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ABBREVIATIONS

Collected Works of Bernard Lonergan (Toronto: U of Toronto P)

General Editors: Frederick E. Crowe and Robert M. Doran

- CWL 1 *Grace and Freedom: Operative Grace in the Thought of St Thomas Aquinas*. Ed. Crowe and Doran, 2000.
- CWL 2 *Verbum: Word and Idea in Aquinas*. Ed. Crowe and Doran, 1997.
- CWL 3 *Insight: A Study of Human Understanding*. Ed. Crowe and Doran, 1992.
- CWL 4 *Collection*. Ed. Crowe and Doran, 1988.
- CWL 5 *Understanding and Being*. Ed. Elizabeth A. Morelli and Mark D. Morelli, augmented by Crowe, Morelli, Morelli, Doran, and Thomas V. Daly, 1990.
- CWL 6 *Philosophical and Theological Papers 1958-1964*. Ed. Robert C. Croken, Crowe, and Doran, 1996.
- CWL 7 *The Ontological and Psychological Constitution of Christ*. Ed. Michael G. Shields, Crowe, and Doran, 2002.
- CWL 10 *Topics in Education*. Ed. Doran and Crowe, revising and augmenting the text prepared by James Quinn and John Quinn, 1993.
- CWL 15 *Macroeconomic Dynamics: An Essay in Circulation Analysis*. Ed. Frederick G. Lawrence, Patrick H. Byrne, and Charles Hefling, Jr., 1999.
- CWL 17 *Philosophical and Theological Papers 1965-1980*. Ed. Robert C. Croken and Doran.
- CWL 18 *Phenomenology and Logic: The Boston College Lectures on Mathematical Logic and Existentialism*. Ed. Philip J. McShane, 2001.
- CWL 21 *For a New Political Economy*. Ed. Philip J. McShane, 1998.

Other Works of Bernard Lonergan

- Method* *Method in Theology*. London: Darton, Longman, and Todd, 1972. Latest reprint: Toronto: U of Toronto P, 1990.
- 2 Coll *A Second Collection*. Ed. William F.J. Ryan and Bernard J. Tyrell. London: Darton, Longman and Todd, 1974. Latest reprint: Toronto: U of Toronto P, 1996.
- 3 Coll *A Third Collection*. Ed. Frederick E. Crowe. Mahwah: Paulist Press, 1985.
- MJLS *Method: The Journal of Lonergan Studies*
- JMDA *Journal of Macrodynamic Analysis*

EDITOR'S INTRODUCTION: FUNCTIONAL INTERPRETATION

MICHAEL SHUTE

This volume represents a shift into a new, higher gear for the journal. Our original idea was to provide a forum for taking seriously the view of macrodynamic analysis that is Lonergan's fundamental achievement: the initial definition of a collaborative division of labour in theology. The restriction of that division of labour to theology has been lifted in various ways in the past thirty years. The artificiality of it was noted by Karl Rahner in 1970: "Lonergan's theological methodology seems to me so general that it applies equally to all sciences, and so is not a method of theology as such but a general method of science illustrated by examples from theology."¹ Lonergan himself indicated this broader reach when he wrote of a functional specialized 'integrated studies' in which "the possibility of each integration is a method that runs parallel to the method in theology" (*Method* 364). Terrance Quinn's article, "Reflections on Progress in Mathematics," in volume three of this journal is a good example of how this parallel method can begin outside of theology.² From the onset we had in mind this broader conception of method and the first three volumes of the journal reflected this, if somewhat eccentrically. A strategy of deliberate diversity prevailed: "Let

¹ Karl Rahner, "Kritische Bemerkungen zu B.J.F.Lonergan's Aufsatz: 'Functional Specialties in Theology'," *Gregorianum* 51 (1970): 537. ["Die theologische Methodologie Lonergan's scheint mir so generisch zu sein, dass sie eigentlich auf jede Wissenschaft passt, also keine Methodologie der Theologie als solcher ist, sondern nur eine allgemeinste Methodologie von Wissenschaft überhaupt, mit Beispielen aus der Theologie illustriert."]

² *JMDA* 3, 97-116.

a thousand blossoms bloom!” What held things together was *the desire and commitment* of each contributor to jump into hodic waters. In the first two issues, articles on mathematics, economics, philosophy of history, business ethics and physics all bumped together in a happy jumble. The venture was not really collaborative in any functionally controlled way, but we were at least in the water and playing around. For the third issue a first attempt at coordinated effort was made. Under the umbrella of a *Festschrift* issue a call was made to respond to a single article by Philip McShane on implementing functional specialization. The volume was large; three times the expected number of articles appeared. Some beautiful flowers bloomed but, largely, responses avoided the core question about implementation.

This result was not unexpected. Lonergan provides only the slightest hint of how this broader task of integrated studies might move forward (*Method* 355-368). In his chapter on Communications he notes the applicability of generalized empirical method “to any sphere of human living” (365); he tells us that the first three specialties “can be applied to any sphere of scholarly human studies” (364); and that “corresponding to doctrines, systematics, and communications in the theological method, integrated studies would distinguish policy making, planning, and the execution of the plans” (365). Not much help. Yet (and there must be some irony in this) developing such an integrated view was Lonergan’s central intellectual preoccupation.

This volume then represents a first youthful start towards a broadened integrated perspective. The failure to realize an efficient procedure for coordinating efforts across fields and subjects is evident in the mess of our contemporary academic failure. Good work gets routinely wasted; blind alleys and dead ideologies persist in bewildering array; and the academy is increasing irrelevant to contemporary living. Yet more than ever the world requires the theoretic and scholarly pauses that are the university’s true gift to the world. Our communal eye is on the creation of a creative collaborative process that injects fresh air into a stale enterprise. The task is risky in the sense that the division of labour as outlined by Lonergan is not

spelled out in any of its functional detail. The only occasion in *Method in Theology* where Lonergan gives an indication of how a specific specialty is actually structured is in the chapter on dialectic (249-250). By contrast, in his discussion of interpretation he points to the efficiency of functional specialties in “the possibility of separate treatment of issues that otherwise become enormously complex” (153) but beyond the actual division of labour itself there is little direction about how to go about doing this. There is nothing like those marvellous two pages on the structure of dialectic for guiding functional interpretation. Essentially, Lonergan pointed out the field of play but left it to those of us who follow to figure out how to play.

As editor my task was to come up with a fruitful strategy, a way of getting the ball rolling. A number of things suggested themselves. First, potential contributors were certain to emerge from across the spectrum of traditional fields and subjects. We could not begin by restricting ourselves to one science or one genus of inquiry. Because functional specialties span all zones of inquiry, the obvious strategy was to pick a specialty. Second, we ought to start with one of the first four specialties: it makes sense to begin first with determining ‘where we’re at’ and that is the job of the first four specialties. Functional research, being the first of the specialties, might seem an obvious choice. However, research is so specific in its material component that it presented difficulties locating a suitable directive for contributors. And Lonergan had very little to say about functional research; the Research chapter in *Method in Theology* is just over two pages (149-151). The next specialty, functional interpretation, held more promise. Issues around ‘Interpretation’ are widely debated across fields and subjects. In the arts and social sciences the ‘problems of interpretation’ are legion. However, as is clear from the debate about ‘observers’ and ‘observables,’ interpretation is an issue even in the hardest of sciences, physics. Moreover, in *Insight* Lonergan had quite a bit to say about interpretation. Chapter XVII, if re-read in the light of functional specialization, provides a base for developing an account of the structure of functional

interpretation missing in *Method*.³

My request to potential authors was to tackle their respective topics in a way that would hold to the restriction of a single aim to interpret some section of an author's work, but with that aim located as best they could in the process towards passing on the result to the community of historians, and of course, on from there in the cyclic process of functional specialization. The immediate context of the effort was to be "The Sketch" of chapter 17 of *Insight*, which provided a 'convenient' or fitting focal point.⁴ Although Lonergan's discussion there is not functional-differentiated, the possible structure for functional interpretation is more richly indicated in *Insight* than in *Method in Theology*. (It is fruitful to fantasize here about how *Method in Theology* would have turned out if Lonergan had had the same energy level available to him in writing *Method* as he had in writing *Insight*). What were we in search of then? First, a better understanding of this obscure text; secondly, some glimpse of how its challenge might be transposed into the more differentiated context of functional specialization. In order to do this it seemed to me that the efforts at interpretation should be presented in three parts: a first part giving what I call "A Personal Context"; a second part aiming at giving the "Content" of the interpretation in the form of a "hypothetical expression"; a third part presenting the "Context." The benefit of the first part is that it is a move towards the expression of the categories being used, something that would be increasingly evident as the functional collaboration moves forward. One might regard this part, indeed, as a side-venture into part of the dialectic process described on page 250 of *Method in Theology*: a taking of position with regard to what is personally thought to be progress and its grounds. As the results emerge, there is a sense in which we were all very much in the dark with regard to the task. None claimed to have much light on "pure formulation", "context", "content", etc. But the effort, and the collaboration

³ McShane's Cantower effort, "Functional Interpretation," Cantower XXXVII (www.philipmcshane.ca), was especially helpful here.

⁴ The context was to be enlarged by the contributors as they thought fit.

it involved, moves us to some better grasp of the *functional challenge*. What I add here, by way of introductory comments, is the fruit of that collaborative effort.

Collaborators in this issue come from an interesting range of traditionally identified ‘fields’ of study. Loosely, we have contributors from Mathematics, (Quinn), Theology (O’Leary), Philosophy of Science (McShane), Linguistics/Language Studies (Benton), Economics (McCallion), and Philosophy of History (Drage). Identifying each participant in this way does not however accurately account for what they are doing. The material focus of Quinn’s article, for example, occurs at the intersection of physics and mathematics; O’Leary’s work brings together theology and business ethics; Benton’s work is really philosophy of language. Beyond this, because our context assumes generalized empirical method as a starting point, each writer cannot rest with the object of his or her study independently of the subject. My request to consider ‘personal context’ make this explicitly impossible. In this I would recall a second meaning for ‘field’ Lonergan develops in his 1957 Boston lectures on logic and existentialism, that is, ‘field’ as ‘horizon’ (CWL 18, 306). Thus, each writer was called to make explicit his or her own position or poise regarding their work. This task is part of doing functional interpretation well: “understand the object, the words, the author, oneself” (*Method* 157). It raised uncomfortably the question of conversions: where do we stand with respect to the core differentiations of consciousness? Quinn, Benton, Drage and McShane, for instance, all point to an element of aesthetic conversion controlling their work, something I readily identify with as well. O’Leary, Drage and Quinn state explicitly what I believe is implicit in the other writers, that there is a structure of ‘care,’ a moral conversion controlling their investigation. Quinn, McShane and McCallion are at home in theory; everyone else located this as a zone of struggle. O’Leary, Drage and McShane are comfortably and explicitly religious; Quinn is quieter and more circumspect, but there is acknowledgment of a friendly divine co-traveler. And so on. Facing up fully to our basic poise is a further task attended to in dialectic, but even with interpretation we need to acknowledge our horizon-field.

On what basis do we really select what work is to be done?

Despite the range of comfort zones and competencies, the common task of interpretation cycling forward opens up links between efforts in divergent fields (in both senses of the word). McCallion's work, which takes a seemingly obscure fragment of Lonergan's economics, might seem far from O'Leary's concern with social justice. Yet both McCallion and O'Leary 'pick up' significant threads of meaning relevant to improving the probability of global economic well-being in the next centuries. They are trying to 'stick to' interpretation but are thinking ahead to the contribution these threads as interpreted can make to (future) functional historians. O'Leary uncovers a significant flaw in Friedman's understanding of the function of business (to only make a profit) and in doing so she points to the practical need for good economic theory. McCallion, on the other hand, moving more comfortably in economic theory, recovers a neglected gem in Lonergan's formulation of 'outlay' that is, ultimately, of great relevance to O'Leary's care about how we conduct ourselves in business. Drage recovers in McShane's developing view on axially, a view of general history that would locate and sublate the efforts of both O'Leary and McCallion. Each writer moves in 'character' towards the recovery of historical significant meaning, for "insofar as its [meaning] is communicative it induces in the hearer some share in the cognitive, constitutive, or effective meaning of the speaker" (*Method* 356). And with that they seed the possibility of transformed meaning. The reader will no doubt find other connections. Overall, in reading through the contributions of this volume, I was struck by how luminously the character of each contributor shone through in their efforts to make a little progress in understanding a couple of pages of Lonergan on interpretation.

Which brings me to the "Sketch" pages. The "sketch" provided the interpretive guideline running through this volume, and the reader may enjoy the way each contributor has worked with its challenge in their various 'fields.' Each contributor has had something to contribute to an interpretation of these demanding and pivotal two pages of *Insight*. McShane's work is the most developed and controlled in this

regard, but each contributor has something significant to add. Out of this emerged some surprising and original contributions to understanding both Lonergan on interpretation and on functional interpretation. I will highlight a few points that struck me.

Since first reading *Insight* twenty-four years ago, I have struggled with notion of the universal viewpoint, which Lonergan identifies as “a potential totality of genetically and dialectically ordered viewpoints” (CWL 3, 587). Here in all its glory is the sought after integrated viewpoint.

And Lonergan is seemingly off-hand about it: “it is *simply* a heuristic structure that contains virtually the various ranges of possible alternatives of interpretations; it can list its own contents only through the stimulus of documents and historical inquiries; it can select between alternatives and differentiate its generalities only by appealing to the accepted norms of historical investigations” (CWL 3, 588). Simple? Or does he mean ‘simple’ as Aquinas does when he affirms in the *Summa Theologica* that God is simple (Ia, Q3)? I assumed the universal viewpoint was beyond my reach. What emerged from this exercise, however, is an appreciation of what *operatively* the universal viewpoint is. It is simply the *working assumption* of the scientist: questions for intelligence intend understanding? Yes, they do! What is the ultimate reach, the aim, of scientific understanding? Complete explanation! The working scientist tries to observe the canon of complete explanation. He or she goes with the best current understanding of the scientific reach. The working interpreter shares in this attitude. Just as “the science of mathematics provides the physicist with a sharply defined field of sequences and relations and thereby enables him to anticipate the general nature of any physical theory,” Lonergan’s “Sketch” provided a method for anticipating “a potential totality of genetically and dialectically ordered viewpoints” (CWL 3, 602). It is not the *per se* achievement of that total range. So while a complete viewpoint may be beyond my current achievement, it is not beyond my reach. McShane’s article, “Lonergan’s Meaning of ‘Complete’ in the Fifth Canon of Scientific Method,” provides a wealth of direction for understanding the function of the

universal viewpoint in functional interpretation as well as making fair progress in indicating how functional interpretation would be structured. The influence of this article on the work of the other collaborators is significant.

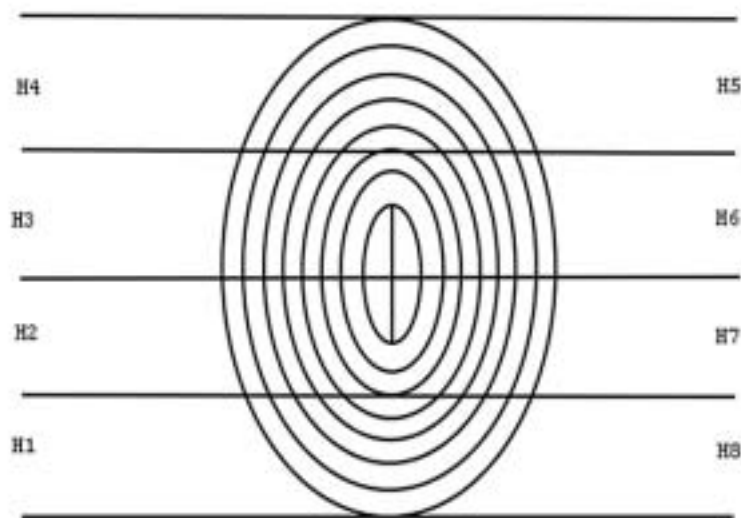
The most original and striking development to emerge in this volume is Benton's transposition of McShane's notion of 'tracking', which he counts as one of the metaphysical words.⁵ To date McShane has identified six metaphysical words, designated W0 to W5.⁶ Tracking is W5. It differentiates seven lanes or tracks of hodic specialization H1-H8 – think 'track and field'- determined by the level of development towards the universal viewpoint. The outside track, for example, is the lane of those working from the best contemporary horizon; the inside track is the lane for entrance level interpretation, and so forth. A diagram should help (see opposite).

H1-H8 represent the eight specialties; the oval tracks run through each. Benton takes the notion and shows how it works in Functional Interpretation. I would urge everyone to read his article. I found it especially helpful locating my own work and developing strategies for communicating results. One of the great frustrations of writing about Lonergan's work is the diversity of the audience; tracking provides a brilliant structure for sorting this out.

There is much more to be found in this volume. But I leave it to readers to explore at their leisure. I would however point readers to a problem that both O'Leary and Quinn raise: How do we interpret a view considered erroneous or handle an oversight in interpretation in a manner that is functionally efficient yet still restricted to interpretation?

⁵ In making this assessment I take nothing away from the other contributors. Quinn's work on relatively theory is impressive; Drage's work on axiality was closest to my own work in philosophy of history and a wonderfully insightful read. McCallion makes a significant contribution to understanding Lonergan's macroeconomics dynamics, and O'Leary, with her interpretation of Friedman, cuts to the heart of the deficiency of mainstream economics.

⁶ See "Infesting History with Hodology," *Cantower* 24
<www.philipmcshane.ca>



This is clearly an important question for the future refinement of the specialty when treating *functionally* doctrinal deviations whether they occur in chemistry or religious studies.

Besides the articles on functional interpretation, this issue includes a response by Eileen DeNeeve on Tom McCallion's article "The Basic Price-Spread Ratio" which appeared in volume 2.⁷ The occurrence of this exchange between DeNeeve and McCallion suggests to me that functional dialectic is a good topic for the next issue. I would locate "The Structure of Dialectic" as the key section for consideration. Those interested in taking part in this venture should get in touch with the editor. To get started I would recommend a reading of McShane's Cantower XXXIX on "Functional Dialectics."⁸

I believe this issue of our Journal represents a significant turning point in the history of functional specialization. It took Lonergan over thirty years from the time he identified the problem of implementation in 1934 until its solution in 1965. In 1969 he revealed his discovery. It has been more than thirty years since then and functional specialization has not become

⁷ *JMDA* 2 61-80.

⁸ <www.philipmcshane.ca>. Related to also this see *Sofdaware* 1 to 8 <www.philipmcshane.ca/sofdaware.html>

effectively operative even in Lonergan studies, let alone theology or in the academy at large. While this effort is but a small pebble tossed in a large sea, one can hope that its ripple effect might start a new wave. I am pleased to be involved in this first attempt to 'try it on' and hope that others will 'track' our progress as we move in the next issue to consider functional dialectic.

THE TWIN PARADOX: WORKING TOWARD FUNCTIONAL INTERPRETATION

TERRANCE J. QUINN

Introduction

In the early 20th century, Albert Einstein discovered the Special Theory of Relativity (c.1905). After about a decade of work,¹ he followed with the General Theory of Relativity (1915). In addition to offering new account of certain otherwise unexplained phenomena, his results called for a revision of previously held notions of space and time. Indeed, this led to assertions not only of what was puzzling, but what in some cases seemed paradoxical. Now, it is not the purpose of this short article to enter into a lengthy analysis of Einstein's Theories of Relativity. Instead, I focus on the traditional and allegedly rigorous argument that is prior to, but leads to, the famous Twin Paradox. That prior argument gives the following scenario: A twin leaves the earth at a speed that is some considerable fraction of the speed of light. The argument then uses equations from the Special Theory of Relativity to deduce that time for the traveler is slowed down; consequently the traveler who returns to the earth would be younger than the twin who stayed at home.²

¹ For the geometry of Riemann, Ricci and Levi-Civita, Einstein consulted with the mathematician Grossman. Also, after close communication with Hilbert, both Hilbert and Einstein came to versions of a General Theory within just a few days of each other.

² For one of Einstein's discussions of the matter, see his *Vierteljahrchrift der Naturforsch, Gesellesch. in Zurich*, 56 (1911) ; see also August Kopff, *The Mathematical Theory of Relativity* (trans. H. Levy.

The Twin Paradox is not a new topic. What is new in this article is that it is an exercise toward interpretation that is *functional*, in the sense discovered by Lonergan in *Method in Theology*. The author being interpreted is P. Tipler; and the primary document³ is taken from his well known textbook.⁴ I try to lay out the basic argument in a way that reveals the operative insights, as well as the significant oversights. As it turns out, it would seem that there is neither theoretical basis nor experimental evidence for the alleged “slowing of time” for the high speed traveler.⁵

Within the main outline requested by the Editor,⁶ some details on the division of the article are as follows: Section I consists of a few remarks toward expressing my Personal Context, and is intended to be a preliminary attempt toward being in keeping with the dialectic process described on p. 250 of *Method in Theology*. This is complemented by the last Section IV, where I look specifically to physics and add what, for this paper, might be called a Context of Concern. For, as is revealed in the course of the paper, there are numerous fundamental issues that arise, calling for further and prolonged attention. Section IV is not a controlled effort within the hodic process. All the same, given the fact that it is early days yet for functional specialization (there is not yet a functioning

London: Methuen, 1923), p. 52

³ I am thinking of the distinctions between documents that are primary, secondary and tertiary, as described by Lonergan in ‘The Sketch,’ Sec. XVII.3.6 of *CWL* 3.

⁴ Paul Allen Tipler, *Physics for Scientists and Engineers*, 4th ed., Volume 3 *Modern Physics: Quantum Mechanics, Relativity, and The Structure of Matter* (New York W.H. Freeman/Worth Publishers, 1999), 1258-9. This contemporary text gives the main features of the standard argument; and over the last almost thirty years, it has been widely used by numerous North American universities for undergraduate physics classes. I hoped, therefore, that it would be an easily accessible document for readers of the present article. Henceforth, this text will be referred to as Tipler.

⁵ Strictly speaking, this last comment is evaluative in a way that may make it belong not to Interpretation, but to Dialectic. I leave it in the paper, however, for reasons that I give in the last paragraphs of this introduction.

⁶ The Editor’s request was that contributions to the present volume be divided according to Personal Context, Content and Context. See the editor’s Introduction in this volume.

community as such), perhaps the various remarks will be useful for later re-cycling.⁷ In Section II A, I briefly indicate the physics context for the time-paradox; and then move immediately to Section II B, which provides the primary document. In Section III A, I give hypothetical expression that is intended to give the main content of the argument for the paradox. In Section III B, I try to identify certain key oversights of what was expressed in IIIA.

Working on this paper led me to methodological questions. For (not to exclude conversations between specialties), it seems to me that a prime directive for the Interpreter is to communicate the meanings of authors to Historians. What, though, if an author being interpreted holds a mistaken view, one say that is not compatible with the norms and exigencies of their field? Again, what if the view of the author being interpreted is grounded in a counter-position?

Speaking strictly as an interpreter, then, would one not comment directly on the validity of the arguments leading to The Twin Paradox? Instead, the interpreter might relay the essential meaning of the author to historians, in the area of expertise. (Both interpreter and historian would, therefore, need to be up on details of the field.) The interpretation could, for example, involve an axiomatic presentation of the author's hypotheses (explicit and implicit), and a plausibility argument for the author's view (whether or not the view is ultimately correct). Within a context of universal viewpoints, the interpreter might then communicate a best effort toward a non-critical and pure formulation of the author's work. Identifying and resolving problematic results might then involve dialectic work as a basis.

As it happens, I have not followed that pattern in this paper; and I also leave an evaluative component in the article. My reasons are as follows: 1. The argument for The Twin Paradox has been in general acceptance long enough; and 2. To leave out in the open the fact already mentioned, that this is a first effort toward functional interpretation in physics, and that the problem of how to interpret a mistaken view will need to be

⁷ See also the last paragraph of this Introduction.

worked out by future functional (collaborative) efforts.

I Personal Context

In university, I would have gone into theoretical physics, but the University of Toronto physics program required upwards of 20 hours a week of lab based time, this in addition to the full retinue of courses in mathematics and theoretical physics. In order to avoid that laboratory work detail, I entered the mathematics program, with the plan to take selected physics courses as possible.

I became immersed in the world of mathematics; the slow learning; the doing; later also the teaching; and more recently I have been making an effort to appreciate details of the method of mathematics⁸ (*method* in the sense discovered by Lonergan).

Some documents that took my early attention include *The Odyssey* (Fitzgerald tr.); class notes from an inspired high school physics teacher; an unusual Calculus text that I found in a second hand bookstore; Chesterton's *The Dumb Ox*; and piano sheet music of Beethoven, Brahms and Chopin. In the early years of university study, I was aware also of Lonergan's work. On good authority I was given to trust that his work was radically important, but I had not yet managed any prolonged reading.

My first experiences with music were happy beginnings. Later "music lessons" were not all so positive. Nevertheless, there was some continuity preserved, leading to the later pleasure and joyful humility of trying to play certain piano pieces of the three greats just mentioned - B, B and C. In some way that my young self could make some sense of, Fitzgerald's translation of Homer's *Odyssey* helped me grow somewhat in appreciation of the wonder-drama that is daily journeying. Chesterton helped me get a real sense that Aquinas was a teacher whose work should be taken seriously, whatever field I was headed for. At the same time as chancing upon these various documents, I also was becoming increasingly aware of the Teacher Tri-Friends.

From the beginning of my university studies, Lonergan's

⁸ See my "Reflections on Progress in Mathematics," *JMDA* 3 (2003), 97-116.

work has gradually become central to my efforts in scholarship. Not all good teachers need to be deceased! I have been lucky in scholarly help received from two brothers, James and John (dec.), both of whom had studied Lonergan and were talents in (among other things) academic honesty. John introduced me to Phil McShane, whose teaching and writings have been of continued and immeasurable help.⁹

I have tried to make some sense of contemporary mathematics and physics. Lonergan's book *Insight* has been as massively opaque as it has been helpful for beginning to realize the necessity, in any discipline, of what Lonergan called "generalized empirical method" (3 *Coll* 141). Elementary exercises in mathematics and physics have helped me reach initial existential displacements with regard to experience, knowing and doing and the elements thereof.¹⁰ Based especially on the effort to come to terms with certain problems in contemporary physics, I have found it possible to enrich, extend and refine initial displacements.

To place myself in mathematics, my background includes the standard repertoire of graduate courses (analysis, algebra, differential geometry, algebraic topology, homological algebra, to name a few). I have managed some rather modest contributions in C^* -algebras, symmetries of differential equations, and applications of stability theory to biology population models. I have become familiar with the non-commutative differential geometry of Alain Connes.¹¹

⁹ Sadly, I have found no academic help from "Lonergan conferences" that I have attended. I have been frustrated by the many talks and professional discussions that did not seek (or promote) theoretic understanding, in any stage of meaning. Instead, the emphasis was of a type of confining and merely linguistic work that runs counter to the expansive and enriching scientific objective. It seems to me then, that largely what has been going on in the name of "Lonergan studies" would, in mathematics say, compare to a group of scholars learning and comparing certain mere symbolic techniques, without fostering or reaching mathematical understanding.

¹⁰ See the zero and fourth words of metaphysics: W0, W4, Philip McShane, *Cantower* XXIV, www.philipmcshane.ca.

¹¹ The "non-commutativity" is because, from the beginning, the theory ties together operator structures and geo-topological manifold structures; and operators in general do not commute: see Alain Connes,

In the winter of 1992-1993 I had the good luck of being able to attend a six month seminar at the Dublin Institute for Advanced Studies. Using his first book¹² as a basis for the lectures, Lochlainn O’Raifeartaigh gave an introduction to field theory in physics. At the time I was missing a lot of background, and so much went past me, or had to be noted for future reference. But the context took hold of me, as did the equations and diagrams for the “Lie algebras of particles”. I found Lochlainn’s civilized and intelligent presence inspiring. It was manifest that this kind man knew what he was talking about, and that he was serious in his commitment to understanding. The directions and mood of that seminar stayed with me, and have been part of what I have been trying to climb to since that time. While life and professional circumstances¹³ have been “slowing me down”, in 1996 -2000 I was finally able to begin honing up on some of the mathematics that I was wanting for my follow up into contemporary physics, namely, Lie Groups and Differential Equations.¹⁴

Over the last years I have dabbled in quantum mechanics,¹⁵ and have been trying to keep abreast of main

Noncommutative Geometry (San Diego: Academic P, 1994). In view of recent GUTS in physics, it is possible that results of this general type will be relevant to modern physics and real geometry. See Section IV, below.

¹² Lochlainn O’Raifeartaigh, *Group Structures of Gauge Theory* (Cambridge and New York: Cambridge UP, 1986).

¹³ Teaching responsibilities have been extensive, but also have been a basis for happy growth. In the main, however, I have found the university environment to be hostile to human growth, for both students and faculty alike – which is especially sad, since the professed mission is education.

¹⁴ P.J. Olver, *Applications of Lie Groups to Differential Equations*, (New York: Springer-Verlag, 1986/1993). This is an expository text. There are orientation problems, however, revealed in various explicit dismissals of the importance of what in fact are higher mathematical viewpoints. In particular, there is a lacking of adequate attention given to the geometric dimensions of the work together with an over-emphasis on mere algebraic technique. I did, however, find the text a convenient source of examples, and a useful introduction to the 20th century results on symmetries, generalized symmetries, the work of Emmy Noether, etc. The author also gives an extensive bibliography.

¹⁵ T. Quinn, “From Schrodinger to Dirac: On Relations and Statistics”, B.N. Prasad Centenary Commemoration, *Bull. Allahabad Math. Soc.*

directions in quantum field theory and quantum chromodynamics. My hope is to soon begin a more detailed work on the foundations of real geometry (see Section IV, below), with results increasingly oriented within the dynamic of hodic control. Of course, by definition, functional specialization is a community project, so part of my hope also is for the emergence of collaborative projects.

The first and second words of metaphysics regard what McShane has called the “aggreformic”. For me, this remains mainly heuristic. At this time I do not know enough of the higher sciences to allow for significant detailed reflection on higher forms. The third word of metaphysics regards functional specialization.¹⁶ As referred to above (see footnote 8), I have made a modest beginning toward recognizing the need for functional specialization in mathematics. In the main, however (and as is a familiar experience in science), the field remains richly and invitingly obscure.

Certainly, there is the potential, personally, for a more adequate *Assembly* and so on, that would no doubt reveal oppositions, affinities, sources. And related to the question of possible opposing horizons, there has been my slow and oftentimes problematic growth within certain differentiations. At the same time, I am not aware of having felt that there were any “necessary separations” between these different worlds. So, I have taken the Divinity, theology, metaphysics, science, the daily drama of journey, music, and so on, to be all of a piece. In that sense, I may refer to a spectrum of blending affinities that contributes to, and is somewhat unified within, my on-going efforts (such as they are) toward hodic oriented theoretic understanding.

Finally, my experiences in mathematics, physics and music have helped make undeniable the need for taking one’s time and starting with elementary instances. As Klein wrote, “slowly to higher things.”¹⁷ In particular, I have found that

(Indian Journal of Mathematics), Vol. 15, 2000, 69-100. This article was my first attempt at identifying some of the key insights (and oversights) in the works of Schrodinger, Heisenberg and Dirac.

¹⁶ W3, *Cantower XXIV*.

¹⁷ F. Klein, *Elementary mathematics from an advanced standpoint*:

pondering over the contemporary efforts of science to understand the familiar human experience of “space” and “time” can be an immensely enriching and likewise be a happily humbling exercise. Moreover, it is increasingly evident to me that such work can serve as a vital and crucial “bridge” (CWL 3 1992) to further issues.¹⁸ This brings me, then, to the present article.

IIA The Context

What follows are Einstein’s postulates and the Lorentz equations. The traditional argument that gives the Twin Paradox takes these as given.

Einstein’s two postulates for his Special Theory¹⁹ are:

1. Physical laws and principles are of the same form in all inertial systems, that is, in all reference systems which differ only in the fact that they are moving with constant velocity with respect to each other.
2. The velocity of light has the same value in all inertial systems.²⁰

For the traditional calculation of the Lorentz Transformation Equations between two inertial frames F and F' , one assumes a (local) affine linear transformation, and that at $t = 0 = t'$, the two origins coincide. Invoking the second postulate, it is possible to then determine the coefficients of the transformation. For one space dimension x and time t , these equations turn out to be:

Arithmetic, algebra, analysis, trans. E.R. Hedrick and C.A. Noble, from the third German edition (New York: Dover Publications, 1925), 268.

¹⁸ Clues to a fuller context are expressed in McShane, *Cantower* XII, “A Problem of Interpretation Arises,” and *Cantower* XXXI, “Time and Distance: Feynman I, ch. 5; *Insight*, ch. 5.”

¹⁹ English translation of the famous 1905 paper (A. Einstein, *Annalen der Physik*, 17, 891, 1905) in: H.A. Lorentz, A. Einstein, H. Minkowski and H. Weyl, *The Principle of Relativity - a Collection of Original Memoirs on the Special and General Theory of Relativity*, trans. W. Perrett and G.B. Jeffrey with Notes by A. Sommerfeld (London: Methuen, 1923), 35-65.

²⁰ Assuming, of course, the use of the same units of space and time.

$$x' = \frac{x - vt}{\sqrt{1 - v^2/c^2}} \text{ and } t' = \frac{t - \frac{v}{c^2}x}{\sqrt{1 - v^2/c^2}}$$

Here v is the constant velocity of frame F' relative to frame F ; and c is the measured speed of light. The reciprocal square root is frequently denoted by $\gamma = \frac{1}{\sqrt{1 - v^2/c^2}}$.

IIB The Text

Figure 1²¹ and paragraphs two and three of 'Exploring the Twin Paradox' (Tipler 1258-59).

The complete quotation is partitioned and indexed by T_1, T_2, T_3 , etc.

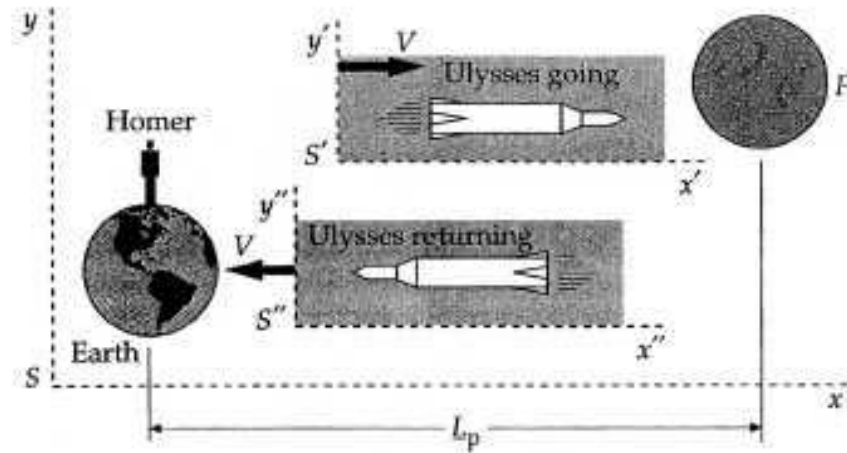


Figure 1 The twin paradox. The earth and a distant planet are fixed in frame S . Ulysses coasts in frame S' . His twin Homer stays on earth. When Ulysses returns, he is younger than his twin. The roles played by the twins are not symmetric. Homer remains in one inertial reference frame, but Ulysses must accelerate if he is to return home.

²¹ The caption for Figure 1 also is from Tipler 1258.

Paragraph 2 of the text

- T₁ Let the planet P and Homer on earth be at rest in reference frame S a distance L_P apart, as illustrated in Figure 1.
- T₂ We neglect the motion of the earth.
- T₃ Reference frames S' and S'' are moving with speed V toward and away from the planet, respectively.
- T₄ Ulysses quickly accelerates to speed V , then coasts in S' until he reaches the planet, where stops and is momentarily at rest in S. To return he quickly accelerates to speed V toward earth and then coasts in S'' , until he reaches earth, where he stops.
- T₅ We can assume that the acceleration times are negligible compared with coasting times.
- T₆ We use the following values for illustration: $L_P = 8$ light years and $V = 0.8c$. Then

$$\sqrt{1 - V^2/c^2} = 3/5 \quad \text{and} \quad \gamma = 5/3.$$

Paragraph 3 of the text

- T₇ It is easy to analyze the problem from Homer's point of view on earth. According to Homer's clock, Ulysses coasts in S' for a time $L_P/V = 10y$ and in S'' for an equal time. Thus Homer is 20y older when Ulysses returns.
- T₈ The time interval in S' between Ulysses' leaving earth and his arriving at the planet is shorter because it is proper time. The time it takes to reach the planet by Ulysses' clock is $\Delta t' = \frac{\Delta t}{\gamma} = \frac{10y}{5/3} = 6y$. Since the same time is required for the return trip, Ulysses will have recorded 12y

for the round trip and will be 8y younger than Homer upon his return.

IIIA Content (Hypothetical Expression)

Text used for each hypothetical expression is indicated in the parentheses.

- A₁ (T₁, T₃, Figure 1) The reference frame is imagined to extend to the remote planet P. All three reference frames and their origins are imagined at once, and are represented in Figure 1.
- A₂ (T₂, T₄, T₅, T₇) We consider the accelerations of the earth's rotation, the traveler's short launch and also the brief change of direction at the planet P to have relatively negligible effect on the calculations. For, in the main argument, the distance to the planet can be as large as we please. So whatever contributions to time and velocity might occur due to the short accelerations at the earth and at the planet P, they can be made relatively small compared to the long times and arbitrarily large distances of the journey at constant velocity V.
- A₃ (T₆) From A₂, we neglect possible effects of accelerations at the beginning of the trip and at the planet P, and assume the constant velocity V relative to S is maintained at 0.8c. Then with $L_P = 8$ and using (Distance) = (Constant Velocity)(Time), we solve for the total time elapsed relative to S for the outward journey. This time is then found to be 10 y; and the same is obtained for the return journey. So the total time relative to S would be approximately 20y.
- A₄ (T₃, T₈) Let's assume that measurements made by Ulysses relative to suitable reference frames S' and S'' on the space ship give the same quantities as would be obtained by Homer on earth, if Homer were first to obtain measurements relative to frame S, and then use the transformation equations. Recall from the diagram that the

primed and doubled primed coordinates refer to the outward and return journeys respectively. So, let's set up the notation for the calculation. For the measurements made by Homer (on earth and relative to frame S), we have $\Delta x_{outward}, \Delta t_{outward}$ and $\Delta x_{return}, \Delta t_{return}$. Let $\Delta x', \Delta t'$ and $\Delta x'', \Delta t''$ be the transformed quantities for the outward and return journey obtained by using the transformation equations on those S measurements respectively; let $\Delta \tilde{x}', \Delta \tilde{t}'$ and $\Delta \tilde{x}'', \Delta \tilde{t}''$ be the measurements obtained by the traveler Ulysses on the outward and return journeys, relative to S' and S'' respectively. Our assumption then can be written as follows: For the outward journey we would have $\Delta x' = \Delta \tilde{x}', \Delta t' = \Delta \tilde{t}'$; and likewise for the return journey we would have $\Delta x'' = \Delta \tilde{x}'', \Delta t'' = \Delta \tilde{t}''$.

A₅ (T₈) Using the hypotheses of A₃ and A₄, we obtain $\gamma = \frac{1}{\sqrt{1 - V^2/c^2}} = 5/3$. The transformation equations

then yield a total travel time for Ulysses to be the sum of

$$\Delta t' = \frac{\Delta t_{outward}}{\gamma} = \frac{10}{5/3} \text{ and } \Delta t'' = \frac{\Delta t_{return}}{\gamma} = \frac{10}{5/3}.$$

For the two observers Homer and the traveler Ulysses, there would be, therefore, a difference in measured elapsed time. Specifically, the time measured by the traveler Ulysses (who is traveling at the large velocity of 0.8c) would be 8 years shorter than the measured time of the earth bound observer Homer.

IIIB Oversights

B₁ Regarding A₁: To begin, it is useful to recall that real reference frames do not extend as depicted in A₁. Indeed, even if instruments are attached to satellites, and even if there is a convenient way to imagine satellites as “out” in orbit, the actual data that finally enters into a real calculation would come from calibrated laboratory

equipment. In any case, there are no visible axes extending outward into the solar system.

Certainly, within mathematics, and within the context of some metric geometry, one may define a “line” that “extends without bound”. But even in mathematics, the basic datum for such conception consists of some imagined fragment of length. We return then to the fact that real reference frames are determined in laboratories, by finite data that are accessible to the laboratory scientist. In some cases, such data begin as actual laboratory lengths relative to some convenient ruler. More typically, however, even lengths are not measured in that direct way. For, as may be found in many undergraduate physics laboratories, there are networks of instrumentations (electronic, digital, etc) that provide plots (e.g. on screens) scaled relative to theoretically and experimentally justified interconnected sets of provisional standard units.

Note, finally, that where it is not possible to verify as imagined the prolongation “into space” of an imagined reference frame such as in A_1 , even less so is it possible to verify as imagined three such imagined reference frames represented in Figure 1.

Evidently, however, diagrams and other images for reference frames can be eminently useful in both mathematics and physics. Further discussion of this issue will be left for Section IV.4 (below).

- B₂ Regarding A_2 : The issue here is not that accelerations would have no effect on experimental results. The fundamental issue here concerns relative magnitude; and the meaning of the claim would seem to be compatible with the context. See, however, B₃.
- B₃ Regarding A_3 : The issue here is deceptively complex. It seems simple enough to hypothesize a constant velocity of $V = 0.8c$ across a distance of 8 light years. But to what would this correspond in experiment? Any experiment will originate from some laboratory situation. A distance of 8 light years is not some imaginable distance as such. (See also B₁.) It can be defined to be the “distance” (what

laboratory verified metric?) that light would “travel” (locally measurable radiation effects) in a locally measured time of 8 years. It is calculated therefore on the basis of verified local velocity experiments for light, hypotheses of special relativity (including that there is no measured distance without its measured time; and no measured time without its measured distance), and pertinent known results on standard units, etc. The speed of $0.8c$ is then defined in terms of c ; the time of 10 years is hypothetical; and the distance of “10 light years” is tautological.

Is it possible for a spaceship or object to reach and sustain that velocity? Does the simple formula $V = (\text{Distance})/(\text{Time})$ actually apply? If so, why the need for Einstein’s results in the present context of special relativity, according to which any such calculation would require drawing in the hypotheses connected with synchronisation due to the fact that each location would have its own time. There are then questions and answers that would require experimental verification, and cannot be mathematically deduced as given in $A_3 (T_6)$. Indeed, there are experiments that have been taken to provide evidence for time dilation, and so some further mention of experimental results will be made in Section IV.1.

With regard to Tipler’s expression, it may be useful to observe that the calculations (e.g. from $A_3 (T_6)$) are of the old style, suggestive of an imaginable empty space, rather than a space-time continuum locally verified in concrete extensions and durations, as would be proper to the context of Special Relativity.

B₄ Regarding A_4 : Measurements obtained by a traveler on the hypothesized space ship would be obtained using laboratory equipment on the ship. There are, therefore, two sets of measurements to consider:

- (i) Lengths and times (x', t') relative to S' , as accessible to the experimenter on earth through the

transformation equations applied to $(x_{outward}, t_{outward})$;
and

- (ii) Lengths and times $(\tilde{x}', \tilde{t}')$ relative to S' , as accessible to the experimenter on the space ship.

The derivation of the alleged time contraction uses the hypotheses of A_4 , applied to measurements pertaining to both the outward and return parts of the space-ship journey. Completely similar remarks apply to both the outward and the return journey, so the present discussion only directly regards the outward journey. Now, for the hypotheses of A_4 , one may ask on what grounds it may be assumed that transformed earth measurements be equal to the spaceship instrument measurements. The spaceship instruments, by hypothesis, are in their own frame, different from the earth frame. Can it simply be assumed that measurements from a remote moving laboratory location satisfy the claimed equality? Perhaps space-ship results can in some way be communicated to the earth experimenters? But, if any such communication occurs, it will necessarily make use of some further transmission data and transformation equations compatible with the hypotheses of relativity. For any such communication will be transmitted from what to the earth frame S is a moving apparatus, at some high velocity, at some remote location, at some remote time. To simply make the assumption that these further complications might not affect results is not only not consistent with experimental method, but breaks from the hypotheses of the context that is special relativity.

Even if some type of bi-data source were in some case obtained, above and beyond the usual laws of physics, the transformation problem would not be removed, but only be further complexified. For there would now be not one, but two sets of measurements (from two laboratory here-nows). Is one of these to take priority over the other? Or, by the principle of equivalence, are they to be considered equivalent, at least with regard to measurements? One

could hardly revert to some non-verifiable notion of absolute space and time. So, there would still be a question of how one might correlate the measurements of one frame relative to the other. The present text, Tipler, however, is a physics text, and in physics we are not free to admit what is not empirically verifiable. Furthermore, from the results of special relativity, we cannot take space to be Euclidean and empty. Finally then, within the present context, there are no grounds for being able to identify the space-ship laboratory results with the transformed earth laboratory results.

Not all is lost. For from the earth laboratory, there might be the possibility of using some second set of measurements, calibrated in some way that would correspond with data originating from the moving spaceship, and measured perhaps relative to some differently calibrated set of measuring instruments S' (units, etc.). In that case, there would be the possibility of comparing those laboratory measurements relative to S' with the quantities obtained using the Lorentz transformation equations applied to the measurements (x, t) obtained relative to the first laboratory frame S . Note also that such use of the transformation equations would be consistent with Einstein's first postulate.

- B₅ Regarding A₅: The calculation for A₅ makes use of A₃, A₄ and the transformation equations. The oversights of A₃, A₄ have already been considered. There is, though, a further fundamental insight that is in fact an incorrect use of the transformation equations.

As a preliminary to the mathematical details for discussing the use of the Lorentz equations, let's first consider an example that is more down to earth. Suppose then that one has two county maps, M and M' , and that (at least for a region surrounding a town), locations given by a pair (letter, number) from M are denoted by possibly different pairs (letter', number') from M' . (For example, M could be skew to M' ; or M could be constructed using different units of land length; and so on.) In particular,

suppose that the coordinates of the town using M are (E,4) say; and that the coordinates for the same town using M' are (K',10').

Notice, that the correspondence between the two maps is a correspondence of pairs. Obviously, the fact that the one town is represented by two different pairs of coordinates does not imply that the coordinates individually agree. Indeed, in the present example, $E \neq K'$ and $4 \neq 10'$.

Now that other details have been attended to, let's look, at last, at Tipler's presentation of the traditional argument for time contraction. Suppose a displacement in distance and time where we take $x'_1 = x''_2$. In Tipler this corresponds to the hypothesis that, relative to the reference frame on the space-ship, there is no change of location of the measuring instruments from one moment to the next. The transformation equations give that $\Delta t' = \frac{\Delta t}{\gamma}$. Hence,

$\Delta t = \gamma \Delta t'$. Since $\gamma > 1$, it is said that the clocks in S' run slower than the clocks in S.

When, however, $x'_1 = x'_2$ and $t'_2 - t'_1 > 0$, the transformation equations correlate the length-time interval $\Delta s' = (\Delta x', \Delta t')$ with the length time interval (in the unprimed earth coordinates) $\Delta s = (\Delta x, \Delta t)$. For $\Delta x' = 0$, we then obtain that the length interval in S is given by $\Delta x = \Delta t' V \gamma$.

So, if (as in the derivation of the paradox) it is supposed that $x'_1 = x'_2$ and $t'_2 - t'_1 > 0$, then relative to the earth frame there is also a corresponding change of location. In other words, the two times t'_1 and t'_2 that determine the time interval $\Delta t'$ relative to the earth frame S are two times at two different locations. Hence, by the fact that the transformation equations correlate pairs of coordinates and not single coordinates at a time, then just as with the illustration of the county maps, there is no basis in the transformation equations for identifying the time component intervals. Besides this mathematical error, we

may also observe that by the original hypotheses of special relativity, times at different locations are simply not directly comparable.

IV Context of Concern in Physics

The sequence of topics in this section is not meant to be comprehensive. Instead, I briefly comment on what seem to me to be various key issues in physics that were implicit in my discussion of the Twin Paradox. Part of my background here includes efforts to read chapters I-V, VIII, XVI and XVII of *Insight*. There have been notable advances in physics in the last decades. So, where much of the explicit physics content of the present section is dated, in as much there is some validity to my comments, they would need to be brought into the modern context indicated by such books as O’Raifeartaigh,²² Lawrie,²³ and Greiner.²⁴ There are leads on energy given in *Insight* that would need be followed up.²⁵ Moreover, all results would need to be taken up by the enriching controlling dynamic hodic process indicated by McShane’s third word of metaphysics.

Note also that while my discussion focuses on physics pertaining to elementary things, eventually there will be the need for results that would regard the physics and geometries²⁶ of higher things. There are, then, the first and second words of metaphysics.²⁷ I think, however, that developments there probably will belong to future functional collaboration.

IV.1 Experiments on Time Dilation

In Section III, I referred to the fact that there have been various experiments that have been taken to provide evidence

²² Lochlainn O’Raifeartaigh, *The Dawning of Gauge Theory* (Princeton: Princeton UP, 1997).

²³ Ian D. Lawrie, *A Unified Grand Tour of Theoretical Physics* (Bristol and Philadelphia: Institute of Physics Publishing, 1990).

²⁴ Three (of many) books by Walter Greiner are: *Quantum Mechanics*, 2001; with J. Reinhardt, *Quantum Electrodynamics*, 2002; with S. Schramm and E. Stein, *Quantum Chromodynamics*, 2002 (all New York: Springer-Verlag). See also Dr. Greiner’s Homepage: <http://www.th.physik.uni-frankfurt.de/~greiner/>.

²⁵ McShane enlarges the context in *Cantower XXX*

²⁶ See Sections IV.5 and IV.6 below.

²⁷ McShane, *Cantower XXIV*

for time dilation. So one might wonder about my conclusion that, within the context of Special Relativity, there are neither theoretical grounds nor experimental evidence for the so-called time dilation.

One of the early experiments that has been taken to give credence to time-dilation is discussed in detail in Swann.²⁸ My immediate purpose, however, is not to enter into all of the details of the experiment as such, but to point out where some of the conclusions represent what to my context does not seem consonant with a scientific point of view.

As I discussed already for the twins, to suppose what other experimenters “would be” measuring is neither grounded in scientific method nor in concord with the hypotheses of Special Relativity. Even “less verifiable” is the following: “...suppose that the lifetime of a mesotron (of velocity βc), as measured by one who accompanies it in its motion, is τ_0 .”²⁹ Even if it were possible to contradictorily both make use of and deny known laws of physics, and so accompany a mesotron (with a real massive laboratory frame and all of its apparatus and measuring devices, etc), the main objections that applied to Ulysses’ space-ship would still apply. It is my view, therefore, that suppositions like these simply do not belong in the realm of natural science.

The cosmic ray experiments did reveal that “a mesotron with high energy has a lifetime which is greater (than a low energy mesotron) [...] in the ratio” predicted using the scale factors $\sqrt{1 - V^2/c^2}$ obtained from Einstein’s equations.³⁰ The further inference, however, was that time for the high energy particles therefore slows down. But, the fact that relative to the calibrated instruments of the laboratory, an energized mesotron

28 W.F.G. Swann, “Cosmic Rays,” *Reports on Progress in Physics* (The Physical Society, London) Vol. X, 1944-45, 1-51. As mentioned by Lanczos, see especially p. 16. There are of course, more contemporary experimental results. For an extensive up-to-date bibliography, see Y. Z. Zhang, *Special Relativity and Its Experimental Foundations* (Singapore: World Scientific, 1997).

²⁹ Swann 16, note †.

³⁰ Swann 17.

tends to survive reactions in a cloud chamber measurably longer than a non-energized mesotron, suggests to me, not some non-verifiable time dilation (whose deduction in any case depends on flawed mathematics), but that the real differences in the energies of such particles correspond with measurable and statistically broader ranges of possible reactions. By analogy, a rapidly spinning top spins measurably longer before falling than a slower spinning top. But this says nothing about the rate of time relative to some imaginary and inaccessible observer traveling, as it were, on a top. Regarding the mesotrons, I suspect that what was partly revealed is the existence of verifiable connections between energy,³¹ potency and the measurable life-times of such entities.

There remain the numerical results of the mesotron experiments, that is, that certain ratios obtained in experiment turned out to be approximately equal to what was calculated from Einstein's relativistic energy equations. These results (and more recent experiments referred to in Zhang's text) provide accumulating evidence that Einstein's postulates and theoretical developments were of reaching significance. As numerous alleged paradoxes show, however, understanding that significance is a further issue.

IV.2 The Complex Physics Context

Evidently, there are root problems influencing the proper development of physics. There is, for instance, a general acceptability of certain results whose theoretic conclusions are partly mixed with imaginative representation. But, when the merely imaginable is taken as scientific, the mesotron is then somehow "out" in "a space" that is empty. There is, it would seem, the necessary inconvenience of having to deal with issues of synchronization (and in General Relativity, the bending of light rays around massive objects). Besides such oddities, however, if only we had better instruments, we would be able to see electrons, mesotrons, quarks, and the like, to be the little grains or imaginable wavicles, wavelets, strings, knots or surfaces that they really are. Note, however, that even when description is empirical (as when for example, an investigator

³¹ McShane, *Cantower* XXX.

examines tracks on a laboratory photo-plate, or a person inspects images of the night sky), these images as images are not the explanatory correlations that the scientific investigator normally works so hard to verify.

This problem of description versus scientific understanding does not point to some merely-philosophic issue extraneous to progress in physics. For, as is now historically evident, lacking control of meaning can both over-turn and suppress postulates, admit the non-verifiable and the contradictory, and even allow for basic mathematical errors to be consistently ignored.³² Other examples can be easily found. For instance, it is still taught in graduate schools that, besides measurement and statistical difficulties usually associated with the Heisenberg Uncertainty Principle, electrons and other subatomic particles orbit central cores or “nuclei”. Known laws have prohibited that as a real possibility for more than 100 years.

I certainly don't mean to suggest that these problems are simple or are to be easily resolved. It seems to me, rather, that part of the difficulty is that the context of theoretical physics is so complex. Whatever one's allegiance or philosophy of science, it cannot be denied that work in physics involves imagination and description; measurement; definitions and equations; frequencies, abstract postulates, identifications, and more. So, to not be engaged in an increasingly precise control of these operations is bound to lead to endless confusion and alleged paradox. What physics needs, then, is a methodical division of labour, as discovered by Lonergan, and as sketched out for mathematics.³³ This would gradually reveal critical flaws and move the group to a fuller control of meaning.

IV.3 Invariance

The question of invariance does not normally arise in the higher (and more difficult) sciences. In physics, however, we use measuring techniques based on the best available standard

³² With regard to the Twin Paradox, the mistake in the use of the transformation formulas has remained in acceptance since at least 1911. Ref. Einstein's paper: see note 2.

³³ See note 8, above.

units of the day, corresponding laboratory reference frames and coordinate systems. So, in physics, defining correlations would necessarily be invariant under actually possible changes of reference frame that, according to the best available theoretical understanding also are likewise mathematically permissible. In the Theory of Special Relativity, permissible changes of reference frame are determined by the Lorentz group. This provides a mathematical range of possibilities. But which of these changes of frame are actually possible is not a question for mere mathematical deduction, but calls for experimental verification in actual electromagnetic phenomena.

In the metaphysics of physics, a term-defining correlation that is suitably invariant would be called a primary relation. It would be the (explanatory) relation that would be generally verifiable. But in physics, seeking primary relations reveals other features of the process. For, where convenient scales might be used to approximately verify a specific combination of measured ratios, an investigator need not point out that the particular ratios in one case are different from those in another. The focus, rather, can be on the combination of ratios, not the particular ratios as such. For a primary relation in physics then, what the particular quantities are at a given time and at a given location would be secondary.³⁴

It is interesting to advert to these distinctions in connection with Einstein's two postulates of Special Relativity. Restricted invariance was already a topic in Newtonian physics; and the constant speed of light played a role in efforts to understand Maxwell's equations. But, to raise invariance to the status of a postulate was an enormous move forward for physics. In Special Relativity, that postulate evidently expresses Einstein's implicit grasp and (special) breakthrough that physics seeks (suitably invariant) relations. The second postulate, while grounded in experimental results, is quite different in significance. For, in as much as terms and units survive in an explanatory context, a measured speed is some kind of approximation toward secondary determination. So, while we may find the postulate on the speed of light to be generally

³⁴ *CWL* 3, Ch. 16.

verified, there would seem to be no principle of empirical science that could rule out the possibility that the measured speed of light relative to inertial frames might not vary; or perhaps change with the age and state of the universe.

IV.4 Minkowski Space, World Lines and Logic

Frequently, texts on Special Relativity include some mention of “world lines”. Space-time axes are drawn, the coordinates of a trajectory are combined, graphs are formed relative to these axes. Notice, however, that this is mathematical construction. The “world-lines” are imagined trajectories relative to imagined scaled axes that are imagined to be “perpendicular”. Certainly, images play a role in physics, as does mathematical creativity. The problem that I look to now is the possible physical status of what for imagined world lines often is taken to be the ambient “Minkowski space”.

The set-up called “Minkowski space” is obtained as follows: Following Einstein’s idea, each measured location has its own measured time. As is customary, suppose a ruler of standard material is scaled with some standard length, and that standard clocks are located at each standard unit distance along the ruler. Altogether, the scaling and the clocks determine a coordinate frame. One may then use the Minkowski distance formula $\Delta s^2 = \Delta x^2 - \Delta t^2$ to define “distance” between location-times of this frame.

On the mathematical side, one may define distance in this way, between points defined to be elements of a coordinate space. In as much as the images for this include imagined extensions and durations, one may even call this a “geometry”. But that is mathematics. For physics, there is the hypothesis that relative to a stationary origin, relatively stationary axes of a coordinate frame can be used to unambiguously give locations and instants. There also is the key hypothesis that the frame itself does not significantly add to the physics of the situation. Finally, the Lorentz coordinates, by definition, refer to no empirical extension or duration of any physical process (other than the constructed frame itself). In other words, “Minkowski space” refers to a situation where, by definition, nothing is going on. And since this does not regard trajectories of physical processes as such, the experimental fact is that

there is no evidence for a real “Minkowski space”.

I mean that last paragraph as a help, by way of exclusion, toward determining a possible physical significance of the Minkowski “metric”. For, going on the progress of physics over the last century, there is undoubtedly significance to Minkowski’s approach. The question then is, if the construction does not yield a geometry, what does it yield? For this, I look to how the construction is used in practice. But there, the invariance of the metric is used as the criterion for permissible changes of coordinate frames. In other words, the invariance of the metric determines ranges of possible universes of discourse. It seems to me therefore, that where Minkowski’s approach does not yield a geometry as such, it does pertain to the Logical Note of Section V.2.6 of *Insight*.

IV.5 Space, Time, Real Geometries and the Dynamical Universe

The extensions and durations investigated in physics are concrete. So, recalling that the word “geometry” comes from the Greek words for “earth” and “measure”, perhaps it is not unreasonable to call the objective of physics “real geometry”. Moreover, doing so actually helps point to a further and central component to the physics project, one on which I have not yet commented. For lengths and times are not “things” but are “of things”. So, in physics, we also seek the identities of things that ground and unify probably verified conjugate forms. We approach then a scientific notion of “space-time-as-explained” that leaves no room for the imagined empty space and general time usually associated with the work of Newton (but that also implicitly continues to intrude on contemporary work).

Frequently, experiments take place under rather exceptional circumstances - of say a laboratory a mile or more underground. Specialized experiments may help investigators discover structures and deduce possible schemes. But the very fact that investigators need to go to such lengths to isolate their experiments implicitly acknowledges a dynamic propensity in things and concretely provides on-going evidence of real randomness.³⁵ Moreover, whatever the ultimate account, the

³⁵ See CWL 3, II.4; and McShane, *Randomness, Statistics and*

success of the multi-Lagrangian Standard Model suggests that there are distinguishable networks (or perhaps “groupings”) of species of elementary things, that taken together can re-act, “form integral compounds,”³⁶ partially “dis-integrate”, be created and annihilated, in dynamic patterns revealing of and constitutive of something perhaps akin to a periodic table. So, even when a full account might be reached of all possible types of elementary geometric-physical entity, there will remain the non-systematically occurring particle sequences revealing controlling geometric forms and dynamic propensities of the non-static universe.

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Emergence (Dublin: Cahill, 1970).

³⁶ Regarding the meanings of “formed” and “aggreformic” see CWL 3, VIII.6; McShane, *Randomness, Statistics and Emergence*; and McShane, *Cantower* XXIX.

INTERPRETING FRIEDMAN'S VIEW OF BUSINESS

DARLENE O'LEARY

The purpose of this edition of the journal is to take a shot at the functional specialty interpretation. It really is a shot in the dark, although I am in good company with the other contributors to this edition. I feel as though my beginning is very tentative. I have been trying to get a sense of what interpretation would mean as part of a functional specialist collaborative effort, and it is hard to imagine, in a way, because we are not there yet. So, this is an effort at a beginning, which involves my own uncertainty.

I have decided to focus this discussion on the famous article by Milton Friedman, "The Social Responsibility of Business is to Increase Its Profits."¹ This article was originally published in 1970 and has been reproduced in many sources since then. So the article is over 30 years old. However, the perspective that Friedman promotes in this article is one that is still very much a part of discussions about business, business ethics, and ethics and economics. It seems legitimate to me to try to get an insight into some of Friedman's insights and oversights.

The structure of the articles in this edition has its basis in Bernard Lonergan's discussion on hermeneutics in Chapter 17 of *Insight* and on interpretation in Chapter 7 of *Method in*

¹ Milton Friedman, "The Social Responsibility of Business Is to Increase Its Profits," *The New York Times Magazine* (Sept. 13, 1970). This article has been reprinted in a number of sources. See Deborah C. Poff and Wilfrid J. Waluchow, eds., *Business Ethics in Canada*, 3rd ed. (Scarborough, ON: Prentice Hall Allyn and Bacon Canada, 1999) 43-47.

Theology. I will limit my references to these sources, although this discussion will need further theoretical reflection in light of Lonergan's broader vision.

1) Personal Context I

I am taking seriously the insights of Lonergan and of feminist scholars in beginning with my personal context. With this beginning, I am attempting to give you a sense of the vision and the viewer that will be guiding this effort to understand Friedman's perspective. I suppose this is a personal quest, in a way, in that I have been spending some time trying to understand Lonergan's view of the economic order and its processes. So it involves my academic pursuits. But also, perhaps more personally, I am trying to offer a perspective about ethics and economics that would help people to take control of these processes and would allow for a shift to improving the standard of living of many people.

I am starting to realize that a democratic control of the economy and a shift in the standard of living of the planet has to involve some very serious and, at times, tedious work to understand what economies are, what makes economies work well, and what makes economies fail. Without this work, we cannot solve the problems that we face, and we cannot recognize the difference between progress and decline, even when many lives have been destroyed.²

So the progress and decline of the economic order is part of this discussion. But for me, it is a matter of human lives being lived more fully. This is the theological angle to my

² What I have in mind is the effects of IMF and World Bank structural adjustment programs in the "developing" countries of Africa, Asia, South and Central America, and elsewhere. However, this misguidedness is not so far from my home. In a recent conversation with my father, who is a fisher in Nova Scotia, he voiced his frustration about ongoing meetings with government bureaucrats and his fishing association. His feeling was that they were not interested in hearing from the people whose lives are directly affected by the decisions made by these department officials. See Michel Chossudovsky, *The Globalization of Poverty* (London: Zed Books; Halifax: Fernwood, 1998); Kevin Arsenault, "Babylon Revisited: CED and the Economic Injustice of Our Time," in *From Corporate Greed to Common Good: Canadian Churches and Community Economic Development*, ed. Murray MacAdam (Ottawa, ON: Novalis, 1998), 29-45.

perspective. Of course, Lonergan offers us much in this respect, and I cannot begin to address his insights into the supernatural solution to the problem of decline. However, it is part of my perspective that we are not alone in this effort to work toward progress. So, our part of the job is to understand and live out a massive collaborative shift in strategy. Here's a first step.

2) Content

Friedman writes his article in a frank style that can be understood as a reaction to what he considers to be a dangerous direction that business people and economists were taking in the 60's and 70's and have carried forth to some extent to the present. This direction is one of making and following through on the claim that businesses have some kind of social responsibility, beyond their basic purpose, which for Friedman is understood as profit-making. For Friedman, the ultimate danger of this direction of thinking in business and economics is the gradual handing-over of control of business and the economy to government. He claims that following this direction is giving in to "the intellectual forces that have been undermining the basis of a free society these past decades."³ Friedman goes on to criticize the "analytical looseness and lack of rigor"⁴ of the positions claiming this doctrine of the social responsibility of business. Friedman attempts in the rest of the article to bring some clarity to this doctrine by way of discussing what this doctrine means and who it implicates. In doing so, Friedman puts forth a precise vision of business and of society that is the real basis of his opposition.

Friedman attempts to illustrate the problems with the doctrine of the social responsibility of business by focussing on the role of corporate executives. For Friedman, corporate executives, in their roles, have responsibilities, and they are two-fold. First, the corporate executive is responsible to his/her employers, who are mainly boards of directors and major shareholders (Friedman uses the term "stockholders"). Second, the corporate executive is responsible to society, but in the

³ Friedman, 43.

⁴ *Ibid*, 43.

restricted sense of following basic rules and laws.⁵ Of course, outside of his/her role as corporate executive, that is as a person, he/she has other responsibilities, such as to family, community, and other voluntary arrangements. In these cases, the person acts as an individual making his/her choice about contributing to certain projects or activities, and using his/her own money and time. However, if the person, as corporate executive, acts out of a sense of social responsibility, then the person is not doing his/her primary responsibility in that role, which is serving the interests of his/her employer.

The choice by the corporate executive to act for social responsibility, for Friedman, is a choice to disregard the interests of his/her employers. Concern for the poor and for the environment, for example, are not the direct interests of the business. So, if the executive directs business decisions and policies in ways that benefit the poor and the environment, then he/she is making a decision that will affect the income and output of the business. For Friedman, in effect, the executive is spending someone else's money. "Insofar as his actions in accord with his 'social responsibility' reduce returns of stockholders, he is spending their money. Insofar as his actions raise the price to customers, he is spending the customers' money. Insofar as his actions lower the wages of some employees, he is spending their money."⁶ For Friedman, the executive should be making more money for these parties, especially the employer, rather than spending it.

What Friedman sees the executive doing when acting out of this sense of social responsibility is, in effect, taxing the employers, consumers, and workers, and distributing the taxation according to his/her concerns. This idea of effective taxation raises two issues for Friedman. First, taxation is meant to be a function of government, which makes its decisions based on the public interest and is elected by the public. Second, the executive is not an elected public servant, but a private employee. So an executive acting out of social responsibility is not doing his/her job as a private employee and, furthermore, is acting as though he/she were publicly

⁵ *Ibid.*, 44.

⁶ *Ibid.*, 44.

sanctioned to do so.

For Friedman, the critique of the doctrine of social responsibility is based on the threat that it poses to what Friedman calls the “foundations of a free society.”⁷ What is a matter of social responsibility is for private business to be left alone, so that it can operate without interference to do what it should do – make money by way of profits and jobs. This freedom allows a further freedom for individuals to make their own personal choices about social responsibility, that are separate from the choices that involve private business. If the public comes to a consensus about interests that are common, then these will be a matter for a democratically elected government to address. However, the external force of government must not interfere with the free market system so as to effectively control it. This, for Friedman, is the real threat of socialism, which he thinks grounds the doctrine of social responsibility. For Friedman, the free market system works because it allows cooperation without coercion. This reflects Friedman’s view of society: “Society is a collection of individuals and of the various groups they voluntarily form.”⁸ Only in certain situations is there a need for a political mechanism to oversee or manage this otherwise free cooperation. But this intervention should be extremely limited; otherwise the freedom is gone.

So, for Friedman, the social responsibility of business is to increase its profits, and to follow a basic minimum of social laws and rules. He condemns those who would impose a taxation on stockholders, customers, or workers, by making choices to serve the broader public interest. He identifies as border-line frauds those business people who make advances to social responsibility in order to gain community or public favour in an effort to serve their own self-interest (even though he can only go so far with this criticism). And he challenges the short-sightedness of business people who seem willing to hand over the control of the economy and essentially of their businesses to government bureaucrats.

⁷ *Ibid.*, 47.

⁸ *Ibid.*, 47.

3) Context

This discussion is being guided by the sketch of a method of interpretation outlined by Lonergan in chapter 17 of *Insight* (CWL 3, 603). However, the content and context indicated in this discussion is only a first effort, which does not come close to the rigorous standards that Lonergan's sketch offers. There Lonergan states that an interpreter must "work out a hypothetical pure formulation of Q's context and the content of Q's message" (602). The context that I will presently outline is limited and points toward a fuller context of Friedman's view. Such a full contextualization would look something like the effort by Frederick Lawrence in his "Editors' Introduction" to Lonergan's *Macroeconomic Dynamics: An Essay in Circulation Analysis* (CWL 15, xxv-lxxii). This introduction gives a fuller context of Lonergan's essays on economics, but also it gives a context for what is an important feature of Friedman's view. This key feature is the idea of self-interest and the context of economic and political liberalism. As Lawrence states, "Liberals try to solve the problems of individual and social autonomy by speaking about 'interest': pursuing one's own interest, enlightened self-interest, the public interest, and so on.... The implication of the term 'interest' is that pursuing one's interest is more in accord with the public interest than acting in the name of the common good.... Even liberals have to acknowledge that 'interest' needs to be 'enlightened' or 'rightly understood,'... This has tended to mean calculating how looking out for someone else's interest might be to one's advantage" (lxx). Although Friedman reacts to those "fraudulent" business people who use claims of social responsibility for their own advantage,⁹ his view is firmly situated in the liberal economic and political traditions of viewing economics as the pursuit of self-interest and of society as a series of social contracts entered into freely by individuals in an effort to guarantee their own interests.¹⁰

⁹ Friedman, 47.

¹⁰ A body of literature has developed around the discussion of self-interest and the contract theory of society in economics. Some of that literature has come from the Catholic Social Teaching tradition on the common good. See S. A. Cortright and Michael Naughton, eds., *Rethinking*

Loneragan gives a broader sense of the context of liberalism in his earlier work in economics, *For a New Political Economy* (CWL 21). There he indicates that the work of early political economists in the liberal tradition had its insights and its sense of the good, but their vision lacked a strong explanatory analysis and an ethical framework that could take them beyond narrow views of interest, of economic order, and of society. Lonergan admired the democratic spirit and creativity of early political economists, in contrast to the trends of socialism, communism, and fascism that he was seeing in the early 1930's, and to the tamer government intervention emerging with Keynes. "What, then, was the secret of the old political economists? How did they manage to create a new order through democracy? Obviously it was because they could speak to democracy. Because their whole doctrine could be synthesized in slogans. Because they could issue the imperatives of thrift, enterprise, laissez faire, intelligent self-interest. Because they could convince anyone who counted that their imperatives led to the best of all possible worlds" (4).

But for Lonergan, the old political economists promoted economic perspectives that were also mistaken. Lonergan states that for traditional economics, "the ultimate premises are not production and exchange but rather exchange and self-interest, or later, exchange and a vaguely defined psychological situation" (42). He's referring here to the focus on preferences, price theories, etc., which overlooked the actual functioning of the productive process. Lonergan is not alone in this criticism of traditional and mainstream economics. For instance, Nicholas Kaldor criticizes the misdirection of economics since Smith with its focus on equilibrium theory and prices.¹¹ Without an analysis of productive process, which Lonergan provides in his macroeconomic analysis by identifying two flows of productive activity and concomitant monetary flows, there is no explanatory basis for going beyond the notion that

the Purpose of Business: Interdisciplinary Essays from the Catholic Social Tradition (Notre Dame, Ind.: U of Notre Dame P, 2002).

¹¹ Nicholas Kaldor, "The Irrelevance of Equilibrium Economics," *Economic Journal* 82 (1972): 1240-41.

the purpose of business is to pursue profit. In fact, there is no explanatory basis for understanding what profit is and how it functions in an economy.

I have to note now that the context that I am presenting as Friedman's includes views that Friedman would not accept as legitimate. This might seem to be a matter more suited to the functional specialty "dialectics." However, part of the function of interpretation is to hand on insights to historians of economics. In doing so, the interpreter is part of the cycle of collaboration that is the movement forward of the eight functional specialties. So, a broader view of theory and history is part of the context for the insights that the interpreter hands forward. As an interpreter, I am putting forth my understanding of Lonergan's insights, along with Friedman's insights, and that allows for a broader context for interpretation.

As Lonergan notes, the old political economy, with its insights and its errors, was corrected by mainstream economics.

Economics corrected political economy not by moving to the more general field, and so effecting the correction without losing the democratic spirit of the old movement, but by staying on the same level of generality and by making up for lost ground by going into the more particular fields of statistics, history, and a more refined analysis of psychological motivation and of the integration of decisions to exchange. (CWL 21, 7)

Friedman's view is grounded in this idea of the importance of the democratic spirit of the classical economists, but the democracy that Friedman promotes is one of individuals consenting to contractual relationships in order to satisfy interests. The shift to a "more general field" would involve an explanatory theory that would provide a very different view of what goes on in productive activity.

A more general field of economics would include a broader view of what happens in business. Friedman puts forth the image of a corporate manager who is an agent for the shareholders and whose job is to increase returns to

shareholders. However, others have identified the much broader role of cooperation and collaboration in business as serving not only the interests of the business, but also the interests of society.¹² Friedman's reaction to the "social responsibility" of business is based mainly on the pervasive liberal view of interests and the concern that any move by business toward social responsibility opens the door for the control of the economy by government, which he views as a support of socialism and a threat to democracy.¹³ Lonergan is aware of this context and the reality of government interventions, but Lonergan has a different view of the problem.

The age of corporations begins. It reorganizes industry. It organizes labor. It reaches out to tame the individualism of small producers of basic materials for world markets, producers of wheat, of cotton, of coffee. It forms cooperatives to link in united fronts of monopolists and monopsonists little sellers and buyers of any description. Issues cease to be merely economic. They are also political in a stretch of legislation that began with the Factory Act and does not culminate even with Social Security. For such a growth of political interference has its premise in the inadequacy of competition and fluid prices to meet economic issues. It cannot but continue until it absorbs the whole sphere of economics or, alternatively, until economics finds a new charter. (CWL 21, 195)

For Lonergan, the "new charter" must involve the "more general field" that is an explanatory analysis of productive activity and the circulation of money. For Friedman, restriction of government interference allows the economy to work as an automatic mechanism driven by the laws of supply and demand, regulated by competition, and motivated by self-

¹² Helen Alford, O.P. and Michael J. Naughton, "Beyond the Shareholder Model of the Firm: Working toward the Common Good of a Business," in *Rethinking the Purpose of Business*, 27-47.

¹³ Friedman, 47.

interest.

4) Personal Context II

Back to me! Obviously, it's been my view of Friedman's content and context that you've just read (influenced by the views of others, of course). But it is important to remind readers that you are relying on the interpreter's insights and more or less authentic subjectivity to get at, in this case, Friedman's view. In the collaborative process of functional specialization, I would be relying on all of the seven other groups of specialists, along with my own group, and they would be relying on me, in an effort to get a more comprehensive view across. It is a massively complex project that this journal is trying to initiate. This complexity is hinted at by Lonergan in the shift from chapter 17 of *Insight* on interpretation to the functional specialties. "See my own discussion of the truth of interpretation in *Insight*, ... and observe how ideas presented there recur here in quite different functional specialties. For instance, what there is termed a universal viewpoint, here is realized by advocating a distinct functional specialty named dialectic."¹⁴ This gets at the function of functional specialization. It is a collaborative effort to reach the broadest and highest possible viewpoint in order to reach intelligent and reasonable understanding recurrently and to live out of that with a broader and higher view of what we are to do and to be.

The effort of the interpreter in functional specialization is to inform the next specialists, historians. The interpreter passes on the insights of a given economic theory or view and presents the context of these insights. So, there is the difficult problem of passing on the insights that may have arisen in a limited context. In a sense, the interpreter does not have to point out what are insights and what are oversights, as the historian will situate the view in broader conversations, highlighting its limitations. And those in dialectics will attempt to sort out positions and counterpositions. And so on.

So I find myself in the difficult position of passing on the insights of Friedman, but coming from a different context than

¹⁴ See *Method*, 153, note 1.

Friedman. My context involves my personal history and my effort to get insights into different approaches to the relationship of ethics and economics. Part of this effort has been my struggle with Lonergan's economics and his understanding of the structure of the good. Lonergan's work on ethics and his macroeconomic analysis fundamentally challenges the basic ideas that Friedman puts forth in his article, namely that the purpose of business is to make a profit, and the function of profit is a return for shareholders. For Lonergan, the function of profit must be understood as part of the dynamic relations between flows of productive activity and monetary flows. This involves a distinction between two kinds of productive activity – what Lonergan calls basic and surplus levels – as well as an understanding of the phases of these activities from constant activity to minor and major expansions. In this framework, the function of profit is understood as the return on entrepreneurial activity that improves the standard of living of the entire community, and this function plays out in the relations of the levels of productive activity and their phases. This is how Lonergan understands profit to function in his analysis as a “social dividend.”¹⁵

As for the purpose of business, Lonergan's work can be seen as part of the Catholic social tradition of the common good, but in a way that takes this tradition beyond its early classical limitations.¹⁶ Lonergan's understanding is in contrast

¹⁵ For a discussion of the “social dividend,” see “The Cycle of Basic Income,” 133-144, “The Cycle of Pure Surplus Income,” 144-156, and Lawrence, “Editors' Introduction,” lxiv, *CWL* 15.

¹⁶ Patrick H. Byrne, “Jane Jacobs and the Common Good,” in *Ethics in Making a Living: The Jane Jacobs Conference*, ed. Frederick Lawrence (Atlanta, GA: Scholars P, 1989), 170. Byrne states that the common good is difficult to pin down, as it's had different meanings in different contexts, but he notes that Jacobs' work, which is complementary to Lonergan's, offers a contribution to a dynamic understanding of the common good, in contrast to the static, classical understanding. Although Byrne states that the notion of the common good has disappeared from contemporary discussions given predominant views about individualism, there have been efforts to bring the common good back to the table. Some of the more familiar attempts have included the US Bishops' letter, *Economic Justice for All: Pastoral Letter on Catholic Social Teaching and the U.S. Economy*

to the view of political and economic liberalism and its focus on “interest,” and to the collectivist views of the socialism of the early 20th century.¹⁷ Lonergan’s understanding of the common good can be seen in his framework of the structure of the good, which is set in the broader context of the dynamics of history.¹⁸ In Lonergan’s framework, business involves recurrent patterns of cooperation and intelligence, that function in the context of the broader patterns of productive activity and of community. Patterns of cooperation ensure that the interests of the parties involved are achieved, such as getting paid for work, having a healthy workplace, producing a quality product or service, etc. But while the initial focus may be on achieving interests, the real goal is achieving goods in common, building relationships and communities, and fostering values.¹⁹ These patterns and values are as much a part of what businesses do and how businesses succeed as is increasing profit. In fact, there would be no profit to speak of if there were not complex patterns of cooperation operating. With a view of the purpose of business as producing quality products, building relationships and communities, and fostering values, we have moved quite far from the narrow view of business and the role of executives in terms of the profit motive.

Finally, regarding social responsibility and democracy, I agree with Friedman and Lonergan that the control of the economy by government bureaucracy is problematic. Although my sympathies are more with “left-leaning” political and economic analysis than with mainstream analysis, I find the

(Washington, D.C.: U.S. Catholic Conference, NCCB, 1986); Herman E. Daly and John Cobb, Jr., *For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future* (Boston, Mass.: Beacon P, 1989); and David Hollenbach, *The Common Good and Christian Ethics* (Cambridge, Eng: Cambridge UP, 2002).

¹⁷ Again, see Lawrence, “Editors’ Introduction,” *CWL* 15, xxv-lxxii.

¹⁸ Lonergan outlines his understanding of the “structure of the good,” and of progress and decline, in chapter 2 of *Method*, 47-55.

¹⁹ For a helpful discussion of Lonergan’s understanding of the structure of the good in relation to business, with an overview of shareholder, stakeholder, and common good theories of the firm, see Kenneth R. Melchin, “What is ‘the Good’ of Business? Insights from the Work of Bernard Lonergan,” *Anglican Theological Review*, 86 (2004), forthcoming.

policy directions of both inadequate. The long-term project is to allow for the reorientation of education so that generations are taught about how businesses and economies work, so that the decisions of everyone contribute to real improvements of the economy, and ultimately to the well-being of all people and of the planet.²⁰

My effort in this discussion has been to point toward the possibility of collaboration and to contribute to a conversation about ethics and economics. The massive complexity of this direction is undeniable. This discussion has focussed on one view among the many economic views that have emerged in recent history. And I have been able to do so only in a brief and descriptive manner. Even the complexity of Lonergan's macroeconomic analysis is far beyond this discussion. But I want to draw your attention to this direction, not only as a reorienting of economics, but as part of the redirection of history. We are aiming at making life better for everyone, which might seem naive and idealistic. However, I think this is ultimately the project of life, and it's a project in which we're not alone. The massive theoretical shift and collaborative efforts are in cooperation with the hope that gets us past the brutality of the limiting views and their consequences. That hope has its source within and beyond us.

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²⁰ For a discussion linking economics and ecology, see Herman E. Daly and John Cobb, Jr., *For the Common Good*.

LONERGAN'S MEANING OF *COMPLETE* IN THE FIFTH CANON OF SCIENTIFIC METHOD

PHILIP MCSHANE

I follow the editor's suggestion in dividing this essay into sections dealing with a) content, b) context, c) personal context. However, I break the personal reflections into two sections that bracket the presentation of content and context. So, sections 1 and 4 present my personal perspective; section 2 is a shot at a hypothetical expression¹ of the content of Lonergan's meaning of *complete*; section 3 handles the context problem. The immediately relevant expressed contexts for the

¹ "Hypothetical expression" comes from the context referred to in *The Sketch* (CWL 3, 579-81). The expression in sections 2 and 3 are attributed to Lonergan. This includes the footnotes. Occasionally I add 'my own' comments in these notes: these comments are in square brackets. I must add that those sections are not at all an effort at adequate interpretation and expression. The function of this essay is to illustrate, to get the show on the roll. So, I would need the functional feed-up of adequate research not only on Lonergan but on 20th century work in the area. I think, for instance, of one author and one book in both these contexts: Arthur Eddington, *Space, Time and Gravitation* (Cambridge UP, 1920), a really fine mid-level introduction to the problems dealt with in this essay. I shall return to the book later. Did Lonergan read it? The direction of Eddington's searchings parallel remarkably Lonergan's push in chapter five of *Insight*. I do not recall finding any reference to the work in the archives, though he knew of Eddington (index, *Method*). And the canon of residues steps in, joined by the canon of forgetting. I recall asking Lonergan in the mid-1960s about his possible reading of S. Alexander and O. Veblen on questions of space-time (see comments relevant to the present topic in *Randomness, Statistics and Emergence* (Gill Macmillan and Notre Dame, 1970), pp. 115-116): he was not 'up' on his own research.

effort here are *The Sketch* in *Insight* and page 250 of *Method in Theology*. *The Sketch* speaks of content and context of an interpretation; the page pushes uncomfortably for a personal stand.

1. Personal Context I

No one needs reminding, perhaps, that the meaning Lonergan gives to *context* is existential. It is the incarnate character's setting of answers and questions (*Method* 163-4; 183-4). That setting, within a developed functioning of specialization, has its *per se* creative lifting and expression in the operations described so bluntly on page 250 in *Method in Theology*, and I take it that the intention of the editor, whose plan includes a following volume centered on this page, is to invite some elementary attention to the perspective of that page within the present effort. That is what I attempt now, in a manner that I have described for decades as "rambling dialectics."

The mention of decades locates me as someone who has been struggling in this zone for some time. I suppose in the *Assembly*² that this would lead to my self-*Classification* (*Method* 250) – in my life-style of the mid-1940s – as a groupie of Frederick Chopin and René Descartes (the Mathematician). The affinities (*ibid.*) seem to have "other grounds" than dialectical, yet was there, is there, not the seeding of a tunneling here towards a positional stance compatible with harmonious theoretic sensibility? But the tunneling became one of a Lonergan groupie only in 1956, when I completed graduate studies in mathematical physics and moved to the study of philosophy. A timely business: the shock of extreme realism came out of the first *Verbum* article³ and, in the following year, the humility of discovering the Chopin of – among so many other zones – relativity theory as expressed incomprehensibly in chapter five of *Insight*.⁴ Forty-

² The last word on p. 249 of *Method*.

³ CWL 2, 20. An unforgettable moment with the unforgettable text dealing with the "fifth element in the general notion of the inner word," dealing, of course, with you and me as notions, patterns of evolution's chemistry, in our strange layer infolding of energy.

⁴ I had given a great deal of time and energy in 1955-6 to such works

five years later it begins to make more sense, and that *more* is what this little essay is about. But I would draw attention to my seriousness in using the word *begins*: only in the summer of 2003 did I reach a sufficient grasp of Lonergan's meaning of *energy*⁵ lurking subcutaneously in phrases like "tensors are defined by" (CWL 3, 171) and "at a certain temperature" (CWL 3, 189).

Yet such a sufficient grasp is an existential presupposition of interpreting adequately Lonergan's meaning of *complete*: surely a cautionary message in our efforts to interpret Lonergan here, there, anywhere, since that meaning of energy resonated for Lonergan in the very print of the empirical residue of *Insight*.⁶ Still, I suppose I have made enough progress to attempt a poor interpretation of the word *complete*: later generations, operating in the hodic sublation of the third canon of hermeneutics, will recycle my reaching and spin-off, with recurrence-schemes of statistical success, the non-pure.

However, I would risk here a general comment on attempts to interpret Lonergan on any topic, a comment I have made previously in a context of humour and satire.⁷ Normatively, a functional interpretation has a controlled fullness: the control comes from the incarnation of the contemporarily-adequate general categories,⁸ the fullness comes from the orientation of that incarnate effort that guides us luminously to "say definitively" (CWL 3, 583) something precise, novel, neglected, to the community of historians.⁹

as Schrödinger's *Space-Time Structure*, - a book I refer to later (see note 55 below) - but this was a shockingly new ballpark.

⁵ I deal with that in *Cantower XXX*, "The Conservation of Energy." This essay, and others of the 117 so titled, are on www.philipmcshane.ca.

⁶ It is sobering to ponder, in the inwardness of extreme realism and of a committed explanatory heuristic, the status of the already-out-there-now *Insight*. The status of the already-out-there-now space-time is, of course, the larger problem lurking here. The required inwardness is the topic of *Cantower IX*, "Position, Poisition, Protopossession," and I return to the larger problem in *Cantower LXIII*, "Considerations of Gravity" (June 1st, 2007).

⁷ See *Cantower XI*: "Lonergan: Interpretation and History."

⁸ *Method 292*: "The use of the general categories occurs in any of the eight functional specialties."

⁹ Functional interpretation and its relation to functional history are

But when we think thus we are thinking forward, in foundational fantasy, of later generations and centuries. The present effort at collaboration in functional specialization has to be an honest effort to lift-off poorly¹⁰ out of more than seven centuries – or seventeen, or twenty-seven centuries – of disorientation and malice into a luminous redress of poise. Page 250 of *Method in Theology* grounds multiply-rich paradigm shiftings of the practice of *Comparison*. Aristotle's brief dance¹¹ and present minced two-steps¹² have to be replaced by a global symphonic ballet of "the completed assembly"¹³ in which all disciplines madrigal. Present moshpit honesty needs to "protect the future" (CWL 3, 265) with a disconcerting bow to Lonergan's logic: "the essential logic of the distorted dialectic is its own reversal" (CWL 3, 258).

This volume and the present essay are such a bow and quasi-luminous disconcertedness is part of its curtsy. We fail to step to the measure of *The Sketch*, the Canons, the functional divisions, but we stagger in stumbling tune. My own stumbling avails of a simple strategy of the appearance of blaming Lonergan for my failure: I let him speak imperfectly for himself in the two following sections. How would Lonergan speak efficiently to functional historians of this coming millennium? Certainly, he would still hold that "adequacy is a variable standard" (CWL 3, 580), but how might he reach a transient standard of getting from (A) to (F) and beyond? Would he try for the high achievement of a reflective interpretation despite its "two obvious difficulties" (CWL 3, 586)?

dealt with in *Cantowers XXXVII and XXXVIII*.

¹⁰ In using the word poorly I am thinking of the slogan I invented in the late 1970s regarding functional specialization: "If a thing is worth doing, it is worth doing badly."

¹¹ I am thinking of the beginning of the *Metaphysics*.

¹² I am thinking especially of the type of comparative study, "Lonergan and X," where regularly the categories of the interpreter remain unrevealed. *Comparison* is given quite a precise status on page 250 of *Method in Theology*.

¹³ *Method* 250. Note the later creative addition by Lonergan to his early notion of *complete*: to the data of space-time we are to add the data of spacetime print and imprint on the sand of time.

Any of my present readers, many of whom, hopefully, find the following two sections inadequate, could attempt that high reflectiveness that involves an estimate, (B''), of readers' habitual grasping (C'') of the self's intellectual development (C') (*ibid.*). In this way we might stumble towards later whirling. But please, don't just sit there, bitching at this mazurka: I have had enough of that in the past decades.¹⁴

2. Content

"The canon of complete explanation is culturally conditioned. By this I mean that it will fade in so far as explanatory heuristics develops and is implemented.¹⁵ The cultural condition tends, however, to be an attractive disorientation, so the canon may have an indefinite future relevance.¹⁶

But first I must note its central point. It is that experienced extensions and durations are no less data for inquiry than any other zone of experience. Indeed, they are to be identified as the data of physics when that science is viewed only in its objective content.¹⁷ The data of physics in its fullness, of course, includes the physicist: that is the claim of my full expression of the meaning of generalized empirical method.¹⁸

¹⁴ A deliberate little shock of style at the end of this first section. A matter of being complete, as will appear when we take up again after Lonergan has hypothetically spoken in the next two sections. I return to the question of shock, style and dissent below, at note 32, and conclude in that tone from note 64 on.

¹⁵ An extremely important text on this matter is my *De Deo Trino II. Pars Systematica*, Gregorian P, Rome, 1964, 306-11. See especially section 3 on p. 308, which indicates the inconvenience of using descriptive relations even in the beginnings of scientific investigations.

¹⁶ The problem that I raised at the beginning of chapter fourteen of *Insight*. I do not foresee an institutional overcoming, in the next few centuries, of the pressure of naive realism on scientific conversation. [See note 6 above]

¹⁷ CWL 3, 80 permits this distinction but it should fade operationally under the pressure of my later definition of generalized empirical method. See the following note.

¹⁸ "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

But for the moment I focus on objective content. Then extensions and durations are objects to be investigated in physics: indeed their investigation is an investigation of the conjugate forms and conjugate acts of the things of physics.

Why, then, the special canon? After all, there is no need of such a special canon in chemistry or zoology. There is a push for explanation, for complete explanation, in these areas. That push is sufficiently expressed in the other five canons. If the same were true for physics there would be no need for a separate canon of explanation. Is the need just cultural or is it more deeply human? That topic carries me into the question of context, and I am trying to home in here on content. Let us take it in stages.

The issue is massively complex, especially as I am writing from the non-moving viewpoint that controlled the moving presentation of *Insight*. *Complete* means that physicists have to push forward, in collaboration especially with geometers, towards an asymptotically adequate conception of the real geometry of the cosmos. That real geometry involves not only a determination of the conjugate forms of all the things of physics – one might think in terms of an analogue of the periodic table of chemical things – but also, heuristically, the acts by which these forms generated and generate and carry forward to its destiny the rich mesh of dispersedness that is its dynamic potency. It seems to me that physics to date has carried us sufficiently forwards to enable the identification of that dynamic potency with what the physicists call energy, always so called in a context of actual or proximately-potential formedness. It is that “always so called” that brings into focus the fundamental difficulty.

The difficulty of physics lies in what I might call its helplessly empty beginning. It is the emptiness identified by Aristotle in the non-identity of a prime part-reality which made here and there merely here and there. One is somehow helpless in referencing it unless one avails of.... well, either of some things that are here and there that need not be things of physics, or of some quite subjective referencing system. Different plants identify places in a primitive garden: or one

corresponding objects.” 3 *Coll*, 141.

can leap ahead beyond Descartes to label somehow the undifferentiated places and times, Places and Times. Immediately we are trapped in the primitive garden that lies between China and Egypt, measured off by the additions of the Greeks. But is the Euclidean referencing system quite arbitrary and subjective? Indeed no: it turns the helplessness to advantage in emphasizing a sameness. It is an ordering on a principle of sameness. Rulers and clocks can be moved around safely in the ordered emptiness – but only if they are not there!

Obviously, I am pointing you towards my previous expression of this problem, and into that context I add the present starker pointing. What is the frame of reference of real geometry? It is the concrete network of conjugate acts of the things of physics that pattern material finitude. How do we move towards the conceiving of that pattern and its forms? By sleepwalking.

The adjective *complete* points to a danger in that sleepwalking, a danger not eliminated by the shift from Euclid to Minkowski: that is a large part of the message of chapter five of *Insight*. Perhaps I might identify the danger roughly by saying that the geometry of the cosmos is not some overlay on a simple four-dimensional structure of sameness gifted to us by either special or general relativity. The elimination of the danger, at least for the psyche of the intellectual pattern of inquiry, requires a shift to a luminous physics: “the extroverted subject visualizing extension and experiencing duration gives place to the subject oriented to the objective of the unrestricted desire to know and affirming beings differentiated by certain conjugate potencies, forms, and acts grounding certain laws and frequencies” (CWL 3, 537). When holding to that pattern – but not luminously – people like Einstein can move forward within the ethos of the fifth canon to conceive of laws invariant under certain transformations: another key topic of chapter five of *Insight*. So, he arrives at a view of cosmic geometry as involving symmetric and anti-symmetric tensors, despite a massive lack of heuristic luminosity regarding things, conjugates, and the real dynamic potency of the complex patterning of the secondary relativities of real forms.

Of course the canon of explanatory completeness reaches

further. In the first paragraph of chapter five of *Insight* I write of “a bridge”: if this canon is not cultivated existentially, the rest of the book lends itself to systematic mis-reading, even for those with the sophistication of intellectual conversion.

What, then, do I, did I, mean by *complete*? “All we know is somehow with us” (CWL 3, 303) and “theoretical understanding seeks to solve problems, to erect syntheses, to embrace the universe in a single view” (CWL 3, 442), “a single intelligent view” (CWL 3, 544) which is itself brought forth in the embrace of the universe seeking its own unity. The first and fourth contexts mentioned in the first paragraph of the next section are central here. My non-moving viewpoint at the age of 46, when I wrote this canon, placed me integrally and heuristically and existentially beyond imaginative synthesis.¹⁹ The integrity, of course, was existentially incomplete: I was very much a displaced person both privately and socially. But I was dominated by the notion of *complete*.

So, my meta-physics led me to envisage and indeed achieve to some extent an on-going enlargement of the meaning for me *as physicist* of the canon of complete explanation. But I wrote, even from a moving viewpoint, in the manner of a doubly-displaced person, of “an intelligibility grasped in the totality of concrete extensions and durations and, indeed, identical for all spatio-temporal viewpoints” (CWL 3, 195). And only a doubly-displaced person could follow those phrases with a paragraph beginning, “The answer is easily reached. One has only to shift” A serious pause over the first paragraph of the next section would bring forth the humour, or perhaps the satire, that I did not notice as I typed the words *easily* and *only*.

I had placed Thomas’ reflections on the beginning – or non-beginning²⁰ – of the cosmos and on its destiny in the

¹⁹ *Insight*, section 6.4, “deals with” the contrast between systematic unification and imaginative synthesis. What might I have said here, about personally dealing with the contrast? [It involves the long haul described particularly in *Cantower IX*: “Position, Poisition, and Protopossession” and *Cantower XXXII*: “The Empirical Residence.” But what is needed is the new culturally-encouraged contemplative stance described in *Cantower XXI*: “Epilodge”].

²⁰ I refer here to Aquinas’ tricky answer to the problem of an infinity

context of centuries of science's infant struggle with the matter, the energy, of that beginning and destiny. I had done this in the context of the creative innovations regarding the normative patterns of human and divine economics that held my attention through the 1930s and the 1940s. I had taught Christology the year I began *Insight*, 1948-49, and taught it a second time in 1952-3, the stressful year of my enforced incomplete completion of *Insight*. What, then, did I mean by *complete*?

"What, then, is being? Let us begin by taking our bearings" (CWL 3, 665). This question, and its 46-year-old determinations, were my bearings, Trinitarian bearings, but held down and hidden by the device of a moving viewpoint, a device that broke down here and there, but most especially when I rose, in the thirty-first place of the final chapter, to speak of "a love that, so to speak, brings God too close to man" (CWL 3, 747). I rose, or was lifted, to make mention of God's concept, God's Concept, the Heart of my Christological teaching. "The antecedent willingness of charity has to mount from an affective to an effective determination to discover and to implement in all things the intelligibility of universal order that is God's concept and choice" (CWL 3, 747-748). I had already discovered the "single frame of reference" (CWL 3, 761) that held together what might seem "a large number of otherwise unrelated aspects" (CWL 3, 761) of being, such as the frames of reference of physics. "Did Jesus Christ, his only Son, our Lord, suffer, or was it somebody else, or was it nobody?" (CWL 4, 179). A descriptive frame of reference would place Him, God's concept, and His suffering gravity, on a hill in this galaxy of the cosmos. An explanatorily controlled asymptotically-complete histogeometry would help to identify the fore-ground radiation of His effective presence in a eucharistic finitude.

Did I mean all this when I wrote of the canon of *complete* explanation? As my spiritual mentor St. Ignatius wrote in *The Exercises* regarding the unmentioned first apparition of Jesus to his mother, "Are you also without understanding?"²¹

of days before today: see *Summa Theologica I*, q. 46, a.2, ad 6m.

²¹ I translate from memory, from my old Latin *Exercises*, in my

3. Context

“My Context is a complex of overlapping cultural and personal contexts. I draw attention to four main contexts in the order of their importance for the present topic. There is the context of the past century or so in physics (1850-1950), represented fairly adequately by the books mentioned below.²² There is a second context to which I draw attention in my expression of the canon in *Insight*, a context ranging through Galileo and Kant (CWL 3, 107-109). There is the context – an early development for me – of my work on science and logic and the geometry of Euclid.²³ There is the fourth context of my work in theology, especially as it impinges on problems of

possession since the end of my novitiate. It obviously is a central principle of my life. Perhaps you noticed something of Ignatius in my reflection on the Assumption? “Can one say that she adores in heaven the body to which she gave birth, yet is somehow without the body that gave it birth? Can one invent some metaphysical law or some principle of divine justice that overrules the best of sons’ love for the best of mothers, that permits the Sacred Heart to be a living heart but forces the immaculate heart to be a dead heart?” (CWL 4, 73) [written in July of 1948: see Crowe’s comment on Lonergan’s piety, *ibid.*, 267. On Lonergan and the *Exercises*, see Gordon Rixon, “Bernard Lonergan and Mysticism,” *Theological Studies* 62 (2001), 479-497.] And in that context I end my reflection on content, assuming that you can understand that I had also thought of the meaning of *complete* in relation to our “destiny” (*Method* 292): the full vertical finality of real geometry. The operative geovision of the wombed Word was a central interest of my life, a strange mutual self-mediation of a finite and an Infinite wayfarer. My last effort at Latin theology was in this area, continuing my struggle to improve thesis 12, on the knowledge of Christ, in *De Verbo Incarnato*.

²² A list could be compounded of my readings in physics but I mention here the two most relevant works: E. T. Whittaker, *A History of the Theories of Aether and Electricity* (Dublin UP; Longmans, 1911); R. B. Lindsay and H. Margenau, *Foundations of Physics* ([1936] Dover, 1957). The latter book was something of a bible in the field for me. [See my comment in note 1 above on research into Lonergan’s readings].

²³ Again, I limit myself to key references. H.W. B. Joseph, *An Introduction to Logic* (Clarendon, 1906; rev. 1925) was a central text. The final chapters, on explanation, on induction, on mathematical reasoning, on the methodology of the sciences, were especially relevant. Then there was my focused work on Euclid, which I brought to bear on Peter Hoenan’s rich searchings in my “A Note on Geometrical Possibility” (CWL 4, 92-113). A relevant overlapping is “Isomorphism of Thomist and Scientific Thought” (CWL 4, 114-132).

space and time: *Gratia Operans*, *Verbum*, the Trinity and the Incarnation. It was in hintings of that last context that I concluded the section on Content.

It is of interest to note that these contexts were personally overlapping rather than culturally over-lapping: one must advert here to the fact that the broad definition of context that I later gave in *Method in Theology* covers the case of non-overlapping contexts where the aggregate of answers and questions are distributed over diverse communities. This non-overlapping exacerbates the problem lurking in the word *complete*.

Elaborating here, old-style, on these contexts, would be lengthy and superfluous: the old-style expression is available in the texts noted. Elaborating new-style would, in the present state of hermeneutics and functional specialization, be lengthy and differentiatedly creative. Further, I would note that this paragraph does not belong in the new-style interpretation. In functional interpretation one would no more have to draw attention to the style than one has to draw attention to theorems of tensor invariance in an advanced paper of contemporary relativistic physics. That new-style would be dominated by the second canon of interpretation (CWL 3, 609-610), which sublates the fifth canon of science towards a pure context of complete explanation. In a developed specialist collaboration, shared and sophisticated general categories would control the level of specialist work and inter-specialist communication so that "cumulative and progressive results" (*Method* 4) would occur with a *per se* accuracy and efficiency that would give a new unity to the enterprise of metaphysics.²⁴ One must think, then, of a community sharing, in a manner quite beyond public discourse,²⁵ a full genetic systematic control of the ongoing

²⁴ I urge your attention to the context given by line 16 of page 160 of *Topics in Education* [CWL 10]. A science has unity and beauty in its efficiency. Functional specialization shifts metaphysics discontinuously towards that efficiency. See below, note 27.

²⁵ It is enormously important, personally and communally, to take a stand on this. It is all too easy, for instance, to think of the eighth specialty as somehow bordering on popularization. The eighth specialty requires an understanding of popularization not only categorially but in the possibilities made statistically probable by ever-freshening genetic systematics. No

genesis of meaning.”

4. Personal Context II

So, I step now back, or forward, to personal and rambling musings about the fifty years since Lonergan finished the climb of 1953 to his final words: “once that mind is reached it is difficult not to import his compelling genius to the problems of this later day.”²⁶ What the implementation of functional specialization does, will do, is increase, with a precise statistics,²⁷ the making it “difficult not to import” the genius of the past through operative embarrassment. It is a brilliantly human cosmopolitan twist on method that I rejoice in mentioning: “doctrines that are embarrassing will not be mentioned in polite company” (*Method* 299). It is an embarrassment that is to place the global culture, in the concrete good of a fresh pragmatism,²⁸ on a merciless roily rollaway.

But into my rambles here it is as well to place a shot at a precise and fuller meta-physical embarrassment that accrues to Lonergan’s view of *complete* by its multifaceted “*Completion*,” adding evaluative completeness in the fullest possible context of object and subject in a completeness that in this life remains essentially incomplete, but with possible and probably growing luminosity.²⁹ First I draw attention to the subjective completeness, then to the objective completeness. But I already drew attention, drew your attention and your attendant feelings,

mean challenge.

²⁶ The final words of the Epilogue of *Insight*, referring there to Aquinas.

²⁷ *CWL* 3, 144 describes how probabilities are shifted from products to sums by scheme-structures. Functional specialization is a scheme-structure.

²⁸ A context of reflection here is “Inventing Pragmatics” and “A Fresh Pragmatism in Education,” chapters three and five, respectively, *Pastkeynes Pastmodern Economics: A Fresh Pragmatism* (Halifax: Axial P, 2002).

²⁹ I think it relevant to brood in this context over a remark Lonergan made in a book review in *Gregorianum*, 1955: “What then is needed is a qualitative change in me, a shift in the center of my existing from the concerns manifested in the *bavardage quotidien* towards the participated yet never in this life completely established eternity that is tasted in aesthetic apprehension ...” Lonergan, review of J. Chaix-Ruy, *Les Dimensions de l’être et du temps*, *Gregorianum* 36 (1955), 138.

towards that *Completion* listed on page 250 of *Method in Theology*, at the conclusion of section 1, when I wrote of the mazurka that you might bitch about. Did that stir and comfort - or discomfort - your molecules? We are here at a very fine point of the communication that is dialogue in either its common or its dialectic form, biography speaking completely to biography in history, where the personal relating is burdened and bubbling with vertical finality.³⁰ In functional specialization we reach for the pure cycle of efficiency in so far as the cycling triggers an effective lift in energy's your-heart loneliness for a freshfelt turn to the idea. It is then an echo of the economy that is the divine cycle.³¹ How do you feel about about about³² this emotional twisting in and round page 250's residual finality?

But the twisting and perhaps the discomfort is now more refined through the addition of what I call objective completeness, the addition of companionship, in the *assembly* of those who reach towards complete explanation in physics.

³⁰ I would note that the third line of the 'diagram' of page 48, *Method in Theology*, is within the vertical finality of incompleteness. Authentic personal relating is a reaching beyond established relating, indeed, at its best, in the mood described in the previous note. Add the context of "Mission and Spirit" (3 *Coll*, 23-34). Of course, the context of the following footnote is the Heart of the matter.

³¹ The context here is the reflection on "novae relationes personales" in Lonergan, *De Deo Trino II. Pars Systematica*, Gregorian P, 1964, 240ff. And so we may point to the complete meaning of *complete*, the complete meaning of energy, in the strange incompleteness of eternal surprise. Even, I would note, for the human mind of the second divine person. See *Summa Theologica*, I, q. 17 a. 7; III, q. 9, a.2, ad 3m; q.10, a.1. This is important in the conceiving of the eschaton in terms of "Infinite Surprise" (*Wealth of Self and Wealth of Nations*, 111).

³² Reflection on this peculiar triplicity runs through *Cantowers XXVII-XXXI*, five essays which parallel the first five chapters of *Insight* with the first five chapters of Feynman's 3-volume work, *The Feynman Lectures on Physics* (Addison Wesley P, many reprints). The five essays provide a context for understanding the present effort. The "about about about" comes from Lonergan's distinction of three orders of consciousness made in a draft, in early 1965, of a first chapter of *Method*. See Darlene O'Leary, *Lonergan's Practical View of History* (Halifax: Axial P, 2004). We are again in the shock and annoying zone of the end of part 1. Are you annoyed with my triple 'about'? Well, that makes you annoyed with Lonergan, so I am in good company. Now try note 64.

Here it seems important to pause over the difference between future normal theological science and our present situation of massive impoverishment and the shocking multilayered paradigm shift.

In the normal hodic science of later centuries what the cycling normally adds is a transforming piece to an already solidly established content. All the functional specialists will then go about their business of lifting history still further in the context of a systematic beauty shared like a post-Messien melding of East and West: a new chord, a piccolo note, is added to the expansive control of mature musical meaning. It can be a lift in any specialty, but it is a kindly ripple, not a shock wave desperately avoided by lesser folk trapped in convention. Perhaps the best analogue for such a hodic development is contemporary chemistry in its successful though non-hodic form: at its front-edge there is a massive complex implicit heuristic that grounds the ordering of discoverings in various domains.³³ In contrast, present “normal theology” has no serious heuristic, even in the non-hodic sense.³⁴

But let me get closer to my topic of completeness, of Lonergan’s meaning of *complete*, and of the completeness that he adds to twentieth and twenty-first century physics, by turning my attention to present “normal physics.” That last sentence and the last phrase are amusingly, challengingly, ambiguous. Part of the achievement of this essay is the thematization of myself for myself of just what I am “turning my attention to” in the next eight years, and central to that turning, turn-about, is the shocking discovery of the meaning of *complete* as it lifts the book *Insight* into a quite new context of answers and questions. So, “let me get closer to my topic of completeness” is at least ambiguous, at most false. I do not wish you to “let me”; I wish some of you to come along in the

³³ A context here is *The New Chemistry*, edited by Nina Hall, (Cambridge UP, 2000). On the heuristics of chemistry and its school teaching see *Cantower XXVIII*.

³⁴ I reflect on this problem in *Cantower XXXIII*, where I survey from this perspective the last decade of Christological theology presented in the journal *Theological Studies*.

search.

The search as I see it now, in this next two-thirds of my *Cantowers*, is for a meta-physics in a quite novel sense. There is a narrow novel sense contained in the heuristic program that I name GEMb, the implementation of the later view of Lonergan.³⁵ Physics and metaphysics must travel together in the new normative culture. Nor do I mean by that a limited metaphysics: this I shall illustrate below. There is the further full novel sense of hodic physics, physics twirled into the cycling process of functional specialization. Is this further novel sense really “further”? On the contrary it is the prior and dominant sense, as it is to be in theology. What I mean by this is that it is functional specialization that will bring about the lift - by embarrassment and peer-pressure and various other low human motives - towards the first novelty of GEMb either in physics or theology or any other zone of culture.

So, again, let me get closer - come with me obscurely³⁶ - to the topic of completeness. The problem has been emerging since the dawn of physics and chemistry. It emerged in the past few centuries of physics with more precision, especially because the contexts of Newton and Maxwell lent themselves to a mess of dialectic muddling regarding what we may name the couplings or conjugations of the things of physics and

³⁵ See note 18 above. I deal with a classroom form of this implementation in “A Reform of Classroom Performance,” *Divyadaan; Journal of Philosophy and Education* 13 (2002), 279-309. This article is the concluding section of *Cantower VI*.

³⁶ The character of obscurity, popular or otherwise, is a vast undeveloped topic of methodological analysis. I opened it up in chapter three of *Lack in the Beingstalk: A Giants Causeway*, return to it in *Cantower LVI*, “Quantumelectrodynamics, Pedagogy, Popularization,” in the context of one of the most brilliant pedagogical efforts in physics that I have come across: R. Feynman, *QED: The Strange Theory of Light and Matter* (Princeton UP, 1985). What is needed is a precise normative account of the strategy and content of popularization. “Never has the need to speak effectively to undifferentiated consciousness been greater” (*Method* 99). What we need to work towards is the luminous presence - characterization in the existential sense - of the understanding of the need. That luminous presence has to become an operative statistic of local community: this relates to “The Problem of General History” raised by Lonergan in the final section of his *Topics in Education* (pp. 250-57).

especially regarding the potency of that conjugation.³⁷ The muddling is easiest recognized in the present popular captivation of the minds of physicists and non-physicists with the structure of space-time: there seems to be an entity - it replaced the aether of the nineteenth century - in which we live and move and have our being, that has a wondrous complexity of wriggles and bumps in three or four dimensions, but also beyond that in baffling larger dimensions of quantal and stringy foams.³⁸

My difficulty now is how to handle for you - presumably a non-physicist - the illustration of interpretation that places Lonergan's in the dialectic of the past century's physics. I wish to do this in two stages: one focused on the work of the Irish

³⁷ This is a massively complex topic of reaching for metaphysical equivalents and for a new language of the forms, acts, and potencies of coupling (coupling values, constants, 'particles,' factors, whatever). For people of the Aristotelian tradition there is the error handled by Lonergan in a fragment that I reproduced in *CWL* 18, 13, note 13. The handling pushes one towards a view of conjugate potency that ties in both with a new metaphysics of energy (see note 8 above) and with a fresh clarity on the primary and secondary relational elements of real geometry. How, for instance, might one reach methodological luminosity on the claim that "the distinctive feature of the gravitational field is that it is *self-interacting* ... it defines the space-time over which it propagates. In order to obtain a definite equivalence class of metrics which represents a space-time, one introduces a fixed 'background' metric and imposes four 'gauge conditions' on the covariant derivatives of the physical metric with respect to the background metric." *The Large Scale Structure of Space-Time* by S. W. Hawking and G. F. R. Ellis (Cambridge UP, 1973), 227. There are many paperback reprints; my own is 1999. This places Lonergan's problem of measure-standard (*CWL* 3, 190) in an up-to-date context. See also notes 52, 60, 61, below.

³⁸ A recent *Scientific American* (January 2004) gives the tone of present popular mythological writing by serious scientists. The cover-story this month tells in Blue and Red of "Loop Quantum Gravity. A Physics Theory Shatters Space and Time." I already commented on popularization and its problems in note 36 above, where I mentioned Feynman. I should refer to him again here, for those interested in a serious glimpse of the problems of quantum-gravity: *Feynman Lectures on Gravity*, edited by Brian Hatfield, with a foreword by John Preskill and Kip S. Thorne (Addison Wesley, 1995). Lectures 12 and 13 are especially good as a broad introduction to problems of cosmic structure and the limitations of our struggles towards a full physics (leading, of course, to issues of eschatology).

physicist Lochlainn O'Riafeartaigh, the other on the context of the work of Stephen Hawking. Let us begin with the restricted zone of physics relevant to the meaning of *complete* with which O'Riafeartaigh deals. I focus on a single book, providentially and suitably titled *The Dawning of Gauge Theory*.³⁹ It is the beginning of a dialectic analysis of twentieth century physics by a scientist working quite outside the Lonergan tradition.⁴⁰ Lonergan, then, is not in there, as he will be in analyses later in this century.

In those later analyses, not only will the writing be comprehensible to physicists but the elders of dialectic will also be in the ballpark. After all, we will only be moving forward on lines suggested by the theologian, the 45-year-old Lonergan of the mid-twentieth century. Further, the cycling of functional specialization at that stage will be such as to lift the entire community of specialists to this new level of comprehension. You find this claim strange, unacceptable? I recall now a Boston Lonergan workshop of the 1970s on

³⁹ Lochlainn O'Riafeartaigh, *The Dawning of Gauge Theory* (Princeton UP, 1997). I may as well introduce here his second book that is relevant to our considerations: *Group Structure of Gauge Theory* (Cambridge UP, 1986).

⁴⁰ Lochlainn and I had in fact done graduate work together, 1955-6. The following year he was a research fellow in the Dublin Institute (where Schrödinger had worked, 1939-56) and then went on to study in Zurich under Heitler. He came to visit me in 1964, during my fourth year of theology in Heythrop College, Oxon. (Lewis Watt, Lonergan's economics inspiration, was still there). He knew of my interest in Lonergan but we were on different tracks. Yet at the time he was pushing towards a no-go theorem (see note 44 below) of fundamental significance in the conceiving of space-time. I met him last in the summer of 2000, when he was full of fresh hope as he talked about the long active life of some theoretical physicists. He died a few months later. I add these reflections here because it seems to me that there is a bio-lesson for theologians in the life of this brilliant man. There is a tendency in theology to expect creative contributions where few may be possible or probable. Most of us are simply learners, some of us may contribute a theorem, but in the main it is a matter of recognizing that symphonists are few, second-rate fiddlers in plentiful supply. But now I am rambling back to the message of the concluding page of "Features of Generalized Empirical Method. A Bridge Too Far?," *Creativity and Method*, edited by M. Lamb (Milwaukee: Marquette UP, 1980).

“Theology as Public Discourse” (which of course, normatively, it is not and will not be) the reply of Lonergan to the question, “How much physics should a theologian know?” Lonergan’s reply was “well, he should be able to read Lindsay and Margenau.” *She*, of course, is included in his old-style talk. Theology has seven centuries of disorientation from which to recover.

What might I say here and now? To those very competent in physics I would say, read O’Raifeartaigh’s book with a hodic eye: I come back to that shortly. What is the key point in it, that happens to bring Lonergan’s brilliance into focus? In my first draft of this paper I foolishly envisaged some sort of a swing through the works of Weyl, Kaluza, Klein, Schrödinger, etc, made available in translation and commented on by O’Raifeartaigh. Instead it seems more appropriate just to quote summary introductory pointings by him. The pointings are pretty incomprehensible, even to many who graduated in physics, but you might get a sense of the shift in the past century regarding what I call **real geometry**.

.... Almost entirely due to the genius of Einstein, geometry graduated from being the stage on which the drama of physics took place to being a major player in the drama. There remained, however, the electromagnetic and the nuclear forces, and the geometrization of gravity raised the question as to whether these other fundamental forces were ‘true’ forces operating in the curved space of gravitational theory or whether they also were part of the geometry. This question has still not been fully answered. But what has become clear is that these forces and gravitation have a common geometric structure. This is the so-called *gauge* structure. The purpose of this book is to explain how this structure gradually emerged.

It was actually the theory of gravitation that opened the way for the development in physics and mathematics that led to gauge theory. Although gauge theory is now universally accepted, its geometric nature is not always fully appreciated. This is partly

because the success of gravitational theory has made the idea of geometrical forces less remarkable, partly because the geometry of gauge theory is not metrical and is therefore less intuitive, and partly because the geometry is not yet the whole story. Furthermore, the emergence of gauge theory has been a gradual process, a slow evolution rather than a revolution. The emergence of gauge theory has been gradual for two reasons. First, on the physics side, its importance for gravitation and electromagnetism was not appreciated for various reasons that will become clear later, and its role in the nuclear interactions was hidden by the phenomenology. Indeed, the short-range of the forces and the apparent absence of vector-like interactions in both nuclear forces, seemed to rule out a gauge structure. Only in the past two decades has it become clear that these were phenomenological effects due to spontaneous symmetry breaking and confinement respectively and that they masked the true situation. Second, on the mathematics side, the gauge structure that was eventually required, the fibre-bundle form of differential geometry, was itself in process of development, taking its final form only in the early fifties.⁴¹

Perhaps this quotation, however obscure, gives you a nudge towards glimpsing Lonergan's eventual place in this development, grounded in a product also of the early fifties. But before moving on to Lonergan's ongoing place in the *complete* development of physics, I wish to note a few features of O'Raifeartaigh's work in physics helpful towards understanding the functioning of the specialties.

O'Raifeartaigh unknowingly⁴² illustrates that functioning magnificently through two books. The one just quoted, *The Dawning of Gauge Theory*, anticipates dialectic. The second of

⁴¹ *The Dawning of Gauge Theory*, 3-4.

⁴² One must be clear on the meaning of 'knowingly' to detect this unknowingness. Lochlainn 'knew' in a culturally acceptable sense and was capable, as I witnessed personally, of sophisticated discussion. I am talking here about "about about about." See note 32 above.

his books that I reference in note 39 is clearly systematic: indeed I wish to draw your attention to the notion that it is the expression of an up-to-date slice of the systematic physics. Coming to grips with that *slice* notion is important, though I cannot enter into detail here.⁴³ I would note that O’Raifeartaigh shows in *The Dawning* that he is competent in what I might call all the slices right through the twentieth century, beginning with the early slices that include the usual Maxwell stuff, the special relativity stuff, the ‘black body’ stuff. He could have written a 1918 slice, or a 1958 slice, etc: most of the top physicists are like him in this. I would further note that he wrote *The Dawning* in a way that helps the reader to ‘get’ the moves that sets up the dialectic stuff towards its function of generating the full genetic systematics that is to be the communal possession of those working in the seventh specialty. He writes with the twisting tactic that reveals and reverses the counterpositions. Detailing this would be at least a long article. How is he able to do this? Because he brings to the work a genetic perspective: it is part of his incarnate heuristic. He has a powerful control of meaning. So, for instance, he was the master in the relevant mathematics of group theory, in a full control from Lie and Cartan on. Indeed, out of that context came his no-go theorem, which cut off a line of work decisively. One expert remarked, “I felt Lochlainn was going to kill the program. He was sharp and his knowledge of group theory was way ahead of anything I or most physicists knew at that time.”⁴⁴

⁴³ For a beginning, see *Cantower VIII*: “Systematics and General Systems Theory.”

⁴⁴ Quoting the physicist McGlinn, from p. 288 of “Lochlainn O’Raifeartaigh 1933-2000” by Siddhartha Sen, *Physicists of Ireland. Passion and Precision*, ed. Mark McCartney and Andrew Whitakker (Institute of Physics Publishing: Bristol and Philadelphia, 2003). It was McGlinn that first formulated the problem that led to the no-go theorem. “The prize was to discover a symmetry that combined the internal symmetry of the Gell-Mann with the full Poincaré symmetry of space-time associated with Einstein’s special theory of relativity, as it was well known that rotational symmetry was only a part of Poincaré symmetry. O’Raifeartaigh showed that under very general conditions the problem posed no useful solution. The methods used by O’Raifeartaigh to prove his result were subtle and made use of deep results from the theory of Lie

This, I hope, is helpful in our efforts to envisage the later working of the functional specialties in theology.⁴⁵ The front-line people – and it is these that are to occupy the Tower, competitively screened, selected – will share a heuristic that resembles but varyingly surpasses the heuristic named in *Method in Theology*.⁴⁶ A few cycling generations in this century will generate a community of the calibre of O’Raifeartaigh in physics, but luminously so.⁴⁷ Can you

groups way beyond the topics covered in Racah’s Princeton lectures and hence unfamiliar to most physicists. This work brought to an abrupt end major efforts to combine internal and Poincaré symmetries” (*ibid.* 287-8).

I leave the reader to think out this illustration of inverse insight and the character of the systematic lift it grounds. “When you discover these limitations, the real significance of them is that you know that such-and-such is a dead-end street and that you have to find another street. What are the implications of this looking for another street?” (CWL 18, 62).

⁴⁵ What I have written here supplements the prolonged analogy I drew in chapter 4 of *Lack in the Beingstalk* (www.philipmcshane.ca) between the calculus of variation (the basis of Least-Principle investigations: see note 60 below) as studied by Husserl in his thesis of 1882 under Weierstrass and the calculus of variation that is Lonergan’s methodology. Husserl was on the edge at that time of a central field of inquiry that he abandoned in favour of a brand of conceptualism. What I cannot emphasize enough is the stand against *theoria* that keeps theology out of the significant climb to desperately relevant meanings. Perhaps my own single contribution to theology is my push for a no-go theorem regarding the sick merging of serious theology with sophisticated but readable description. Serious theology is not open to commonsense reading: full stop. See the final two notes below. And in line with the conclusion of the previous note, I would ask you to connect my no-go theorem with the higher system that is functional collaboration.

⁴⁶ 286-291. There is something to be said for locating these at the end of page 250: they were Lonergan’s stand.

⁴⁷ Recall the challenge pointed to in note 32 above. The move towards postaxiality will be complex, embarrassing, fostered by linguistic feedback and narrative bio-exposure. I would draw attention especially to the place of a fresh communality of kataphatic contemplation: Aristotle’s finest way is not just for the privileged few. Here we must look to a new economics that “adds to aggregate leisure” (CWL 21, 20). “Such leisure may indeed be wasted, just as anything else can be wasted. But if it is properly employed, then it yields the cultural development that effects a new transformation” (*ibid.* 22). In the concluding notes here I draw attention to the manner in which both the leisure and the transformation can be blocked by academic busyness.

envisage this series of cyclings? It is not easy: it is, *per se*, a function of the community whose contemplative vocation is foundational fantasy.⁴⁸ Let me throw out a few suggestions.

In the first place, you have to think out *Research* functionally. At its best it involves the same heuristic as any other specialty. She or he is tuned to the contemporary cycling, capable of catching a relevant cultural imprint and passing it on. The Interpreters? Well, that is what this volume seeks to illustrate: they sniff out, with H_1 help, significant emergent or neglected gems, and steer them on to the community of historians. But note, please, that this is not “uniform”: take Benton’s point, central to his article, regarding a spectrum of tracks. So, in physics there is a subgroup puttering along for and against the Copenhagen interpretation of Quantum Theory who are less and less in the main stream of seriousness. In theology there will be those marching for Karl Rahner or Martha Nussbaum. In linguistics there will be die-hard Chomskyites. And so on. But there is the beauty and efficiency of Controlling Meaning, shadow of the Word, lifting luck to luminosity, lifting the global culture towards an open critical cosmopolis.

I have already attempted to spell out the character of functional history and shall later attempt to nudge forward the heuristics of the following three specialties. Here I would simply recall the complexity that I have insisted on for three decades, symbolized in the matrix that I presented in the mid-seventies.⁴⁹ C_{ij} is a non-symmetrical matrix of 64 types (i, j , each going from 1 to 8) of exchange: it is to become a taken-for granted ethos of the twenty-second century and beyond. And into this anticipated context one may fruitfully put the anticipation of the tasks and conversations of dialecticians: the refined relative invariants to be aired with foundational

⁴⁸ This *per se* character of foundational vocation needs detailed spelling out. I shall attempt that in *Cantower XL*: “Functional Foundations.” But you can, perhaps, detect its pragmatic reaching in this essay on two levels. There is the vision of a lift in physics, front line and frontclass; there is a vision of a stumbling hodic lift in Lonergan studies.

⁴⁹ First published in chapter 4 of my *The Shaping of the Foundations*; it is reproduced on page 108 of *A Brief History of Tongue: From Big Bang to Coloured Wholes* (Halifax: Axial P, 1999).

colleagues; the remote policy-meanings to be suggested;⁵⁰ etc.

We may now usefully turn to Lonergan's place in all this. A general context is already available in "Elevating *Insight: Space-Time as Paradigm Problem*"⁵¹ so I focus on a few particular points here.

In the full dialectic and the full systematic ordering that my sketch above anticipates,⁵² Lonergan's achievements will represent distinctive slices: indeed two slices in each, corresponding to his published contributions of 1957 and 1969. I say nothing much more here about his illumination of functional specialization: that is his outstanding achievement, shifting metaphysics to its due and overdue contemporary unity, beauty, efficiency. I focus, then, on his fifth *completeness* canon. It was an extraordinary anticipation of the drive of the next fifty years. No, he did not arrive at gauge theory or fibre bundle geometry: but he was quite clear heuristically on the geometric character of the forms of physics, on the possibilities of anti-symmetric coefficients in a generalized relativity theory, and he would not have been surprised at the richer and non-metrical character of such geometries.

What is richer, however, is his general heuristic of physics or of any enterprise, a richness which I have symbolized particularly in two of my words of metaphysics, the first and the third. W3 makes symbolic and embarrassing the achievement of 1969, but let us pass over it for the moment; W1 gives the full context for any serious consideration of the structure of space-time and its measurements.⁵³ According to

⁵⁰ I am holding to elementary pointings here. You may notice that, e.g., policy-gestation is at least three layers of larger group-conversations!

⁵¹ *MJLS* 19 (2001), 203-229.

⁵² Throughout the *Cantowers* I have been gradually developing the parallel between the drive of physics towards GUTs (Grand Unification Theories) and the reach in culture for functional specialization, a reach which sublates Lonergan's earlier notion of UV (Universal Viewpoint). One can fruitfully parallel GUTs and UVs, but the fuller view, to emerge in *Cantower LXV* of August 2007, "The Guts Diagram" sublates both, and other disciplines' searches for unity, into an integral hodic anti-foundational perspective.

⁵³ W1 is simply a symbolization of the heuristics of a hierarchic aggregiformic cosmos. W3 diagrams a heuristic of the implementation of

the levels and convictions of the physicist it invites, cajoles, forces, explanatory attention to the total concrete cosmos.⁵⁴ I can only give two instances here of the rich nudging of that perspective, relating to two works on *Space-Time Structure*. I give there the title of the first work, written by Schrödinger in Dublin in the late 1940s, a brilliant and clear book that I highly recommend.⁵⁵ He begins with the problem of labeling: Lonergan's work not only puts that labeling into a full context of meaning but it specifically identifies the formed dynamic ground of the labelability.⁵⁶ The other work I would invite you to attend to is a standard classic on relativity theory: *The Large Scale Structure of Space-Time* by S. W. Hawking and G. F. R. Ellis.⁵⁷ A few scattered comments on the latter book are useful:

functional specialization. These symbolizations are recurrent in the *Cantowers*, but were originally made available in chapter 4 either of *Process: Introducing Themselves to Young (Christian) Minders* (available on www.philipmcshane.ca) or in *A Brief History of Tongue*. The topic of measurement has come up here in the context of classical physics, but there is the more complex context represented, e.g., by the work of John Bell, who raises also the larger issues of metaphysical equivalence. See, e.g., J. S. Bell, *Speakable and Unsayable in Quantum Mechanics: Collected Papers on Quantum Philosophy* (Cambridge UP, 1987). John Bell's life and work is described briefly, in the work cited in note 44, by Andrew Whitakker, "John Stewart Bell 1928-1990," 273-281. A disturbingly honest Belfast man.

⁵⁴ See CWL 3, 421, 423. A homely push for the concrete envisagement of metaphysics in operation is pp. 27-38 of *Cantower XIV*, "Communications and Ever-Ready Founders," dealing with the metaphysics of Manhattan.

⁵⁵ (Cambridge UP, 1950). I commented in "Elevating *Insight*..." on the problem, in Schrödinger, of attending to things and their notion. It would be a whole other topic to move into the relevance of Lonergan's perspective for Schrödinger's other lines of thinking, e.g., regarding Quantum Mechanics. Further, some of my comments here on the second work apply equally to Schrödinger's book if considered in isolation, but Schrödinger's perspective was a much richer one: see for instance his little book *What is Life?* (My own copy [photocopy] of the book does not give details, but it is a set of lectures in Trinity College Dublin, many times produced.)

⁵⁶ *Cantower XXX* pushes towards a conception of the prime matter of Aristotle and Thomas in terms of energy, something compactly suggested by Lonergan in section 4 of chapter XV of *Insight*. See note 4 above.

⁵⁷ See above, note 37.

a serious consideration belongs in the specialty dialectic.

It is obviously far from the silly world of Hawking's pop-works.⁵⁸ But how does it stand in the context of the new "GEMb" physics? First, I recall now a previous effort to deal with deficiencies in a contemporary classic regarding the meaning of *cause*: we really are way beyond time for the community of science to step forwards out of its ignorant stupidity in this area.⁵⁹ In the case of the work of Hawking under consideration, the simplemindedness of the view of causality is perhaps obscured by the context of the reflections of Hawking and Ellis. As with O'Raifertaigh's work, so here the possibility had occurred to me to deal in some detail with this and with other problems that arise regarding relativistic modeling, but such detail would probably be beyond even the graduate in physics. The straightforward question of causality itself – for the authors mainly either a simple matter of consequence-possibility or a more complex issue of boundary-problems⁶⁰ – would call for a separate essay and quite

⁵⁸ I have written critically previously of Hawking and of his naive notion of popularization in the Introduction to *A Brief History of Tongue*. My title may remind you of his first popular book. His second pop-book is still more 'popular' and more expensive: *The Universe in a Nutshell* (Bantam, 2001).

⁵⁹ *Cantower XV* deals with the final work of Stephen Jay Gould, *The Structure of Evolutionary Theory* (Harvard UP, 2002). Section 15.2 focuses on "Causes and Laws."

⁶⁰ The index to Hawking and Ellis gives jump-off zones, but the context must be lifted to that hinted at in notes 37, 52, 61. It seems worthwhile to add here that a full causal analysis of the Principle of Least Action, which underpins model and Lagrangian selection, is a central need in contemporary physics. Both Feynman and Eddington were sensitive to this. I may quote Eddington. He is on the edge of a discussion of entropy as he writes "since the logarithm of a probability is necessarily negative, we may identify action provisionally with minus the logarithm of the statistical probability of the state of the world that exists. This suggestion is particularly attractive because the Principle of Least Action now becomes the Principle of the Greatest Probability." (*op. cit.*, note 1: page 178 - my copy is Harper, 1959) The Principle was a central interest in Feynman's life (*The Feynman Lectures*, II, chapter 19, which also happens to be a good introduction to the topic): it is most evident in his path-integral approach to quantum theory which meshes action and statistics. See R. P. Feynman and A. R. Hibbs, *Quantum Mechanics and Path Integrals* (McGraw-Hill, 1965).

specialized considerations. It seems best, then, to be as brief here as possible, holding myself to making a main yet central point.

The point regards context, the massively rich heuristic context required and offered by Lonergan, the slim context of the presentation in *The Large Scale Structure of Space-Time*. A proper focus on that large scale structure is the focus given by a general heuristic that would acknowledge the problems of things and conjugates layered aggregatively in a hierarchy of informing acts of dispersedness, a dispersedness moreover, which grounds sets of sets of divergences from determinate modelings. The astute reader will have noticed that here I am sweeping the first half of the book *Insight* into the fuller context of its sixteenth chapter. One might claim that the Hawking-Ellis presentation does not need that, since it is a sort of graduate introduction to a specific topic. I refrain from going into technical details but I would make the general popular point that a reader would be better off with at least some appreciation of the facts that there is no such entity as space-time, bounded or unbounded; that study of the large-scale structure is on a par with the study of Boyle's Law and its descendants; that neglect of scales below 10^{-13} cm puts the considerations in a strange context, especially when issues of extreme densities are at issue; that indeed, the structure of the universe on the level of physics is to be conceived heuristically as a real space-time geometry of aggregated events quite beyond formal definition, but whose forms are to be grasped through the discovery and testing of ever-more complex possible geometries.⁶¹

⁶¹ I do not see this ambitious project moving forward in any genetic seriousness without the perspective hinted at in notes 37 and 52 above, which would lift the words and sentences of physics into a due critical and normative metaphysical equivalence. Meantime, one must hold to parsimony. "The next step in creating a more unified theory of the basic interactions will probably be much more difficult. All the major theoretical developments in the last twenty years, such as grand unification, supergravity, and supersymmetric string theory, are almost completely separated from experience. There is a great danger that theoreticians may get lost in pure speculation." L.O'Riordain and N.Straumann, "Group Theory: Origins and Modern Development," *Review of Modern Physics* 72

My compact random comments on this work and on present work in physics and metaphysics are obviously a pale foreshadow of the rich dialectic collaboration that is to eventually emerge and integrate dialectic work across all areas of culture. So, for instance, instead of Hawking you might consider Heaney or Heidegger, to discover parallel needs in poetic and philosophic criticism.⁶² But at least I have given an impression of a need, a direction, a relevance of reaching for Lonergan's perspective if we are to interpret, narrate, criticize, ground, progress. The problem, of course, is the receiving of the impression.⁶³ Again, in the mature cycling of later times the giving and receiving will be institutionalized in an embarrassing efficiency: there will be a receiving by historians, sets of discomfiting nudges for dialecticians, foundational shiftings, and so on. In our current situation, however, there is the clear and present danger of the silent treatment for eccentric reachings such as this essay, this volume.

So, I return to the conclusion of the first section, swinging into the discomfiting mode of narrative aggression, something that occurs regularly in physics.⁶⁴ Am I, are we, wrong about

(2000), 15. And certainly parsimony requires the elimination of strange galactic observers: "This raises the intriguing possibility that one might be able to travel to other universes by passing through the 'wormholes' made by charges. Unfortunately it seems that one would not be able to get back again to our universe to report what one had seen on the other side" (Hawking and Ellis, *op.cit.*, 158-9). More generally, there is the messy moving between general and particular that haunts both relativity theory and quantum mechanics. I attempt to say something on these matters in *Cantowers XLII-LXIV*.

⁶² In *Cantower VIII*: "Slopes: An Encounter," I draw attention to the manner in which disciplines converge in dialectic in a concrete completeness. In particular, I draw attention to the weakness of Heaney's foundational perspective. See there pages 16-17.

⁶³ At an elementary level one may think of *impression* in terms of *species impressa*: then the problem is current molecular indisposition to enlarged harmonious intellectual living. But there is the elementary and embarrassing impression that the shambles of culture in all domains cries out for the division of labour suggested by Lonergan. See note 52 above.

⁶⁴ Heated disagreement was the order of the day in twentieth century physics: such feelingful disagreement is to be lifted into the context of the fourth specialty. It is desperately needed in theology, where biographic absence in implementing the task of *Method in Theology* - as expressed

the neglected power of Lonergan's suggesting of a complex of paradigm shifts quite beyond our present instituted habits? At least read with us seriously that quite clear page 250 of *Method in Theology* which unambiguously asks you to take a stand, "indicating the view that would result from developing what you have regarded as positions and by reversing what you have regarded as counter-positions."⁶⁵ The issue is not just some armchair stance but a quite novel, even terrified,⁶⁶ poising before the shambles of our autobiohermic intussusception of

feelingfully on page 250 - can hide rejection behind pious and detached generalities and misreadings. We need something of the spirit of "the nasty things I said" (*The Dawning of Gauge Theory*, 108) - Pauli regarding Weyl - or of Carver Mead's critique of his friend Feynman's presentations in Mead, *Collective Electrodynamics. Quantum Foundations of Electrodynamics* (MIT P, 2000). "I remember being very angry when I sat in on this particular lecture. Why hadn't he started this way in the first place, and saved us all the mess of the **B** field, which, as he told us himself, was not real anyway?" (xiii-xiv); "If Feynman was stuck about something, he had a wonderful way of throwing up a smoke screen; we called it 'proof by intimidation'" (xviii). Mead's little book is a great feelingful scientific rejection of the "Copenhagen Clan" (78, 122) that dominated the twentieth century. Do we not need such a rejection of the smoke screen of the B-field of sophisticated description that dominated twentieth century theology? We desperately need explicit stands on the homely no-go theorem that Lonergan points towards: "systematic theology is elitist: it is difficult" (*Method* 251). See above note 44. Further, note that systematics is the key cyclic operator in the efficient hodic process, and that it is also on the edge of its street value. Communications "bears fruit. Without the first seven stages, of course, there is no fruit to be borne" (*ibid.* 355).

⁶⁵ *Method* 250. "Indicating the view" are the discomforting words here: how do I really stand, in my daily and annual doings, taking my place among the lonely, the lame and the poor, taking us all forward as best I might during this bone-twisting axial horror, in the deep loneliness of eschatological invitation? Dare I reach for, express, indicate, my stand, even to myself?

⁶⁶ "If a man is a hero, he is a hero because, in the first reckoning, he did not let the monster devour him but subdued it not once but many times" C. G. Jung, "The Relations between the Ego and the Unconscious," *Collected Works, Vol. 7* (Princeton UP, 1966), 173. I especially look for heroines (see *Cantowers IV* and *XXVI*) in these desperate days of quiet Lonerganist terrorism, but the heroics need the cunning of serpents, as the end of the next note hints. But make no mistake about the serial killers in the classrooms, committed to a stable culture of suit and tie conventional wisdom and continuity and to a subtle discouragement of adult growth.

axial pretense. Lonerganism travels along in centuries-old stale ways, in a committedly and destructively⁶⁷ untheoretic fashion. There is nothing wrong with good popularization when it is recognized as such: there is a desperate contemporary need for a turn to the lonely daft subject in all zones of present unlife. But what is a sin against history is popularization comfortably pretending seriousness. The fifth canon of empirical method invites high seriousness in physics and metaphysics. But that metaphysics is not just the metaphysics of physics. It is the terrifying cultural challenge to slowly and hoddically conceive, affirm, and communally implement the integral loneliness of cosmic physics and cosmic chemistry and their highest achievement, the psychic wayfaring of our human hearts.

Philip McShane is a frequent contributor to *JMDA*: a survey by Alessandra Drage of some of his work appears in this issue.

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⁶⁷ I wish to draw attention in this final note to the primary destructiveness that must be existentially remedied: classroom destructiveness. The first three generations of Lonergan scholars were, are, incapable of teaching either *Insight* or *Method in Theology*. This real situation must be made relatively luminous and faced pragmatically, if we are to move forward together. But the key to progress lies, I would say, in the hodic cycling that will emerge in other disciplines. Then the doctrine of embarrassment that lies in my policies will become a discomfort in the halls of academe. Meantime, however, the presentation of Lonergan in the context of the confusions of contemporary commonsense pundits needs to be flushed. But if you are a student, don't try to remedy this: recall Lonergan's advice: "never try to teach your professor anything"!

LONERGAN AND THE MEANING OF 'WORD'

JOHN BENTON

Part 1 – Personal Context

The editor's suggestion to put my attempt at functional interpretation into three sections is helpful. It would seem to parallel Lonergan's thinking in *Insight*: one should seek to get beyond *voraussetzunglos* (CWL 3, 600). We are all, of course, with presuppositions: the challenge is to make them explicit to oneself and others. Professor Shute draws attention, in this context, to page 250 of *Method in Theology*. Because the task of becoming explicit about one's presuppositions would seem to belong *per se* to the functional specialty "Dialectic," this section will then appear to be more of an informal venture into that zone, a matter of positioning "being brought out into the open" (*Method* 250) in a casual manner. But clearly the editor's suggestion is far from casual: he wishes to fulfill a *function* of dialectic. Therefore, the intention in the first section is to "provide the open-minded, the serious, the sincere with the occasion to ask themselves some basic questions, first, about others, but eventually, about themselves. It will make conversion a topic" (*Method* 253). So, to begin, I find myself informally in the centre of that demanding page 250 of *Method in Theology*.

Am I converted in any of the senses that Lonergan writes about? I think I can claim a level of aesthetic conversion, one that is being constantly refined but goes back to my days of being engrossed both in literary studies and in a brief career as an actor drawn to the rich language of Shakespeare. Likewise, there is a touch of scholarly conversion, a displacement I

would characterize as a solitary contemplative journey that has somehow meshed with my otherwise pretty-ordinary moral conversion.¹ Religious conversion? I am convinced of the “friendly universe,” and despite my “quasi-Catholic sentiment,”² I am suspicious about where Christianity went after the Ascension. Nevertheless, specifics of the preceding conversions are not immediately central to my present task. What seem key to my task are three mountainous conversions, “Butterfield,” “Hodic,” and “Intellectual.”

First, “Butterfield conversion”³ is my own quaint name for what might properly be called “theoretic conversion.” For me, it means taking the “what-question” seriously in the manner of a personal scientific revolution. This is a shocking displacement, especially for me, having been brought up in a literary tradition that dodges scientific thinking. I have struggled towards it for decades, particularly in the context of Lonergan’s economics, coupled with elementary ventures into the areas of mathematics and physics.

Secondly, “Hodic conversion,” named by McShane, is a conversion to functional specialization. Like the other zones of displacement, I have no doubt that, at an elementary level, the

¹ On reflection, and in the context of my own random existential journey, the pattern of my life has been dominated by a bent for contemplation, the focus of which has been slow to evolve, the process of which has coincided with the Chestertonian precept: “If it’s worth doing, it’s worth doing badly.” It began in 1973 with an introduction to Aristotle’s *Metaphysics* and Plato’s *Dialogues*. From there I was driven by the “what” question: “What is wisdom?” and existentially, “What is it TO BE wise?” With the introduction to Butterfield and Lonergan in 1977, my appreciation of the “what-question” evolved to taking it seriously enough to adopt the role of Socratic “devil’s advocate,” in a way that also meshed with a sense of the need for a shift of focus in language studies to procedure. Later, the struggle to get beyond the pejorative meaning of “introspection” brought me to within an elementary range of fantasizing on language, bringing about the move towards a two-pronged thesis in 2001. See footnote 7.

² My religious sentiment has always been grounded by Julian of Norwich’s epigram, “All thing is well. All manner of thing is well.”

³ This allusion to Butterfield’s research on the discovery and significance of theoretical understanding, as well as to his criticism of “extra-scientific” opinion, reinforces the need to take a Socratic stand in language studies. See Herbert Butterfield, *The Origin of Modern Science* (Toronto: Clarke, Irwin & Co., 1968).

need for this conversion must be acknowledged in the branch of language study known as English literature, if one is to be serious as an undergraduate. The study by Wellek and Warren cries out for the development of an adequate investigative structure.⁴ Unfortunately, the field of literary study, however refined and sophisticated it may appear to be on the surface, seems to have muddled along from one fashionable movement to another, only to end up with a movement that would end all movements, namely, “post-modernism.” But, if it is to have any identity, must it not be a movement?⁵

Thirdly, there is “intellectual conversion,” and it has been, to say the least, a more-than-formidable challenge. I have imagined myself pacing the stage in Macbeth’s skin uttering, “Is this a dagger which I see before me?” But the struggle with Lonergan’s “startling strangeness” continues to be a shattering, disconcerting, presence in performance. The end of that first page of chapter 14 of *Insight* puts it well.⁶ Whereas I might sit and ponder “the already-out-there-now,” it is quite another reality to find the stage and one’s fellow actors disappear behind my eyes! But at least when I sit and wonder I can hold on to the shocking unreality of the imagined dagger and the seen cast, the “props of truth.” At any rate, despite random

⁴ René Wellek and Austin Warren, *Theory of Literature* (New York: Harcourt Brace, 1956).

⁵The meaning of movement I have in mind here comes from an image in a Patrick Kavanagh poem: “...Gather / no moss you rolling stones / Nothing thought out atones / for no flight / in the light ...” “To Hell With Commonsense,” *The Complete Poems of Patrick Kavanagh* (New York: Hand P, 1972), 288. For me, there is beauty in this image that draws attention to the need for cycling tasks of discernment in the field of language studies: *to continue to discover as best we can how language works and how we should roll with it*. Is this not Lonergan’s strategy for a practical view of history – an adequate investigative structure, a genetic division of labour relevant to any cultural endeavour? My other point is that a pragmatic principle has been forced upon us by the specializations and fragmentations and discoveries of these past centuries; moreover, the need for a division of labour is suggested, NOT by some arbitrarily imposed group of tasks, but rather by the fermentation of centuries, even in post-modern expressions that would scorn categories and canons.

⁶ “[N]o man is born in that pattern; no one reaches it easily; no one remains in it permanently...” (CWL 3, 411).

attempts over the years of teaching English to nudge students in that direction, I have pretty much failed to facilitate a parallel shock in them. Needless to say, it is absent everywhere in reflection on English and its philosophy or method. That its startling strangeness will become the dominant tone of English classes in the short term is, to my mind, a matter for long-term optimism; which leads me to my topic.

I am in the process of refining my doctorate thesis objective, having battled through a Master's degree in the Philosophy of Language.⁷ Those who have attempted a "Lonergan-type" thesis in a non-Lonergan environment will know what I mean by "battle."⁸ Notwithstanding, my focus in the doctorate is to follow up on the aforementioned research in the philosophy of language.⁹ The doctoral issue, of course, has many facets: political, academic, locational, and financial. But the topic relevant to this paper is the issue of "interpretation" raised by Lonergan in the third section of chapter 17 of *Insight*. The challenge of this paper (and this volume) is to lift that

⁷A revised version of the thesis, *Towards the Restructuring of Language Studies* (Norwich University, 2003; hereafter *TRLS*), will be published in 2005 by Axial P, Halifax.

⁸I found, however, that working in the "groves of academe" offered no shortage of opportunity to exercise and refine my sense of humour and satire. For example, my thesis proposal on procedure in language studies noted a parallel between Joseph H. Greenberg's concern over the lack of coherence and progress in the field of linguistics and Welleck and Warren's investigation into the structure of inquiry in literary studies. See Greenberg, *Universals of Human Language* Volumes I-IV (Stanford UP, 1978). In an effort to set me straight, a professor of linguistics at Harvard University wrote me a letter declaring on the one hand, "progress" was "orthogonal" to the study of linguistics, while on the other hand, Greenberg's legitimate call for progress in the field was passé and bypassing him would be a step toward progress!

⁹I have, at this point, arrived at a half-way station to a full heuristics of basic linguistics and basic grammar with a two-pronged thesis that cut down the elements of restructuring in language studies to its two key components: the focal shift in grammatology and the functional relating of sub-fields of linguistics. The full reach of the doctoral thesis will seek to penetrate more fully the entire scope of grammar studies both in the re-cataloguing of linguistic families and in the re-defining of the standard parts of speech, the topic of section 3.

section into the context of hodic conversion.¹⁰

As I struggled with this problem of division of labour, I slowly began to sense that I would be able to merge it with the problem of writing a doctorate thesis in a way that, I think, could be extremely helpful to us as we attempt to move as a community into the cyclic collaboration that is functional specialization. And so, in section 2, I attempt a functional interpretation of a single paragraph of *Insight* quoted at the beginning of that section below. Now, if the community of linguistic scholars agreed with me on the meaning of that paragraph,¹¹ I could get on with the task of pushing forward the meaning of this single paragraph so as to arrive at a view of grammar quite significantly beyond grammarians from Pannini up to the present time. This, of course, is quite unrealistic. Instead, I had to focus on the *presuppositions of the paragraph*. And yet, here came a fortuitous leap in the personal context of my effort to come to grips with functional interpretation. For me, the key lies in *The Sketch* (CWL 3, 602-603), and, specifically, Lonergan's fourth point in that section: the ideal interpretation would be a "hypothetical expression" of a "hypothetical pure formulation."¹² Now that would be possible if there was a shared sophistication of "the universal viewpoint" (587-591) and my work "was addressed to an audience that similarly grasped the universal viewpoint" (602). With that in mind, I linked up with McShane's timely description of the collaborative enterprise. His effort has

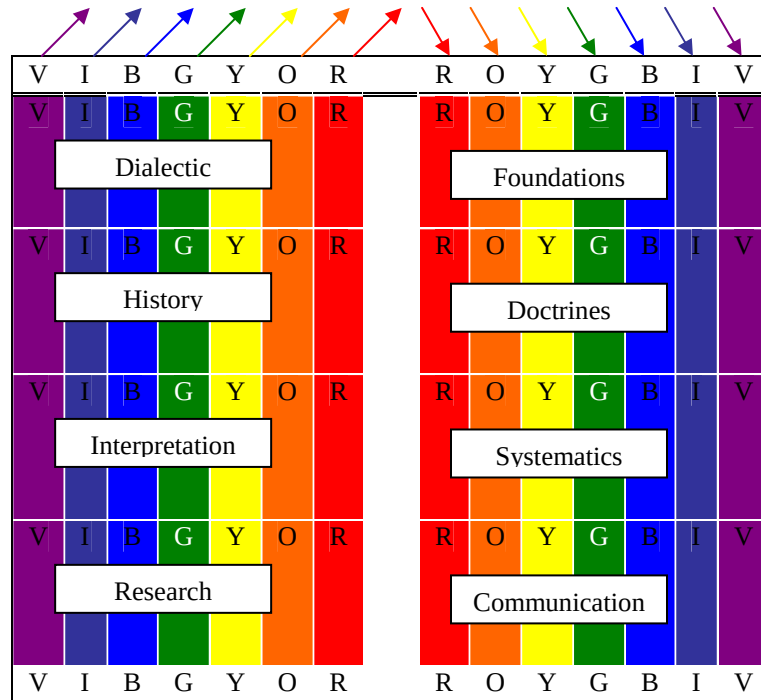
¹⁰ I would recall that Lonergan points to this challenge in a note on *Method* 153: "One of the advantages of the notion of functional specialty is precisely this possibility of separate treatment of issues that otherwise become enormously complex. ... See my own discussion of the truth of interpretation in *Insight* and observe how ideas presented there recur here in quite different functional specialties. For instance, what there is termed a universal viewpoint, here is realized by advocating a distinct functional specialty named dialectic." The last sentence in particular will occupy me at the end of this first section.

¹¹ As will appear in section 3, it is the meaning of the paragraph within the context of the later view of Lonergan, on functional collaboration, that I have in mind here.

¹² "From his immanent sources of meaning *P* will work out a hypothetical pure formulation of *Q*'s context and of the content of *Q*'s message" (602).

inched my personal context forward.

McShane is slowly tackling the problem of transposing *The Sketch*. For me, one of his inspiring images is that of collaborative bands, where *band* could mean both *group* in the usual sense – tribe or musical – and *spectral*. He comes up with the image of a spectral band complete with standard running track and a band of lanes. A diagram is helpful here:



The lanes go up in parallel from the first to the fourth specialty, then turn and come down parallel to the end of the eighth specialty. McShane arranges the colours in a very useful and suggestive way. His outside lane is “violet,” and the lanes run across to “red,” the short inner circuit. He considers the outside “violet” lane to be the lane in which one must both *hold to*, and *develop*, the universal viewpoint. At the opposite end of the band, the “red” inner lane, which scarcely attempts the cycle, is the danger lane, dominated by commonsense eclecticism and general bias. For me, the key was to grasp his insistence on the

“violet” lane *holding to itself*. What does this mean? It means that functional interpretation, if it is to be efficient, does not attempt to communicate with, or persuade, other schools of interpretation. Other schools of thought enter into consideration – or dialogue – in the two specialties “dialectic” and “communications.” Furthermore, McShane reinforces the idea of an audience sharing the interpreter’s viewpoint. Certainly, Lonergan makes this point clear: “The use of the general ... categories occurs in any of the eight functional specialties” (*Method* 292). This idea has its parallel in the presuppositions of those who are collaborating in contemporary physics: one does research or history or theory or teaching *in the context of the best contemporary horizon*.¹³ The function of any specialty is *to open up new twists* in the cyclic collaboration, such as I wish to illustrate in this section.

Now I return to my double problem: a pedagogical handling of both doctorate work and the challenge of trying functional specialization. Its possibility took shape for me by exploiting the image of the spectrum. There is the standard list of seven colours which some of us memorized in school: red, orange, yellow, green, blue, indigo and violet. Now, how might I talk to the other tracks of interest in language? At the same time, how might I bring my audience into my context? So, I came to envisage the work as a series of interpretative steps:¹⁴ I have, to some limited degree, the idea **A** of the text below, or of the thesis-presuppositions. I need to move to a complex practical insight **F** (or **F'** or **F''**) to get my audience to my idea.

¹³ In a developed specialist collaboration, shared and sophisticated general categories would control the level of specialist work and inter-specialist communication so that “cumulative and progressive results” would occur with a *per se* accuracy and efficiency that would give a new unity to the enterprise of metaphysics. One must think, then, of a community sharing, *in a manner quite beyond public discourse*, a full genetic systematic control of the ongoing genesis of meaning. In contrast, truncated perspective systematically fails to sense the spontaneous and shadowy seeds of progress from which the quest of a Greenberg, or of a Welleck and Warren, could be transposed.

¹⁴ Perhaps here I am being helpful towards a conception of the operation of the functional specialty, communications, towards an appreciation of *per se* accuracy and efficiency that involves sharing in a manner quite beyond public discourse.

My practical idea takes the shape of a seven-step effort, starting with the “red” track and moving to the “violet” track. The audience in the “violet” track is, supposedly, my community of collaborators. My thesis, in that better world, would be the advance. My thesis, in the real academic situation, is more likely to be a “mangled” seven-step effort followed by an eighth step; the mangling is, of course, the result of the usual academic compromising, politics, and despair.

Obviously, then, this is not the place for a plunge into the eighth step, towards a new view of grammar, though I shall venture some suggestive pointers in the third section. Rather it seems to me to be, realistically, the place for the previous seven. Certainly, the eighth step is the key one, the one that comes closest to the ideal of functional interpretation: of opening up new twists. What is functional interpretation about? It is about someone who is up with the community’s categorial effort at *finding clues to progress* in some author so far neglected, in those particular clues, by the community. But it’s not just a matter of recovery. Whereas the interpreter, as interpreter, is retrieving creatively, seeking *the best of an author’s clues to progress*, s/he may, in actuality, also have original clues: then there is the need for conversations with other specialties.¹⁵

Finally, I would note that my audience *per se* is the community of historians. “This is something that should get picked up and woven into the flow of progress, something that you folks should notice as neglected with a neglect that is now part of the surds of history.”¹⁶ At the same time, obviously, my audience is you, living your story. In so far you are tracking along in the “red” lane, but open in some minimal way to functional specialization, my functional interpretation begins immediately after the quoted text (“red”? → I). Now what does each subsequent colour or lane in the spectral image represent? Each level represents an *unknown complexity*, the content of

¹⁵ However, that is another and quite complex topic beyond the scope of our immediate interest.

¹⁶ A remark of McShane made at the West Dublin Conference on “Functional Specialization,” August 2003.

which is *presupposed* at each level – the topic of Part Two. When you reach a subsequent unknown colour, then you are back with the task of “interpretation” (“orange”? → I); “yellow”? → I; “green”? → I), and so on. In so far as you are “up with me” in any subsequent colour or lane, then that subsection is simply a clue as to how we might differ in teaching or presenting that sub-sectional interpretation. Insofar as you or I are “heading together to violet,” then we move beyond the *per se* task of functional interpretation to creative work in some other area.

Part 2 – Content

The Text:

Were words related only to other words, their meaning would never be more than verbal. But the mere fact that a word can occur in a sentence that is affirmed endows it with a basic reference to the objective of intelligent and rational consciousness, to being. Moreover, this basic reference, which is the core of all meaning, admits differentiation and specialization. There are many words: some are substantival because they refer to intelligible and concrete unities; some are verbal because they refer to conjugate acts; some are adjectival or adverbial because they refer to the regularity or frequency of the occurrence of acts or to potentialities for such regularities or frequencies. Finally, since the development of language fuses with the development of knowledge, the meaning of words not only depends upon the metaphysical matrix of terms of meaning but also on the experiential sources of meaning. Prior to the explanatory conjugates, defined by their relations to one another, there are the experiential conjugates, that involve a triple correlation of classified experiences, classified contents of experience, and corresponding names. The being to be known as an intelligible unity differentiated by verifiable regularities and frequencies begins by being conceived heuristically, and then its unknown nature

is differentiated by experiential conjugates. (CWL 3, 578)

There is a basic flaw in what follows that I must bring to your attention. It may be considered by you to be, perhaps not a flaw, but simply a deviation from the editor's request. Lonergan writes: "Suppose P to be interpreting Q. From his immanent sources of meaning P will work out a hypothetical pure formulation of Q's context and of the content of Q's message" (CWL 3, 602). Lonergan would not seem to ask for a separation: but then, the editor can have another meaning for the separation, which I must come to in the third section. At any rate, I seem to need to merge content and context in what follows.

2.1 Red: Helen Keller

What do I mean here? Well, think of the context, semi-purely formulated as the absence of the thematic of meaning pointed to by Lonergan when he refers to Helen Keller's discovery (*Method* 70). He points to the same missing thematic elsewhere. "[Meaning] seems to be a relation between sign and signified" (CWL 3, 5). At greater length, and important when we arrive at section 2.4, is his statement of the point in considering "the first element in the general notion of an inner word":

[It] is had from a contrast from outer words - spoken, written, imagined, or meant. Spoken words are sounds with meaning: as sounds, they are produced in the respiratory tract; as possessing a meaning, they are due to imagination according to Aristotle, or, as Aquinas seems to have preferred, to soul; it is meaning that differentiates spoken words from other sounds, such as coughing, which also are produced in the respiratory tract. (CWL 2, 14)

Clearly, we are into the question of context, the context in particular of Aristotle and Aquinas, and I suspect that the pure formulation of this context has to come, eventually, from within a genetic systematics¹⁷ that would order such

¹⁷ What is needed is some suggestive imagery of system, indeed

positioning regarding the core of meaning (CWL 3, 381-83). And within that ordering would be the sequential reversal of the massive historical confusion of viewpoints on meaning, the proximate versions of which dominate reflection on language. The point here, I think, is that we are just not up to pure formulations at present. For instance, one may think of mistaken views mentioned in passing by Lonergan¹⁸ that surface in the reflections of Pinker or Foder.¹⁹

At any rate, under red I am dealing with a necessary piece of an interpretation to almost all the present academic community. Indeed, there may well be members of the Lonergan community who have not done the serious exercises involved in *identifying the data for the insight into the grounding insight of language*. Yet without this insight, the passage, and the entire book, is being systematically under-read.

So, it is of no little importance to ask, what would a hypothetical expression of Lonergan's position on the insight into the equivalent of Helen Keller's insight be?²⁰ The question raises all the problems of adequacy. My suspicion is that the short statements within Lonergan's writing are inadequate as *expression*. What seems to be needed is a hypothetical expression that would be the equivalent of Lonergan teaching a class on those few lines of *Method* that deal with Helen Keller.

2.2 Orange: Elements of Meaning

The previous section touched on a problem that spanned the entire text: without a universal viewpoint meaning of *word*

incarnate system, on the move.

¹⁸ See, for example, CWL 3, 383: Lonergan discusses "the prevalence of empiricist theories" in the context of instrumental and ostensive acts of meaning. "[T]he empiricist identifies the valid field of full terms of meaning (i.e., the universe of being) with the range of sensible presentations."

¹⁹ Confusion in linguistics grounded in a general self-neglect is evident in the discussion of signs in Steven Pinker's popular book, *The Language Instinct* (New York: William Morrow & Co., 1994). General self-neglect grounds the irony both in the content as well as the title of Jerry Foder's latest effort: *The Mind Doesn't Work that Way* (Cambridge: MIT P, 2000).

²⁰ This is discussed in *TSLS*, Chapter 4.

the paragraph is seriously under-read. Let us focus our attention now on the end part of the text: terms of meaning, conjugates, triple correlating, etc.: “there are the experiential conjugates that involve a triple correlation of classified experiences, classified contents of experience, and corresponding names. The being to be known as an intelligible unity differentiated by verifiable regularities and frequencies begins by being conceived heuristically, and then its unknown nature is differentiated by experiential conjugation.” For the people in the violet band, these would not be topics in a pure formulation, which is after all addressed to those in the ballpark of the universal viewpoint, who have then digested the first sixteen chapters of *Insight* – within context: the topic of section 3.

What begins to emerge here for me, and possibly for you, is the high standard of achievement and collaboration that Lonergan was writing about in his reflections in *Insight* on interpretation. And with that emergence comes the suspicion that there is a great deal of preliminary work to be done before a “violet” band emerges to cycle achievements of the past into a scientific community in the control of pure formulations. To get there we need the accumulation of a tradition of simple interpretations of Lonergan’s *compact* doctrinal pointers: for example, an essay on the problem of introspecting triple correlations.²¹

2.3 Yellow: Hierarchies of Meant

In the previous two sections I have been drawing attention to the difficulty of reaching – or teaching – the control of meaning that pivots on grasping the grounding insight of language and the differentiating of the grounding insight over the elements and terms of meaning. Without that control one is not in the scientific community that Lonergan writes of in terms of pure formulations: one is not in the equivalent of the world of physics that shares the control of meaning given by

²¹ Relevant to this preliminary work, I think, is the need to re-catalogue words that I touch on in Part Three. It focuses on data in Lonergan’s work that would contribute to a sweeping reclassification of adjectival, pronominal and nominal expression

theoretic achievement. Yet the next step, the next band of our reflections, takes us into a quite solitary zone of Lonergan's work. The paragraph that we are reading was written by a thinker who had sorted out, over at least ten years, the hierarchic aggregative structure that was essential to his meaning of words like *molecule* or *mouse*. "A concrete plurality of lower entities may be the material cause from which a higher form is educed" (CWL 4, 20). We are back in the first half of our paragraph. Most of the words that occur in our sentences are endowed with reference to such hierarchic entities or quiddities. And so is not one missing Lonergan's meaning if one is not tuned into that component of Lonergan's context?

Once again, we are in the area of contexts. I shall return to the problem of the content of a hypothetical expression in the present question in concluding this section, but I think two points are relevant here to our reflections. First, this content – a hierarchic perspective – is needed in foundational linguistics. One has only to survey the efforts of Greenberg to see how the search for a hierarchic perspective is lurking as a problem.²² Language reaches towards an objective that is intrinsically aggregative: A heuristics of linguistics, of words, cannot dodge that issue. But my second point is addressed to both linguists and my co-workers in Lonergan studies. The present issue, however difficult, cannot be left out of one's perspective without warping the conceptualization that is metaphysics. On this it is worth attending to an earlier, recently published, writing of Lonergan. "The conceptualization of understanding is, when fully developed, a system, and one must advert to the implication of systematic knowledge in the Aristotelian and Thomist *quod quid est* if one would grasp the precise nature of the concept; the concept emerges from understanding, not an isolated atom detached from all context, but precisely as part of a context, loaded with the relations that belong to it in virtue of

²² See, for instance, his "Some universals of grammar with particular reference to the order of meaningful elements," in *Universals of Language*, ed. Greenberg (Cambridge: MIT P, 1963), pp. 73-113, and his *Language Universals, with Special Reference to Feature Hierarchies* (The Hague: Mouton, 1966).

a source which is equally the source of other concepts.”²³ This is very far from the simpler view of the reference of words that runs through most traditions.²⁴ But does that simpler view not hold down Lonergan interpreters? Think, for instance, of the word *phantasm* that occurs in the frontispiece of *Insight*: do we regularly read it hierarchically?

2.4 Green: Word-beings and Beings

Two sections have reflected on elementary meaning and on the generic meant of human knowing. But words also fall under the class of generic means: we speak of words; Lonergan writes here of words. So, we arrive at a twist to the question that concluded the previous section.

Do we regularly read the word *word* hierarchically, as a word, in its referencing? We are back with the problem of a word as produced in the respiratory tract or chemically on paper or electronically on screen. The difficulty is brought out by McShane's effort to symbolize this problem of meaning and expression. “You come to the complexity of a heuristics of speaking... Now what does its symbolization look like? There is generically a need for a reduplicative symbolization of the form $V\{ W(p_i; c_j; b_k; z_l; u_m; q_n) > HSf(p_i; c_j; b_k; z_l; u_m; q_n) \}$.”²⁵ The symbolization is strange but the content is part of the content of the Lonergan paragraph with which we are dealing.²⁶ And some such symbolization is necessary to the control of meaning made possible by Lonergan's shift of metaphysics into the zone of generalized empirical method. This is a large

²³ CWL 2, 238. I am quoting from the Appendix, which contains previously unpublished fragments.

²⁴ See footnote 19 referring to Pinker and Foder. There is the problem of general bias, a sort of global flattening of meaning. History has multiplied words, externalized them.

²⁵ McShane, Philip. *A Brief History of Tongue* (Halifax: Axial P, 1998), 122. See Section 3.

²⁶ A metaphysics of words, of language, subsuming the elementary pointers of CWL 2, 1, relates an aggregative function $W(p_i, c_j, b_k, z_l)$ to functions $F(p_i, c_j, b_k, z_l, u_m, r_n)$ within the integral perspective of $Sf(p_i, c_j, b_k, z_l, u_m, r_n)$. That relating meshes into the reality of “the finality of intellect” (CWL 3, 16), that “all we know is somehow with us” (*ibid.* 303), that “every consistent choice, at least implicitly, is a choice of universal order” (*ibid.* 629).

and rich topic that forces us to think of the meaning subject in a new way, in a way that is adverted to explicitly when we face Lonergan's invitation to think of the harmonious development of the subject as incarnate.²⁷ That invitation is part of the content of a previous chapter²⁸: it is obviously part of the meaning of our selected text.

But let me turn aside here, in a type of reflective interpretation that can share a fault common to both the present writer and perhaps most of my readers. Let us suppose that indeed we are green, green and beginners in the effort to cultivate the universal viewpoint, or to cultivate functional interpretation. Still, we have some suspicion of the missing viewpoint. So there is a sense in which we can do a type of immature, imperfect, functional interpretation. Even here, as we communicate, might we not say that, in so far as I may be a little ahead of some of you in the heuristics of words, I could enter into a hypothetical expression of Lonergan's view of aggreformic signs referring to aggreformic quiddities?²⁹ That would identify me as an interpreter speaking to you as a "his or her story," who would then view the story and the history of what goes on in metaphysics and linguistics, and indeed in Lonergan studies.

No doubt some of you will sense that the problem of interpreting Lonergan's paragraph is becoming far too complex. I would make three points here. First, when one enters into a new science it is good to have, up-front, the spread of that science: a school class in chemistry is handed the periodic table. The second point is really only this point with a twist given it by Lonergan. His text on the point is quite lengthy, but briefly he is saying that, even at an immature stage in a science it is "inconvenient" – damaging then – to tarry with description when one can lift the investigation into an explanatory heuristic.³⁰ Thirdly, convenient or not, what I write

²⁷ *Method*, ch.3 section 6 and ch.14, section 1. Also, see notes 34 and 35 below.

²⁸ *CWL* 3, ch.15, §§ 6 and 7.

²⁹ On the process of ingesting the aggreformic perspective, see McShane, Cantower 29. [www.philipmcshane.ca]

³⁰ Lonergan, *De Deo Trino II, Pars Systematica* (Rome: Gregorian

of here is part of the meaning of the paragraph of our interest.

2.5 Blue: A Hodic Perspective

By hodic I mean functional specialist. You may immediately think that, no, this could not be part of a functional interpretation of the paragraph. The discovery was eleven and a half years away at the time of writing. And I must obviously agree that the hodic perspective was not part of the original content.³¹ But I am led to this larger, and perhaps strange, view, the need for efficiency in functional interpretation. It would seem that we are committed to recycling the best, the neglected best. We look to the past for neglected riches of the heuristics of progress. That riches may be found early in an author's reachings and have sufficient autonomy to warrant what one might call a restricted – and certainly precise – interpretation. Indeed, such autonomous interpretations belong to the full task of functional interpretation. But I would say that they belong as context.

The illustration that comes to mind is that given by Lonergan's doctorate work published in *Grace and Freedom* (CWL 1). What is relevant to the core of a functional interpretation as lifting the systematics of future theology is Aquinas' "endview," in so far as that endview was the result of a genetic achievement, not an elderly lapse. What is seen to be relevant for handing on then is, so to speak, a neglected "best stab" at a topic. Such achievement is to be selectively imported into the pure formulation of context. Selecting and trimming is important. The beauty and efficiency of the collaboration requires that a participant not inflict irrelevant searchings and blind alleys. This relates to Lonergan's demand that one know the object, one is up-to-date, one has reached adequate control of the author's meaning, shifting words, etc., etc.³² In this

UP, 1964), 308-309. This is, of course, also the message of chapters 15-17 of *Insight*.

³¹ Nonetheless, what I am pointing towards is the transposition of the later explicit writings into that full explanatory heuristic context. That transposition is the topic of those key pages, *Method* 287-288. What emerges then is a vast enlargement of the task envisaged by the canons of hermeneutics of *Insight*.

³² The central pointing of chapter 7 of *Method*.

context it is worthwhile recalling the first principle of criticism of the third canon of hermeneutics: how would one shuffle and trim the work in order to bring it closer to a functional interpretation?³³

But the point in this section is that the hodic reading, a hodic consciousness, is key to attempting functional interpretation at all. Further, from my own struggles, I would suggest that at its best it involves a new and precise set of differentiations of consciousness. But in its early stages it is no more differentiated than is the periodic table for a pupil. Lonergan writes of the exegete “expressing his interpretation to his colleagues” (*Method* 170), speaking to his pupils, “to the theological community, to exegetes in other fields and to those engaged principally in other functional specialties” (171). Lonergan goes on to give suggestions from Bishop Descamps about communication that are “eminently relevant, sane and solid” (172) but I think that it would be a mistake to let this sanity of Lonergan’s superficial treatment in *Method* warp our perspective on the distant achievements intended by his project. There is certainly a matrix of specialized conversations to be envisaged and cultivated in this new context. But the *per se* function of interpretation is a conversation of interpreter with historian about a clue to progress present as a past expression but missed as a “going-on.” That specification should be luminously present in the interpretative effort of the cycling of mutual self-mediation.

2.6 Indigo: Linguistic Feedback

When we come to the indigo band and to the topic of linguistic feedback it seems that we are still closer to the ideal of purely-formulated functional interpretation. Linguistic feedback, as envisaged by Lonergan in *Method in Theology*, seems like an ongoing reaching for an impossible adequacy of expression. “At a higher level of linguistic development, the possibility of insight is achieved by linguistic feedback, by expressing the subjective experience in words and as subjective” (*Method* 88, n. 34). In the text, Lonergan is writing of projection, of the increasingly refined transfer of the

³³“A contributor fails to present his results ...” *CWL* 3, 611.

meaning of moral defect so that it is felt as personal guilt before God. What I am envisaging here is not moral defect but moral success, the blossoming of linguistic mores in a sort of Wordsworthian tonality of metaphysics. Then one is speaking about “the earth and every common sight tak[ing] on the glory and the freshness” (CWL 3, 556) of the inner reach of hodic metaphysics.

Then the triple correlation that is the concluding topic of the paragraph of our attention is lifted into the context of another triple correlation, the defining relations of a mature methodology discussed by my colleague, Darlene O’Leary, in section 2.1 of her contribution. Her reflections relieve me of the task of venturing further into that area.

But there are less complex aspects of the methodological presence of linguistic feedback, aspects that were not present in *Insight* but begin to be suggested in Lonergan’s lectures on Existentialism, lectures given the year of *Insight*’s first publication.³⁴ There is a focus there on the task of expressing the subject-as-subject, expressing the subject’s exigent reaching for the unknown field.³⁵ Yet that topic, without the linguistic sophistication, was the topic of the beginning of the chapter in *Insight* from which our paragraph is taken. The meaning has not been lost, forgotten, by the author in the intervening week. Mystery and the reach for the unknown unknown is meshed into the meaning of the paragraph with which we began. It would seem to be part of the task of adequate interpretation to make that meaning present: as I do now, with massive inadequacy of expression.

2.7 Violet: At home in the text

Still, there is a sense in which I can certainly claim some success: for part of functional interpretation is “understanding oneself.”³⁶ I am only at the edge of a beginner’s possession of a

³⁴ See the Introduction to CWL 18, and McShane’s missing Appendix A to the volume, which appears as chapter 5 of *Lack in the Beingstalk: A Giants Causeway* (Axial P, Halifax, 2005). See also the following note.

³⁵ See CWL 18, the index under “exigence,” “field,” “subject-as-subject.”

³⁶ *Method* 161. It is the title and topic of section 5 of the chapter on Interpretation.

universal viewpoint, of a viewpoint that would place me in a position to address “an audience that similarly grasps the universal viewpoint” (CWL 3, 602). But I have succeeded in lifting the paragraph of our attention out of “common sight” much more than when I began this essay. At my best moments, the paragraph is no longer “already out there.” Indeed, there can be something of the reversal of what Lonergan writes of at the beginning of his chapter on “The Method of Metaphysics,” worth quoting here fully as an aid to a glimpse of his full existential context. “The intellectual pattern of experience is supposed and expressed by our account of self-affirmation, of being, and of objectivity. But no man is born in that pattern; no one reaches it easily; no one remains in it permanently; and when some other pattern is dominant, then the self of our self-affirmation seems quite different from one’s actual self, the universe of being seems as unreal as Plato’s noetic heaven, and objectivity spontaneously becomes a matter of meeting persons and dealing with things that are ‘really out there’” (CWL 3, 411). Might one not suspect that Lonergan was neither “out there” nor “in here” but *in being*, somehow focused on the context and content of a quite new metaphysics of words and of grammar?

So I come back, or forward, to my initial problem of facing the writing of a thesis on a new metaphysics of grammar. Were my audience at home in the violet band, comfortable about the benefits and the deficiencies of the other bands, then I could proceed to what I could genuinely call a functional interpretation of the class envisaged by Lonergan when he wrote chapter 17 of *Insight*. Why would I claim that? Because it seems to me that, however original my work would sound or read, it would only be an interpretation – a mix of simple and reflective interpretations as described in *Insight* (585-587) - of what Lonergan meant by the middle sentences of the paragraph with which I began this second section. So, placed in the context of functional specialization, my work would qualify as a functional interpretation. For it would be addressed to the community of Lonergan students – and hopefully beyond it – to draw attention to the ongoing defective storytelling that flows from Panini and the

mediaevals right through our psyches in our talk of words as parts of speech. Only slowly, humbly, patiently, can we face the problem of the alienating patterns of axial grammar. But that raises a further question of interpretation, which, fortunately, I can leave to my colleague Alessandra Drage-Gillis.

Part 3 – Context

Towards the Restructuring of Language Studies placed grammatology in the context of functional specialization that the Greenberg School was looking for and grasping at, reaching quite beyond previous efforts such as that of Chomsky. Yet the context was not hinted at adequately within the field of linguistics itself. The context emerged as a sort of “half-way house,” in the form of a two-pronged strategy to cut down the elements of restructuring to its two key components: the focal shift in grammatology and the functional relating of sub-fields of linguistics. The full reach adequately expressed and expanded would seek to penetrate the entire scope of grammar studies both in the re-cataloguing of linguistic families and in the redefining of the standard parts of speech. The full reach freshens up the question, “what is metaphysics?” by focusing on the isomorphism of “question” and “questioner”: “metaphysics rests on the major premise of the isomorphism of the structures of knowing and of proportionate being” (CWL 3, 599). Lonergan, envisioning the full reach, was neither “out there” nor “in here” but *in being*,³⁷ “some how” focused on a quite new metaphysics of words and of grammar, on the structured concrete “whats” and “ises” that are all humans in history. In Chapter 17 of *Insight*, Lonergan puts the challenge into context for a metaphysics of words and of grammar: “A scientific interpretation is concerned to formulate the relevant insights and judgments, and to do so in a manner that is consonant with scientific collaboration and

³⁷ I would note how helpful for me here is the analogy of the Möbius-strip to the extent that a Möbius-strip theory of consciousness, one-sidedly excludes any two-sidedness in the appreciation of the meaning of the word “is.” The anomaly of confrontational two-sidedness is the central warp in both logic and phenomenology.

scientific control.”³⁸ Hodic science, then, Lonergan’s great achievement, gave structure to the Hegelian insight:

As the labor of introspection proceeds, one stumbles upon Hegel’s insight that the full objectification of the human spirit is the history of the human race. It is in the sum of the products of common sense and common nonsense, of the sciences and the philosophies, of moralities and religions, of social orders and cultural achievements, that there is mediated, set before us the mirror in which we can behold, the originating principle of human aspiration and human attainment and failure. Still, if that vast panorama is to be explored methodically, there is the prior need of method.³⁹

Lonergan’s focus on the question about the question in the concrete takes in all occurrences of questers and questions. His reflection on Hegel envisages the dialectical reach of the whole of humanity in its minding, from which to shape its future minding. So here we are situated at the foothills of Lonergan’s perspective on the future of language in general.⁴⁰ Over the long haul, the task of working toward elevating language to an explanatory perspective is to fantasize foundationally, as did Lonergan, toward a perspective on a fuller explanatory heuristic of words.⁴¹ “It takes as its starting

³⁸ CWL 3, 608. The context of this statement is Section 3.8 “Some Canons for a Methodical Hermeneutics.”

³⁹ I quote from p. 14 of a Lonergan archival file labeled A697. It contains a typescript numbered pp. 8-23.

⁴⁰ In a sketch, dating from February 1965, of a first chapter of *Method in Theology* in the archive file labeled Batch V. 7 (which contains the discovery pages of functional specialization), Lonergan scribbles of “Second level mediation: based on tools of meaning ... Third level mediation: based on operations.” The second-level mediation requires “study of language, Ar. Logic [norms are incorporated in linguistic, grammatic, structures]. Study of maths, Modern logic [norms are incorporated in math. struct + procedure].” The file is reproduced in Darlene O’Leary, *Lonergan’s Practical View of History* (Halifax: Axial P, 2004) Ch. 2. I would note the connection of second-level mediation to the discussion here.

⁴¹ In the new hodic context, postmodern philosophy is to be identified

point and clue the discovery of some precise issue on which undoubtedly one was mistaken”(CWL 3, 736), the issue being the massive historical confusion of viewpoints on meaning, the proximate versions of which dominate reflection on language, the alienating grammatical structures of Panini, the mediaevals and the moderns in their talk of words as parts of speech.

Where does a responsible reach for a new view of grammar go from here? I suspect it involves a long-range plan with a realistic attitude. It seems to me, then, a plan that seeks to rise to the level of a scientific determination of classes should move towards strategic description meshed with crucial experimenting from which to arrive at the beginning of explanation.⁴² I am pushing for the metaphysical equivalents of the parts of speech (CWL 3, 16.3.3 and 16.3.4). That push, realistically, will be the long haul. And so this short section anticipates the much-needed expansion and detail. I point, briefly and densely, to specific struggles and to the massive complexity of the work.

A preliminary involves the employment of a simple phenomenological procedure. The strategy behind this procedure is to notice the obvious, and evident problems in the obvious from which to make a determination.

As the notion of the universal viewpoint, so also some account of levels and sequences of expression is, we believe, a necessary preliminary to a treatment of the problem of scientific interpretation. The immediate task will be to classify modes of expression, not in terms of language or of style, but in terms of

with the activities of the fourth and fifth specialties. In the other specialties there is certainly “the use of the categories,” but the nature and genesis of the categories is the focus of these two specialties.

⁴² Here I recall Lonergan in *Insight*, in a way that includes the necessary twist toward the questioner: “[Self-]study of [language] begins from the thing-for-us, from the [linguistic data] as exhibited to our senses. A first step is a descriptive differentiation of different parts ...” (CWL 3, 489). The long haul, of course, is to discover the metaphysical equivalents of the eight parts of speech. Lonergan later observes, “Since metaphysical analysis has a quite different basis from grammatical or logical analysis, one must not expect any one-to-one correspondence between metaphysical elements and grammatical or logical elements” (526).

meanings... Sources of meaning lie in the experiential, intellectual, and rational levels of knowing [and doing]. (CWL 3, 592)

So my attention is focused on surface aspects of writing that express invariant sources of meaning, the data of which is available with the text of any familiar language. To illustrate, I take the data of a passage from Derrida's large work, *Of Grammatology*. Derrida writes:

The science of writing should therefore look for its object at the roots of scientificity. The history of writing should turn back to the origin of historicity. A science of the possibility of science? A science of science which would no longer have the form of *logic* but that of *grammatics*? A history of the possibility of history which would no longer be an archeology, a philosophy of history or a history of philosophy?⁴³

First, I observe that invariant surface structures are detectable in the linguistic data. Secondly, these invariant surface structures reflect a "search." Thirdly, the search is evident by recurring patterns that involve the mark "?". Fourthly, the problem I sense in Derrida's use of language, far from being the legitimate questions that he raises, is that, for all their sophistication in his sincere search for solutions, he seems to overlook the obvious, which in this case is the invariant surface structures in his own data.

Now, curiously, Derrida's expression contains two full stops and three question marks: five blocks of meaning, then. And so some descriptive classification of writing structures can be noticed: large-scale statements (about judgments of value) and small-scale punctuations. I also observe that the small-scale punctuations have a central role in the large-scale classifications. I'll come to that presently. I notice that the three question marks in the quotation connect to future possibilities. I note further that this connection reflects a spontaneous need for a rational restructuring of inquiry; a

⁴³ Jacques Derrida, *Of Grammatology*, trans. G. C. Spivak (Baltimore: John Hopkins UP, 1976), 27-28.

restructuring that anticipates a determination of normative classifications warranted by hodic science.

It is illuminating to follow such patterns from which to verify the existence of invariant patterns of meaning. The mark “?” is a symbol for what Lonergan refers to in *Insight* as the “effective emergence of wonder, of the desire to understand” (CWL 3, 34). It has a central role in the data related to the deeper core of meaning objectified as the “dynamics of knowing” (“What is it?”→“Is it so?”), and as the “dynamics of doing” (“What is to be done?”→“Is it to be done?”). That core of meaning is a basic logic of language the images of which appear in Appendix “A” of *Phenomenology and Logic* (CWL 21, 322-323).⁴⁴

This brings into focus the middle sentences of our passage in Section 2 from *Insight*:

There are many words: some are substantival because they refer to intelligible and concrete unities; some are verbal because they refer to conjugate acts; some are adjectival or adverbial because they refer to the regularity or frequency of the occurrence of acts or to potentialities for such regularities or frequencies. Finally, since the development of language fuses with the development of knowledge, the meaning of words not only depends upon the metaphysical matrix of terms of meaning but also on the experiential sources of meaning. (CWL 3, 578)

The strategy is to follow up on the foregoing paragraph by assembling phyla of words that range over all levels of the two categories by sifting through the texts, *Insight* and *Verbum*. Again, the context is the push for the metaphysical equivalents of the parts of speech, the struggle of which relates to *Insight* 16.3.3 and 16.3.4. “The significance of metaphysical equivalence is twofold. On the one hand, it provides a critical technique for the precise control of meaning. On the other hand, it is an implement for the development of metaphysics” (CWL 3, 530). I am dealing roughly and sketchily with the data

⁴⁴ The reach for the deeper structures of speech and their objectification is the focus of pp. 126-7, 130.

in a manner that would somehow bear on, “the rule of concreteness [for] a solution to the problem of individuation” (527), “[the] rule of explanatory formulation...that takes its stand on the present existence and functioning of the dynamic structure of explanatory knowledge” (528-529), the rule of structural transposition between logical and metaphysical analysis with which to yield a grounding metaphysical equivalent (529). I begin by noting that the small-scale punctuations have a central role in the large-scale classifications from which to re-catalogue words:

1. Adjectival “When,” “Where,” space-time locational questions,
2. Adverbial “How” and “Why” questions seeking “causes:” material, formal, efficient, exemplary, and final,
3. Substantive classifications associated with the copula “is.” (“Is” questions that fall into a new series of classifications, the assonant descriptions of which I cannot resist borrowing from McShane: pod⁴⁵ questions, quod questions, nod questions, hod⁴⁶ questions, even God questions),
4. Conjunctival “if” and Adverbial “then,” expressing inference. Lonergan writes, “Any language has a number of syntactical forms that are peculiarly inferential. Most obvious is the causal sentence, because A, therefore B, where A and B each stand for one or more propositions. Next comes the concessive sentence, although A, still not B, which is the natural instrument of anyone ready to admit the propositions, A, but wishing to deny that A implies B. To meet such denial, to give separate expression to the implication of B in A, there is the host of conditional sentences, if A, then B,

⁴⁵ Pod or seed questions are questions of initial meanings, aesthetic meanings, which is a focus close to conventional phenomenological interest.

⁴⁶ Hod questions are questions of “met’hod” with tones of both Indo-European roots and of the first verse of the Joycean song “Finnegan’s Wake”: “to rise in the world he carried a hod.”

which may be past or present, proximate or remote future, particular or general, actually verified or what the pure interconnection grammarians call contrary-to-fact. It is not hard to see that these three syntactical forms are particularly inferential. Just as 'so that' and 'in order that' express the relations of efficient and final causality, so also 'because,' 'although,' and 'if' are the special tools of reasoning man" (CWL 4, 4);

5. Noun classifications (Nominal and Pronominal) in terms of hierarchic entities or quiddities bringing to light varieties of unity: real-thing unity, planned unity, metaphysical unity, aesthetic unity, abstractive unities, and so on.
6. A transposition of the classification of Indefinite Articles, Definite Articles, Prepositions.

Obviously, this drive for metaphysical equivalents and the re-definition of the eight parts of speech has massive implications, one of which would expose and transpose flawed language usage. In other words, a new grammarology has the potential to give the phrase "linguistic analysis" quite a new turn. For example, painfully evident is the usage of the word "concept," particularly in academic English.⁴⁷ Its warpedness is rooted in the colonization of the language of inquiry.⁴⁸ Colonization of language has its reflective origin in Scotus' view of mind⁴⁹ and has proliferated a language replete with dead metaphors that dominate the language employed in most

⁴⁷ I have, to some extent, undertaken this type of inquiry in *TRLS*. See Chapter 7 for a dialectical discussion of flawed language usage in Pinker, Derrida, Chomsky, et al.

⁴⁸ I borrow the expression of colonization from Declan Kibberd, *Inventing Ireland. The Literature of the Modern Nation*, Harvard UP, 1993. The index under "colonization" gives abundant references to the problems of colonized expression. However, I refer here to the deeper problem of the disorientation of Scotus' view of mind in almost all brands of educated English, evident by the recurrence of phrases like "understanding the concept of," "teaching the concept of," "clarifying the concept of." Such orientations murder the educational process: neither child nor adult mind fits this linguistic mold.

⁴⁹ This basic issue is described in *CWL* 2, 38-39. See Chapter One, Part 4, "Insight into Phantasm."

fields of inquiry today. What might it mean then, from a developed grammarology, to analyze a concept? If a concept is descriptive, what needs analysis is data; if a concept is fully theoretic, it does not need analysis: it can be applied or taught, in both cases through a return to data. Furthermore, there are extended investigations of a greater complexity that could reveal unwarranted deviations from normative discourse: tainted aesthetic discourse, flawed theoretic discourse, and – anticipating hodic science – there are deviations to be expected in initial efforts to conduct discourse within any of the eight differentiations of consciousness warranted by functional specialization.⁵⁰

I leave that struggle for now and turn to a related struggle associated with Lonergan’s challenge to conceive the existential and phenomenological human in heuristically adequate terms. According to Lonergan, even in the early stages of the development of a science, it is a serious handicap not to reach methodologically for serious relational understanding.⁵¹ Properly done, this requires the mediation of textbooks in biopsychology. This mediation relates to the reach for a controlling heuristic language of word. I take as a brief illustration the word “image.” In what sense can we be in heuristic control of our efforts to talk metaphysically about the word “image” that lifts us out of spontaneous, illusory speech of “image” as “already out there now”? In what way can we get beyond speaking glibly about “insight into image?” How do we face the question: what does the named word “image” convey about its referents? For me, then, there is the struggle to put the image in the imager and the primary referent of any word in the speaker. The imager, the speaker, to be attended to is:

⁵⁰ *TRLS*, chapter 8 discusses the emergence of “shadow zones” of the eight functional specialities in linguistics and literature.

⁵¹ On this point I am indebted to McShane for both the translation and references from the following works of Lonergan: *Divinarum Personarum Conceptio Analogica* (Rome: Gregorian UP, 1957), 290; the same passage occurs on pages 308 and 315 of the slightly modified version of the same book, *De Deo Trino II: Pars Systematica*.

$$HS\{f(p_i ; c_j ; b_k ; z_l ; u_m ; q_n)\}.$$

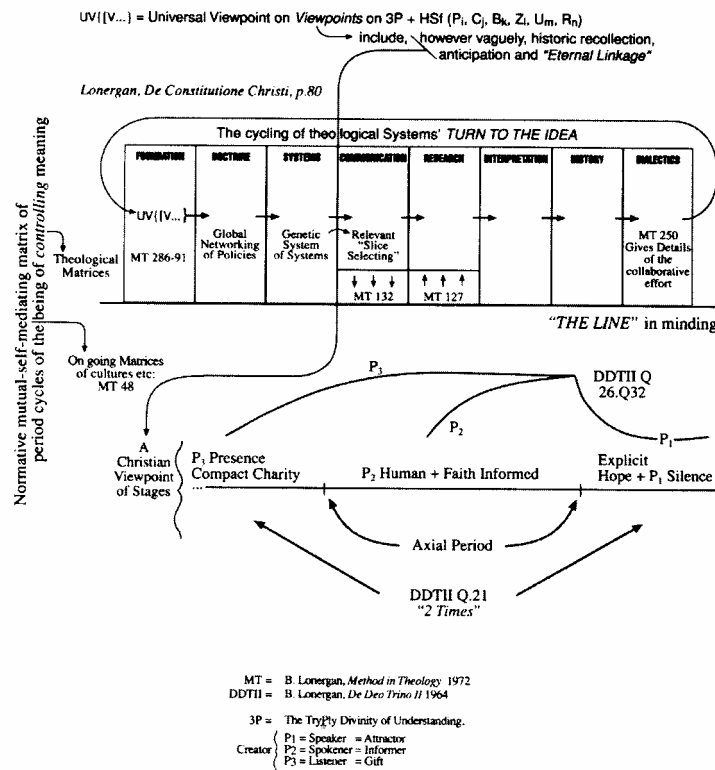
Again, let's say there is the complex that is the image, and there is the word image that is used to refer to it. Let's say the two complexes resonate, intermesh, and enrich each other. Then there is the struggle to come up with illustrations of referents of multiple complexities for which further heuristic clarity is required regarding language and its referents: so a science of grammatology would be faced with symbolizations of functional form:

$$V [W \{p_i ; c_j ; b_k ; z_l ; u_m ; q_n \} > HS \{f(p_i ; c_j ; b_k ; z_l ; u_m ; q_n)\}]$$

An adequate metaphysics, as Lonergan observes, pulls in "optic nerve and cerebrum ... [and] the matter is far from fully explored" (CWL 3, 213); hence we are at the very edge of *Insight*, 6.2, especially 6.2.7.1 to 6.2.7.3 somehow meshing with *Insight* 16.3.3 and 16.3.4 and grasping the manifold complexity of the speaker, the imager, on the neurochemical level of mind mapping.⁵² An adequate heuristics of the word "image" and its referents will be viewed as a function of aggregates of aggregates etc. of biochemical acts. The remote meaning "of subjective experience in words and as subjective" (*Method* 88, n. 34) will neither be confused with, nor expressed by, the language of "the already out there now." It will transpose Carter's observation that "reflects a real truth: there is no definitive picture of 'out there,' only a construction in our heads triggered by the external elements we are best equipped to register" (109), to reveal the blossoming of linguistic mores in a sort of Wordsworthian tonality of metaphysics. Then one is the speaking about "the earth and every common sight tak[ing] on the glory and the freshness" (CWL 3, 556) of the inner reach of hodic metaphysics. The fantasy that is the science of language will come to fruition by the hodic searching of the human group into neurochemical rhythms. Hodic cycling will, in Lonergan's words, embarrass (*Method* 299) and curtail "the substitution of a pseudo-metaphysical

⁵² My introduction to this strange world has begun with Rita Carter *Mapping the Mind* (Berkeley: U of California P, 1999).

myth-making for scientific inquiry” (CWL 3, 528). Appropriately, then, I close this sketch with an image of the heuristic patterns of collaboration below,⁵³ and its necessary complexity, by drawing attention to the reference to Lonergan from *De Constitutione Christi* near the top left corner. On that page, Lonergan notes that unless you have a diagram you will not have a controlling understanding (CWL 7, 150-151).



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⁵³ McShane, *A Brief History of Tongue*, 124.

THE OUTLAY PAGE: AN EXERCISE IN INTERPRETATION

TOM MCCALLION

The core of the present paper is an attempt to understand what is meant by a brief fragment found within Lonergan's economic writings. The text of the 'page' in question is given on page 216 of *For a New Political Economy*.¹ For the reader's convenience I reproduce it here.

[The Outlay Page]

Outlay DO'

$$DO' = \sum_i \left[(\alpha_{io} + j - 1 = \alpha_{ij}) r_{io} + \sum_{n=1}^{n=n} (j - n + \alpha_{ij}) dr_{in} \right]$$

where α_{io} α_{ij} are constants for each "i"

α_{io} the fraction of the zero turnover left over from last turnover

α_{ij} the fraction of the last turnover found in this one

$j + 1$ is the number of turnovers counting both fractional turnovers

dr_{in} is the difference in outlay between the n th and the $(n - 1)$ th counting the first complete turnover as the first

[End of Outlay Page]

We will attempt to do two quite different things. The first is to achieve a 'first-order' grasp of the meaning of this piece

¹ CWL 21, 216 (with a facsimile on page 224).

and its place in and contribution to the author's wider economic understanding. In other words, what is Lonergan saying and why is he saying it?² The second will try to put that whole endeavour within the context of the topic of the present Journal issue: how and to what extent does this effort we are making exemplify Lonergan's position on interpretation?³

How then does one approach such a fragment? The most obvious question relates to the danger that it is possibly just a 'fragment', a tiny part of some larger whole, most of which is lost. If that were the case, it would appear most unlikely that we could ever make much sense of it. There is no way out of this conundrum except by developing, synthetically, a unified grasp that can reproduce the text, completely and without significant superfluity, so that one has re-generated it in its unity, identity and wholeness. We must actually do this to see that it can be done!

Obviously the next most basic necessity is to place the text in some broad context. What type of writing is it? Clearly it is a theoretical statement. It is not, for example, a piece of simple description, nor is it a literary work. On this determination hinges the choice of which of a whole panoply of tools one brings to the task at hand.

So we are in theoretic mode. There are two aspects of this. One relates to the author, and the other to the interpreter. With regard to the author: in what sense is the text a 'communication' at all? Sometimes when one formulates a matter carefully on paper one does so with a (real or imagined) audience in mind. The teacher in one writes with a view to helping some potential reader come to an understanding of the text.⁴ This necessitates an awareness of the potencies and limitations of such a possible audience with its habitual set of

² CWL 3, 585. What is in question here is only Lonergan's second category, 'simple' interpretation.

³ I am primarily referring to the methodological analysis of the individual interpreter in CWL 3, Chapter XVII, not to the functional specialisation 'Interpretation' as discussed in *Method in Theology*, where the expected interpretation relates to and forms a unity with the other 'functions.'

⁴ It does not matter that one knows in one's heart that 99.9% of the time there will never in fact be such a 'reader.'

insights and its relevant deficiencies.⁵ It also necessitates in the author a vast range of practical, pedagogical insights into what would most likely work. One attempts to construct a central phantasm, most likely by a roundabout path through ancillary insights, often expressed with a reduced standard of adequacy, in order to expedite the main goal of increasing the likelihood of the occurrence of the central insight. In such a context the essential division of expressions is not so much into true and false as into adequate and inadequate (CWL 3, 580).

There is a second possibility. There are other times when one is just working something out for one's own sake in order to clarify one's thinking, without even an implicit eventual audience. One is then, in a sense, just making phantasms as stepping stones in 'thinking the matter out.' In this case, the 'scribbles' would be incomplete and not necessarily even fully consistent. It is likely that parts of the author's total phantasm would have no external counterpart (as marks on paper) but would be 'only imagined' by being held to the fore in the thinker's efforts to reach the sought-after insight. Much of this 'evidence,' the missing written counterpart of the phantasm, would, therefore, be unavailable. It would be extremely unlikely that the reader would in fact be able to move from the little he has understood to that same central insight.⁶

Finally, among one's collected papers, even those that are clearly 'theoretical' ones, a researcher would perhaps find mere 'doodles.' Obviously it would be a waste of time to treat these as 'insight-intending expressions.'⁷

We need a working assumption. We will, therefore, treat this fragment as an 'expression,' in the sense intended by Lonergan.⁸ A good grasp of the author's very purposive style, something that the editor of *For a New Political Economy*,

⁵ CWL 3, 579. A convenient term here would be Vygotsky's 'zone of proximal development', but without the conceptual baggage that this usage generally carries.

⁶ Or that, having done so, he would be able to justify the judgement as to its correctness or centrality.

⁷ Their only interest, if any, would be in some kind of biographical psycho-archaeology.

⁸ CWL 3, 585. This is his first category of 'interpretation.' It presupposes an intention to *communicate*.

Philip McShane, undoubtedly has, grounds this assumption. He knows from long experience with Lonergan and his writings that he seldom leaves behind interim and partial phantasms,⁹ and even less so, doodles!

All this necessary prior positioning and research has already been done by the editor. He has established the true text (which in this case was probably fairly easy because, as the facsimile shows, the handwriting was clear and unambiguous). He has claimed that it is indeed part of the Lonergan corpus.¹⁰ The *content*, however, is quite unlike anything in most of that author's other (philosophical or theological) papers. The researcher has therefore plausibly proposed that the fragment forms part of his *economic* analysis.¹¹ This means that it is correctly included in *For a New Political Economy*, one of the economics texts.¹²

We have discussed the broad context as it applies to the author. What of the reader, the present author? As he¹³ approaches the fragment he must first accept as a working

⁹ The word 'phantasms' here is intended to refer to what was earlier described as 'insight-intending expressions.' In the present example, they are the structured marks on the paper (the kind of thing that Lonergan's circulation 'diagram' purports to be). Perhaps we need a new term here. I might suggest a *generalised* use of the word 'diagram' itself in that an adequate understanding of the term 'phantasm' as used in *Insight* means its occurrence *in the questioning subject*. It is the 'diagram' as 'illuminated.'

¹⁰ This judgement must presumably have involved consideration of its physical location, at the back of another text that was already recognised as Lonergan's. But despite this it still remained at least possible that the latter had merely used a piece of paper on which *someone* else, before or after, had scribbled some jottings? The handwriting, the mathematical 'style,' terminology used, and the similarity of these with other texts ascribed to this author would be a good indicator.

¹¹ The appearance of somewhat similar looking summations in the economic papers is corroboration. The use of such words as 'outlays' and 'turnover' constitutes internal evidence.

¹² And not, for instance, with the papers on Logic (published in *CWL* 18), which, on the basis of a quick form-analytic 'glance' alone, might *a priori* have been a possible, if unlikely, candidate.

¹³ The use of the masculine form here reflects in part the fact that the present author is indeed a male. But I would prefer if all such usages could be read instead in (to use Garret Barden's felicitous word in *JMDA* 3) an epicene manner.

hypothesis the correctness of that prior effort of research.¹⁴ Having established the likely basic context, he must try to achieve the best grasp he can of the relevant horizon which is Lonergan's understanding of the dynamics of an exchange economy. If he arrives already well 'informed' by such a viewpoint this will be perhaps relatively easy. If not, then there is need for a whole prior period of study. Only on that basis can he hope to reach an understanding of the new text. This raises a question of value. Is such a long apprenticeship likely to be worthwhile? It even appears that most 'Lonerganites' do not think it so, if one is to judge by the amount of interest they display! But how does one make these decisions?¹⁵

Having decided to proceed, he constitutes the given 'marks on paper' as a 'questioned', illumined by the economic context and by the more general background context of his own prior skills and viewpoints. And then, having achieved the necessary insight(s) into that 'phantasm' he will proceed, now as a communicator rather than just an 'understander', to try to communicate that grasp to *his* readers. It is only in this third moment that he is truly, in Lonergan's sense, an interpreter.¹⁶

In the present context my interpretation will be by way of a synthetic re-statement and a 'proof' for his readers of the

¹⁴ While remaining open to the possibility that his eventual 'clarification' of the material could lead to a complete re-assessment of such an assumption.

¹⁵ As a personal example, the present author has given a preliminary reading to some of the works of Derrida. They are labyrinthine. To reach up to his mind would necessitate a long apprenticeship. Would it be a waste, a study of a dead end, or might it liberate one into a fuller grasp of even the Lonergan corpus? One has only a single life, and can but bet on the probabilities, basing one's choices on reports from trustworthy others, and reliance on of all things, feelings, spontaneous responses to what grabs one's interest. How sad it would seem to have to admit on one's deathbed that one had wandered up a useless dead end, and have to fall back on the hope that even the judgement of history is not a 'final' judgement!

¹⁶ *CWL* 3, 585. What is in question here is Lonergan's second category, 'simple' interpretation. The third category, 'reflective' interpretation, is our second topic in this essay and is a step in the direction of bringing into focus the author's own and his audience's "habitual grasp of its own intellectual development", the divergences between the two, and the incomplete status of each in comparison with a potential 'universal viewpoint.'

central equation in the given text. When they have grasped what he has done they will thereby have understood *as well* the initial Lonergan text. This particular methodology of ‘interpretation’ is really only applicable in a formal theoretic context such as applies here. One does not, for instance, ‘prove’ an interpretation of a literary text by some kind of regeneration of the work in question. What is offered here is only a particular kind of example and it can only illustrate what it is suitable for.

First of all there is the matter of the fragment’s particular context. The first and most obvious need here is that of a shared ‘language.’ If, for example, one does not understand the mathematical notation of summation one will have no chance of understanding the fragment.¹⁷ As already remarked, one is also very unlikely to understand it at all if one has an insufficiently nuanced grasp of Lonergan’s economic theory. This does not mean, of course, that one needs complete mastery (though it would obviously help). If such mastery were in fact required most of us would never begin! It is more likely that one will be involved in a hermeneutic circle where a partially adequate context (one’s current level of understanding) will lead to a grasp of this new detail. This will in turn feed back into one’s enrichment to become a more adequate context.¹⁸ But we need a way *into* that circle. Ultimately, that first step will have to be a descriptive understanding of the processes under discussion.

Clearly the fragment, on its own, is insufficient. We need the help of external evidence. On the formal side, we must of course be aware of the general mathematical notation where a lower-case *d* is commonly used to indicate a change in the value of the immediately following variable. We must also know that *DO*’, for example, is already defined within the

¹⁷ Despite how things might appear to the non-mathematician, for whom the symbolism might be ‘scary’, there is very little true ‘mathematics’ in what is presented. It really only involves arithmetic and some simple algebra. (Apart perhaps from the use of *DO*’, where the *D* prefix evokes some clarity about rates of change.)

¹⁸ For we are the context. It is never some idealist matter of concepts understanding concepts.

writer's economic corpus.¹⁹ In addition, Lonergan has elsewhere²⁰ made use of the variable r'_{ij} to indicate the aggregate of initial Basic payments by individual enterprise i in turnover j .

Now we can turn to the text itself. Since it is mathematical in form we must pay close attention to such matters as the positioning and prioritising of the brackets (since these in turn establish the extent of the summations). Other rather similar summations in the 'fragments' and in the main *CWL 21* text show that the outer summation (over the variable i) relates to adding together the contributions of all the enterprises involved, N , say, (from $i = 1$ to $i = N$). Notice that the subsidiary²¹ summation is from $n = 1$ to $n = n$.²² This establishes that, as well as being a variable, n is being used to refer to the total number of turnovers for enterprise i .

Let us now proceed to some limited *analysis*.

$$\text{We could write } DO' = \sum_{i=1}^N O_i$$

$$\text{with } O_i = (\alpha_{io} + j - 1 + \alpha_{ij})r_{io} + \sum_{n=1}^{n=n} (j - n + \alpha_{ij})dr_{in}$$

Immediately this sets a problem for a mathematician. The variable i is summed over, and so is what is referred to as 'dummy'.²³ The same goes for the variable n .²⁴

¹⁹ In Lonergan's older notation (retained in *CWL 21*) it represents the aggregate *rate* of *Basic* level outlays in the period in question. (The ' D ' recalls the mathematical notion of differentiation, and flags that it means a rate and not just an amount. The (single) dash indicates that it relates to the operative monetary circuit that Lonergan refers to as *Basic*.) Hereafter in this paper I have changed to Lonergan's less cluttered notation, as used in *CWL 15*, which omits the prefix D (by *stipulating* that upper case variables will automatically be taken to represent rates).

²⁰ In other 'fragments', as in *CWL 21*, 166-171 and 210.

²¹ Inside the square brackets.

²² This use of the same letter for the running variable, and for its final value, is quite common in mathematics. If one were a purist such a notation would not be tolerated. In practice, however, it should not (at least for mathematicians) cause any confusion. In my later synthetic 'moment' I will, however, make some changes in the notation to make things a bit clearer.

²³ And so it will not appear on the left-hand-side of the total equation.

But what about the j ? j cannot be a variable (for where is it summed, or alternately, where did it go?) and so must be a constant for any given enterprise i .²⁵ I do not believe that merely internal analysis of the fragment can successfully elucidate its precise role any further. It is only when we switch below to a *synthetic* approach (by building up a similar equation for ourselves) that its precise meaning will become clear.

Before we can attempt such a synthetic effort we must, of course, try to establish Lonergan's 'thematic' in this fragment. The clue, of course, is in his use of terms such as 'the fraction ... left over', or 'the fraction of the last turnover found in this one'. It seems clear to me that he is thinking of what I have come to call 'edge problems.'

Edge Problems

At the beginning of a calendar year²⁶ it is entirely possible that a firm may be holding a great deal of partially completed stock.²⁷ Some of the outlays (in the form of factor payments) for this will have been made in the previous year and totalled in that year's aggregate outlays. Some will remain to be made and so will be included in the present year's figures. For the goods sold within the present year (for only those are included as turnover) the small 'edge' portion will give rise to a consequent excess of final receipts over outlays. In a similar manner, the final turnover of the interval may run over partially into the next year, so that outlays will have been made for which no final receipts will occur (in this year). The mismatch in this case will in the other direction.

²⁴ Strictly speaking it might be preferable to use n_i for the total number of turnovers for enterprise i , a value possibly different for each enterprise. It will, however, be notationally less cluttered if we stay with the above simpler form, while remembering that there is no necessity that the total number of turnovers in any given interval be the same for every enterprise.

²⁵ This finds confirmation in Lonergan's statement that $j + 1$ turnovers are involved (for some particular enterprise).

²⁶ It is most convenient, though not at all essential, to speak in terms of calendar years.

²⁷ Recall that for Lonergan a turnover is only complete when goods are actually *sold*.

How should such ‘edge’ problems be handled?

One method, what we might call an accountant’s solution, is by suitable strategic *redefinition*. Imagine examining the books of the enterprise that is holding stock at the beginning of a new interval. In the previous interval it cleared all its earlier costs (transitional payments and outlays). Now consider the enterprise making new payments which occur in our present accounting year. The books of that enterprise show that it made payments (‘last year’) and in return ‘owns’ the half-finished goods represented by that payment. It now goes on to pay out some additional outlays to its factors of production and, then, in the present interval, *receives* payments (whether transitional or final) which are sufficient to clear both payments.²⁸ We could now opt to make this new present receipt truly the exact sum of all the outlays in the present interval if we *re-defined* the ‘hanging’ transitional payment as an ‘outlay’ from the perspective of the present interval. And in the same way we should have to re-define ‘unfinished receipts’ (which will not in fact actually occur until ‘next year’) as a final payment to be added into total aggregate receipts R' from the perspective of this present interval. With these conventions we could then, in a merely theoretical accounting sense, carry a kind of ‘timeless’ equality of R' and total aggregate outlays O' ²⁹ over into an exact equality for each actual interval.

Loneragan rejects this kind of accountants’ balance. He prefers an approach which accepts the discrepancies and estimates of their values. He does not see the point in so re-defining matters that one has *forced* R' to equal O' . Better to take actual values and recognise that the difference is not only *not* a problem but is, in fact, part of the wealth of sought-for economic understanding. For, of course, R' and O' as actually calculated (without redefinitions) will in all probability be different anyway and for two real reasons. One will relate to the fact that there will almost always be waste, arising either

²⁸ But, of course, they have the effect of passing the ownership along the line to some new intermediary dealer or to the final purchaser.

²⁹ Hereafter in the text I use O' for aggregate Outlays, in accordance with Lonergan’s later notation, rather than the DO' form given in the reproduction of the fragment shown earlier.

from breakages of the goods themselves or of the production processes itself, or from misconceived notions of what might sell. But more importantly, all of the above was predicated on a static situation, where there is, for example, no growth in O' as a result of speculative anticipation of rising sales. But because it is precisely such changes that Lonergan wishes to study, it makes no sense at all to begin by defining them away.

So for Lonergan R' will be the sum of all the receipts r_i that actually occur within the present interval. It will not include any component for unfinished (= made but not sold) goods. But the outlays for such an unfinished good may still lie within the interval and so will be included in the corresponding Outlay aggregates.

Let us now proceed to the promised synthetic moment, which, *in its conception*, constitutes a kind of 'first interpretation' moment for this text, that is, the moment of simple understanding, and *in its presentation* (as to a reader) constitutes the moment of 'simple interpretation.'

Firstly let us clarify some minor, but perhaps confusing, notational changes.³⁰

As Lonergan himself does in other places, let us replace the above r_{ij} with o_{ij} . So o_{ij} is the total of initial payments by enterprise i in the j^{th} turnover. To avoid clutter we do the analysis without making any distinction between *Basic* and *Surplus* production (so that variables need not be accented).³¹

n_i turnovers of enterprise i overlap wholly or in part the interval under consideration. (We shall see below how this relates to the variables n and j in the fragment.)

Lonergan's first simplifying assumption was that all the enterprises started their first turnovers *together* and that for any enterprise i its own n_i^{th} turnover ended simultaneously with the corresponding n_i^{th} turnover for every other j^{th} enterprise (so that there are no 'edge' problems). On this basis he was able to write the formula: -

³⁰ These are made, believe it or not, in the interest of greater transparency and consistency.

³¹ The analysis will therefore apply equally well to both stages.

$$O = \sum_{i=1}^N \sum_{j=1}^{n_i} o_{ij} \quad [1]^{32}$$

As before, N is the total number of enterprises and under this over-simplified assumption n_i is the number of *complete* turnovers for enterprise i .

To reduce the visual complexity of the argument let us introduce a composite variable for the total outlay for an individual enterprise i by defining

$$O_i = \sum_{j=1}^{n_i} o_{ij} \quad [2]$$

$$(\text{And then, of course } O = \sum_{i=1}^N O_i \quad [3])$$

The above simplifying assumptions meant that for each enterprise i an *exact* number, n_i , of turnovers, exactly matched the interval under consideration. But, as we have seen, this will generally not be the case.

To refine Lonergan's analysis let us change to a different way of writing equation [2]. This will restate each o_{ij} value in terms of a single initial value at the start of the interval and all the *increments* between that and the present value.³³

Consider the following diagram.

Turnover 0	Turnover 1	Turnover 2	Turnover 3		Turnover (n-1)	
o_{i0}	o_{i1}	o_{i2}	o_{i3}	...	$o_{i(n-1)}$	
o_{i0}	$o_{i0} + do_{i1}$	$o_{i0} + do_{i1} + do_{i2}$	$o_{i0} + do_{i1} + do_{i2} + do_{i3}$	...		

It shows a standard interval (shaded) and the set of full and partial turnovers of a particular enterprise i that intersect it. (For the sake of notational simplicity and clarity the diagram and accompanying text uses n for the number of turnovers. This should really be n_i , since the number will change from

³² CWL 15, 69.

³³ Recall once more that Lonergan's r_{ij} variable has been changed to o_{ij} for consistency with other parts of his works. An *increment* is the change that a value undergoes from any one period to any other. This will become clearer later.

enterprise to enterprise.)

o_{i0} is the outlay in the zeroth turnover, which is only partially within the interval. Turnovers that are completely within it are then counted from $j = 1$ to $j = n - 1$.³⁴ This means that if we include the two partial turnovers as separate there are $n + 1$ turnovers in all.³⁵

o_{in} is the outlay in the n^{th} turnover, which again is only partially within the interval. Let do_{ij} be the *increment* (increase) in the outlays as one moves from turnover $j - 1$ to turnover j .

So, for example,

$$\begin{aligned} o_{i1} &= o_{i0} + do_{i1} & [= & o_{i0} + do_{i1}] \\ o_{i2} &= o_{i1} + do_{i2} & = & o_{i0} + do_{i1} + do_{i2} \\ o_{i3} &= o_{i2} + do_{i3} & = & o_{i0} + do_{i1} + do_{i2} + do_{i3} \end{aligned}$$

When we add up all these o_{ij} we must include a fraction of the outlay in turnover 0. Let us call this fraction α_{i0} , so that what we must add is $\alpha_{i0}o_{i0}$. Similarly, we must add a fraction of the n th outlay, which we shall call α_{in} , since it is only partly within the interval. This means that we will add $\alpha_{in}o_{in}$. But this latter is just

$$\alpha_{in}(o_{i(n-1)} + do_{in}) = \alpha_{in}(o_{i0} + do_{i1} + do_{i2} + \dots + do_{i(n-1)} + do_{in})$$

Notice now what happens when we add, say, the first three complete outlays, to get $o_{i1} + o_{i2} + o_{i3}$ (as these were expanded above).

The sum will include o_{i0} and do_{i1} three times, do_{i2} twice and do_{i3} just once. Generalising this, if we add all the completed turnovers, we get:

³⁴ This means that I have interchanged the roles of j and n as they were used in Lonergan's fragment. As a result j is now the 'running' variable, and n (which should really be n_i) relates to the constant (for each i) number of turnovers in the interval. In fact, of course, there are actually $(n - 1)$ complete turnovers, and in general two incomplete ones at the edges.

³⁵ If there is *no* edge part at either end this can be handled by making the corresponding α value zero.

$$o_{i1} + o_{i2} + \dots + o_{i(n-1)} = (n-1)o_{i0} + (n-1)do_{i1} + (n-2)do_{i2} + \dots + do_{i(n-1)}$$

To get the full value of O_i we must add to this the two partial turnover contributions. We get:

$$\begin{aligned} & \alpha_{i0}o_{i0} + (n-1)o_{i0} + \alpha_{in}o_{in} \\ & + [(n-1) + \alpha_{in}]do_{i1} + [(n-2) + \alpha_{in}]do_{i2} + \dots + [1 + \alpha_{in}]do_{i(n-1)} + \alpha_{in}o_{in} \end{aligned}$$

The terms shown on the second line can be combined into a convenient summation:

$$\sum_{j=1}^n [(n-j) + a_{in}]do_{ij} \text{ or, more simply, just } \sum_{j=1}^n (n-j + a_{in})do_{ij}.$$

This means that we can write:

$$O_i = (\alpha_{i0} + n - 1 = \alpha_{in})o_{i0} + \sum_{j=1}^n (n-j + a_{in})do_{ij}$$

Finally, combining all these O_i in accordance with equation [3] above gives the formula for O as listed in Lonergan's fragment.³⁶

With the completion of this synthetic moment we can contend that we have successfully understood the fragment. We are also claiming that if the reader understands our 'interpretation' then he understands what Lonergan was saying. It is, therefore, a *true 'simple interpretation'* of the given text. That text itself also claims, of course, since Lonergan is never frivolous, to offer a scientifically *true explanation*³⁷ of a minor part of the operation of productive exchanges.³⁸

As already indicated, this analysis is, in many ways, of limited value in itself. One of its microeconomic values is that it confirms Lonergan's awareness of the 'edge' problem and that the solution he chose involved fractional estimations of the carry over or anticipatory outlays from the two partial

³⁶ With the notational changes discussed. Recall again in particular our interchanging of the roles of j and n .

³⁷ In the absence of *complete* explanation, of course, all scientific truths are subject to later revision. We can only do our best.

³⁸ In this case the goal is more humble. We are merely clarifying what is required if we are to measure the variables that are involved.

‘turnovers.’

A more significant macroeconomic value is that it reflects a general option by him to mean by such words as ‘costs’ only and precisely what one gets by adding up the relevant set of *actual* payments. He explicitly does not include notional ‘allocations to costs’ by accountants of, for example, depreciation charges for capital renewal, etc.

Its most general usefulness in his economic theory lies in its (relatively minor) contribution to precision in regard to the exact meaning and role of money transfers from what he calls the Redistributive Function to the *Basic*³⁹ operative circuit, the net value of which is indicated in his diagram by the variable S' .⁴⁰ For it is these transfers that in the aggregate meet the differences that the fragment reveals between R' and O' . It shows the real meaning of the transfers as meeting actual differences in payments and receipts, that is, actual money amounts and reduces any tendency to treat them instead as inexplicable or arbitrary ‘flows’, or to view the changes in the circuits from interval to interval as being based on some kind of ‘mystical’ multiplier plucked from goodness knows where. Ultimately, therefore, it is a step towards the discussion (for the most part missing in his economic writings) of Financing as a need and a consequence of actual payments in real exchanges. These matters are given a much fuller treatment in other parts of his economics writings.⁴¹

In addition to its economic content, there is a second level of discourse to this paper. I have presented an example of a particular kind of interpretation in action. In passing, without slavishly following the *Insight* discussion of ‘the Sketch,’ the paper has made many of the points found in that difficult

³⁹ The same analysis, as the synthetic ‘interpretation’ shows, applies equally well to the *Surplus* circuit.

⁴⁰ This is achieved by way of what would traditionally be called a microeconomic argument, but for Lonergan the distinction between micro and macro seems ultimately unnecessary.

⁴¹ In relation to the present context, particularly *CWL 15*, 65-69, and in many of the ‘fragments’ in *CWL 21*, most notably 134-148; 158-162 and 163-174. On this see the Appendix, “Trade Turnover & the Quantity Theory of Money,” in Philip McShane, *Pastkeynes Pastmodern Economics* (Halifax: Axial P, 2002).

section. When I first wrote the central portion of this paper my immediate intention was to write what might later have been one small subsection in a simple first order discussion such as could appear in something like the primer on economics that Lonergan himself desired. Soon, however, there occurred that kind of ‘double-take’ which also revealed the essay to be a small exemplification of his position on interpretation as outlined in *Insight*. This added a second layer. There remains something to be said, as I promised on the first page, regarding the topic of the present volume.⁴²

How, then does this effort relate to the refinements that occur when interpretation is placed in the functional context? The dependence of interpretation on research does not seem to call for much modification. However, what about functional interpretation as addressed to historians?

Immediately my perspective on what was going underwent a strange shift. The tonal change involved reminded me of the added sensitivity that occurred in all civil servants writing opinions for their political masters when it became clear that ‘freedom of information’ legislation would soon bring their missives into public scrutiny. Scary indeed to think that historians may perhaps someday gather this little effort, and others perhaps that offer alternative interpretations, and assemble them, together if necessary with helpful information about their authors and the contexts in which they wrote. These would then be data for potential later study by Dialectic. One’s work may now be grist for a larger mill. Or two such mills, in that there is discussion both of first order economics and of ‘interpretation’ itself.⁴³

The topic is new and complex. Perhaps it is best handled by appealing to a diagram from McShane⁴⁴ which is included in this volume by John Benton (82-110). The diagram indicates that there are a range of possible ‘tracks’ around the functional

⁴² I am grateful to Phil McShane for his guidance here in keeping me informed about what was happening in other parts of this present volume and in helping me to integrate what I have said with its central thrust.

⁴³ Or indeed, three, in that the present comments on hodics may also be assembled for study of *that* topic.

⁴⁴ Cantower XL <www.philipmcshane.ca>.

specialist Way. The outside track is the one that McShane and Benton designate as the track fully committed to an up-to-date effort at luminous working. McShane's key point is that, if the luminous working is to be efficient, then the communication of the interpreter to the historian has, so to speak, to stay on track. It seems to me that this is a powerfully important point and the athletic metaphor can help us forward, although I do not wish to delay on its suggestiveness.

To what historian am I attempting to communicate? - indeed succeeding rather than attempting, since we are envisaging a unified efficient metaphysics (CWL 10, 160, line 16). I am communicating with the historian that is on track with me in understanding the new economics. Yet, unless the historian has been working very seriously on this particular topic and is up with my effort here, then the historian picks up on some important features of serious economic care: e.g., the concreteness of the endeavour. Even if the historian has already glimpsed how Lonergan's analytic approach cuts through the obscurities of the ancient debate about *The Quantity Theory of Money*,⁴⁵ attention to this particular passage gives an added glimpse of the relentless meshing of normative and empirical work that is necessary to economic analysis. Indeed, the present interpretation would nudge the "on track" historian to take note of further elements in history, leading thus to a richer history.⁴⁶

But what, you may ask, about communicating with historians on "other tracks"? Here, I think, is where McShane's notion of tracking pays off, and dove-tails with Lonergan's pointers regarding both Dialectic and Communications. Communicating with other types of discourse, other disciplines, cultures, sciences: that is a precise function within the eighth specialty. That function needs to be carefully specified in its efficient operation. It is a mediating function, promoting progress by mediating changes in patterns of

⁴⁵ There is an enriching discussion of this in the Appendix to *Pastkeynes Pastmodern Economics*.

⁴⁶ I do not wish to enter here into the intertwining of the factual and contrafactual in historical analysis. It is a topic that requires discussion in the broader view of functional specialization.

communications in the worlds of common sense, arts, sciences, technologies. There is a sense, then, in which the eighth functional specialty's dealings with these areas is quite indirect: but that is a difficult area of specification. Let me turn now to Dialectic: here, too, the relating to other views is indirect. It becomes direct only if people with other views are sufficiently in sympathy with the enterprise of dialectic and are willing to participate in the experiment outlined in section 5 of Lonergan's chapter on Dialectic. There must be a willingness to risk the self-exposure described there, a self-exposure unavoidable in answering the questions; What do you think is progress? and What is your basic stand on its grounds?

But these are large questions going beyond the topic of the present volume. Still, it all relates to my present effort of interpretation. Who might read it? To whom is it addressed? *Per se* it is addressed to historians conversant with Lonergan's transposition of economic theory and economic history. *Per accidens*, of course, anyone might latch on to it and shift their own tracking in history or economics or whatever.

Finally, the question occurs: How successful has the main part of my article been as a functional interpretation? We are here in the context of the "first principle of criticism" that Lonergan suggested in the 1950s. I can re-read my own effort and see where it falls short. There are distractions and deviations from the strict requirements of a functional interpretation. At a later stage, such an interpretation will be under a control of meaning that will keep the flow of sentences and phrases within the track-section that holds clearly to the function. Both you and I can find it profitable to detect my deviations. However, if we do, we are not in the field of interpretation but rather rambling into a poor doing of the task of dialectic.

Tom McCallion responds to Eileen DeNeeve in this issue.

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PHILIP MCSHANE'S AXIAL PERIOD: AN INTERPRETATION

ALESSANDRA DRAGE

Part One: Content – The Axial Period

Let's suppose that the Axial Period is a time in history that is a transition between the first time of the temporal subject and the second time of the temporal subject; that it is the second stage of meaning: a troubled time between a first stage of meaning, characterized by a spontaneously operative consciousness in 'early' culture, and a third stage of meaning constituted by at least a dominant authority of a luminous control of meaning and an explicit metaphysics in a 'later' global culture. What this statement means we have now to uncover.

In the first place, then, there are two times of the temporal subject.¹ The 'temporal subject,' is temporal (and distinct from an eternal subject) in that s(he) possesses both an intellectual nature *and* a material nature that is 'mutable,' changing (*DDT2* ms 168). The intellectual nature of a temporal subject, moreover, is only *potential*. It is potential both as 'potency to the intelligible,' that is as potential capacity for understanding what is intelligible, and as a being dependent on a "presupposed sensitive living." In the latter case, the temporal subject only arrives at understanding and judgement through

¹ Bernard J. S. Lonergan, *De Deo Trino II: Pars Systematica* (Rome: Gregorian UP, 1964), Question 21. My copy of this work is a first draft translation of Michael Shields, photocopied by him for me in 1999. Please note that the page numbers I use here very likely will not be the same in the volume soon to be published by University of Toronto Press (hereafter *DDT2* ms).

asking 'what is it?' and 'is it?' in regard to the sensible. Without that prior sensitive living which provides the sensible data, there would be no further questions, no further understanding or judgement; it is only *through* the sensible that the intellectual nature of a temporal subject is "actuated" (ibid).

Further, the intellectual nature of the temporal subject operates first and primarily on the basis of a natural spontaneity. That is, it happens that the subject asks questions, reaches understanding and conception, judges and wills only *spontaneously*, simply in accord with the immanent norms and exigences of her or his own temporal nature. But it is possible that the temporal subject can *become aware* of this spontaneous operation, can come to understand it, affirm it, and chose to live by its known norms and exigences. And it is through this "exact and very difficult knowledge" (DDT2 ms 169) of intellectual process that there arise the two times of the temporal subject:

there is an earlier time in which it is on the basis of natural spontaneity that [s]he is the subject of his [her] actuated intellectual nature; and there is a later time in which [s]he is the subject of his [her] own actuated and to be actuated intellectual nature, not spontaneously, but knowingly, willingly, and through his [her] own intention. (DDT2 ms 169)

Now, given that there is a first and a second time of the temporal subject, there must be a transition between these two times. As a first point, then, the Axial Period can be associated with the transition between these two times of the temporal subject, between a first time in which the subject operates in a state of natural spontaneity, and a second time in which the subject operates in accord with the immanent norms and exigences of her or his own intellectual nature.

In the second place, there are three stages of meaning (*Method* 85-99). From the point of view of history, the stages of meaning fill out and complement the two times of the temporal subject. In terms of the stages of meaning, for instance, distinction is made between *undifferentiated* and *differentiated* consciousness, rather than between the *natural*

spontaneity and the *actuated intellectual nature* of the temporal subject. In the first stage of meaning, consciousness operates on the basis of undifferentiated common sense. This stage of meaning is characterized by the emergence and development of early language with its blend of myth and magic. It is also characterized by tremendous developments of practical understanding and technology that yield the ancient high civilizations (*Method* 86-90).

In the second stage of meaning, humanity's increasing proficiency in practical technique overcomes magic to give way to "religious supplication" (*Method* 90). In a parallel development, expanding literary traditions make way for reflection on language itself, on human feeling and thought, knowledge and decision. In Western culture, for example, there is the process of the 'Greek discovery of mind' (90-93), while in Eastern culture there are the ancient speculative traditions of India, China, Iran and Palestine.² Also in this second stage of meaning, there is the emergence of "modern science" which gives rise to "troubled consciousness" in its questions about the apparently opposing worlds of common sense and theory (*Method* 84). Meaning "splits" into the two realms of common sense and theory, and those who have reached the differentiation of consciousness characteristic of the second stage of meaning are able to operate on the basis of both undifferentiated common sense and of theoretically differentiated consciousness and logic (93-94). Lastly, in a third stage of meaning, scientific theory becomes a specialty for the advancement of understanding, the sciences become autonomous, and philosophy takes its stand on the further differentiation of consciousness that operates in the realm of interiority (85; 94-95).

It is interesting to note that these three large historical divisions of meaning are *temporal*, and not chronological: "one has to be in the first stage to advance to the second and one has to be in the second to advance to the third" (85). The temporality of these stages means that many people can remain undifferentiated even though a culture has achieved a second

² Karl Jaspers, *The Origin and Goal of History*, trans. Michael Bullock (London: Routledge and Kegan, 1953), 2.

or third stage of meaning, and again, many people can remain in a second stage even though a culture may have achieved a third stage of meaning (85). Given that there are these three stages of meaning, then, meaning as a historical development *must* be temporal, that is, transitional and 'on the move.' As a second point, then, the Axial Period can be associated with this temporal, and thus transitional, character of phylogenetically expanding meaning.

In the third place, one can ask how the two times of the temporal subject mesh with the three stages of meaning. A rough correspondence can be discovered between the first time of the temporal subject and the first stage of meaning, so that there is in human history "a prior time dominated by a spontaneity found best in compact consciousness."³ Again, there is a strong correspondence between the second time of the temporal subject and the third stage of meaning, so that there is "a later time with at least a dominant authority of the mediation of generalized empirical method" (*MKMM* 11).⁴ Given this correspondence, the second stage of meaning must be a phylogenetic temporal transition between the first and second times of the temporal subject, and between the first and third stages of meaning. As a third point, then, the Axial Period can be associated with the second stage of meaning as a phylogenetic temporal transition to a third stage of meaning in history. What, then, characterizes this second stage of meaning?

In the fourth place, and in answer to this question, there are the implications and conditions of the temporal transition to the third stage of meaning and to the second time of the

³ Philip McShane, "Middle Kingdom, Middle Man," in *Searching for Cultural Foundations* (New York: U of America P, 1984), 1-43, at 11. (Hereafter referred to as *MKMM*). The question that I have raised here, of how the two times of the temporal subject and the three stages of meaning mesh, does not appear explicitly in McShane's documents. His 1984 chapter on this topic, however, makes it clear that he is asking that question, though in the wider context of attempting to draw together not only Lonergan's works but also those of Karl Jaspers, Arnold Toynbee, and Eric Voegelin under the question of 'total history.' See especially 9-11.

⁴ See McShane's footnotes there on *authority* and on *generalized empirical method*.

temporal subject. Because the transition is temporal, there is the survival of undifferentiated consciousness in the later stages of meaning (*Method* 97-99). In particular, there is the fact that it is not the philosopher, nor the scientist, who “does the world’s work” (97). Governments and economies, schools and businesses, all operate within the realm of common sense. While it is possible for a commonsense culture to be lifted up appreciatively in support of a later stage advance in meaning, it is also possible that “theory fuses more with common nonsense than with common sense, to make the nonsense pretentious and, because it is common, dangerous and even disastrous” (98). Ideally, the novel ideas of a progressing philosophy and science can filter down harmoniously to common sense so that a community can share, to some lesser degree, in the advancing concerns and interests of differentiated meaning. But on the other hand:

Such ideal conditions need not obtain. Discontinuities may arise. The better educated become a class closed in upon themselves with no task proportionate to their training. They become effete. The less educated and the uneducated find themselves with a tradition that is beyond their means. They cannot maintain it. They lack the genius to transform it into some simpler vital and intelligible whole. It degenerates. The meaning and values of human living are impoverished. The will to achieve both slackens and narrows. Where once there were joys and sorrows, now there are just pleasures and pains. The culture has become a slum. (*Method* 99)

The implication here is that there arises a widening gap of cultural distortion and fragmentation between those who live and operate in a dominantly commonsense realm of meaning and those who operate in theoretically or interiorly differentiated realms of meaning. Likewise, there is a significant gap between theory and interiority that leaves the sciences in fragmented and truncated confusion about knowledge, objectivity, and reality.⁵ Moreover, these gaps,

⁵ Refer to McShane, *MKMM*, 8, for an account of the distortions of

fragmentations, and distortions are likely to advance through the layers of a society in accord with increasing advances of modern science and philosophy (*Method* 98-99).

Such continuous breakdowns in cultural development lead to divisions among the many groups and layers of society.⁶ The secularization of drama in ancient Greece, for example, marks a beginning of one of the primary divisions within civilized social structure.⁷ Again, the once highly respected role of the primitive Elder, as one who genuinely grows in wisdom, fades, so that, to repeat a phrase, Elders increasingly are “a class closed in upon themselves with no task proportionate to their training. They become effete” (*Method* 99). In the Axial Period, then, genuine adult growth is sadly and monstrously replaced by a contracted and increasingly unintelligible reigning practicality.

Again, there are conditions for the transition to the later time of the temporal subject (*DDT2* ms 170-171). The later time, for instance, will be achieved only communally, through the development of a richly layered common culture, and only to the extent that there is a community of subjects who willingly and responsibly accept and embrace a commitment to live “knowingly, willingly, and through [their] own intention” in accord with the intrinsic norms and exigences of their own intellectual natures.⁸

Add to this fact the “state of fallen man [in which] temporal subjects are greatly impeded from becoming true and

consciousness that disorient modern living and of the fragmented consciousness that dominates and troubles the sciences regarding subjectivity, objectivity, and realism.

⁶ On group bias see *CWL* 3, 247-50.

⁷ See McShane, *MKMM*, 26-8 on the sacred and the secular in modern artistic sensibility. On the same topic in reference to Greek drama, see McShane, *A Brief History of Tongue: From Big Bang to Coloured Wholes* (Halifax: Axial P, 1998), 45 (hereafter *BHT*).

⁸ *DDT2* ms 169: “True manifestation of the... temporal subject... occurs either concretely and symbolically or technically and exactly: it occurs concretely and symbolically inasmuch as human culture is developed... and set forth in mores, customs, precepts, narratives; ...it occurs technically and exactly inasmuch as there occurs scientific and philosophic inquiry into human nature. But it is plain that both objectifications of human nature presuppose the collaboration of many...”

responsible mature persons” (*DDT2* ms 170).⁹ There is the paradoxical situation in which a community cannot live in this new time of subjectivity until it has been voluntarily chosen, grasped, and acted on by those subjects (170). There is the fact that the grasping of such a realm involves “an exact and very difficult knowledge” (169). There is the fact that apprehensions, fears, and other desires interfere with the progression “to an understanding of the objective order of the universe” and to a grasp of one’s role in that universe (170). The advance of the arts and of practical living provides the opportunity for grasping intellectual nature, but those advances are matched by an advancing confusion and obscurity in the many layers of human society (170-171). There is the reality of weak will and of the failure to live up to what one knows one has to do in order to live according to the dictates of intellectual nature. And added to weak will, there is the pull of human friendship and group bias (*CWL* 3, 247-250) that instead of bolstering genuine intellectual life, can lead away from intelligibility and toward the less difficult paths of human mediocrity (*DDT2* ms 171).

Yet further, there is the problem of general bias and the longer cycle of decline (*CWL* 3, 230-269). There is the lag of intellectual development in which humanity’s sensitive ‘animal living’ proceeds faster and more readily than the longer and more difficult development of ‘mind’ (*CWL* 3, 247). Within this reality, there is common sense ‘doing the world’s work’ while being incapable of knowing its limitations. More than that, it is not *aware* that it is incapable of knowing its own limitations and so there is the paradox that common sense needs the higher viewpoint of explicit metaphysics (later third stage of meaning, the second time of the temporal subject) in order to *become* aware of its own shortcomings (*CWL* 3, 254). However, in its minor surrender, common sense excludes the possibility of a higher viewpoint and looks instead to practical solutions to meet increasingly unintelligible social situations (*CWL* 3, 254-57).¹⁰ In its major surrender, common sense

⁹ Compare Lonergan’s *mature persons* here with McShane’s meaning of *adult growth* and of *Elder growth*.

¹⁰ Note the relevance to the social surd.

persuades theory to accommodate its practical demands (*CWL* 3, 254-57), the contraction of intelligibility carries forward with increasing incoherency, the social situation deteriorates cumulatively (*CWL* 3, 253) until theory “becomes effete” and “culture becomes a slum.” From the point of view of trying to advance to the second time of the temporal subject or the third stage of meaning, “one seems constrained to acknowledge that the busy world of practical affairs offers little scope to one’s vocation” (*CWL* 3, 253). If one is to pursue the high road of a self-directed intellectual development that would head one toward the differentiation of consciousness of a later stage of meaning, it seems one must travel against great odds.

The mention of ‘odds’ brings up yet another condition of this temporal transition: emergent probability. “Generically, the course of human history is in accord with emergent probability; it is the cumulative realization of concretely possible schemes of recurrence in accord with successive schedules of probabilities” (*CWL* 3, 252). Placed in the above contexts—of undifferentiated consciousness surviving in later stages of meaning; of troubled consciousness emerging alongside differentiated consciousness; of the human impediments to advancing intellectual development, especially the extreme contrast of the world of common sense versus the world of theory and interiority and the objective order of the universe of being; of general bias in its oversight of insight and its immanent norms and exigences; and of the consequent longer cycle of decline—placed in these contexts, the slim probabilities of human schemes of recurrence leading toward the third stage of meaning, toward the second time of the temporal subject, form yet another condition of the second stage of meaning, of the phylogenetic transition to a third stage of meaning.

With all of these prior details in mind, it is possible to see that the cultural shift into significantly differentiated consciousness of interiority is deeply problematic. It is not, even yet, an achievement of a common majority. It is a difficult and gradual advance, through the world of theory and modern science, that occurs only in accord with relevant human schemes of recurrence and their successive schedules of

probabilities. It is an advance that is vastly ambiguous to large segments of common society, that is open to confusions and obscurities to those who remain theoretically undifferentiated, that is a slow communal climb requiring an “exact and very difficult” development of knowledge that must eventually filter down harmoniously to enrich and lift the general bias and longer cycle of decline that presently characterize the living of undifferentiated common sense. In short, the shift to a luminously differentiated consciousness *does not happen suddenly*. “Communal luminous consciousness is something of the future” (*BHT 2*). Now if it is true that these conditions exist as part of the temporal transition between a first and second time of the temporal subject, and between the first and third stages of meaning, then it is also true that the second stage of meaning must be characterized by these conditions. As a fourth point, then, the Axial Period can be associated with the second stage of meaning as characterized by these temporal conditions of transition to a later third stage of meaning.

In the fifth place, there is the question of modernity:

So, in noting the parallel falsifications of history in the Sumerian King List and Hegel’s *Philosophy of History*, [Eric] Voegelin is led to query: ‘And what is modern about modern mind, one may ask, if Hegel, Comte, or Marx, in order to create an image of history that will support their ideological imperialism, still use the same techniques for distorting the reality of history as their Sumerian predecessors?’ (*MKMM 10*)¹¹

Voegelin’s question of the meaning of modernity tends to reflect the validity of the conditions for the transition and development of human meaning in history such that progress is not guaranteed. If this is true, then the meaning of *modernity* itself falls under the conditions of the transitional character of the second stage of meaning. Thus,

What is going forward, I suspect, in a period of

¹¹ The reference is to Eric Voegelin, *Order and History, Volume Four: The Ecumenic Age* (Baton Rouge: Louisiana State UP, 1974), 68.

fragmented consciousness that I would call modern, is a transition between what Lonergan calls the two times of the temporal subject... Then one may expect the transition period to be one of fragmentation and specialization of consciousness in opaque forays into the second stage of meaning, with concomitant unenlightened displacements of the control of meaning out of historical compactness. Within such forays and displacements is the problematic that invites a mediating integration of hard-won genuineness in the noosphere. (*MKMM* 10-11)

As a fifth point, then, the Axial Period can be associated with *modernity*, where modernity itself is identified with a) the lengthy transitional time between the first and second times of the temporal subject, and with b) the transitional and problematic character of the second stage of meaning.

In the sixth place, then, it is perhaps time to attempt to formulate more compactly the content of the Axial Period. Most notably, the Axial Period is not a major expansion of Lonergan's context but is a 'pulling together' of his various relevant historical contexts. So, the Axial Period is an approximate time span extending from roughly 4000 B.C. through to about 2500 A.D. (*BHT* 38).¹² It is *the second stage of meaning*, a transitional time in history in which a third stage of meaning has not yet been achieved, but in which history is seething towards that later time (*BHT* 2). It is a period of *Inbetween-ness*, (*MKMM* 10-11)¹³ a period of *fragmented consciousness* between the compact consciousness of earlier

¹² This time span includes the emergence of linguistic expression as occurring within the first time of the temporal subject and the first stage of meaning. It also includes "the transition from speech to writing both as a differentiation of human consciousness and as contributing to further differentiations as well as to fragmentation." See 43-4.

¹³ *Inbetween-ness* is associated with Voegelin's *Metaxy*, taken from Plato and expanded by McShane into the Vertical and the Horizontal Metaxy. The Horizontal Metaxy is social and historical process, the global communal effort of intelligent and unintelligent living, as evidenced by humanity's social structures and institutions. The Vertical Metaxy is the divine inner ground of interiority evidenced by human unrest and self-questioning. See Voegelin 6; 11-13.

human living (*BHT* 2; 43)¹⁴ and the fully differentiated consciousness of a later post-axial self-luminous living (*MKMM* 11; *BHT* 2-3). It is *modernity*, a period of some three thousand years or more, up to and including the present and the foreseeable future, prior to the emergence of the third stage of meaning and the implementation of explicit metaphysics. It is a period that is characterized by a deteriorating social situation, of which the educated classes and the academy are a part, by a neglected and truncated common sense and an increasingly pretentious common nonsense, and by a slim nominalism masked in neurotic busy-ness (*MKMM* 5-6). Though it is a time in which there is the emergence and progress of modern science, in the middle of the second millennium, science in the Axial Period is only at a beginning (*MKMM* 8). Furthermore, the fragmentations of neglected and truncated consciousness in the Axial Period make not only science, but also practical modern living, deeply problematic at this stage of meaning in history (*MKMM* 8).¹⁵

Part Two: Context – The Axial Period

2.1 General Statement: Philip McShane and the Axial Period

Philip McShane's work on the Axial Period spans close to three decades. Beginning with the first mention in his 1976 work, *The Shaping of the Foundations*,¹⁶ McShane's context of the Axial Period has been the drive to communicate his view of history that takes in the fact, the implications, and the necessary conditions of a probable shift to a future explicit metaphysics in the third stage of meaning. The original idea of an Axial Period is associated with historian Karl Jaspers (background given later) and was later criticized by historians

¹⁴ Here McShane draws on recent decades of anthropology and uses examples of primitive tribal consciousness to give meaning to this earlier spontaneously integral compact consciousness.

¹⁵ Ibid. Also, in *BHT*, 2, the self-neglect that constitutes neglected and truncated subjectivity is noted as a prominent feature in present axial modernism and post-modernism.

¹⁶ Philip McShane, *The Shaping of the Foundations: Being at Home in the Transcendental Method* (Washington: UP of America, 1976), hereafter *Shaping*.

Arnold Toynbee and Eric Voegelin. McShane draws on their contributions while giving the Axial Period a larger context.

McShane reconfigures Jaspers's original Axial Period to bring it into the larger context of philosopher Bernard Lonergan. McShane's Axial Period is associated with Lonergan's two times of the temporal subject, his stages of meaning, longer cycle of decline, and with his Christian theological context of the Word and 'total history.' Briefly, it is a large open-ended timeframe between the first and second times of the temporal subject, between the first and third stages of meaning, a time when humanity is immersed in the longer cycle of decline, yet in its 'modernity' is pressing toward a shift to explicit metaphysics in accord with human schemes of recurrence and their relevant schedules of probability. Lonergan's scheme of Functional Specialization is crucial to the shift out of this Axial Period and into a third stage of meaning.

McShane's attention and concern is with philosophers, theologians and academics making this shift to explicit metaphysics and so he addresses himself both to individuals working in philosophy and theology and, more essentially, to the academic community as a whole. I was at first tempted to say that McShane's concern is with metaphysicians rather than with 'philosophers, theologians and academics,' but the metaphysicians, or 'categorical characters,' McShane envisions, at least in terms of an axial shift, are people of the future. Therefore, his talk is necessarily directed to 'the people of today' who find themselves facing at least a potential journey, some few perhaps an actual one, toward that foundational future. Nevertheless, the role of metaphysics and the metaphysician is crucial to McShane's meaning of the Axial Period; these are issues which will be explored later in the article.

In my opening paragraph, I have made a very broad general statement about McShane's thirty-year drive of axial meaning. But what do I mean by this general statement, and more importantly, on what sources from McShane's work do I base that statement? Let me repeat my earlier sentence, emphasizing what I consider to be a few key words:

“Beginning with the first mention in *The Shaping of the Foundations*, McShane’s context of the Axial Period has been a drive to communicate his view of history which takes in *the fact, the implications, and the necessary conditions* of a probable shift to a future explicit metaphysics in the third stage of meaning.” The italicized words, in my estimation, harbour the mainstay of his Axial-Period meaning, nestled within the protective confines of his broader, and perhaps deceptively obvious, ‘axial’ span of time.

It is this ‘mainstay’ meaning, *the fact of, the implications of, and the necessary conditions of a shift to explicit metaphysics*, that I will try to bring out as crucial to McShane’s growing meaning of the Axial Period. These words encompass a depth of detail that can best be handled in the upcoming context. Viewed simply as a time span, the reader can have a deceptive impression of a meaning of the Axial Period that is ‘simple and obvious.’ In actuality, the context of that meaning, spanning as it does the climb of thirty years’ effort, could realistically take years to piece together. So the details of that contextual drive have now to be filled in as best they can in my more limited efforts of months rather than years. Working from the writings and resources of McShane’s work, I hope to begin to answer the question: What is the ontogenetic meaning of Philip McShane’s Axial Period?

2.2 Biographic or Ontogenetic Span

I have decided to write this short ‘survey’ of biographic detail in an effort simply to give the reader an outline and appreciation of the ontogenetic span of McShane’s work on this topic. While this outline is helpful in fixing McShane’s meaning within the phylogenetic flow of history it does not actually convey the shifts and climb of meaning that constitute the full context of his Axial Period view. This brief outline is merely a reference to help the reader/historian orient herself or himself to McShane’s ‘axial’ biographic span.

The first mention of an Axial Period appears in McShane’s 1976 book *The Shaping of the Foundations* (88). A second mention appears in his 1980 book *Loneragan’s Challenge to the*

University and the Economy.¹⁷ Both mentions are brief in themselves, though implicitly associated with extensive ideas relating to generalized empirical method, an adequate personal *Weltanschauung*,¹⁸ the relevant context of emergent probability, and, in the 1980 work, the two times of the temporal subject and an epochal shift in the control of meaning. In this later work, while the third stage of meaning and the longer cycle of decline are mentioned (*Challenge* 13 and 16), they relate more to the possibility of what the academic person or community might become in the third stage of meaning than to the axial period *per se*. Further, in these earlier works, McShane has not yet moved to the decisive claim that the Axial Period is associated with the second stage of meaning. At this point, his view of the Axial Period is in line with Lonergan's statement that "the second stage of meaning is vanishing, and a third is about to take its place" (*Method* 96). As is clear from the 1980 text, the Axial Period for McShane is an "immature phase of the third stage of meaning."¹⁹

The next appearance of the Axial Period is in *MKMM*. This work is McShane's first major attempt at spelling out in detail what he means by the Axial Period. Here the above mentioned contexts become explicitly associated with his view of the Axial Period and are complemented and enlarged by a Christian historical context. Between this work and the next mention, there occurs a lengthy gap: the axial topic doesn't appear again, except by reference, until his 1998 book *A Brief History of Tongue*, the first in his Axial Press Series (37-48). The treatment there is further enlarged by the context of linguistics. Various shorter appeals to the Axial Period occur in the Editorial Introductions of the following Axial Press Series books.

¹⁷ (Washington: U of America P, 1980), 3-4 (hereafter *Challenge*).

¹⁸ This topic is explicitly addressed in chapter one of *Shaping* which was written for the Florida Conference in 1970. The later contexts of these two books include and enlarge on this earlier context.

¹⁹ *Challenge* 15: "The scattered community of interdisciplinary philosophers in this immature period of the third stage of meaning is in the main characterized by what Lonergan says of 'undifferentiated consciousness surviving in the later stages of meaning.'"

2.3. Background Context: Karl Jaspers, Arnold Toynbee, Eric Voegelin

The original idea of an Axial Period in history was first put forward by historian Karl Jaspers, in his work *The Origin and Goal of History*. It was later taken up, criticized and expanded by Arnold Toynbee,²⁰ and again criticized by Eric Voegelin,²¹ prior to McShane's work. McShane reconfigures Jaspers' original Axial Period to bring it into the larger context of philosopher Bernard Lonergan. The present article is concerned with McShane's view of the Axial Period. However, since these earlier views form part of McShane's context, as well as providing the background of his content, a brief summary of the movement from Jaspers through to McShane will be helpful.

In his book, *The Origin and Goal of History*, Jaspers' suggests an axis in human history in which human consciousness becomes 'aware of itself.' As McShane notes, the period identified by Jaspers' as the Axial Period "is not, however, strictly a historical period but rather a period specified by a transition from compact consciousness to luminous consciousness" (*BHT* 1). Jaspers' idea of an Axial Period is a limited time frame within which there occurs the event of 'consciousness emerging to consciousness' in history. This event constitutes the time in history from which humanity takes its 'modern' beginnings. In Jaspers' words:

This axis would be situated at the point in history which gave birth to everything which, since then, man has been able to be, the point most overwhelmingly fruitful in fashioning humanity; its character would have to be, if not empirically cogent and evident, yet so convincing to empirical insight as to give rise to a common frame of historical self-comprehension for all peoples – for the West, for Asia, and for all men on earth, without regard to particular articles of faith. It would seem that this axis of history is to be found in

²⁰ *Mankind and Mother Earth: A Narrative History of the World* (London: Oxford UP, 1976).

²¹ Voegelin, *The Ecumenic Age*.

the period around 500 B.C., in the spiritual process that occurred between 800 and 200 B.C. It is there that we meet with the most deepcut dividing line in history. Man, as we know him today, came into being. For short we may style this the 'Axial Period.'²²

Jaspers' perspective is broader than the typically Christian perspectives of Western history. He includes in his Axial Period all the influential philosophers and thinkers of the era: in China, there is Confucius and Lao-tse as well as all the schools of Chinese philosophy which come into being at this time. India has the Buddha and its Upanishads. In Iran there is Zarathustra and in Palestine there are the Hebrew prophets. In Greece there is Homer, the tragedians, and the philosophers.²³ Jaspers' view of the Axial Period, then, is humanity's discovery of itself as speculative, this discovery occurring between 800 and 200 B.C.

Later in his book, Jaspers raises the question of a second Axial Period.²⁴ He discusses our present time in history and notes it as "a period of catastrophic descent to poverty of spirit, of humanity, love and creative energy" (96-97) brought about by and in this great Age of Technology. From this state of human affairs, Jaspers suggests a possible turning point of a second Axial Period that would lift us out of present descent: "This new Axial Period, which perhaps stands before us and which would constitute a single, world-embracing reality, is beyond our powers of imagination. To anticipate it in phantasy would mean to create it. No one can know what it will bring." (97). The second Axial Period, he suggests, could only come about in the future.

Arnold Toynbee, in *Mankind and Mother Earth*, takes issue with Jaspers' view of the Axial Period as being too narrow and thus in need of expansion. His expansion to Jaspers' original Axial Period is on the basis of the need to include those "two mighty epigoni," Jesus and Muhammad. Toynbee justifies his expansion as following on the long

²² Jaspers, *Origin and Goal of History*, 1.

²³ *Ibid.*, 2.

²⁴ *Ibid.*, 96-100, specifically 97.

traditions of Zarathustra and 'Deutero-Isaiah,' already included in Jaspers' view. With this inclusion, Toynbee expands the Axial Period to a duration of about seventeen centuries. For Toynbee, the Axial Period should run from 1060 B.C. to 632 A.D., ending with the death of Muhammad.²⁵

In his fourth volume of *Order and History: The Ecumenic Age*, Eric Voegelin takes issue with both Jaspers and Toynbee.²⁶ While he agrees that there is, in fact, a shift from what he terms 'compact consciousness' to 'differentiated consciousness' during this timeframe, he criticizes these two historians (and others) for what he considers to be their *linear* views of history. That is, while Jaspers and Toynbee accept the notion of an Axial Period as a (or *the*) significant event in history leading down through time to their own present, Voegelin moves to a "fuller view of the historical process" (MKMM 9-10), one that is not bounded by the view of a linear flow of events. His meaning of history constitutes an implicit shift from the 'outer events' of history to the 'inner context' of the historian, and to the role of meaning as constituting the movements of peoples and cultures in history. As such, Voegelin denies that there is a single flow of events which all lead smoothly to the historian's own present. Instead, he notes that a historian who confines himself or herself to such a perspective excludes the meaning of many significant societies in history, ones that may not necessarily line up with the historian's own attempts to arrive at a linear view of history. As Voegelin remarks, historians appear to have a horror of the richness of meaning in human history and of the idea that history is actually "a mystery in process of revelation."²⁷

McShane, following on Jaspers, Toynbee and Voegelin, draws on their views and incorporates them into the context of philosopher Bernard Lonergan to arrive at his own view of the Axial Period. Having provided a summary of these earlier views, I can now attempt to formulate the context of McShane's Axial Period.

²⁵ Toynbee, *Mankind and Mother Earth*, 178.

²⁶ Voegelin 2-3; also MKMM, 10.

²⁷ Voegelin 6.

2.4. *McShane's Axial Period - Context*

McShane's work on the Axial Period brings the meanings of these three historians within the larger context of the work of Bernard Lonergan. From that initial context, his meaning enlarges and expands increasingly up to the present. All along, his growing concern and understanding is a process of figuring out the implications and the necessary conditions involved in the probable shift to an explicit metaphysics as defined by Lonergan. How, then, has McShane's context grown?

In keeping with the aims of a scientific interpretation, I will try to convey not simply the results of the different stages of development in McShane's 'axial' meaning, but also the operators that moved him from one stage to the next. What were the questions, events, contexts, issues, that led him forward from one stage in his meaning to the next? What concerns moved him forward?

As I already mentioned in the opening statement of the article, McShane's concern, all the way through, is the association of the Axial Period with the long-term shift to, and gradual emergence of, explicit metaphysics in history, not as an isolated occurrence, but as the possession of at least a global minority. Further, the shift, or the emergence, has conditions. For instance, one of its conditions, among others, is the personal understanding and control of Generalized Empirical Method by individuals and as a communal possession. McShane's attention, then, is directed towards the implications of such conditions. Over the years, his thinking about explicit metaphysics and about the conditions and implications of its emergence expands, so that his idea of what constitutes the Axial Period also expands.

The first expansion of his meaning is found in the work between 1976 and 1980. In the first mention of an axial period in 1976 (*Shaping* 79-95), though his eventual long-term goal is clearly communal, I would say that his appeal is primarily personal. He is speaking to individuals, mainly in philosophy and theology but here also to those in zoology, about their need to turn personally, concretely, to scientific self-attention. He makes this personal appeal clear in his opening page: "My hope, rather, is to move the general philosophic reader towards

a more precise appreciation of his or her own nescience – and therefore of his or her own humanity – and also to introduce the animal psychologist to the possibility of transforming that science, where by science I mean not the content of laboratories or libraries but primarily the content of the scientific mind” (79). McShane presses for the emergence of interiority as a personal and communal methodological possibility, something that comes about as each individual takes up his or her own personal quest of interiority (88).

In the personal turn to scientific self-attention, the need for an adequate methodological *Weltanschauung* is emphasized,²⁸ as is the personal foundational climb involved in attaining such a perspective (87, 89, 94-95). The re-orientation and integration of one’s common sense and one’s science are a condition of the adequate self-knowledge invited (88), and McShane takes issue with the situation of the contemporary culture and the modern academy in which scholars, philosophers and theologians in particular, have little or no competence with modern science (88).²⁹ In this 1976 work, the personal climb toward the scientific self-attention of interiority, the communal possibility of a context of interiority, and the consequent reorientation and integration of common sense and science, is identified as what would ground a contemporary Axial Period (88).³⁰

In this work, then, McShane has identified and reconfigured the Axial Period so as to associate it with the both the personal and the communal possibility of scientific self-attention. The significant point that McShane makes in this re-configuration is that Jaspers’ Axial Period had never actually

²⁸ An adequate *Weltanschauung* is the topic of his 1970 paper, “Image and Emergence: Towards an Adequate *Weltanschauung*,” prepared for the Lonergan conference held in Florida that year. It appears in *The Shaping of the Foundations* as chapter one and it must be taken as ‘qualifying context’ for his discussion of this topic in the present work.

²⁹ The drive of this entire chapter is to communicate the importance of a future relationship between philosophy and modern science within an adequately developing *Weltanschauung*. This message is especially evident in McShane’s concluding words on pages 94-5.

³⁰ “Scientific self-attention alias methodology as communal possibility marks what Jaspers calls an axial period.”

ended – with the events of 800-200 B.C., it had only just begun. In other words, McShane makes the point that there *wasn't* a sudden leap to differentiated consciousness in history. There was simply a scattered beginning that now needs the efforts of many individuals to arrive at a time in history when at least a global minority would be adequately differentiated.

In the 1980 work (*Challenge* 1-27) I found a shift in speaking – from personal appeal to communal appeal. Here McShane's context enlarges from personal invitation to communal appeal and he points now to the responsibility of the academy. Why? He is clearly thinking more vigorously about the role of the academy in the shift to explicit metaphysics. I think his own shift in thinking is brought on by a constellation of factors, all of which emerge in this chapter: a struggling with Lonergan's work on the Trinity, *De Deo Trino*, with emergent probability in *Insight*, and with the relatively new idea of Functional Specialization. Consequently, his view of the Axial Period takes on the implications of this larger context also.³¹

Where first the Axial Period was associated with the individual's reaching for scientific self-attention, and with a communal reorientation of common sense and science, now it is associated explicitly with "the possibility and probability of *an epochal shift* in the control of meaning" between Lonergan's two times of the temporal subject (3-4). While this 'epochal shift in the control of meaning' seems clearly to point to and intend a *communal* possibility and probability, the context here does still retain the personal appeal of the 1976 tone of writing. That is, McShane is still emphasizing the fact that the epochal shift is grounded by the successful personal incarnation of interiority, involving a life-long self-attentive climb. But his view of the Axial Period now is 'leaning forward.' Along with it being grounded by the personal climb, he is now indicating that the Axial Period involves an 'epochal shift,' something that can only point to a *communal*, as well as

³¹ *Ibid.*, see the concluding words to chapter six on page 110 of this book: "The love of God, the third stage of meaning, and the second million years are on our side."

a personal, reality.³²

While it does not appear explicitly in his talk of the Axial Period, nevertheless I think the academy is now McShane's focal point, as seems clear even from the title of this chapter: "The Psychological Present of the Academic Community." It is more apparent in the opening sentence: "If there is to be a massive shift in public minding and kindness and discourse in the next century, there must be a proportionate shift in the mind and heart of the academy and the arts at the end of this century..." (*Challenge* 1). The first part of this chapter was actually written in 1976, though not published until 1980, and it seems evident to me that it takes in the main context of the previous work of 1976, as above, and moves to enlarge on it. How so? The chapter is divided into three parts, only two of which appear in this book. The first part has seven sections, each with initial 'summary points' that provide the context of that section. When I reviewed these points together, I found they could be taken as echoing the message in the 1976 work, though with one major difference: they are leading now to the larger context of academic responsibility and obligation, rather than to the previous individual appeal (2, 4, 8, 11, 13, 15, 16).

Consider some of the relevant passages. In the introduction, there is a first obvious indication of his larger context when he speaks about this first chapter:

The title I have chosen, however, serves a more complex purpose. It indicates clearly, honouring his 75th year, the initiation by Lonergan of what I regard as a profound cultural shift. It specifies his challenge as being, not to small groups of philosophers or theologians, but to the academic community. (vi)

There is, too, the indication that this challenge is both novel and unacceptable to present culture, associations that later become explicit, though here they are merely indicated.

Further into chapter one, McShane's concern about the role of the academy comes to the fore. Now he moves to make the point that adult philosophic growth, of which he has been

³² Refer also to Lonergan, *DDT2* ms, 170-71 on the necessity of community in the shift to the second time of the temporal subject.

speaking throughout the chapter, is not enough:

Undoubtedly the basic possibility of the specification [of adequate psychological presence in the philosopher] is rooted in the solitary searcher's *anamnesis* and *prolepsis*. But the more than random recurrence of successful search requires the linkage of community, and the basic shift in schedules of probability of adult philosophic growth requires the emergence of complex supporting schemes of recurrence. (15)

And on the following page:

That paramount task is not one for some community of interdisciplinary philosophers: it is the evident task, it seems to me, of the academy. It is a task of academic self-definition and self-constitution. What is involved is a sophisticated functionally-differentiated *Wendung zur Idee* that, quite precisely, goes beyond present dreams. (16)

McShane is leading now to the larger context of Functional Specialization within the worldview of emergent probability. So his meaning of the Axial Period in this chapter is *pointing* toward this larger communal and historical context. Part two of his chapter one supports this claim. In it, there is criticism of the contemporary academy, there is an emphasis on generalized empirical method as requiring academics to develop competence in the realms of science, and there is a 'metaphysical move' from implementation to Praxis within a new notion of value (16-27). McShane's shift in meaning, then, from *The Shaping of the Foundations* to *Lonergan's Challenge to the University and the Economy*, is a shift from the personal reorientation and integration of one's common sense and science, to the communal implementation and the need for the academy to embrace Lonergan's challenge of interiority and generalized empirical method. This shift can be seen as reflecting McShane's developed understanding of Lonergan's own shift from *Insight* to *Method in Theology*.

I shift now to the 1984 work, "Middle Kingdom, Middle Man." The leap in meaning of the Axial Period from his

previous work to this work is immense. For the first time, McShane spells out in detail what he means by the Axial Period. For the first time also, he makes the strong definitive statement that we have not yet begun the third stage of meaning. This statement, in fact, is the crux of his axial meaning. In this larger context, the Axial Period is the *second stage of meaning*. It is a period of *Inbetween-ness* associated with Voegelin's Metaxy (MKMM 10). It is *modernity* (10-11), a period of some three thousand years up to and including the present and the foreseeable future prior to the emergence of the third stage of meaning and the implementation of explicit metaphysics. It is a period of *fragmented consciousness* between the compact consciousness (11)³³ of earlier human living and the interiorly differentiated consciousness of a later post-axial living. In this later time, a minority (and perhaps someday a majority) of 'self-luminous' people would constitute self-appreciatively their own ongoing living (11). The Axial Period includes the emergence of science but McShane is adamant that science, emerging in the middle of the second millennium, is only at a beginning: there was no scientific revolution (8). Furthermore, the fragmented consciousness that characterizes this stage of meaning in history makes science problematic in the Axial Period.

The great leap forward (4)³⁴ in McShane's meaning here is his Christian context intertwined as it is with the question of total history. Now the burden on the academy in this Axial Period (the message is addressed particularly to theologians in the academy) is extended and enlarged by being placed within the context of Lonergan's insights into God's subjectivity (6). With that context, there is a consequent call to "contemporary Elderhood" (4) that includes the call to science, to living at the level of one's times (4-5). McShane draws on the general categories of *Method in Theology* to ground his claim that academics are invited to engage in a Foundational Climb. In

³³ Also see Voegelin 1-2.

³⁴ The *Great Leap Forward* is a theme of this article. McShane uses Mao Tse Tung's *Great Leap Forward* in China, weighed against Lonergan's 'Great Leap Forward' in the West, as a means of opening up and including the East in his Christian historical context.

line with the Christian context of this work, McShane notes that “the heuristics of Foundations are concrete, providing the inner word of a worldview by which one thinks of the realities of mind and grace within the fullness of the emergent probability of meaning” (1) The Axial Period becomes for McShane the three thousand and more years up to and including present modernity in which human beings, the academy in general, and theology in particular, are floundering in “a cultural swamp” of neglected and truncated subjectivity, immersed in common sense eclecticism (2), and blinded by the illusion that clear statements and ‘plain speaking,’ or ‘telling,’ equal understanding (6). Part of McShane’s context becomes, then, the need to speak to theologians with a measure of bluntness about the contemporary practise of theology and the mess of modernity. Such speech allows him to raise the *problems* of modernity, specifically those of truncation and commonsense eclecticism, *as problems*.

Between the 1984 work and his next published mention of the Axial Period, in *A Brief History of Tongue* (BHT 37-48), there lies some fourteen years. During this span, I think two factors in McShane’s development are of crucial importance: 1) McShane’s growing understanding of the Christian Trinity as something fundamental to the philosophic meaning of total history; and 2) his continued attention to the earlier identified problems of modernity. The 1984 work left off with the message that the academy, and theology in particular, are in need of a lift into the realm of Lonergan’s interiority and his explicit metaphysics. This lift, however, not only imposes on the academy the need for foundational climbing, but also raises the concrete problem of how to communicate such a need to individuals working in the academic system. Traditional ‘summary’ efforts³⁵ at communication are blocked for the reader by the fact of truncation and by the illusion, generated in the reigning realm of modern commonsense eclecticism, that ‘telling’ equates to ‘understanding.’

³⁵ See McShane, *Shaping* 81: “Yet what is a man to do who settles down to summary printed expression of the fruits of his labours? Should he not rather write an autobiography?...”

The book *Process*,³⁶ written in 1988-89, is, to the best of my knowledge, McShane's first attempt at writing in a specific mode of expression which attempts to address these problems concretely. This book is highly relevant to his context of 1998: it provides evidence for my claim that in these years McShane, for the first time, is grappling concretely with the problem of *linguistic feedback*.³⁷ The problem of linguistic feedback emerges in McShane's 1998 work as *fundamental* to the axial transition period itself, as will become apparent. In this later context of meta-linguistics, McShane embraces concretely, as a specialized expression of his axial context, the need to begin to implement Lonergan's notion of linguistic feedback in order to pragmatically lift metaphysics to a later, third stage of meaning (*BHT* 47). Nearly thirty years after his initial grappling with the philosophic meaning of words,³⁸ McShane's context now incorporates and vastly enlarges on his earlier context, transforming it into his much more refined and specialized, 'thirty-year grown' context of meta-linguistics.

In *A Brief History of Tongue*, the needed transformation to linguistic feedback is actually 'written into' McShane's expression. That is, the impossibility of "telling," coupled with the modern illusion of a 'clear understanding' that purportedly

³⁶ Philip McShane, *Process: Introducing Themselves to Young (Christian) Readers*, 1989, available on the website www.philipmcshane.ca

³⁷ The problem of linguistic feedback as linked to the axial period is a problem that has been with McShane all the way along. In *Shaping* (98-9), there is the following passage concerning a link to be made between interpretation as treated in *Insight* and linguistic feedback as noted in *Method* (p. 88, footnote 34): "In the present stage of the axial shift to which *Method in Theology* belongs we are a long way from adequate signs and symbols of studied interiority, but that very point cries out to be made." In this later context of *Process* and *BHT*, McShane has begun to act on these words.

³⁸ *Shaping* 113 and following, "Instrumental Acts of Meaning and Fourth Level Specialization," on the triple correlation involved in experiential conjugates, in naming, and to page 10 and following on his earlier struggle and concern with "the menace of experiential conjugation" in philosophy. This latter note takes us back to McShane's work of the late 1960s and its emergence at the Florida Lonergan Conference of 1970. The edited works resulting from that conference are also relevant here, as can be seen in the following note.

results from this telling, is tackled by McShane in the advent of an explicit 'problem-solving' style. Going back to the book *Process*, the seeds of this new context can be found; in chapter two, especially, McShane raises and explicitly attacks the modern illusion of 'clear' and 'easy' communication, referring back to his earlier works expressing the same concerns.³⁹ In that chapter, by presenting a series of exercises and problems geared to lead the reader toward genuine acts of understanding and toward a self-awareness of the ever-deeper layers of meaning involved in a growing understanding (88-90), McShane enlarges his context so as to include this practical attempt at a solution to his earlier identified problems of contemporary communication.

By the time he gets to *A Brief History of Tongue: From Big Bang to Coloured Wholes*, the Axial Period is itself now presented for the first time as a *puzzle to be solved*. "This sequence problem is not at all a simple problem. Indeed, in the fullest and deepest sense it is the 'whole' problem expressed in the title of the book. This is a first shot at an answer to that problem, and the first shot is precisely to see it as a puzzle, like the other sequence puzzles of this chapter." This strategy of 'puzzling' is carried throughout the entire book and McShane contrasts it with his earlier efforts of "telling" the axial problem (*BHT* 43 and ch.4).

Jumping ahead for a moment to his 2002 work, *Lack in the Beingstalk*, this strategy of 'puzzling' continues. Now, though, it is applied to the larger and more evident data of

³⁹ *Process*, 60-1. In reflecting on his earlier article, "Instrumental Acts of Meaning...", McShane notes: "It is an elusive convoluted article: somehow, I was trying to stop people reading." Criticisms of his writing style as compared to Lonergan's eventually led McShane to reflect on the ease with which Lonergan's work can be read but not understood (that is, a *nominal understanding* can be achieved relatively easily, but such possession often blocks the way for the reader to the fuller theoretic understanding with which Lonergan wrote). In response to these criticisms, he proposed the question, "why did Lonergan write books that people could read?" This question grounded his shift to the new writing style. Please note that I am using a typed manuscript from 1989: the page numbers on the website may be different; therefore it is well to know that the reference here is to the beginning four pages of chapter two.

‘grammatology’ within the meta-linguistic context.⁴⁰ Here McShane is pointing to the core foundational data, the elements of meaning to-be-discovered in the “surface aspects of writing.” His manner of bringing attention to these surface aspects of writing “can be paralleled to Lavoisier’s bringing attention to surface aspects of combustion.” In other words, note that his aim is not ‘clear explanation’ or definition, but is the more “humdrum description of a homely approach to a phenomenology of language” which nevertheless “eventually blossoms into a powerful heuristics of deep structure” (*Lack* 169). McShane now is presenting language itself as a puzzle through which to discover one’s own ‘core data.’ In fact, by drawing the reader’s attention to both “the data in front of your nose” (i.e., the sentence types and grammatical structures) as well as the “data behind your nose” (the elements of meaning to be discovered), McShane is very neatly embracing Lonergan’s later definition of generalized empirical method within his own pragmatic strategy of presentation.⁴¹ Compared to his earlier attempt, in the first chapter of *A Brief History of Tongue*, the presentation of the elements of meaning within this linguistic field is much more subtle and encompassing.

Returning to *A Brief History of Tongue*, McShane’s context of the Axial Period now, as is clear from his presentation of it in this book, not only incorporates his heuristic meaning of the emergence of speech and written language, but also addresses pragmatically the problems of fragmented modern speech and communication, identified by him in his earlier works. McShane’s expression of the Axial Period in this work, then, is not a summary presentation. Here the Axial Period is presented as a large historical ‘problem’ that is merely ‘alluded’ to. It is presented as a puzzle in need of the reader’s extended efforts at solving. The pictorial image, as seen below, is complemented by various textual hints and indications for follow-up in the reader’s problem-solving effort

⁴⁰ See chapter five, section three, of *Lack in the Beingstalk: A Giant’s Causeway*, 2002, available on the website www.philipmcshane.ca (hereafter *Lack*)

⁴¹ *Lack* 163-71 for the full context mentioned here; pages 170 and 163 respectively provide the exact references.

(*BHT* 38ff).

....t T ¹ ...t _{ra} .. t _r .. t _a .. t _s ..	t _n ..	t.. T ² ..t _x
4000 B. C. <		> 2500 A. D.

Major differences between his expression of the Axial Period in 1998 and in 1984 can be seen in this work. For instance, where McShane in the 1984 work has a dense paragraph outlining his idea of the Axial Period,⁴² his puzzle presentation of 1998 identifies the Axial Period simply as “the Big Bang in human history,” alluding to something significant without attempting to explain it. In place of dense ‘telling,’ McShane uses pointers and hints to cajole the reader forward into curiosity and problem solving activity. For example, the word *bang* not only is a key word in the title of the chapter but is drawn on repeatedly throughout the chapter. It refers first to the occurrence of insight (*BHT* 15-28), next to the double-layered “shift from babbling to talk” which constitutes the “language bang” (28-37), and finally to an axial/post-axial shift of method: “a cultural bang that grounds adequate speech about language, its acquisition, its universals” (30; 37-48). These hints are but some of the many available for the reader to follow-up.

Hints outlining the levels of meanings of the various **T**’s and **t**’s in the puzzle sequence are also spelled out. The **T**’s and **t**’s in the axial puzzle sequence are doubly indicative of McShane’s larger meta-linguistic meaning of the Axial Period. In this much larger context, McShane’s meaning embraces the fact that one of the necessary conditions of the probable shift to an explicit metaphysics is a shift in types of talk. His own shift

⁴² McShane, *MKMM*, see the paragraph beginning on the bottom of page 10 and flowing into page 11. This one dense paragraph manages to include McShane’s definition of ‘modern,’ Lonergan’s context of *De Deo Trino* and the two times of the temporal subject, Lonergan’s later context of generalized empirical method as well as his stages of meaning, Voegelin’s context of compact and differentiated consciousness meshed with McShane’s notion of fragmented consciousness and with Lonergan’s context of displacements of consciousness, Lonergan’s notion of genuineness as ontogenetically and phylogenetically applied, and finally, a transformation of Chardin’s *noosphere*.

in expression from ‘telling’ to this strategy of puzzle-solving is the first indication of his larger context and meaning here. But the various *t*-letters within the puzzle are themselves the second indication.

Here McShane makes use of the symbolic representation of capital letters, lower case letters, and subscripts to indicate in pointing fashion the elements of his axial context. His symbolic representation follows the tradition of scientific formulation where the dense image merely indicates a definitive meaning yet-to-be-discovered. Within his presentation of the axial problem, for instance, McShane uses subscripts to point to the range of types of “differentiated talk” that have emerged in history: religious ‘talk,’ artistic, scientific, and so on. Filling out these subscript-pointers are textual hints and footnotes leading to the larger dense heuristic issues of differentiation and speech lying behind the symbolic expression (43-45).

The “main interest” for McShane in this context is, in fact, *not* to ‘tell,’ as he himself states. “This is all very sketchy, and necessarily so: there are large varieties of differentiations of consciousness and of language... [examples given] All I’m attempting to do is to present a puzzle with some adequacy, and the hint of a solution.” The puzzle-solving strategy is now *part of* McShane’s larger meta-linguistic context. It is his pragmatic attempt to elicit “the emergence in you of large scale puzzlement...” (46). In his view now, the historical emergence of ‘large scale puzzlement’ is key to the transition toward post-axially differentiated talk: “Understanding the full solution to our present sequence problem involves a venture into the territories named by t_x and moving beyond them to some personal glimpse of the meaning of T^2 ... t_x , something which is not yet a historical reality” (46). For McShane, the emergence and cultivation in history of humanity’s genuine puzzlement is a basic starting prerequisite for shifting out of the Axial Period and into post-axial territory.

Having presented his axial puzzle sequence, McShane immediately compares his own earlier writing on the Axial Period with this present context. His analysis leaves no doubt about his present shift in context, nor about his *own awareness*

of that shift (46-47). In this larger context, the shift he has made is a fundamental shift to *pragmatism*. McShane points out that in his early work, he spoke of a needed “massive shift... in the mind and heart of the academy...” (*Challenge* 1). In this later work, though, “That massive shift I now identify as a slow change to how-language...” (*BHT* 47). The pragmatism of this ‘how-language’ is evident in its ‘how’ title, as well as in the content of its chapter.

As I followed it up, the ‘how-language’ indicated by McShane indeed pointed to a pragmatic perspective. In its issues of core grammar, language universals, causality, syllogizing, ‘noun-ing,’ upper levels of consciousness involving planning and decision-making, of emergent probability, and of linguistic feedback leading to the post-axial transformation of the control of language,⁴³ it became clear that this how-language had for McShane, at the very least, a double-edged pragmatic meaning. “To deal with the long cycle of human decline [i.e., of the Axial Period] in an effective redemptive manner calls for the massive restructuring of human searching that is the topic of the next chapter” (78). The ‘next chapter’ flows into the topic of Functional Specialization. So the ‘massive restructuring of human searching’ that McShane envisions not only includes his own new pragmatic strategy of expression and communication, designed as it is to elicit *the emergence in you of large scale puzzlement*, but also includes the larger communal geo-historical strategy of Functional Specialization. If that were not enough, the concluding words to his chapter on ‘how-language’ should be convincing: “The key factor here is the achievement of a genuine efficiency of evolution, emergence, revolution, grounded not in policing or class war but in a gentle persuasive move towards a democratic and luminous liberation of human sensability” (79).⁴⁴ McShane’s context here clearly implies and includes the *pragmatism* of strategies for implementation that will lift evolution, lift history, out of the Axial Period and into the explicit hope of the third stage of meaning (*BHT* 116-

⁴³ *BHT* 51, 55-6, 57-64, 64-71, 71-75, 75-79 respectively.

⁴⁴ *Ibid.*, 79. Sensability is intentionally misspelled, a pragmatic strategy pointing the reader toward her or his own operations of mind.

125).⁴⁵ In this context of 1998, McShane reveals the fact that he has himself shifted from a position of “telling” to one of “doing,” to a personal incarnation of Lonergan’s claim that identification is performance (CWL 3, 582).

A Brief History of Tongue, then, marks a new mode of pragmatic expression in McShane’s work, and indeed, a new *context* of pragmatism in his view of the Axial Period. It also marks a shift from his earlier concern with the academy to his now larger concern of lifting the full global population and culture toward Functional Specialization,⁴⁶ or Hodic Studies, and ultimately into a third stage of meaning. His pragmatism is a key element in trying to nudge global culture forward, and his works since *A Brief History of Tongue* reflect that context.

Looking to the works since *A Brief History of Tongue*, McShane’s context of pragmatism is, I would say, of vital importance to his meaning of the Axial Period. *A Brief History of Tongue* is the first in a series of volumes for which McShane is the general editor. The series is called, notably, *Transaxial Series: A Series Within Axial Press*. McShane’s context for this series is thus founded explicitly on his view of the Axial Period, as the title implies, as well as on his shift to pragmatism. The meaning of *transaxial* pivots on the new pragmatism, as McShane makes clear in his opening introduction: “The book focuses on the problem of *beginning to move beyond* what I call the ‘Axial Period’...” (1, italics mine). With this series, McShane’s view of the Axial Period is, then, a view of history that, in its concrete pragmatism, has the potential to *lift* history.⁴⁷

⁴⁵ McShane’s axial context explicitly includes his three heuristic words of metaphysics, found in this section of chapter four. The third word contains reference to the explicit hope of Lonergan’s Trinitarian context. With these heuristic words, chapters one through three of this book are lifted into the uncompromising explanatory heuristic context of this chapter (four). Moreover, the heuristic words presented here are symbolic indications of McShane’s steadily enlarging, ontogenetic context of the meaning of history.

⁴⁶ See, for instance, *BHT*, chapter three, 81, footnote two.

⁴⁷ See his Editor’s Introduction in McShane’s *Economics for Everyone: Das Jus Kapital* (Halifax: Axial P, 1998), 4-5, concluding words on axial hopelessness and transaxial hope. The Editor’s Introduction to his

I am convinced that the shift to pragmatism at this point in his work is a result of McShane's evolution of grappling with the problem of "implementation" as it appears in Lonergan's definition of metaphysics.⁴⁸ From the beginning and throughout his work, McShane has pointed to Lonergan's later discovery of Functional Specialization as the answer to the problem of implementation 'left hanging' in *Insight*.⁴⁹ The present problem for McShane, then, is a practical *how-to* problem: how to 'get the Functional Specialization ball rolling'⁵⁰ in an axial culture that resists such a turn.

In his work since, and including, *A Brief History of Tongue*, McShane meets that question in what I would call a three-pronged strategy. The first prong is key: McShane now takes the Axial Period as part of his 'foundational stance.' The Axial Period is the present historical basis, the 'now' reality out of which culture and history must gradually move forward and into a THEN⁵¹ reality.⁵²

From that position, McShane's second 'prong' rises. The second prong, as I see it, is his decision to 'tackle' axial culture, something McShane has done all the way through his *opera omnia*, but now does in an increasingly explicit manner.

Pastkeynes Pastmodern Economics: A Fresh Pragmatism (Halifax: Axial P, 2002), 1, is a more explicit context of pragmatism which is now being expanded by McShane in his Cantowers, available on the website www.philipmcshane.ca.

⁴⁸ CWL 3 415-21, with the definition stated at the bottom of page 416.

⁴⁹ See, for example, *BHT*, chapter three, 82, note 8: "The manner in which Lonergan's discovery of functional specialization solved the problem of 'implementation' as a component of metaphysics is implicitly our topic throughout this chapter;" and, in the same book, chapter two, 78, note 32: "The question of the efficiency of metaphysics is an axial problem, but in the context of Lonergan's work it may be identified as the problem of the unidentified cosmopolis of *Insight*, chapter 7, the weakness of the notion of 'implementation' as a component in metaphysics, the slimness of the treatment of the last three specialties in *Method in Theology*."

⁵⁰ McShane's favourite chapter title (see *Pastkeynes Pastmodern Economics*, 66) on this topic is "A Rolling Stone Gathers Nomos," chapter three of *BHT*.

⁵¹ The title of Cantower V is "Metaphysics THEN."

⁵² Particularly relevant here is Cantower XVII, 10, footnote 20, citing the axial perspective as central to the psychic context of long-term hope and optimism.

That is, McShane points to problems, or *lacks*, in present axial culture which need to be identified *to* axial culture precisely *as* lacks. The book *Lack in the Beingstalk: A Giant's Causeway*, as the title suggests, carries this explicit message. So his context of the Axial Period enlarges to become an explicit message of cultural deficiency in need of pragmatic solutions. One of the most significant problems in culture is the lack of *efficiency* in a now global academic enterprise. By pointing to a *Giant's Causeway* of Functional Specialization, McShane's context now includes an effort to *shift the statistics* of axiality, through the vehicle of Functional Specialization, toward a third stage of meaning. So making Functional Specialization an "unavoidable topic" (153) becomes for McShane the vital 'catalyst' of his axial context.

The third prong in McShane's approach, as touched on above, is the attempt to initiate his own strategies of linguistic feedback. Here he pragmatically alters his own mode of expression and communication in order to address the axial deficiencies he has himself identified. Introducing the puzzles and exercises of *Process* and *A Brief History of Tongue* was a first move in this direction. But in these later works, there are further additions to those initial strategies. Not only, then, has McShane's context of the Axial Period become again larger and more explicit, but also it now incorporates his own context of pragmatic action within the realm of linguistic feedback, as noted above.

Before identifying the strategies McShane uses in his new pragmatic style of writing, I think it will be helpful to bring out at least some of the major cultural deficiencies McShane now explicitly associates with the Axial Period. Let me begin by saying that there are several interrelated 'axial lacks' to which McShane explicitly points. So he identifies as axial and problematic, the present cultural state of extreme *nominalism*; a secular-oriented modern attitude of 'busyness' which tends to exclude genuine *Mystery* from its horizon; a widespread cultural neglect of *theory*; a common global reality of *neglected and truncated subjectivity*; and, finally, a consequent lack of appreciation for and achievement of genuine adult, or

Elder, growth.⁵³ All of these axial facets have been part of McShane's perspective and work from the beginning but now he is moving into a much more explicit mode of specification.

Consider a handful of quotations from some of his later works which serve to tie together the above-mentioned 'lacks.' The 'Bacchus pages' of *Lack in the Beingstalk* address most explicitly the lack of Mystery and Elder growth in axial culture. Included here is the 'eye of the storm' diagram, re-quoted from his 1976 book ("It is only in the eye of the storm that one can name the Mystery"). In the earlier work, the 'eye of the storm' is used to illustrate *intentio entis*, or the intention of being, which is "at the centre of the vortex of method and at the centre of any person's storms of finitude;" the same 'eye' is drawn on in Faith, only now it is experienced as Mystery. McShane's linking of the axial period to the larger *notion of being* and to a Christian context of Trinitarian theology and total history, is carried forward and enlarged here. In the second Bacchus page, for instance, notice that Mystery is now much more subtly and personally conveyed as the "Upanishadic or Zulu desire that twists around all our genitaled molecules." By drawing on classical Indian and African sacred traditions and beliefs, McShane opens up global cultural appreciation and resonance beyond Western Christianity. He is finding cultural parallels to extend his message to a larger and yet much more personal global community. Further, to make mention of "our genitaled molecules" he is drawing the notion of being 'back' into its full and proper personal genetic home, while pointing to and hinting at the full aggregformic structure of that desire.

More than that, the second Bacchus page comments on his earlier work, and his comments now are in the explicit realm of pragmatic need. So he specifies his own foundational growth in meaning since his writing of the 1976 work. While in his earlier works Mystery and adult growth were topics, they weren't explicitly identified in this context as cultural *lacks* in need of pragmatic attention. Further, as well as specifying the

⁵³ I have not included individual references here as they are too numerous to begin to cite. These topics can be found mentioned in all of McShane's works, from the earliest on up to the present.

pragmatic need of both ontogenetic and phylogenetic growth in meaning, McShane now also makes the distinction of the need for *heuristic clarification* of that growth. His own 'growth curve' ($y = x^2$) offers an instance of *how-to* meet the latter heuristic need, at least as a starting point here. Finally, McShane's larger axial context now invites *pragmatic personal decision* regarding one's own stand toward authentic Mystery and Foundational adult growth:

But that I and that storm are in an Axial Pericular sea.
You are incessantly invited to settle down. You are
invited to call for plain meaning in a necrophiliac
obviousness. You are invited to expect to meet
yourself of last year, of twenty-five years ago, as an
obvious equal.

You would be older, but not Elder.

What does your aye desire? (Lack, Bacchus page,
concluding words, italics mine)

As this quotation makes clear, his message of axial lack and his own context of pragmatism now used to meet it, is an explicit aspect of his context here.

Also in this book is a hearty critique of an axial culture steeped in nominalism and lacking in genuine theory. Lonerganism itself is critiqued as merely nominal, as avoiding the call to Mystery, to theory, and to genuine Foundational growth (ch. 4). This critique brings out the dialectic of views between McShane, in his position for Mystery, and other Lonergan scholars calling for clarity of expression and meaning.⁵⁴ Ultimately, McShane's analog of Husserl's life work (in mathematics and phenomenology) is put forward in order to make the point that it is not only the fields of mathematics, phenomenology and logic that require the cycling and re-cycling of Functional Specialization. Such axially dialectic views, surrounding both Husserl in phenomenology and McShane in philosophy and theology, will only be authentically aired when the cycling of Functional

⁵⁴ See here McShane's account of the editorial disagreement regarding his Appendix to *Phenomenology and Logic*, CWL 18, 319-21.

Specialization begins its efficient churning: "You may well have expected some such [random comparison and debate] here... But what might the value be? You can peruse... and read... and come out somewhere in the middle, but it would not constitute efficient hodic progress" (*Lack* 45-46). By making "hodic conversion an unavoidable topic" McShane is hoping to identify this collaborative possibility as the "central lack in the beingstalk" (53). His critique of a nominal axial culture is lifted now into the pragmatic zone of the need for the spiralling of Functional Specialization that will give that culture a lift.

There is also the article "Towards a Luminous Darkness of Circumstances" and Cantower XVII, section one, on Mystery. Both works convey the message of axial lack and the need for pragmatic solution. In the first article, he writes:

I am inviting you, more concretely than Lonergan, less eloquently than Ortega, to discover the call [to genuine adult growth], its presence or absence, the shade of its nature, above all the slow rhythms of its reaching.

There is then, adult growth in mathematical physics, a growth that can reach beyond graduate studies... It has parallels in the more difficult fields of chemistry, botany, zoology, etc. Much of contemporary culture takes a stand against such adult growth... Instead of an openness to the unknown there is established a bogus nominalistic essence that can crib you into acceptable graduate studies...

How can this rigid handing down be unseated?

What is important to notice here is the manner in which the cyclic structuring of inquiry [of Functional Specialization] shifts the statistics of the successful reading of the book *Insight*. ...I speak of possibilities, perhaps thin probabilities, of the next millennium. The emergence of the third stage of meaning, in which luminous extreme realism becomes a core dynamic, depends upon a willingness towards hodic

logic in a creative minority.⁵⁵

And there is Cantower 17:

My quest, then, remains the quest for some few evolutionary sports... “Evolutionary sport” is to be understood, in your own elderhood perhaps decades hence... Then ... you will remember the Proustian climb through arts and sciences and suffering soaked into one’s straining molecules.

My quest now is more precise and more hopeful: how is this sensability [of authentic nescience] to be acculturated against the current mythologies?

The task for us all is to muddle along, twisting around the dynamic of major and minor authenticities, with as much growing luminosity and honesty as possible... What I look towards is the genesis of a culture that would intussuscept the orientation of W1 in such a fashion that the next global generation would grow up with the mood of unfamiliarity that it invites.... The words that I introduce here may grow to have the same vibrancy of meaning, distance, invitation: relations to us... of cosmic yearnings.⁵⁶

McShane’s context of pragmatism regarding the present Axial Period of which he writes envisions a future lift of global culture toward which *his own efforts of linguistic expression* reach.

With the mention of W1 in the above quotation, it seems a good time to return to McShane’s ‘third prong’ pragmatic strategy of altering his own mode of communication in his writing. It is through these strategies, like that of puzzle-solving mentioned earlier, that McShane addresses pragmatically the axial lacks he identifies. In other words, not

⁵⁵ McShane, “Towards A Luminous Darkness of Circumstances,” available on the website www.philipmcshane.ca, 8-9; 10-11; 12; 19 respectively.

⁵⁶ McShane, Cantower 17, pages 3, 9, 11, 13 respectively; W1 will be discussed shortly.

only does he make these 'lacks' a topic by writing about them, but also his manner of expression, his way of writing about them, is such that he *challenges*, pragmatically, the specific problems or lacks he has identified. And this stylistic *challenging* is now an integral part of his context.

Take W1,⁵⁷ for example. By introducing complex *symbols*, such as this one, McShane challenges his reader to confront the axial cultural tradition and problem of nominalistic understanding. Through this tradition, mere familiarity with words passes for 'serious understanding.' Symbols and signs such as W1 make use of the denser images which are regularly found in the realms of natural science and mathematics. McShane uses them to evoke the long, slow-growing process of understanding that such realms of meaning require and invite, and to make the point that a parallel perspective (on growth-of-meaning) needs to enter into the realm of the human sciences, particularly philosophy and theology. His various *diagrams* create the same kind of cultural challenge against nominalism (esp. *BHT* 108-10; 124). They also introduce a respect for the density of growing meaning. Dense diagrams, such as the 'Turn to the Idea' in *A Brief History of Tongue* (124), raise the point that humanity will need increasingly complex images as (and if) it gradually moves toward a larger control of growing meaning.⁵⁸

Slogans and Pragmatic Principles⁵⁹ are another strategy which McShane employs in his writing as part of his context. In his pragmatic *Childout Principle* ("Teaching children

⁵⁷ This 'first word of metaphysics' was introduced by McShane in *Wealth of Self, Wealth of Nations: Self-Axis of the Great Ascent*, published in 1977 and now available on the website www.philipmcshane.ca. Cantower 17 names two further words of metaphysics created by McShane.

⁵⁸ See also *BHT*, 123-24, footnote 27: "The diagram is an invitation not to take fright: as humanity progresses, images necessarily complexify as invitations both to control and to reverence the density of growing meaning. Instead of the notes of birds we have the melodic and symphonic notes, manuscripts of musical genius, mightily beyond our own sensibilities. A good diagram, like the printed image of a piano concerto, calls us, if not to actual reading at least to admiration."

⁵⁹ See, for example, his 'minimal foundations' of *Pastkeynes Pastmodern Economics*, chapter three.

geometry is teaching children children”), he points readers, and especially teachers, toward questions and problems of “truncated subjectivity” and invites them, in concrete fashion, to discover Lonergan’s definition of generalized empirical method, particularly the later definition. His *Minimal Foundations* are yet another avenue for pointing readers toward both generalized empirical method and Functional Specialization.⁶⁰

The key to all of these strategies lies in the fact that McShane does not attempt to *explain* his meaning.⁶¹ Each of his pragmatic strategies of linguistic expression in this later context offer only pointers and leads for an interested reader. Such linguistic strategies direct attention to the *attitude* of the reader. McShane attempts to evoke the reader’s curiosity and interest, on the one hand, but by doing so, he realizes “it most likely means [for the reader] a straining of present habits, of truncatedness foisted on you by present literature...” (*Lack* 163). So his manner of expression is likely to disturb the reader’s axial-rooted expectations of what it commonly means to ‘read’: for example, the reader may experience impatience, resentment, or annoyance when confronted with McShane’s strategies of *not telling*, but hinting, of inviting the rather novel experience of having to slow down and spend days, weeks, or months ‘puzzling a thing out.’ To offset these reactions, McShane makes axial-rooted expectations themselves an explicit topic. He deals with such expectations by talking explicitly about the ‘axial’ feelings of annoyance and resentment that might typically be felt in reaction to his words. Further, he also makes a point of raising the broad cultural topic of needing to “read differently,” “eyes off the page” and “without prejudice.”⁶² This topic of ‘reading,’ in fact, is one

⁶⁰ Another ‘strategy’ increasingly used by McShane, though not exactly a ‘strategy,’ is to identify as *doctrinal* those statements or works which invite a more or less long-term personal climb of understanding. Lonergan’s *Insight* is the most notable work identified as *doctrinal* by McShane. (And the manner of expression in this article itself falls under that category.)

⁶¹ *Lack*, chapter three, section six, for his more recent meanings of explaining, explaining, coplaning, and suplaning.

⁶² See especially *Pastkeynes Pastmodern Economics*, chapter five, 64

that McShane has written into his work for nearly thirty years, bringing it round now to this larger, more pragmatic context.

By introducing these pragmatic linguistic strategies into his writing, McShane is attempting to turn the axial tide toward a distant post axial future. In doing so, he is attempting to deal with generations steeped in nominalism, secularization, and truncation, and lacking in respect for Mystery and genuine adult growth. So he is building into his pragmatism, by a purposeful obscurity,⁶³ by a twisting of the usual (*Lack* 154), both an awareness of these lacks and of the distant possibility of their redemption. He is also attempting to convey to global culture the *need for* lifting history forward. In taking this pragmatic stand, he hopes to elicit a glimmer of respect for the slow-growing meaning that his words, puzzles, slogans, principles, and diagrams point to. If successful, McShane's work on the Axial Period may result, some time in the future, in a shift of global statistics towards reading *Insight* successfully,⁶⁴ lifting culture some way forward to the distant goal of third stage meaning that he envisions. At the very least, it will no doubt reveal future enlargements to what has already been a "giant-stilts"⁶⁵ climb.

where McShane quotes Descartes' advice on reading: "I would advise none to read this work, unless such as are able and willing to meditate with me in earnest... and likewise to deliver themselves from all prejudice." Elsewhere, however, he makes use of Gaston Bachelard's recommendation in *The Poetics of Space* that one is reading properly only when "eyes are off the page." See McShane's earlier work, *The Shaping of the Foundations*, chapter four, 98, footnote 11 for an earlier reference to this quotation. McShane has drawn on this quotation for nearly thirty years in his effort to encourage an appreciation of mystery, of 'boned in meaning,' and of the slower pace and painstaking process of understanding.

⁶³ Having talked briefly about "the distantly future version of the *hodic* enterprise," his concluding words to chapter three of *Pastkeynes Pastmodern Economics* go on to ask: "What is this distant pragmatics that I barely hint about? Very superficially, it can be suggested that it would replace the grammar of descent... with a grammar of ascent that would de-colonize desire's expressions. This, *I fear not but savour*, tells you little or nothing." *Pastkeynes*, 73 (italics mine).

⁶⁴ McShane, "Towards a Luminous Darkness of Circumstances," 19.

⁶⁵ From Marcel Proust's *Remembrances of Times Past*, conclusion. Proust's 'man on giant stilts' is an image which McShane draws on repeatedly as his own context grows.

Part Three: Personal Context

I am not exaggerating in the least when I say that the process of writing this article has been an expansive and rewarding experience. It has been my first attempt at doing a scientific *interpretation*, one that aims, as much as possible in these early stages, to be in line with Lonergan's ideas and suggestions. The fact that my attempt at an interpretation, along with the efforts of the others in this journal volume, is, as far as I'm aware, something of a first attempt, means that there are bound to be struggles and ambiguities in how to proceed. For this reason, it seems important that these struggles are shared in order to try to ease the way for future efforts. My own way of dealing with the struggle of doing this interpretation was to keep notes on the questions and problems and ideas that arose for me along the way. It is mainly from these notes that I now write my personal context in the hope that my struggles may help others in their own similar tasks.

I began work on this article in earnest in September, 2003. Aware of my commitment to do some kind of interpretation for this volume, I had asked myself what topic I might possibly consider. Perhaps because trying to understand Lonergan is a primary focus in so much of what I do, I initially thought that I might tackle an interpretation of some aspect of his work. I jotted down especially topics that I wanted to learn more about. Right away, though, I saw a major problem with this line of thinking. In my journal I had written: "Trouble with this though – not an interpretation but merely a learning... so how to go about the article? Can only start by spelling out my missing contexts, which are huge, and try to get something out of it..." But this isn't an interpretation in an efficient functional sense.

So I went on to consider other fields (music, feminism, maybe psychology?) in which I have some experience. From my degrees in music and musicology I considered doing an interpretation on music and meaning. Also, following my recent book on philosophy and women, I thought of tackling Betty Friedan's notion of the 'feminine mystique' and how it might relate to Lonergan's notion of the pure desire. Likewise, I considered looking at some of Abraham Maslow's ideas on

growth psychology from a similar light. The topic of music seemed the most likely, while the latter two topics seemed too involved and complex to be successful first attempts at interpretation. These last two topics had to draw on the major issue of human development and, consequently, rested in large part on a competence in the genetic heuristic structure, so there was again a good chance of my falling into that problem of 'merely learning' instead of properly interpreting.

When the topic of the Axial Period was suggested to me, I was immediately interested. It was a topic I had explored and included in my recent book on women.⁶⁶ In its relationship to large questions about the meaning and process of history, it had very much piqued my interest. Further, it had the advantage of being a single 'contained' topic that was 'handle-able' for a genuine, and hopefully successful, attempt at an interpretation.

What is important in all this personal history is that, within this 'simple' initial process of trying to arrive at a suitable topic for an interpretation, I found that some quite profound questions had already come up. I had written in my notes: "What to use as guidelines for selecting a topic for interpretation? In music, for example, I would try to look for the work of someone who is striving toward a 'self-luminous' view, though without the benefit of Generalized Empirical Method... Susanne Langer, for instance." I would now add that I would want to look for someone whose work I considered to be significant to history. It seemed obvious to me that McShane's work on the Axial Period is significant to history, and it also contained a significant 'self-luminous' content and context. So should any chosen topic have this type of 'lift' in it? If it isn't directly related to Lonergan's work and ideas, should it always be something that can benefit from, or be lifted by, Lonergan's perspective? Does this assume that all interpreters are familiar with Lonergan and his work? "What," I wrote, "of those in other various disciplines who do not have Lonergan's context? What then is a 'significant topic,' one suitable for an interpretation?"

⁶⁶ Alessandra Drage, ? *Woman What Gives* (Halifax: Axial P, forthcoming in 2005).

In retrospect, I realize that these questions raise the complex issue of personal horizon or individual viewpoint, of ‘positional’ or ‘categorical’ stand, even. What would seem a topic of significance to me, may be not at all significant to another interpreter. It seems to me that what we’re into here is the need for a universal viewpoint, an acknowledgement of the protean notion of being and of the need to deal with it in an explicit fashion. John Benton has raised this issue of personal horizon in his own article where he talks about “tracking.” As I understand it, the primary function of the universal viewpoint is to make explicit the fact of the varying personal positions and horizons of interpreters (*CWL* 3, 587-91). Benton’s “track,” then, with its colourful rainbow spectrum of differing horizons and zones of conversation, seems a very helpful image in expressing the function of the universal viewpoint.

The need to deal explicitly with the issue of personal horizon, of personal context, at first reaction, however, seemed to me to have more to do with Dialectic than Interpretation. In fact, it is the editor’s intention for each interpreter/author to include a somewhat informal version of the positional statement required in Dialectics (*Method* 250). Given the fact that questions of horizon come up right from the beginning, even in the so-called simple process of selecting a topic for interpretation, it does strike me as important for each author to include and make explicit her or his own horizon. This need is in fact stated in the third canon of methodical hermeneutics: the canon of successive approximations. Its first two principles are the demand of a universal viewpoint and of adequate self-knowledge. Where do I, where does each author, stand in respect to these two principles?

I think of my answer as a means of ‘introducing myself positionally,’ so to speak. For instance, as I was preparing to write this section, it helped me to imagine myself at a scientific conference, a chemistry conference say, where I might stand up and say what field I specialize in, knowing that the rest of the audience takes it for granted that I possess the prerequisite basic position, say, on the periodic table – in fact, surely it would be silly to even mention that assumption at such a conference! But in this field of philosophy, we are at a very

early stage of trying to work scientifically, and so it isn't silly to introduce myself as possessing, or not possessing, this or that basic prerequisite position philosophically.

By way of introduction, then, I have been working at Lonergan's philosophy since 1987. My introduction to Lonergan came, providentially, as I was starting in on a degree in music. My spare hours over the next four years were absorbed in *Insight*, and various other related works, especially Philip McShane's *Wealth of Self, Wealth of Nations*.⁶⁷ In September of 1991, having completed my music degree, and after struggling for four years part-time with "The Inside Out of Radical Existentialism," I experienced the startlingly strange insight that placed me in the universe.

This shift in me became my beginning. So I can claim intellectual conversion as it is written about in *Insight* (22-23) and *Method* (238-240). Since then, I have made a slow struggle to build on that insight, to make an "impossible climb" toward a theoretic metaphysical world, though my progress has been slow and little. By this point, I possess a fair degree of 'Positional' comfort: when adverted to, I am comfortable with the fact that any real person I am talking with is *not* that person out there who I am looking at; that if I advert to real words, then these words on this paper 'disappear;' that when I advert to the real movements of my real fingers on my own my real hand, then the movements out there become a quite wondrous, 'detached' ballet; and so on for as many more examples as one wants to repeat.

I think I can also claim a 'normal' moral and religious conversion, as well as aesthetic conversion. I am, however, missing a crucial conversion to theory, which I believe limits the full development of intellectual conversion. In fact, it is only in the past two years that I have come to realize and embrace fully, in my own inner conviction, the need for theoretical conversion.⁶⁸ During this time, through particular

⁶⁷ McShane, *Wealth of Self*, www.philipmcshane.ca.

⁶⁸ What is becoming clearer to me through the work I have been doing recently, not the least of which is this interpretation, is a crucial distinction between what I might call "sophisticated description" and theoretical achievement. It has helped me to be able to reflect back on a degree I

aspects of work I've been doing, I have gradually come to feel within me and to realize a call toward living fully in the universe of being, a call that makes me responsible, commits me to a climb (foundational or categorial in name) within being, trying to greet the universe in as full a way as I can.⁶⁹ For me, this means tackling what is lacking in my horizon: mathematics, physics, chemistry, not in the hopes of becoming a 'professional' in any of these fields, but in the attempt to bring myself up as best I can to some familiarity and basic competence with these dynamic aspects of God's universe in order to fill out my genuine foundational climb.

For the purposes of this article, I also feel the need to speak of the universal viewpoint. A major question for me through this interpretative work has been to ask myself what is *my* universal viewpoint? I have an appreciation of *a* universal viewpoint as a distant, and in some sense 'impossible,' future goal of functional specialists working together, the possibility of their achieving a genetic and dialectic ordering of all critical viewpoints. But concretely, what is *my* universal viewpoint? It seems to me that, if the UV is the range (potential totality) of genetically and dialectically diverse (ordered) viewpoints, then my concrete possession of that range is very limited, in fact may well be limited to the one view of this particular interpretation that I have just done. Of the total potential range

completed in Kinesiology (1982-86). During this time, I struggled through courses in Anatomy and Physiology taken from the Medical School at Dalhousie University. My experience in these courses, in retrospect, offers a clear example of the huge difference between the "sophisticated descriptions" of anatomy, which were relatively easy to understand, and the functional theoretical relations of physiology, and of our later courses in biomechanics. The latter were *much* more difficult. As trying as they were then, I now find my experiences very helpful, especially in relation to reading page 464 of *Insight*, for instance.

⁶⁹ As I was writing this passage, I happened incidentally to pick up Lonergan's *A Third Collection*. In my reading, I almost immediately came on these words: "Only in virtue of this further level of consciousness [level of reflection] can we set aside myth and magic and astrology and alchemy and legend and begin to live by philosophy and science and astronomy and chemistry and history. It is a decisive stage in the process of self-transcendence when we not merely think of the universe but begin to know what the universe really is." 3 *Coll*, 132.

of genetically and dialectically ordered viewpoints, what share do I genuinely possess? Not much!

I can, though, claim a conversion to 'hodics' or Functional Specialization, at least in some basic level of commitment to its future functioning. I think I can also claim some introductory degree of competence and understanding of what this structure is about. At the present time in history this seems to me the best we can do. Like the volume of this journal, our limited efforts at getting Functional Specialization off the ground are only beginning-ventures in what will some day be, I hope, a much more specialized theoretic zone of the control of human meaning.

This brief review, then, expresses my horizon, my positional stand. With this said, I turn back now to the context of my struggles of 'doing interpretation.' My next step was obviously to gather the relevant materials on the Axial Period (here the specialty of Research would have been helpful) and read through them, slowly accumulating insights from his writings into the development of McShane's meaning. Once again, as I approached this reading, some very basic questions arose: "What was I trying to achieve with this interpretation? What was my goal? What information in the documents and texts was relevant and what wasn't? Who was I writing to?" As I went along I was able to answer at least one of these questions, as my notes reveal:

I can see in re-reading this that at least one question is clearer – that of the aim of the interpretation and who is reading it... Strictly speaking, the aim has to remain *functional*. So I'm writing for historians and they are the primary audience. As far as the more specific aim of how to write functionally, that's still in the fog. What I'm trying to do is first piece together the works that deal with the Axial Period – next try to figure out what McShane in each work was saying about the Axial Period. Then (now) try to figure out how the meaning has changed – *grown*, expanded - between each work, or from one to the next. Each expansion seems, at this point, to be what is relevant – and then to ask *why*? Why the expansion? What moved him

forward to the new meaning? This is, as far as I can figure, the process of trying to pinpoint the “operators” – it seems that in doing these steps I’m pivoting between content and context... the one filling out the other.

First of all, then, I had to aim at being *functional* in my task. So I was providing the historian with an interpretation that she/he could use to place the Axial Period, as one particular view of history, within the full range of philosophic views of the meaning of history generally.

Secondly, though, and what this excerpt makes somewhat clear, is the fact that my questions of *how* to proceed functionally were met at this time by a point in *Insight* (594) regarding the identifying of operators. This hint helped me forward to construct the *context* section of my interpretation, which I wrote first. Having written that section, though, I wasn’t sure how to approach the *content* section. How would it differ from the context? What was the aim here? In fact, the last sentence in my journal entry above reveals, perhaps, my confusions at the time about *context* and *content*, something that was to be clarified only later during my struggle to figure out just what my pure formulation of the content should express.

But I’m getting ahead of myself. Once I had realized that I was writing to historians in a purely functional manner, I faced the question of *how* to proceed. What I can say now, after the fact, is that I was able to find my way forward only by struggling repeatedly with the relevant texts and documents for my topic (the Axial Period), combined with *Insight’s* chapter 17, especially section 3.6 *The Sketch* (602-603) and section 3.8 *Some Canons for a Methodical Hermeneutics* (608-16) and *Method’s* chapter 7 on *Interpretation*. Only by attempting repeated drafts of my interpretation, noticing my shortcomings and correcting and revising as I went along, did I arrive at some fresh light on the meaning of these two chapters.

It isn’t realistic to think that I could ‘summarize’ my process for you, but it occurred to me that a few words about my struggle to sort out ‘hypothetical expression of pure formulation of content’ might help others in their own future

struggles. My confusion, it seems to me, revolved around page 580 of *Insight* (CWL 3, 602-03) on the hypothetical expressions: how to transpose the content of 'Q's' message (or in my case, McShane's message) from my universal viewpoint "into an equivalent content that would proceed from Q's particular viewpoint. That particular viewpoint is assigned in the pure formulation of Q's context"?

In retrospect, it seems that the main point in this paragraph is the need for the interpreter (me) to come to possess the meaning of author x (here McShane) *as my own*, that this possession would ground my hypothetical expression of content. How do I do that? From my "immanent sources of meaning," that is, in my own experience, understanding and judgement, I have to try to reproduce McShane's viewpoint, the content of his particular message. And in doing so, I have to ensure that my interpretation is as closely "equivalent" to McShane's viewpoint as possible.⁷⁰

Let me see if I can make this a little clearer. I was struggling to figure out just what I needed to express in regard to the content of McShane's meaning of the Axial Period. I came to realize that for the functioning of History, what the historian needs to know is a compact answer to the question "what is the Axial Period?" Now my first inclination was to think that it would suffice simply to repeat what McShane had himself said in his texts on the topic. But of course there is a major flaw in this idea: *it isn't functional*. Or I might say, it's *dysfunctional*. For a functional interpretation, I needed something more than simply a repetition of his words, mimic-like or parrot-like. So what to do?

The breakthrough to this dilemma came for me when I began to consider what the word "hypothetical" implies in this methodical procedure of interpreting. As scientific, it implies the putting forward of a hypothesis or theory just as in any other science. I had been focusing heavily on the question "*what* is the Axial Period?" But now it dawned on me that, for the purpose of arriving at my own hypothesis about McShane's meaning, and in order to move beyond a mere repetition of his

⁷⁰ See the "threefold control" of CWL 3, 603 and relate these controls to the canons of interpretation at the end of the same chapter.

words, I needed to ask myself a further question: *Why* does the author claim that this period in history is the Axial Period? Or more simply, *why is this the Axial Period?*

By answering this further *why?* question, I was providing historians with the *conditions* necessary for verifying the Axial Period: *the Axial Period is such and such because...* In effect, what I was doing was pulling together and presenting what I considered to be McShane's 'final view' of the Axial Period, a sort of 'best view' that wasn't necessarily expressed anywhere in his writings. This was my hypothesis. I was *proving* my case about his meaning of the Axial Period, verifying it in order to pass on to historians an efficient formulation. In my notes I had written: "I need the essential points that together provide the 'proof' of *why* the author (McShane) claims that this period in history is the Axial Period – i.e., proof of why the author's content is what it is... and proof exists in the context, in the documents." For this reason, my 'McShane-close' expression, and also my 'Lonerganian' tone of expression, particularly in the first section of this article, were part of my proof.

My *why?* question opened up a more profound view, though, one that I only realized later after much reflection. My *why?* question asks for the *form* of the Axial Period. In terms of causality, this fact sheds some light on 'what we are at' when we are doing Interpretation. Each interpretation asks about and attempts to arrive at the form of some author's meaning. So my hypothetical pure formulation of the content of McShane's viewpoint of the Axial Period is, then:

- 5) a piece of history that is in need of being actively identified;
- 4) a process of interpretation that was in accord with the efficiency of the design of Functional Specialization;
- 3) a move from Jaspers, Toynbee, and Voegelin, to Lonergan through McShane, and from myself onto future historians;
- 2) part of the form of Emergent Probability;
- 1) revealed (beautifully) by the data

This broader view is, so to speak, a pointer to an unsuspected larger aspect of my original question. My original question was about the hypothetical pure formulation of the content of McShane's message. After my struggles with this problem, as written about above, it seemed to me that not only did the meaning of "hypothetical" fall into place (as a scientific hypothesis of my own meaning of another's genetically-attained meaning⁷¹), but also the canons began to make sense. The canon of relevance demands beginning from the universal viewpoint, which I was trying to do as best as possible at this early stage of scientific interpreting. The canon of explanation demands adhering to the documents and relating to each other the evidence found within the documents; it was in the documents, and only in the documents, that I must find the evidence to construct the 'proof' of the Axial Period. The canon of successive approximations (in its fourth principle) and the canon of parsimony together provide the basis of the virtually unconditioned, which depending on the sufficiency of the evidence found in the documents and texts, would serve to make the interpreter's (my) hypothesis either more or less certain or probable. Luckily for me, the evidence was there in abundance. From countless relevant footnotes and sources, I was able to confirm McShane's meanings and intentions with a very strong degree of certainty. Lastly, the canon of residues allows for the accidental intrusions and mishaps of time and other factors that may hinder the textual evidence and make the verification of the hypothesis more or less difficult. In my own case, perhaps because I was dealing with an author whose work is contemporary, such difficulties seemed to be luckily minimal.

Further to this light on the canons, when I went back over the chapter on Interpretation in *Method* I found that, once

⁷¹ Obviously McShane's 'genetically attained' meaning is ongoing: he isn't dead, even though it may sound that way in this article! Indeed, given the view of growth presented here, McShane's meaning not only is ongoing, but is ongoing in an accelerated fashion. See the Bacchus Pages of *Lack*. I should add that this 'dead' tone of writing is a problem of expression that I have struggled with in this article without yet finding a way to solve it efficiently. For now, the best I can do is mention it as an issue for further reflection.

again, I was able to make much more sense of what previously had seemed quite vague. Judging the correctness of one's understanding of the meaning of the text, for example, tied in with the canons of explanation and parsimony in *Insight*. Then there was 'understanding the object.' In this case, understanding the object was an obvious prerequisite. The Axial Period required understanding some very precise philosophical ideas, particularly those of Bernard Lonergan. Without this background, most of what is claimed as the Axial Period would be meaningless. So I found I was writing my interpretation to a very specific philosophical (Lonerganian) audience,⁷² an audience that, for this topic, could very explicitly draw on the second principle of the canon of successive approximations, the demand for an adequate self-knowledge.

Again, the phrase 'understanding the words' took on new meaning for me. Now this phrase seemed to tie in closely with the canon of explanation, so that "surmounting the hermeneutic circle" was a matter of always sticking to the texts and documents, the words, phrases, sentences, paragraphs, chapters, in order to build up an understanding of the unity of this author's meaning (*Method, passim*, especially page 159). Most notably for me, my work of understanding the author, if not moving me to an actual theoretic conversion (that would take some years of work!), did shift me into a new horizon in which I came to deeply appreciate the truth of an uncompromising need for theory in the realms of philosophy and theology. What was particularly important in this shift was that I had moved from a position of belief, that is, of acceptance or denial of this notion simply "because McShane says so," to my own position and verification of what is, quite simply, there in the evidence, in the data, in the references and trails of meaning leading back to Lonergan and others. McShane has brought together this evidence, perhaps in ways that are offensive or annoying to others, but the facts, nonetheless, *are* there for anyone willing to 'understand the

⁷² Recall Benton's "tracking" of personal horizon and the different audiences that would correspond to each of the relevant 'colour-coded' tracks of meaning (above, 170).

author.'

In this first attempt at a scientific interpretation, then, I have tried to state the meaning of 'the text,' or in my case, of the Axial Period, in as complete a fashion as I can at this time. My expression is technical: certainly in much of its language, but also in my efforts to relate and integrate McShane's work with the previous work in the field on the Axial Period, and with Lonergan's work in metaphysics and history. In keeping with the evidence in the documents, I have tried to stay within the language resources available to the author, that is, to McShane in *his* work. And if I have not *always* been happy to proceed slowly and carefully, I *have* tried to do so, following the way of the beginner on more than one occasion (*Method* 170-171)! I hope my effort will find a happy home in some future historian's work.

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AD COR LOQUITUR

THE AGGREGATE BASIC PRICE SPREAD: A RESPONSE TO TOM MCCALLION

EILEEN DENEEVE

Tom McCallion's article is a clear and much needed exploration of an important section of Bernard Lonergan's thought on economics.¹ In response I would like to discuss some points concerning Lonergan's notions of costs and profit in the aggregate basic price spread of a pure cycle. My interpretation of Lonergan's notions of costs and profit differs from McCallion's and may offer a considerable simplification to his analysis. McCallion contends that Lonergan's notions of cost and profit are no longer obverse terms (65). To set the framework for the brief discussion I will first say how I understand Lonergan's notion of the "pure cycle."

The Pure Cycle

In an economy like ours, a cycle would be "pure" when human behaviour is well adapted to the time and money constraints of production and exchange.

For Lonergan, a pure cycle "includes no slump... It is entirely a forward movement which, however, involves a [wave or] cycle inasmuch as in successive periods of time the surplus stage of the process is accelerating more rapidly and, again later, less rapidly than the basic stage" (CWL 21, 242-43;

¹ JMDA 2 (2002), 61-80. Bernard Lonergan's economic writings were first published in *Macroeconomic Dynamics: An Essay in Circulation Analysis* (CWL 15) and *Towards a New Political Economy* (CWL 21).

see also *id.*, 245; *CWL* 15, 25). Lonergan also contends that “a pure cycle is at the root of the trade cycle” (*CWL* 21, 275; see also *CWL* 15, 115). As economic actors we are overadapted to the expansion phase, Lonergan’s surplus expansion, and underadapted to the basic expansion; that is, the full expansion of the output of consumer goods and services that enter the standard of living.² For Lonergan, this failure to adapt behaviour to the lags and increments of the productive process leads to the trade or business cycle.

My understanding is that Lonergan proposes the pure cycle as a normative model of macrodynamics. It differs from the static Walrasian equilibrium model, first because it is about the dynamics of production and sale and, second, because it does not make prior assumptions about human behaviour. Walrasian equilibrium is automatic because individuals are assumed to act to maximize their utility or profit, which is regarded as rational behaviour. However, in Lonergan’s pure cycle economic choices also need to take into account changes in production and their price effects. Economic behaviour needs to be based on an understanding of production lags, as well as a willingness to reinvest excess profits (Lonergan’s social dividend) as widely as possible to maintain output and employment and avoid a downturn in the economy. An adequate discussion of the economic behaviour required by production dynamics cannot be undertaken here.

Why Is There No Aggregate Surplus Price Spread in Lonergan?

Lonergan called the price effects of the production cycle the ‘cycle of the aggregate basic price spread.’ Because he focuses on the emergent standard of living, or goods and services that can be consumed, his (selling) price index is the consumer price index (P'). The (selling) price of capital goods (P''), does not appear as a variable in Lonergan’s analysis of the aggregate basic price spread. However, he includes in his

² Lonergan. *Caring About Meaning: Patterns in the Life of Bernard Lonergan*. Interview edited by Pierrot Lambert, Charlotte Tansey, Cathleen Going (Montreal: Thomas More Institute, 1982 info@thomasmore.qc.ca), 81-82.

analysis, the cost of production of capital (surplus) goods and services (p''). This variable is determined by the costs of inputs to the current production of capital goods: labour, management, and financial capital and the current costs of capital equipment (surplus goods and services). Capital goods are entirely an input to production, and their selling price, in the current period, is equal to their cost price to the producers who buy or rent them to use in their current production. In other words $P'' = p''$ in the current period. McCallion seems to make a distinction between the cost and selling price indexes of capital goods in his discussion of replacement costs. I note that McCallion's notion of replacement cost differs from Lonergan's use of that term (68).

Time Periods in Lonergan's Macroeconomic Dynamics

I would like to note briefly here my understanding of the time relation between outlays, income, sales, expenditure or receipts. In an exchange economy, production for Lonergan includes sales, at which point price is determined. Once a product is sold in the current period it either enters current production as a surplus good or enters the standard of living as a basic good. When surplus or basic goods are in production in the current period, the price of that production is still indeterminate as goods are in process until they are sold. Here I differ from McCallion who uses the current selling price index with the current production of consumer goods (68). Further, outlays for production, like wages, are paid in the period. So they become income in the period. And Lonergan does use them as an identity, as the following equations for a pure cycle indicate.

$$I' = c'O' + c''O'' = p'a'Q' + p''a''Q'' \quad (1)^3$$

Basic income is a function of outlays for production in the current period, but it will be used to purchase the "emergent standard of living" or the results of production of the previous period. (Q'). It seems to me that Lonergan does not use notation to distinguish periods of time because he uses instead

³ CWL 15, eqs. 4, 43; CWL 21, eqs 3, 47.

his acceleration coefficients (a'', a') to differentiate current production ($a'Q', a''Q''$) from current output or sales (Q', Q'').

The Notion of Cost in Lonergan

Lonergan's concept of cost is one that

...would include among costs the standard of living of those who receive dividends but not the element of pure surplus in the salaries of managers; worse, it would not include replacement costs, nor the part of maintenance that is purchased at the surplus final market, nor the accumulation for sinking funds which is a part of pure surplus income. (CWL 15, 157; CWL 21, 301).

This description includes notions of both income and cost. As Lonergan himself states,

...the greater the fraction that basic income is of total income (or total outlay), the less the remainder which constitutes the aggregate possibility of profit. But what limits profit may be termed cost. (CWL 15, 157; CWL 21, 302)⁴

I understand that outlays and income as two sides of the same transaction. Producers' outlays for labour and capital are paid out to employees and to people who lend capital and own stocks. These payouts are the basic and surplus income in the economy. Costs are essentially that part of total aggregate income that is consumed. "A very rough illustration may be had if we identify basic income with aggregate wages and aggregate wages with costs of all production and, as well, with the receipts of basic sales" (CWL 15, 158; CWL 21, 303). Basic income is fully consumed in a pure cycle to purchase the full output of basic goods and services. This is necessary in order to maintain full production in the next period. Lonergan explains this when he assumes that flows to and from the redistributive function (R) to basic or surplus demand add up to zero in a pure cycle (CWL 15, 64; CWL 21, 266).

⁴ This is expressed in symbols by equations (41) and (43) in CWL 15 and in McCallion, as well as in CWL 21 equations (45) and (47)

My understanding is that this notion of cost differs from mainstream economic notions only in its exclusion of replacement costs (CWL 15, 25-26; CWL 21, 236).⁵ For Lonergan replacement costs are part of surplus income sourced in basic and surplus sector outlays. ($I'' = i'O' + i''O''$). There is a difference here with McCallion (64), though it may be typographical.

**Why Does Lonergan Say That Surplus Income
“Constitutes the Aggregate Possibility of Profit?”**

As we know from Lonergan’s equation

$$O' + O'' = I' + I'' \quad (2)^6$$

outlays of producers in both sectors of production become incomes to people who receive them, in their role as economic agents (CWL 15, 48; CWL 21, 254). This income can be divided into basic and surplus income. In all phases of a pure cycle, basic income is fully consumed in purchasing the standard of living or basic goods and services. Similarly, in all phases of a pure cycle, all surplus income must be spent in surplus final markets to maintain or increase the possibility to produce the current or rising standard of living.

Using again the quotations from the previous section, we note that surplus income includes the surplus in the payments to managers and others. It also includes “replacement costs,” “the part of maintenance purchased at the surplus final market,” and the “accumulation for sinking funds that is part of pure surplus income.”

It is my understanding that Lonergan does not include replacement costs in his notion of cost because they are indeterminate. Until surplus expenditure occurs it is not clear whether surplus income will be used to replace or scrap or upgrade or increase the means of production. That will be decided in the capital investments (surplus expenditures) in the

⁵ On the ambiguity of replacement costs see John Maynard Keynes, *The General Theory of Employment, Interest and Money* (New York: Harcourt Brace Jovanovich, 1964[1936]), 62-63. See also Keynes’ Appendix on User Costs, 66-73.

⁶ CWL 15, eq. 2.

period. As surplus income, funds for replacement are merely potential for profit for Lonergan.

My understanding is that in a static phase the surplus income will not include pure surplus, but will include sufficient surplus income to cover simple replacement costs. But, as Lonergan notes, a static phase is merely a theoretical possibility (*CWL* 15, 115; *CWL* 21, 275). In an economic expansion, involving better means of production as a result of new ideas or innovations, as well as more means of production, Lonergan explains the existence of pure surplus income, which need not be spent in surplus or basic final markets to maintain the current level of production. However, it needs to be invested to continue an expansion to its limit in the production of consumer (basic) goods and services (*CWL* 15, 146; *CWL* 21, 293).

As it would take us into a major new section of Lonergan's economic thought, I will postpone further discussion of pure surplus income, its variation over the cycle, and the adaptive behaviour it requires.

Lonergan's Equations for the Aggregate Basic Price Spread

Lonergan's price analysis explains how the expansion of the productive process with its "time to build" lag affects the selling price level of consumer goods, P' . He proposes two equations⁷ as follows:

$$P'Q' = p'a'Q' + p''a''Q'' \quad (3)^8$$

where the selling price of consumer goods ($P'Q'$) is equal to the cost of the current production of consumer (basic) goods plus the cost of the current production of capital (surplus) goods. The cost price indexes for basic and surplus goods are p' and p'' . Q' and Q'' are, respectively, the basic and surplus goods output or sales during the current period. Lonergan explains the acceleration coefficients a' and a'' showing how they will depend on the ratio of current production to current

⁷ McCallion, 67.

⁸ *CWL* 15, 158, eq. 44; *CWL* 21, 302, eq. 48.

output over the cycle. He states that whereas in a stationary economy the coefficients are equal to one, in an expanding (contracting) economy they are greater (less) than one.

Then, dividing equation (3) through by $p'Q'$, the cost of the current output of consumer goods, we have Lonergan's second equation:

$$J = P'/p' = a' + a''R \quad (4)^9$$

J is defined in the equation and represents the aggregate basic price spread, a ratio as McCallion notes. Given the assumption that all basic income is consumed in a pure cycle, these equations show precisely the dependence of the variation in the consumer price index on acceleration in production in each sector, as well as on the ratio of the output in the capital goods sector relative to that in the consumer goods sector.

By assuming that the cost prices of basic and surplus producers will tend either to move together because they have the same determinants, and that any variation will tend to reinforce the changes in quantities, bringing no distinct source of variation, Lonergan is able to eliminate the price variables from his ratio of the monetary values of current output in the surplus and basic sectors, $p''Q''/p'Q'$ (CWL 15, 158; CWL 21, 303). Thus $R = Q''/Q'$. Lonergan then has a simpler equation for the derivative of J to explain the basic price spread over the cycle. I do not understand why McCallion needed to introduce π' and π'' as cost price indexes instead of Lonergan's p' and p'' (66).

I conclude my comments on Tom McCallion's article here. The behaviour of the aggregate basic price spread over the pure cycle and the threefold possibility of the cycle's derailment through speculative behaviour, would require too extensive a discussion. However, I would note that my understanding of the sequence of phases in a cycle is: proportional, surplus, and basic—a point of difference with McCallion (75-78).¹⁰

⁹ CWL 15, 158, eq. 45; CWL 21, 302, eq. 49.

¹⁰ This sequence is similar to the graphs presented for clarification by the editors of CWL 15, 121-125. See also CWL 15, 115 and CWL 21, 275

A REPLY TO EILEEN DENEEVE

TOM MCCALLION

Firstly, I am delighted that what I wrote has triggered any kind of response at all, even one that is a little unfavourable. I was beginning to despair that, apart from a few lone wolves like myself, hardly anybody was paying the slightest bit of attention to Lonergan's economic writings. (Perhaps, of course, this is still the case, and Eileen DeNeeve is just one more lonely addition to a very sparse set!)

DeNeeve gives an excellent summary of the central points in her section, "The Pure Cycle," (184ff) in relation to the differences between Lonergan's position and that adopted by mainstream economics. I would heartily recommend this statement as a clear headed and succinct elucidation of Lonergan's central notions.

It is in the next paragraph that she begins to outline in more detail her differences with the position I adopted. Let me list our various disagreements as she sees them, not necessarily in order of importance but in sequence as they appear in her text.¹¹

1. We differ on our interpretation of Lonergan's notions of costs and profits (I claim that for Lonergan these cannot coherently be treated as obverse terms).
2. (Lonergan's) "(selling) price index is the consumer price index (P'). The (selling) price of capital goods (P'') does

for the sequence of phases. Note that the table there differs from the text. See also *CWL* 15, 160 and *CWL* 21, 281, 305 for the phase sequence. The word "initial" has been omitted in *CWL* 15.

¹¹ There is one other 'difference' to which she refers. She quotes the formula: $I'' = i'O' + i''O''$ and then says, "There is a difference here with McCallion, though it may be typographical (64)." She is correct (and I am grateful for having it pointed out). The upper (surplus) flow in my diagram (on my page 63) is correctly labelled: $I'' = i'O' + i''O''$, so that this is precisely the same as what she herself asserts. But on my page 64 I made the mistake of writing "[i.e., $c''O'' : c'O''$]" This should of course read, "[i.e., $i'O'' : i''O''$]"

not appear as a variable in Lonergan's analysis of the aggregate basic price spread. However, he includes in his analysis, the cost of production of capital (surplus) goods and services (p'')" (186).¹²

3. My "notion of replacement cost differs from Lonergan's use of that term" (186).
4. "When surplus or basic goods are in production in the current period, the price of that production is still indeterminate as goods are in process until they are sold. Here I differ from McCallion who uses the current selling price index with the current production of consumer goods (68)" (186).
5. Her "understanding of the sequence of phases in a cycle is: proportional, surplus and basic – a point of difference with McCallion" (191).

I will discuss each of these briefly below (actually in reverse order), but it is perhaps important to notice that in her first paragraph she is purporting to be outlining an "interpretation of Lonergan's notions of cost and profit that differs from McCallion's and may offer a considerable simplification of his analysis." The ambiguity of the pronoun 'his' in this quotation, though no doubt unintentional, is significant. My own analysis is complicated because it is an attempt to follow, more or less exactly, the complicated discussion by Lonergan himself (*CWL* 15, 156-62). Apart from notational changes I have neither added nor subtracted anything from the master's discussion.

¹² At this point let me dispose of her later question as to why I introduced Greek letters π' and π'' instead of Lonergan's p' and p'' . In fact I did this with many of Lonergan's symbols for those variables that are in fact ratios or indices (but not all – for example, I retained the upper case versions P' and P'' instead of the perhaps more consistent Π' and Π''). This was in an attempt to be more systematic throughout the larger text (on the whole of Lonergan's economics) on which I was then working, and I readily grant that it could represent on my part just a kind of mathematical fetishism.

DeNeeve must therefore ask why Lonergan himself thought the matter was as convoluted as he clearly did.

Let me now try to answer the five ‘objections’ as listed above. I will tackle number 5 first, as it is the least contentious. I do not have any difficulty with DeNeeve’s particular preference in relation to the order for discussion of the three kinds of expansion. I was aware of the accidental dropping of the word “initial” before the expression “proportionate expansion” in the *CWL* 15 version of the text in question (160, beginning of last paragraph) and this required me to make a choice. Should I treat the three parts in what might be called their developmental order, or should I stick to re-interpreting and clarifying the text as I found it? I opted for the latter. I do not, however, see the matter as very significant. The analysis of each expansion type is self-standing, and the essential points made (including the discussion of the three minor cycles, Schumpeter’s ‘Kitchens’) still applies. In a sense, the whole question is a little pointless, since it merely boils down into a discussion of the positioning of the proportionate expansion in relation to the other two. This is a concrete question. We are not thinking in terms of some kind of rigid model (heaven forefend). It is a matter of a set of explanatory tools which we apply as they fit a particular phase. At the back of my mind I retain the mathematical point that, if there are at different times a surplus expansion and a basic expansion in either order, then, between them, there must be a proportionate one, however briefly.¹³

DeNeeve is correct to make the point (see number 4

¹³ Reverting to Lonergan’s notation, consider the expression $dQ''/Q'' - dQ'/Q'$. This is positive for a surplus expansion and negative for a basic. In any change from one to the other, the sign changes. Reasonable continuity assumptions then necessitate that it must pass through the zero value at some point (without either of the two individual terms necessarily becoming itself zero). At that instant we have exactly the proportionate case. If, as is likely, the transition is reasonably gradual then there is a more or less prolonged period when the expansion is approximately proportionate (to first order, which is enough for Lonergan’s argument to work). If, therefore, one has (with obvious notation) a cycle that goes ...PSPBPSPBPSPB... it is surely just a matter of convention where one makes the first cut!

above) that there is no selling price of goods that are still in production. Prices are only set when the sale actually occurs. (In the same way Demand only means the value of what actually is sold. There are no semi-mystical ‘pressures’ in Loneragan’s theory. Everything is quite concrete and countable.) It remains true that the values of the acceleration coefficients α' and α'' are set by entrepreneurs, as risk-takers (betting people), on the basis of the information they have to hand. And that can only mean using the current price levels at the market, even though these refer to goods that are no longer in production. Thus my admixture of the two terms from, as it were, two different time periods is helpful in the limited manner I claimed, by letting us “get our heads around” the formulae I was discussing.

I simply do not understand the point she is making in number 3 above. She refers, in her footnote 5, to *CWL* 15, 25-26 (and to some discussions by Keynes which I am not in a position to evaluate). I cannot speak for how she interprets these two pages and the whole of his Section 7 of which they are an integral part, but can only say how I have understood them myself. Prior to that point (*CWL* 15, 23), Loneragan had been operating with a *descriptive* distinction between the Surplus and Basic productive processes. In full accord with his notion of science it was now necessary to switch to an *explanatory* account. Having done so, he then must meet any apparent difficulties that arise as a consequence of his definitions. It is these that are addressed in his pages 27 and 28.

Explanatory Distinction of Levels¹⁴

To arrive at his explanatory definitions of the two productive levels Loneragan first discusses a set of rather abstract specifications of *types of relationship* between any two sets of objects. Since purely abstract arguments are hard to follow it is best to use concrete examples, and it will be most efficient if the examples chosen are precisely those towards which we are in fact aiming. In accord with normal practice in mathematical science we are guided by keeping an eye on

¹⁴ This section and the one following it are largely just extracts from the longer work in progress referred to in note 12 above.

where we want to go!

The first kind of relationship is *element-to-element*.¹⁵ Consider a shoe that has just been made. Earlier in the process of its manufacture there was a small portion of a piece of hide that connected directly with just that shoe (or some part of it). Some may have been wasted in trimmings, *etc*, but there is still a direct linkage of so much hide to so much shoe. It is in fact the same material piece that persists throughout the process.¹⁶ We are not thinking of some kind of theoretically fixed quantitative connection. Styles change, and more or less leather can be used in footwear. For the definition we only require that the relationship in this instance is one-to-one between elements, and is in principle knowable as such here and now as we hold the finished shoe.¹⁷

One can also envisage a more complex relationship, that between an individual element in one set and some whole set of other elements. I will refer to this as *element-to-set*.¹⁸ Consider, for example, the relation between the old adage's fishing net and the ongoing catches of fish it enables.¹⁹ It is one-to-many, since each net, one hopes, will be used to catch many fish. Or in the footwear example, one cutting tool is not

¹⁵ The word 'element' in mathematics denotes any one of the items that are in some set. Lonergan used the more geometrical metaphor *point-to-point*. This was all right, but what about when he later referred to *point-to-line*, for example? Was it the whole line, or just some portion? Were there continuity implications? Was it straight, or would a curve do? A set-based approach avoids such confusions.

¹⁶ It need not be a purely material connection. Various examples are given by Lonergan (and by Philip McShane in *Economics for Everyone* (Halifax: Axial P, 1998)). One example (CWL 15, 25) relates train journeys to passenger miles.

¹⁷ There is a subtle but important point here about retrospective knowledge that Lonergan discusses in CWL 15, 27-28. We return to this point later in the section entitled "A Real Distinction," below.

¹⁸ Lonergan again prefers here a geometrical metaphor, and speaks of a *point-to-line* relationship. The alert reader will notice an apparent difficulty with this metaphor. The set that is the second component in the relation could have just a *single* element. This would be only notionally different from the element-to-element relation. This issue too is discussed in the section "A Real Distinction," below.

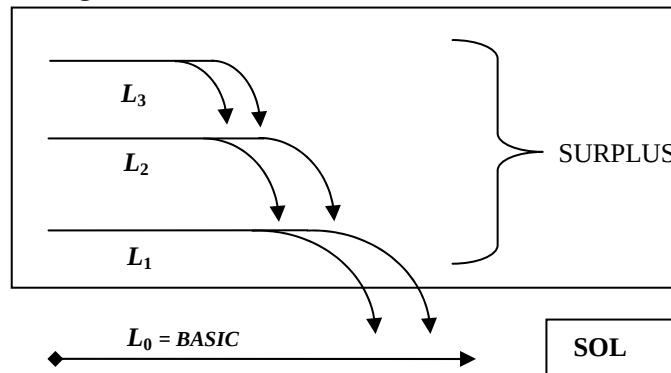
¹⁹ Give a person a fish and you feed him for a day. Give him fishing net and you feed him for life.

used in the production of just a single shoe, but can presumably help to produce many of them.

Complexifying again, consider an *element-to-(set-of-sets)*²⁰ relationship. Think of a casting forge that is used to make, among other things, cutting tools for producing shoes. Any particular forge can make many different cutters, each of which in its turn will make many different individual shoes. Other higher complexity relations can be listed, but what we have seen so far will turn out to be sufficient for our purposes.

With these clarifications, we may now proceed to our *definitions* of the various levels of productive process.

Figure 1



Firstly, we will take the notion of the Standard of Living (*SOL*) as given. The lowest level, Level_0 , consists of the aggregate of all concrete relations of the type element-to-element, where the second element is in transit to the *SOL*. The first of the higher levels, Level_1 , is the aggregate of all concrete relations of the type element-to-set, with the elements in the set (the relation's second component) being in transit to the *SOL*. Similarly, the second higher level, Level_2 , is the aggregate of all concrete relations of the type element-to-(set-of-sets), with the elements in the lowest level sets (within the second component in the relation) being in transit to the *SOL*.

We will henceforth refer to Level_0 as the **Basic Stage**, and

²⁰ In his geometrical metaphor, Lonergan refers to this as *point-to-plane*.

lump all of the higher levels together as the *Surplus Stage*.²¹

A Real Distinction

Consider a cutting tool for use in making shoes as an example of the element-to-set relation (and so in the *Surplus Level* of production). But is this true? Such a tool will have a finite life, and at its end it would be possible in principle (though difficult in practice) to say exactly which shoes it helped to make. Say there were 3000 such. Then we could allocate one three thousandth of the tool to each of them, relating each part to a single shoe. The element-to-set would have collapsed into a mere element-to-element. Indeed, at the tool's first introduction, past experience could tell us its expected life would be 3000 shoes, and so give us a fairly reliable estimate of what to allow in an element-to-element relation. Does this not show our distinction of the levels is ultimately vacuous?

The point, however, is that this *is* an estimate. The fact that a tool is expected to last for two years, does not guarantee that it will. It could break down after one year or last for six.²²

²¹ Traditional economics bases itself on model of the circular flow of income. The key difference in the Lonergan approach is the recognition that we need to discuss two such circular flows, interlinked monetarily in transfers of payments from one to another (they would be leakages and injections in a single-flow system) and functionally in that actual production in one is an accelerator for production in the other. It is the consequential cyclicities in the dynamics of their interaction, and the restrictions that these impose, that are the concern of Lonergan's analysis. We could perhaps express the simple distinction of 'Surplus' and 'Basic' flows as constituting a bicameral model. But once we do this we recognise that the theory as Lonergan has presented it is only a first approximation. There is a similar bicamerality between, say, Level₂ and Level₁ in the above diagram, and indeed between each higher level and the one below it. This gives, as a first approximation, a reduplicated structure of bicamerality. But, of course, things are more complicated than that. For example, it is not just true that some of the wages paid out in Level₂ flow to Level₁. Some of them jump over it directly to Level₀. For higher levels there are even more complex cross-level flows. It is clear that this kind of discussion is for much more advanced work at some future stage in the ongoing development of this kind of adequate economics. For now the simple bicamerality of 'Surplus' and 'Basic' will have to suffice.

²² But hardly ever before the item is just out of warranty! There is

It is not that we will not eventually know how long each tool actually survived, but that we did not know at the earlier time. The need for estimates (or the application of risk management techniques such as were mentioned in the last footnote) does not remove this ignorance. It merely acknowledges it. The definitions here and now of *Basic* and *Surplus* levels depend on current fact. It will remain that this *was* the current fact, even if at some future date we are able to look back and unravel the distinction that was used. Hindsight may indeed be blessed with 20-20 vision, but it can also see quite clearly what was in fact the situation way back when. The relationship of a cutting tool is, here and now, clearly and distinctly different from that between some leather hide and the shoes that will be made from it.

Note also that this point also answers, as promised, the question that was raised earlier about whether an element-to-set relation is really just the same as an element-to-element one if the image set has just a *single* element. Again, this would indeed be true in retrospect, but in advance (that is, in the present interval) we only knew that a set was involved. We did not know for certain how many elements it might have. And this is not denied by our ability to make estimates, but rather is emphasized by the need to do so.

We must distinguish this point from the truly retrospective component in the notions of *Basic* and *Surplus*. An electronic component will eventually become part of either a 'tool' or a consumer good, and so will definitively be either *Surplus* or *Basic*. But right now, when it has just been made, it may be unclear which way it will in fact be used. Only time will tell. But that telling, when it eventually occurs, will be unambiguous.²³

scope, of course, for deliberate forms of 'built-in-obsolescence' that pre-program the item to collapse after a fairly precisely allotted lifespan. Similarly, there can be an actuarial risk-management plan that will automatically replace a fleet of vans, say, every year, whether or not some are still in excellent condition, just because on average this will reduce the firm's overall age-related maintenance costs or at least make them more predictable.

²³ See the very clear discussion in *Beyond Establishment Economics*, Bruce Anderson and Philip McShane (Halifax: Axial P, 2002), of the

Back to My Main Reply to DeNeeve

After the explanation of the previous section, it is clear that I do not believe that Lonergan's topic here (CWL 15, 23-28) has anything to do with the notion of replacement (or any other) costs. Obviously this does not actually *meet* the question raised by DeNeeve, but it at least must relocate it.

Let me turn now to my point number 2 above. DeNeeve states that Lonergan's "(selling) price index is the consumer price index (P')."²⁴ I cannot accept the use of the word 'the' here. Lonergan's theory *is*, as I called it, bicameral. One cannot let oneself forget this and revert to some kind of single flow model. There are inevitably and essentially *two* different consumer price indices. (Even if at some instant they happen to be equal momentarily, they remain theoretically distinct.) Indeed, Lonergan goes to a great deal of trouble to show (CWL 15, 70-75) that both P' and P'' (and Q' and Q'') are theoretically coherent, and so can be empirically meaningful, either as averages, in cases where change is relatively slow, or by way of a more complicated vectorial model in the general case.

It is of course true that P'' does not appear as a variable in Lonergan's analysis of the *Basic* price spread ratio. It would, however, appear in a similar analysis of the corresponding Surplus price spread ratio, as is easily checked by following through an exactly similar analysis beginning instead from $I'' = i'O' + i''O''$. It turns out that the mathematics in that case, however, is rather more intractable, and does not give equations that are particularly fecund in respect of insights into the processes involved. It is not that there *is* no "Aggregate Surplus Price Spread" (Ratio), but that it is not particularly interesting and so Lonergan does not discuss it. It seems to me that the real reason that P'' does not appear in (that is, has no direct effect on) the Basic Price Spread Ratio is that we have assumed that $E' = I'$.²⁴ The only way that P'' could appear

distinction between the two levels, which emphasises this retrospective aspect. See for example the discussion of using sheet metal in automobile production on page 25.

²⁴ CWL 15, 158, just before his equation (43). This arises because we are assuming that the general condition of circuit acceleration applies whereby $D' - e'I'$ in my article (or $D' - c'I'$ in CWL 15) is zero. (I now

would be through combining a direct effect from E'' on E' (and so I') with the equation $E'' = P''Q''$. There is no such effect, because E'' (and so Q'') only effect E' , as a result of the acceleration equations, during the *next* period.

The reader will notice how I tend to use analytical, mathematical, type arguments, rather than relying on what I have no doubt I lack, a kind of economist's 'feel' for the realities we are discussing. It is quite possible that I may be 'missing the point' here. If this is the case and I am to be led to fill in my gaps, I need a little more help from such as DeNeeve. If I am indeed wrong I am willing and eager to learn.

DeNeeve's first two points are connected. I must agree, of course, that the essential differences between her and me, and between at least one of us and Lonergan, lie in the matter of the latter's notion of costs. This area makes me nervous. Whereas DeNeeve approaches this as an economist, with some level of ease with these concepts, I am to some extent approaching it as a mathematician trying to understand a given text. (The disjunction is not, of course, complete. I have some common sense understanding of the issues, and she must obviously have a good grasp of mathematical and interpretative methods.)

In this vein, finally, and in reply to her first point, I admit also that what I was saying (in my pages 63-68) about 'costs' and 'profits' was and remains very tentative. Let me try to restate briefly what I said in a somewhat different manner so that if it still seems incorrect perhaps my respondents will be in a better position to make clear to me where I am making my mistake.

Obviously my simplified breakdown of E'' into *NFI* and *Dep* is not adequate. But it was not really intended to be so. It was just a kind of shorthand for a more correct statement. Obviously, for example, accumulations into sinking funds would have to be included with *Dep*. The real breakdown of E'' is into *NFI* and '*everything else*.' The latter category consists of all the payments within the surplus flow that are needed just to maintain, sustain, and insure its steady continuance into the

prefer the greater simplicity that comes from dropping all these subtraction terms, writing just D' , for example, by, in effect, netting them out.)

future. This portion is what would be exactly sufficient to underwrite an ongoing constant (but dynamic) state. An expansion can be viewed as being a superimposition on top of such a state. During such a period of growth total surplus expenditures will therefore exceed the total of all this normal 'everything else' category. The excess is what has been called *NFI*. It was in that extended sense that I used the word 'maintenance'. With the assumption of the continuity condition we can go on to assert that $I'' = E''$. The breakdown of E'' is then, as it were, shadowed over into that of I'' , and we arrive at the distinction between Pure Surplus Income, *PSI*, and Ordinary Surplus Income. But we have as well a different breakdown of I'' , in accord with the equation $I'' = i'O' + i''O''$.²⁵

NFI is what Lonergan means by 'profit' in a macroeconomic sense. DeNeeve quotes Lonergan;

The greater the fraction that basic income is of total income (or total outlay), the less the remainder which constitutes the aggregate possibility of profit. But what limits profit may be termed cost. (CWL 15, 158)

Indeed, but 'the remainder' is not itself identical with the profit. It is a fund out of which profit can occur. If the rest of the remainder is not to be called 'cost' (for this has been restricted to being $c'O'$) and neither is it 'profit,' then my case stands that these two terms (as Lonergan wants to use them) are not obverse.

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²⁵ See again my comments in note 11 above regarding my mistypes here.