge. There have been new schools of thought, new research

[78]Jan Kregel, "Reflections on Unity and Diversity, the Market and Economic Policy," in *Classical Economics Today: Essays in Honor of Alessandro Roncaglia*, eds. M. Corsi, J. Kregel, and C. D'Ippoliti (London: Anthem Press, 2018), 7.

agendas, new approaches for interpretation, new methods for historical analysis, new efforts in dialectics, and, indeed, new applications of all kinds. However, something happens between the four past-oriented tasks just described and moving forward to new results and applications. I am referring to what, so far in history, is a largely hidden fifth task which, in this paper, is called foundations.

Note that in the present context, the name "foundations" has two meanings: (1) it is a name for the fifth task; and (2) it refers to aspects of experience which are the focus of the fifth task. Moreover, neither of these two meanings are foundations in the familiar sense of axioms, premises, and rules in logical treatises and discursive contexts.

With regard to experience, foundations refers to something basic, to one's fundamental "inner premises," to one's modes of thought, deliberation, decision, and choice, to one's operative heuristics (implicit or otherwise) that, in particular, can give rise to foundations of the more familiar kind. At this time in history, basic foundations usually are more implicit than explicit. But their presence and influence are fundamental and are not without evidence in the literature.

For instance, Walras tacitly reveals something of his foundations when he asserts that

> [e]conomic theory is essentially the theory of the determination of prices in a hypothetical regime of perfectly free competition. The ensemble of all things, material or immaterial, on which a price can be set because they are scarce, that is to say, are both useful and limited in quantity, constitutes social wealth. That is why economic theory is also the theory of social wealth.[79]

Walras continues: "First, let us imagine a market in which only consumers' goods and consumable services are bought and sold."[80] According to Walras, the "whole theory is mathematical."[81]

On what grounds did Walras direct his focus to the mathematics of hypothetical regimes, imagined markets, mathematically defined

[79]Léon Walras, *Léon Walras: Elements of Theoretical Economics: Or The Theory of Social Wealth*, ed. Donald A. Walker and Jan Van Daal (Cambridge: Cambridge University Press, 2014), viii.

[80]Walras, *Léon Walras: Elements*, ix.

[81]Walras, *Léon Walras: Elements*, xi.

aggregates, and never-to-occur mathematical limits called equilibrium prices? He writes, in general terms, of "landowners, workers, and capitalists."[82] Did he study contributions of particular landowners, workers, or capitalists in actual towns or cities? Was his approach informed by experience in actual economies, or merely by imagined aggregates? This is not to suggest that Walras' work has not been and will not be useful. The point here is that, while not identified by him, Walras had his fundamental heuristics, his personal foundations, within which and from which he developed his mathematical theory of prices for mathematically defined equilibria of imaginary markets.

But foundations are not merely personal. For example, foundations compatible with Walras' heuristics have been operative in theorists who, in the last century and more, have collaboratively focused on advancing the mathematics of general equilibrium theory.

For another example, consider the work of Amartya Sen. His foundations included mathematics. But what also directed his thought was not a focus on hypothetical regimes but rather on concrete circumstances, and a concern for the poor. Regarding his 1981 book, Sen writes: "The main focus of this work is on the causation of starvation in general and of famines in particular."[83]

There is, to be sure, the exercise of attempting to make progress in identifying one's own foundations in economics which, when there is growth, is a moving target. On a broader scale, as samples from the literature illustrate, foundations and shifts in foundations are part of, and have shaped the historical development of, economics. To go beyond preliminary observations, therefore, part of what will be needed will be progress in identifying foundations and subtle shifts in foundations in recent centuries. But the history of economic thought is vast and complex. What I am pointing to here, then, will be a massively challenging collaborative task for future (functional) historians of economics, namely, to luminously (that is, with a commensurate control of meaning[84]) identify historically significant sequences of shifts in foundations from, say, 19th century political economics, through to

[82]Walras, *Léon Walras: Elements*, ix.

[83]Amartya Sen, *Poverty and Famines. An Essay on Entitlement and Deprivation*, *Poverty and Famines* (Oxford University Press, 2003), vii.

[84]See note 30.

Walras, Keynesian economics, the Chicago school, macro- and micro-economics, choice theory, development economics, systems theories and complexity, interdisciplinary economics, ecological economics, modern political economics, and so on. Enlarging the context still further, what I am touching on will require the effectiveness of the full functional eight-task cycling. The possibility of moving toward implementation of that collaborative structuring is the topic of the last section of this paper. For now, the examples given above are sufficient for present purposes, namely, in a preliminary way, to draw attention to the operative presence of diverse foundations in economics.

But what, then, is "the fifth task"? The fifth task remains a future possibility. However, by way of initial, albeit superficial, heuristics, we can anticipate that there will be advantages in making foundations explicit, whatever that will mean. For, as in any science, such progress is neither accessible to, nor equivalent to, speculative modeling. It will be through progress in the fifth task that we obtain data (experience) needed for progress in characterizing the fifth task. As Aristotle observed, "For the things we have to learn before we can do them, we learn by doing them."[85]

7. Policies

Let us look again to the words of Amartya Sen:

> I am, therefore, not arguing that the non-ethical approach to economics must be unproductive. But I would like to argue that economics, as it has emerged, can be made more productive by paying greater and more explicit attention to the ethical considerations that shape human behaviour and judgement. It is not my purpose to write off what has been or is being achieved, but definitely to demand more.[86]

As is normal in human expression, Sen's statement emerges from and implicitly reveals something of his foundations. Evidently (and as also observed in a quotation in the previous section[87]), his foundations include

[85]David Ross and Lesley Brown, *Nichomachean Ethics*, Oxford World's Classics (Oxford: Oxford University Press, 2009), II.1.

[86]Sen, *On Ethics and Economics*, 9.

[87]See note 83.

a concern for humanity. As indicated in the Introduction, however, in this paper, our challenge includes entering into, and in that way (self-) identifying, the *mode* of Sen's statement rather than merely its topic. You might observe that, in this quote, Sen is not drawing attention to new data, nor is he advancing new historical understanding, nor is he articulating aspects of his personal experience, nor is he attempting to delineate possible sequences of progress or decline, nor is he concretely attempting to educate or provide counsel to some particular group in the "plane of common meanings."[88] He is, rather, in direct fashion, in technical terms determined in the context of his book, speaking to economists, and is explicitly calling for a policy to help guide future progress in economics, namely, that we "[pay] greater and [give] more explicit attention to the ethical considerations that shape human behaviour and judgement."[89]

Scientific policies and doctrines are also given by (sub) groups. In the following statement from the 2010 UN (United Nations) "Human Development Report," the first two sentences mainly are doctrinal, while the emphasis of the third is in a policy mode:

> It is now almost universally accepted that a country's success or an individual's well-being cannot be evaluated by money alone. Income is of course crucial: without resources, any progress is difficult. Yet we must also gauge whether people can lead long and healthy lives, whether they have the opportunity to be educated and whether they are free to use their knowledge and talents to shape their own destinies.[90]

[88]See note 116.

[89]Sen, *On Ethics and Economics*, 9.

[90]Jeni Klugman, "Human Development Report" (New York: United Nations, 2010), http://hdr.undp.org/en/content/human-development-report-2010, iv. Just as for Sen's statement (note 86), the topic reveals something about Klugman's foundations. To see that Klugman's statement also is not a foundational statement, as such, one needs to (self-) identify the *mode* of the statement. Relevant here is a general observation that speaking about foundational issues is not the same as doing foundations. Indeed, there will be, for example, policies and doctrines for foundations, policies of research, research on foundations, and so on. Eventually, a subtle challenge will be to luminously distinguish statements that, for example, are fundamental policies for progress, in explanatory contexts appropriate to a future functional specialty called Policies, from policies for progress in the "plane of common meanings" (which includes much of what is currently produced in reports given by the United Nations and other agencies engaged with governments and global communities). More details are provided in Section 11. Discussion: Toward Implementation.

Like the 2010 report, the more recent 2020 UN "Human Development Report" is a complex weave of data, results, and advisories. The multivalent complexity of the report's content notwithstanding, one of the main purposes is made explicit, namely, to provide "recommendations not around actors but around mechanisms for change – social norms and values, incentives and regulation, and nature-based human development . . . to expand human freedoms while mitigating planetary pressures."[91] Recall, also, that the report includes the statement that "[w]e must reorient our approach from solving discrete siloed problems to navigating multidimensional, interconnected and increasingly universal predicaments."[92] In fact, much of the first fourteen pages of the 2020 "Human Development Report" are doctrinal and policy statements for going forward.

We might also look to two recent OECD reports. The 2019 report, *Beyond Growth: Towards a New Economic Approach*, "draws on a core recognition of the sociality of human beings and their embeddedness in social institutions, an idea with profound implications for our understanding of both economic theory and policy."[93] The 2021 OECD report also is mainly forward-oriented. For instance, the following statement contains both economic doctrine and economic policy (about economic policies):

> Steering growth in a more resilient and inclusive direction requires enhancing market competition and reallocative capacity, which had hampered productivity growth before the pandemic. This necessitates removing policy barriers, where they exist, for firms to become more dynamic, innovative and greener, and adapting competition policy for the digital age. Failure to do so will reduce job opportunities and output growth, which in the longer run will hamper efforts to improve public finances.[94]

[91]Conceicao, "Human Development Report 2020," 9.

[92]Conceicao, "Human Development Report 2020," 5.

[93]Gabriela Ramos and William Hynes, "Beyond Growth: Towards a New Economic Approach" (Paris: Organization of Economic Cooperation and Development, September 2019), 5.

[94]OECD Staff, "Going for Growth 2021: Shaping a Vibrant Recovery" (Paris: Organisation for Economic Development and Cooperation, 2021), Exec. Summary, par. 6, https://www.oecd.org/economy/going-for-growth/.

Later in the report, it is stated that

> [t]he way the two most important drivers of change – markets and the state – work needs to be understood in terms of the underlying social contract. Social contracts evolve, especially in response to the pressures of domestic groups. Policy design that ignores such institutional processes is likely to be irrelevant.[95]

How, though, are we to assess relevance and irrelevance? According to the report, "[a] sound measure of sustainable human development . . . should reflect how societies use various resources over time and judgments about which resources are substitutes or complements."[96] Notice the attempt to be generic, to allow for ranges of specific options that would be consistent with general doctrinal and policy-type statements. But that brings us to the next main task which, in this paper, is called "Planning-Systems."

8. Planning-Systems

The seventh task is, one might say, the opposite of amnesia. It draws on history but is not history, as such. The seventh task is forward-oriented. A historian might explain a particular sequence of events or writings. And statistics of historical trends certainly are the purview of historians. For counting is a matter of fact. But based on precedent, one can also attempt to work out all probably possible sequences, whether they occurred or not, whether they were opportunities obtained or missed. We also witness implications of results of the prior task, Policies, fleshed out. Essential features of the seventh task are latent in knowledge needed in teaching economics, in thinking out possible consequences of economic policies and possible stages of economic, societal, or cultural development, progress, and decline. As the literature reveals, in modern scientific contexts, the task of determining probably possible sequences is usually informed by statistical results and empirical probabilities determined by prior relative actual frequencies.

[95]OECD Staff, "Going for Growth 2021: Shaping a Vibrant Recovery," 109.

[96]OECD Staff, "Going for Growth 2021," 117.

The 2010 United Nations "Human Development Report" is somewhat dated. However, it provides some data on the seventh task. For instance, the third chapter, "Diverse Paths to Progress," begins

> by highlighting some of the most remarkable aspects of human development in the past 40 years, focusing on global progress alongside local variability and on the lack of correlation between improvements in the income and non-income dimensions of human development. [It then] examine[s] the key drivers of global trends in each of the three HDI [human development index] components as well as the country-specific factors determining performance. The chapter culminates in an analysis of how the findings fit into the broader story of [possible] interactions between markets and states.[97]

As with each of the eight tasks discussed in this paper, the operative presence of the seventh task can be found in any main field of inquiry. But for economics see, for example, growth and development time-series data provided by the European University Institute.[98] Those databases are rife with statistical results directly relevant to, and that could be used to, determine empirical probabilities of possible sequences and series of economic events, locally, regionally, and globally. There is also the 2020 United Nations "Human Development Report."[99] Its content ranges complexly, but two main aspects of the report are: (1) statistical data and analysis of precedents; and (2) relying on (1), identification of possible future sequences of all kinds, both good and bad. One may also observe that statistics provided are concrete and pertain to specific geo-historical slices of societies "imbedded [sic] in the biosphere."[100]

The seventh task, then, is fully inclusive. If we take all areas of inquiry together, there is the work of determining all possible growth and development trajectories, trajectories of decline, all possible sequences in societies, economies, and ecologies, along with, when possible, their empirical probabilities.

[97]Klugman, "Human Development Report," 46.

[98]EUI Staff, "Growth and Development Time-Series Data," 2021, https://www.eui.eu/Research/Library/ResearchGuides/Economics/Statistics/DataPortal/GDDC.

[99]UN Staff, "World Economic Situation Prospects 2020" (New York: United Nations, 2020), https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/WESP2020_FullReport.pdf.

[100]OECD Staff, "World Economic Situation Prospects 2020," fig. 1.5, 29.

9. Communizings[101]

The eighth task is, in some respects, as obvious as it is complex. In the seventh task, options are worked out. But choices need to be made and implemented. Drawing on results of the seventh task, what will be our choices, our selections, and how will they be actuated?

To glimpse something of the enormous complexity of the task, we can look to events surrounding a recent global pandemic. Various vaccines were developed for COVID-19. To a high degree of accuracy, vaccine effectiveness rates were known. But for a particular nation, region, or community, which vaccines would be distributed, and which not? In some cases, vaccines might not be used at all. Moving toward vaccine distribution, options are discussed with stakeholders. People involved might be government representatives, medical officials, those in education, as well as groupings and subgroupings of the general public. Results and the manner of their communication depend partly on the intended audience. When the audience consists mainly of medical staff with a shared scientific ethos, it could sometimes be enough to provide technical reports on vaccine efficacy. Although, that is not always the case. In medicine, too, there are "anti-vaxxers," communication with whom has been problematic. For the general public, education initiatives have been helpful.

Selections can include policies on particulars. Note that there is, therefore, a terminological clarification needed. In the context of communizings, the word "policies" refers to what will be implemented in communities, rather than "scientific policies of progress" determined in the sixth functional task.[102] With that distinction in mind, data on the eighth task can be found in recent work done by the OECD:

> Given uncertainty about the pace and strength of the recovery, the sequencing of reforms is vital. Expansionary fiscal policies – such as public infrastructure investment, and health and social safety net reforms – and measures to improve the rule of law should be frontloaded to support the recovery as well as enhance long-term growth prospects. This is also true for measures preventing social damage, such as reforms of education and activation programmes.

[101]See note 35.

[102]See the last sentence of note 90.

> Other measures – for instance, including strengthening of job-search conditions in unemployment benefit schemes, increasing carbon taxes and reducing the stringency of employment protection – should be contingent on the state of the economy or implemented only gradually. The crisis has also underscored the importance of resilience and environmental sustainability.[103]

The advisories are far reaching. But in the various "Country Notes,"[104] they are translated into specific recommendations, tailored to needs and possibilities of forty-four countries, and the European Union. Recommendations regard details of governance, education, economics, trade, equality, labor, business, fiscal and monetary policies, tax, welfare, living standards, health care, Indigenous communities, ecologies, and so on. And for any community, between all such recommendations and implementation, communications are needed.

The seventh task seeks to determine possible sequences and series (with, if possible, empirical probabilities) that could be conducive to economic and human progress, or decline. Eventually, however, there is the local challenge. Selections and communications are needed, without which the work of the previous seven tasks would be to no avail, for they would not lead to results in any community. Taking Lonergan's words, focused now on economics, the eighth task is "a major concern, for it is in this final stage that [economic] reflection bears fruit. Without the first seven stages, of course, there is no fruit to be borne. But without the last the first seven are in vain, for they fail to mature."[105]

10. Multi-tasking

In some respects, the first two tasks (Research and Interpretation) are already familiar in the lower sciences. In physics, for example, there is a long-established collaboration between experimental physics and theoretical physics. This is not speculative. It is an observation regarding what has been part of the scientific tradition for some time. In institutions, and the lives and works of individuals in the physics community, the

[103]OECD Staff, "Going for Growth 2021," Exec. Summary, par. 11.

[104]OECD Staff, "Going for Growth."

[105]Lonergan, *Method*, 327.

division of labor is not rigid. But that there are two tasks is clear when, for example, researchers at CERN,[106] say, look for significant data, while teams at the IAS[107] focus on developing field equations for explaining data obtained by groups working at CERN. Both subgroups are up-to-date and work relative to a shared standard model. But so great is the difference in expertise required that, in contemporary contexts, a career-choice is needed. To contribute to operating a cyclotron requires special training; while to contribute to advancing frontlines of contemporary theoretical physics requires a quite different education.

As one finds by reading frontline journals in experimental and theoretical physics, authors and author-teams generally maintain a focus on their task. For example, as a rule, we do not find authors sliding between technical discussion of experimental results and attempting to advance current theory. At the same time, of course, the two subgroupings are in communication and contribute to a common goal, namely, the advancement of physics. Reports from experimental physics highlight data that is interesting or perhaps anomalous. Often, such reports invite attention to aspects of a theoretical model. But for the most part, experimental physicists leave that further task to theoreticians. On the other hand, articles in theoretical physics center on theory and either draw on already available data or communicate the need for new data. In the last two centuries, collaboration between the two subgroupings of physics has been remarkably successful.

In contemporary economics, however, there tends to be no such tradition of focusing on particular tasks. To illustrate the problem, we can look again to the United Nations 2020 "Human Development Report."[108] The report leans forward, for the most part is future-oriented, and includes contributions in a Planning-Systems poise. But it is also evident that it inadvertently slides between tasks.

Consider the following quotation: "Now, in the context of the Anthropocene, it is essential to do away with stark distinctions between people and planet. Earth system approaches increasingly point to our interconnectedness as socio-ecological systems, a notion highly relevant

[106]Conseil Européen pour la Recherche Nucléaire, https://www.home.cern/.

[107]Institute for Advanced Study, https://www.ias.edu/.

[108]Conceicao, "Human Development Report 2020," 8.

to the Anthropocene."[109] The first sentence looks forward, in a Policies poise; the second sentence reveals a Dialectics poise, but the second phrase of that sentence shifts back to a forward-looking Policies poise.

In addition to inadvertently shifting tasks, tasks also are inadvertently missed. "Systems and complexity thinking applies equally to social norms."[110] The expression reveals shared foundations which shape the direction and content of the multi-author report. But has there been an improvement in foundations? Progress in foundations has neither been adverted to nor reported. Was progress in foundations needed? There is no reference to Dialectic-type work that would have evaluated pros and cons of past and present foundations and, in particular, would have communicated an identified need, or not, of progress in foundations.

What I am touching on is, among other things, the need and possibility of detecting what in fact are distinct major tasks through line-by-line reading. In that way, we will begin to make progress in identifying which of the eight tasks dominate particular works (including our own) as well as where authors inadvertently shift focus within works. As history reveals, being able to hold to a functional focus in Research and Interpretation is normal in the lower sciences. Staying in forward-orientation is not uncommon in outreach efforts such as those made by the United Nations, the Organization of Economic Cooperation and Development, and other development agencies. But holding to a focus on particular tasks is generally absent. Indeed, as the literatures reveal, frequent inadvertent shifting of functional focus currently is endemic in the human sciences, social sciences, economics, and ecological economics, thus undermining the possibility of cumulative and progressive results.

11. Discussion: Toward Implementation

As the previous sections of the paper reveal, eight tasks are already implicitly operative in economics. At this stage, then, there would seem to be two main options: (I) reject the model, or aspects of it, or (II) inquire further into its emergence and make progress in its implementation.

Regarding option (I), interestingly, the structuring of the model is such that attempts to reject it would call on features of the model allegedly to

[109]Conceicao, "Human Development Report 2020," 8.

[110]Conceicao, "Human Development Report 2020," 9.

be rejected. If one is to reject the model, (1) is it because one has different data on how economics makes progress? (2) is it because one has a better understanding of authors' works, economies, and events in past and present history? (3) is it because one has a different understanding of what has been going forward in history, in economics, and beyond? (4) is it because one has evaluated the model and found it wanting or in some way deficient? (5) is it because the model does not fit with or allow for one's current heuristics, articulated or otherwise? (6) is it because there are basic descriptive truths and doctrines about progress in economics that do not seem to be allowed for by the model? (7) is it because one has a different grasp of possible sequences of progress and decline, in history and in economics? or (8), is it because one wishes to communicate and implement a different methodology for collaboration in economics?

What has been identified, then, are elements of an emerging standard model of omnidisciplinary collaboration in economics (1) for which there is an abundance of supporting data and (2) that cannot be outrightly rejected without implementing elements of the model being rejected. The way forward, therefore, would seem to be option (II).

The eight tasks do not occur in siloes.[111] Some of the same evidence that reveals their operative presence in economics also provides evidence of the fact that concomitant with the eight tasks are various modes of communication. To make progress in identifying (the emergence of) these various modes will, however, require extensive collaborative empirical work. A contribution to such would go well beyond the scope of this introductory paper.[112] But that is not to say that nothing can be said, at this stage, by way of contributing to preliminary heuristics.

The eight tasks are distinguished not by discipline but by "function" and so, to ground such heuristics, we will need to increasingly include results from all areas of study.[113] For the moment, however, let us

[111]See note 7.

[112]Although it is, of course, my hope that this paper will help promote such efforts.

[113]How do we "include all areas," let alone do so "increasingly"? This is a major and not-yet-solved problem in contemporary science and philosophy of science. It is an aspect of the challenge of interdisciplinarity. See, for example, note 3. Systems theories (see, for example, note 110) do not solve the problem. Indeed, they are stopped short by the biochemistry of any single-celled organism, not to mention growth, development, global ecosystems, and world history. Key aspects of heuristics for the solution were outlined by Lonergan in ultra-density. See, for example, Lonergan, *Insight*, 489, 609-610. Following up on Lonergan's leads, with details from modern science, see Philip McShane, *Randomness, Statistics, and Emergence*, ed.

keep our focus on economics. As data in this paper already reveals, one will find, for instance, that aspects of specialized works written by interpreters for interpreters meet different standards and serve different immediate aims than, say, interpretations of authors' works, or of economic events, that might eventually figure in historical analyses of sequences in the history of economics. Making use of a natural extension of the notation of Figure 1, the two modes of communication in economics can be symbolized *C*22 and *C*23. On another front, drawing on the entire body of work of the economics academic community, there are ongoing efforts to improve or reform economics education[114]; some economists work as economic advisors to nations[115]; and more. What is in evidence, then, is that there are also communications in which economics reaches beyond the eight tasks *F*1, *F*2 . . . *F*8. Such communications feed into and influence the "Plane of Common Meanings,"[116] which, as is appropriate at this early stage of development, can be labeled simply by *C*9.

Alas, the more we examine the field, the more its complexities are revealed. How can we hold all of this together in ways that will be efficient and practical? As already quoted in the Introduction, there is Lonergan's advisory regarding "larger and more complex questions." We need to have "a diagram in which are symbolically represented all the various elements of the question along with the connections between them."[117] Figure 2 meets that need. It represents communication

James Duffy and Terrance Quinn, 2nd ed. (Vancouver: Axial Publishing, 2021). McShane later introduced helpful symbolisms for "aggreformic layerings." See, for example, Philip McShane, *A Brief History of Tongue. From Big Bang to Coloured Wholes* (Vancouver: Axial Publishing, 1998), 116-123. In the context of functional specialization, there will be "slopings." See Philip McShane, "Prehumous 2. Metagrams and Metaphysics," n.d., metagram W6, http://www.philipmcshane.org/wp-content/themes/philip/online_publications/series/prehumous/prehumous-02.pdf. Referring to functional collaboration, "the recycling increasingly will be unrestrictedly multidisciplinary and omnicultural, with the process from research 'up' involving a sloping convergence to the comprehensive task . . . with a different sloping 'back down' to the communication process that grounds further recycling," Philip McShane, "The Importance of Rescuing Insight," in *The Importance of Insight. Essays in Honour of Michael Vertin* (Toronto: University of Toronto Press, 2007), 201.

[114]See, for example, "Coreecon. Economics for a Changing World," COREECON. n.d., https://www.core-econ.org/.

[115]N. Gregory Mankiw, "The Macroeconomist as Scientist and Engineer," *Journal of Economic Perspectives* 20, no. 4 (2006), 29-46.

[116]Pierrot Lambert and Philip McShane, *Bernard Lonergan. His Life and Leading Ideas*, 1st ed. (Vancouver: Axial Publishing, 2010), 163.

[117]Lonergan, *The Ontological and Psychological Constitution of Christ,* 151.

modes intrinsic to the (at present mainly inadvertent and ineffective but nonetheless) emerging operative presence of the eight tasks. It is obtained by reversing the ordering of rows in McShane's original rendering of the functional communications matrix.[118] The top row becomes the bottom, the second from the top becomes the second from the bottom, and so on. It is a trivial adjustment, but it serves a purpose. Among other things, it brings various diagrams into symbiotic alignment.[119] In particular, communication forms implicit in Figure 1 are now the cross-diagonal "stairway" (in boldface) in Figure 2.

The diagram can immediately help us make beginnings in a new control. For instance, it provides a heuristics by which, and in which to read works (including one's own) in a new way. Reading phrase by phrase, and line by line, and (provisionally) symbolically identifying the various "*Cij* leans" present can be remarkably revealing. On the one hand, methodological problems can be more easily identified. On the other hand, reading a work with "*Cij* matrix-eyes" can reveal clusterings of communication modes, thus allowing for a work's positive contributions to the field to be more easily ascertained.

Adverting to communications modes is, of course, not yet part of the current ethos in economics, or any other field. Progress in identification and control of meaning in all sixty-four modes of communication will be future work.[120] But then, is the communications matrix really needed at this time?

On this matter, we might remember Mendeleev, who worked out a periodic table for chemical elements. In communicating his results, he also indicated gaps in the table, and successfully anticipated the eventual discovery of elements that, at the time, were not yet known. In a similar way, but where the focus now is method, Figure 2 provides us with a "global cyclic table" for "communication modes" in all areas. As this paper reveals for economics, descriptively, some of its elements are

[118]See, for example, McShane, *A Brief History of Tongue. From Big Bang to Coloured Wholes*.

[119]See, for example, Philip McShane, *The Allure of the Compelling Genius of History: Teaching Young Humans Humanity and Hope* (Vancouver: Axial Publishing, 2015), 188-189 and fig. 1.

[120]Concretively, if we think more of conversations than of individuals submitting communications, then the count is "symmetrized." Therefore, there will be something like $1+2+3+\ldots+8=\frac{(8)(9)}{}=36$ classes of (functional) conversation. Both ways of counting, however, are but preliminary and open heuristics, within which endless differentiations may emerge.

already known.[121] But the diagram also alerts us to new possibilities. It points to and invites the emergence of differentiations of consciousness that, at this time, remain largely unknown.[122] In particular, "the more the specialties develop, the more their techniques are refined, the more delicate the operations they perform,"[123] the more there will be works wherein, phrase by phrase and line by line, individual authors will luminously hold, each to their functional task. But getting to that stage in history will be a long climb, akin to, but far greater than, the climb from Mendeleev's elementary periodic table to the marvels of modern biochemistry and its applications in, for instance, modern medicine.

A central cumulative progress internal to the functional division of labor will cycle (Figure 1) "upwards along" the cross-diagonal, *C*11, *C*12, *C*22, *C*23, *C*33 . . . *C*78, *C*88 (Figure 2). "Fruit"[124] of that labor in world communities will be through *C*89. Functional specialists will grow in understanding "the relevance of one another's work for their own . . . and will be in easy and rapid communication."[125] At any given time, historians may dialogue with scholars working on policies of progress, interpreters with researchers, and so on. In other words, once the *Cij* "engine" starts, all sixty-four modes of functional communication will contribute to a progress-oriented omnidisciplinary vortex, with *functional economics* a sub-structuring. In its maturity, there will be an ongoing functionally collaborative striving to lift local and global economies, communities, and societies "imbedded [sic] in the biosphere."[126]

[121]See also note 33.

[122]These will be normalized through the eventual emergence of the "third stage of meaning" in history. See, for instance, Lonergan, *Method,* ch. 3.

[123]Lonergan, *Method*, 135.

[124]Lonergan, *Method*, 327.

[125]Lonergan, *Method*, 142.

[126]Staff, "World Economic Situation Prospects 2020," fig. 1.5, 29.

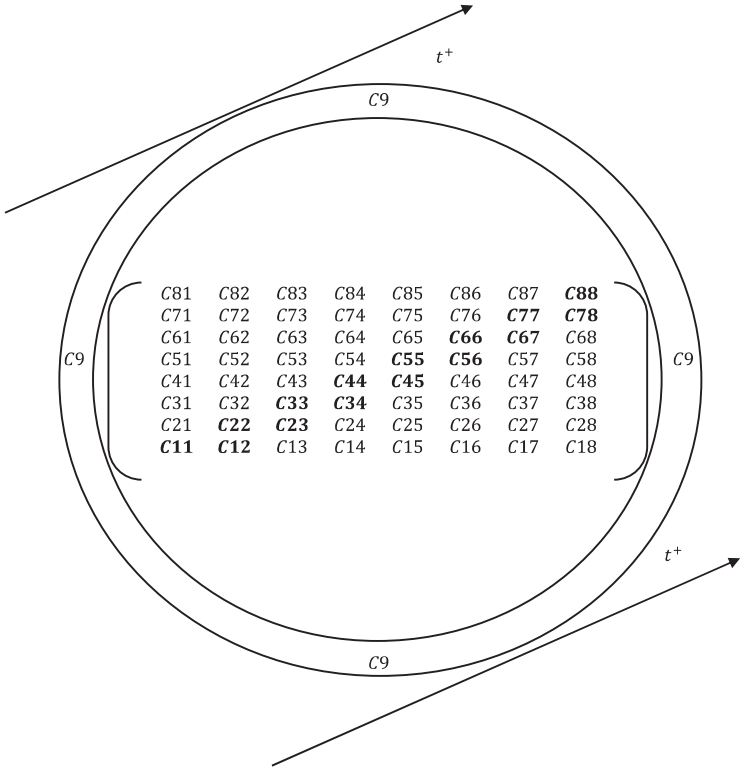

Figure 2. Communications *Cij*, *i*, *j* = 1, 2 . . . 8, 9 are among functional specialties *F*1, *F*2 . . . *F*8 and the "plane of common meaning" *F*9. The process is progress-oriented; the "stairway" *C*91, *C*11, *C*12, *C*22, *C*23 . . . *C*78, *C*88, *C*89 is implicit in Figure 1; the arrows are for increasing time.