

SOFDAWARE 1**From Cantowers to Collaboration****February 2004**

SOFDAWARE 1 is in fact both the beginning of a new elementary collaborative Website series and the ending of the **Cantower** series, a rather solitary advanced project. The ending is also the Introduction to a four-volume version of the **Cantowers** to be published by Axial Press 2005-7. If you don't fancy this complex beginning to our simple venture, at least not yet, then skip on to **SOFDAWARE 2**, where I get right down to that venture and its possibilities.

Introduction: In Form of Inference

You have below four sections, the first dealing with the cut-off, after 400,000 words, of the million word project of 117 Cantowers with which I began. These four volumes give the cut-off version in the manner listed in the Table of Contents. The second section is on the promotion of progress attempted in the volumes. A third section deals with the use to you of the 41 Cantowers in these volumes, implicitly enlarging on the grounds for abandoning the full project. The fourth section homes in a central problem of our sick axial times: the brutal expectation that at some age we "settle down" in the lie of an ordinary life. The final section gives you a chance to muse over the significance, for you and me and for future searchings, of the missing Cantowers.

This Introduction is heavily footnoted. A first reading might skim over all these except the first three. The notes relate to different reader's possible take-off points in sharing with me what now replaces the original Cantower project, but the first three compact the question for your form of inference, a conversion-challenge. The conversion-challenge is to the central practical project of Lonergan's life. If you take it up - and it has not been taken up yet - then you might profit from collaborating with me. My cut-off is a cut-on to a project I have been led to name **SOFDAWARE**, which

you might for the moment take to relate to Searching Out Friendly Dialogue about Action: the cut-on solves my existential problem of February 2004, in principle.¹ I certainly shall continue my climb towards some glimpse of “our destiny”²: but what is of central importance in the beginning of this millennium is the fostering of a community of radical and visionary concern.³ There is that possibility in the Lonergan

¹But only “in principle”. How may this shift work out? The title of the introduction may puzzle you, but at least it reminds you of that early brilliant article of Lonergan, “*The Form of Inference*” in which he homes in on the illative sense. Here you are invited to home in with me on a shift that could be said to ‘arise from the intuition of the moment; its ground is the objective configuration of the moment as interpreted through the accumulated insights of experienced judgment’ (*Collection*, 7). Depending on ‘where you are at’ in your moment, you may rise to your own intuition, even to a life-shifting discernment of discernments of discernments: the strange twist in the methodology which is really what this is all about about about. But ‘for the moment’ just skip over the eccentric triplification as a puzzling oddity. Some more about that in note 24 below.

²*Method in Theology*, 292, line 16. I misquote significantly. “Our” or “their destiny” is to be contemplated by you with whatever context you hearthold. You may have a fullness of inspiration and concern from the final section of Chapter 7 of *Insight* or from the early chapters of *Topic in Education*, or from that the mood of that final scriptural “Scholion” that ends *De Deo Trino I: Pars Dogmatica*. Or you may just sense from simple reading that page 250 of *Method in Theology* might help us out of a tiresome and endless flow of comparative debates, papers, conferences. Lonergan points to a destiny of humanity: but he directs towards quite practical destinations.

³Well, there you have my ‘principle’ inference, leaning on “the accumulated insights of experienced judgment” of Lonergan of forty years ago, the fundamental insight of his Searching Out Future Directions, his eightfold Sofdware, within which he placed his plain yet brutal strategy, “The Structure of Dialectic”, what I was led recently to name, SOFD. The accumulated insights shrunk into a little article in *Gregorianum*, 1969. SOFD, which had been fermenting for much longer, curled into that single page, 250, of *Method in Theology*. My principle inference is that his hard-won directions are worth following, are worth abandoning other projects to foster within some global subgroup. You may need to read no further to have your leap of discernment. Still, the principle inference calls for the subtle discernments of concrete collaboration. So, perhaps read on. But make no mistake: this is the fundamental conversion of the *post-Insight* Lonergan and my interest is in making this “conversion a topic”, “in the style of

community, but it is only a possibility, and it is being destroyed in the next generation by present Lonerganist comparative⁴ teaching and pseudo-scholarship, “events”⁵ referred to in the conclusion to the second note. Lonergan studies seems mainly a shuffling along in the relatively “effete”⁶ tunnel of present conventional academic busyness. I cannot, could not, write on of my strange climb through the next decade and let this shuffling continue to happen.

1. The Shortened Project

The Cantower project came to me near the end of 2001 while trapped, with my wife Sally, during a snowstorm, in a holiday cabin in Cape Breton. One of the seeds of that project was, of course, Ezra Pound’s *Cantos*, to which I had returned at that time: a large block of some 117 poems that had been a pre-occupation throughout his strange life.⁷ But the immediate seed in my own writing efforts was the promise that I made, in

a crucial experiment” (*Method in Theology*, 253).

⁴Perhaps you are familiar with that marvelous comment of Thomas (*Quodl.*, IV, a.18), which Lonergan quotes on the second page of *De Deo Trino II. Pars Systematic*? Where Thomas takes about the type of teaching that rambles round authors: the student leaves empty, “vacuus abscedet”. My spies tell me of such classes, where generalized empirical method (*A Third Collection*, 141, lines 1-5) is certainly not the *ethos*, and sophisticated common sense excludes *theoria*.

⁵*Method in Theology*, 250, line 2. Later you will find how a group of Australians led me to twist around in our reading of this page. You might like to joint the twisting, and read that page in regard to present Lonergan studies. Of course, the discomfoting twist is autobiographic.

⁶*Method in Theology*, 99. “The culture has become a slum”. Could this be true of much of present work on Lonergan? Is it bubblingly sincere, yet an effete ghetto?, “A small and embattled segment of the learned Catholic ghetto” (Hugo Meynell, “The Plight and the Prospects of Lonergan Studies: A Personal View”, *Journal of Macrodynamic Analysis*, 3(2003), 167).

⁷I spell this out in Cantower 1.

a note⁸ of *Lack in the Beingstalk. A Giants Causeway*, of an essay to follow, “Sunflowers: Speak to us of Growth”. That title certainly has a strange ring to it, when the essay is considered as in fact an essay in the philosophy of botany. One does not think of botany, in this axial period, as a conversation with, a questioning of and listening to, flowers. That is the stuff of poetry or children’s books.⁹ Yet I was edging towards a post-axial perspective on science, a perspective that matured during the two years of writing the Cantowers. Indeed, that perspective and that edging was the dynamic of my struggle forward through *Lack in the Beingstalk*, and intrinsic to it was my growing self-luminosity with regard to adult mental growth. In the final pages of that book¹⁰ I expressed a view of such growth that was beyond me when I began, though it now seems so obvious, and with a chunk of luck¹¹ may seem so also to you.

But I am not optimistic about the survival of this view in an axial culture, nor am I going to air it seriously in the Introduction, though I return to it briefly here and there. My main interest in this Introduction is to deal with the question, Why did I end the Cantower project with Cantower 41, and what has or will become of the project identified in the titles of the remaining 76 Cantowers? This is all the more plausible as a topic of this Introduction in that other normal aspects of introducing the work and its direction are dealt with in the First Cantower, where I write of Ezra Pound, the Vorticist Movement of the early twentieth century, Lonergan’s searchings through the middle of the century, etc, etc, etc. Still, if I am to communicate something of the reasons for the

⁸*Lack in the Beingstalk*, chapter 3, note 2, conclusion.

⁹There is much to be gained from this world. *Lack in the Beingstalk* dances around the little flower of *The Little Prince* of Antoine de Saint Exupery.

¹⁰Pp. 195-7 of the Website edition. To be published shortly.

¹¹The realities of your luck are central to your form of inference in our ramblings. My own continued luck endlessly astonishes me. Luck, of course, lies within the full symphony of providence. I recall once asking Lonergan how he found various books. His twinkling answer: “luck!”. Perhaps this is a lucky Galatic day for you?!

shift, I must say some few things about that from which I shifted.

The project was a million word project, a series of 117 monthly essays to be published on a website - www.philipmcs Shane.ca - beginning on April 1st, Easter Monday, of 2002 and ending with the final essay on December 1st 2011.¹² From my point of view, the project went extremely well up to now, up to my present termination of it. In the two years of writing that it involved - and there were quite a few other things going on during the period - 41 Cantowers were completed¹³ and a great deal of energy had gone into grappling with problems to be dealt with in the following 2/3 rds of the enterprise. But this brings me to the question of saying briefly what the entire enterprise was.

The core of the project was and is to promote the global collaboration named by Lonergan as *functional specialization*. My primary intended audience was, and still is at the time of writing, the community interested in Lonergan's writings. Yet it is clear, at present, and especially in this year of celebration of the centennial of Lonergan's birth, that I am far from catching that attention.¹⁴ There are a host of reasons for this failure.

¹²The list of Cantowers is available at their beginning on the Website.

¹³The completion of the 41 Cantowers by the end of January of 2004 meant that the project was 18 months ahead of schedule. I had posted the essays up to Cantower 27 in the previous November; Cantowers 28 - 41 were posted in February 2004, reaching forwards to the due date, August 1st 2005, of Cantower 41.

¹⁴There is a sense in which I have been 'side-lined' from the Lonergan movement, in spite of my editing of key works. And certainly there has been no rush of invitations to give papers or participate in conferences. But that is a long story. Perhaps the mood expressed by 'Joey' in his or her critique of my editing of *Phenomenology and Logic* (the critique was published by me in *Lack in the Beingstalk*, chapter 4, section 4) represents a general attitude: Lonergan "has a few clear things to say" and I am obscure, mystifying. In this present challenge I aim at saying a few clear things, including drawing attention to some few clear things that Lonergan said like "divide up the work functionally", " dialectic will work if you do it this way", AND " you'll have to re-write and re-live *Method* into the existential up-date context of *Insight* if you don't want to continue to be breathlessly late." {I am recalling the Epilogue of *Insight* here

Perhaps I had best begin the ramble by reaching towards a fundamental reason - the ramble round reasons continues through this Introduction - by returning to my central objective: the promotion of a global collaboration. That was my bent from my first days of reading Lonergan: glimpsing the power of his work for areas like relativity theory, then pushing forward to emphasize his contribution to the philosophy of biology and statistics, to Trinitarian and Christological theology, and, in the wake of his discovery of functional specialization, moving to show the desperate need for such a functional division of labour in the complex field of musicology.¹⁵ Despite the fact that I ended up being enthusiastically selected as editor of the three score and more papers of the Lonergan International Florida Conference of 1970,¹⁶ those interests of mine put me quite outside the flow of interest in Lonergan's work. Lonergan studies, at Florida and since, has been very much a matter of meshing his efforts with the traditions of philosophy and theology to which his followers were inclined, in which they were educated.

But there is a further oddity here. The global nature of Lonergan's project was evident to me from the beginning, and so functional specialization immediately struck me as a division of labour that was to structure a global collaboration of functional experts. A twist helps here. Was the global nature of the project evident to me because of the survival in me - 'does it survive in you?' is the existential question of the Cantowers - of the open global nature of my bent? "In which they were educated":

(733[755]), but the key clear statement sits in all its glorious brutality in the middle of page 287 of *Method*.) For further points on this topic see note 22 and 36 below.

¹⁵There is no need for detailed references here. I would rather you attend to the optimism of the need for functional collaboration as it has emerged through the complexification of studies in all areas. I dealt with that in an optimistic fashion in the third chapter of *Pastkeynes Pastmodern Economics. A Fresh Pragmatism*, Axial Press, Halifax, 2002.

¹⁶Only two volumes of the six volumes planned appeared: *Foundations of Theology* and *Language, Truth and Meaning*, both from Gill and Macmillan, 1972.

lurking in that phrase is the problem of the survival of the full heuristic reaching in any of us in these axial times. I return to that problem in section 4. But note that the twist gives another reading to “the core of the problem was and is to promote”. One is to read one’s notion of being and becoming. And the reading-bent, if it survives education and convention, could push the core towards a thinking out of the full terminal value of being, towards a contemporary eschatology and the efficient road to humanity’s luminousness in its regard. So, we arrive at a handy way of separating the first third of the Cantower project from the missing two-thirds. The first third is a broad promoting; the missing part is a strenuous climb, through a fullsome physics and astronomy and humanism, to a contemporary eschatological cosmology. I deal with the first third in section 3. I deal with the missing part in section 5. Right through these sections I shall be cycling round the question of the unfinished nature of the enterprise in order to help both of us locate each other in a possible replacement of the initial enterprise in patterns of collaborative reaching.¹⁷

2. The 41 Cantowers: their Progress towards Promoting Progress.

What was their progress? Obviously, it was primarily a progress in my own envisaging of the progress that would result through an adequate meshing of the drives of Lonergan’s two main English works, *Insight* and *Method in Theology*. That envisaging was an all-consuming reaching of fantasy,¹⁸ winding together different chapters of both books, meshing with that reaching drives within culture of poesy and

¹⁷The challenge to your inference-form is to locate yourself realistically in a commitment to survive personally and to better a tad our symphonic scar-trek of destiny. You can cherish with massive seriousness the challenge expressed in the first three notes of this essay yet remain outside the central venture, a spectator perhaps, or a Diaghilev to the dance.

¹⁸I first introduced the notion of **fantasy** in the fourth chapter of *The Shaping of the Foundations*. It has since become very precise as the *per se* task of foundational thinking.

chemistry, economics and education, psychology and biology, physics and astronomy, that pointed towards the need for a new global inwardness. The envisaging was shared by some few interested people: the focal quality of that sharing and its possibilities for any reader will concern us in section 4. But clearly the main progress was mine, an enrichment of envisagement. One instance of this may help us along. I had grappled for 45 years with Lonergan's suggestion about a massive re-conception of prime matter and of energy.¹⁹ A key break-through occurred in the early summer of 2003: hints of it are given in Cantower 30. Hints? In what way could such hints be turned into a communal perspective? There is a massive axial problem here of *ethos* and pedagogy that, curiously, I had already illustrated in the 27th Cantower, when I dealt with the general failure of readers of *Insight* to take Archimedes' hints *On Floating Bodies* seriously on the first page of *Insight's* first chapter. My envisagement, at all events, was obviously becoming a remote, isolated, personal project.

But the Cantowers to follow those moved from an effort to re-introduce the early chapters of *Insight* to an effort to lift the meaning of *function* - was not *functional* specialization the great discovery? - to a new center-stage luminosity. And my effort to do so became less solitary. There was Michael Shute's new website publication with its cheeky title, *Journal of Macrodynamic Analysis*.²⁰ Macrodynamic? If an analysis was to be genuinely macrodynamic, it had to be functional specialist. The cheekiness was the parallel with Mendeleev's table: chemistry that dodged that table just wouldn't be chemistry.

Shute's move pulled my envisagement towards collaboration. So, for example, the idea that emerged of devoting volume 4 of the journal to the problem of functional

¹⁹*Insight*, chapter 15, section 4.

²⁰He began the journal in 2001, so the volume numbers follow the years of the millennium. His view of the journal is expressed at the beginning of volume 1, but it complexifies with each volume.

interpretation pushed me to sketch out and communicate, ahead of schedule, “A Few Elementary Pointers Regarding Interpretation”.²¹ The collaboration on that volume continued through the winter of 2003-4. Meantime, I had completed the Cantowers up to 38, (on “Functional History”), and prepared to drive forward towards the Cantowers on physics. The challenge at that stage was to pause for at least a year over the mess of quantum mechanics before tackling e.g. the problems of “Quantum Mechanics and Measurement”. What of Cantowers 39, 40 and 41, dealing with functional dialectic, foundations and policy? These were put on hold, not only to give space for work on physics, but also because it seemed to me worthwhile to see what emerged from the conferences etc that related to Lonergan’s hundredth birthday before tackling those issues. Positive signs of moves towards implementing Lonergan’s project would obviously call for a positive carry-forward from me; failure would call for a more critical response.²²

At that stage there occurred what I may call the Australian Connection and the gradual emergence of a key topic of common interest, the structure of dialectic analysis as described by Lonergan in that single marvelous page 250 of *Method in Theology*. The nudge towards collaboration prompted me revise my agenda so that in early January 2004 I tackled the three Cantowers that were to be written in the Summer of 2005, before I ventured into the focused task of a precise defining of meta-physics.²³ They were completed on St. Brigid’s Day, February 1st, the eve of both the Feast of Lights and of the 122nd birthday of James Joyce: a good time to re-envisage my total

²¹The essay is the 34th Cantower.

²²Recall note 14 above. On the failure see note 80 below.

²³This is an enormously complex issue which involves luminously the defining that is an on-going communal achievement dominated by the richest perspective on generalized empirical method. You could get some further light on the issue by following up the pointers in section 5 regarding Cantower 42, the first “missing” Cantower.

envisagement.²⁴ And that envisagement led me here, in mid-February: to a conditioned wrap-up of the original project, and the beginnings of a new one which I title, **SOFDWARE**. It is not really a wrap-up, since it carries the old intent forward into the new strategy of elementary collaborations that may be with individuals or groups, casual or organized, public or private or even quite secret.²⁵ The 41 Cantowers remain as help to such collaboration - We turn to that in the next section.

I conclude this section by returning to the question within its title, since the answer meshes into my decision to take another route. What of the promotion of progress? Certainly there was the foundational progress in me, a climb of fantasy - foundation's task - towards an increasingly rich vision of the unity, beauty, efficiency, of **hodics**, the replacement of the old metaphysics. That component of progress will occupy us in the sections to follow. But there was little in the way of the general promotion of progress. The new turn swings towards this promotion.

²⁴I recall now note 1 above with its two triplicities. In the Cantowers around 27-31 I make some effort to spell this out. The notion is Lonergan's, from an unpublished first chapter on Method that he wrote in 1965 (See Darlene O'Leary, *Lonergan's Practical View of History*, Axial Press, 2004, chapter 2, where the 1965 'discovery file' of functional specialization and this sketched chapter are available). In simplest terms: we discern; we can discern our discerning; but we can enlarge our interest to the sequence of discernments, be that sequence ontic or historical. This throws the question of e.g. Ignatian discernment into a quite fresh and strange context. But more broadly, it brings out the view of methodology being to method as zoology is to animals. Please do not get bogged down in this note. Its stuff is central to my decision. I think of Thomas' strange climb [I wont go into the various view of why he abandoned it in his late forties]. His climb through the *Summa* was rarely followed, but he held to it. His methodological context was quite different from one in which the structure of retrieval had become a serious communal possibility. The context of discernment for me is one of new media and Lonergan's possibility of a new symphonic control of meaning.

²⁵During my twenty years of teaching at a Canadian University I always warned my students to keep what we were at to themselves, not to try it out in other classes, with other professors etc. And with struggling thesis writers I share the sentiments of a card Lonergan wrote to me when I was battling Oxford: "... give the guy what he wants. It's only a union card".

3. Randomly Using the 41 Cantowers in Context.

There is a catch here in talking about the new promotion: to talk about it adequately is to converse in new ways, as is very slowly happening in my collaboration with the group who are trying, with me, to read - always for the first time - that strange how-to page, page 250 of *Method in Theology*. Perhaps the best lead I can give is one that uses some of the Cantowers. In Cantower 27, a fresh beginning of reading *Insight*, I invite a weird type of slow reading, a cherishing, of the end of the first page of chapter one of *Insight*; in Cantower 31 I do the same for grappling with the invention of a measure, a simple twelve-inch ruler. Here I am pointing to a measure, a *nomos*, to be gathered only slowly, a slow-rolling tongue-tasting-effort²⁶ of the stone-horizon of axial culture to gather less in the old *mos* way, to gather (so to speak) *nomostically*! And attending to those two pages, the first of *Insight* chapter 1, and the 250th of *Method*, would not be a bad starting place for you if you wish to glimpse my move. Generations of very solemn Lonergan scholars have failed to read these two pages, failed to how-to read the displacement involved in concluding lines of those pages.

So there you have a first how-to-use pointer. But are you up to the madness of doing that, of cherishing, embracing the universe, in the suspended water, in the suspension of present failed modes of dialectic? It brings to my mind the Zen type of instruction in flower-designing or in archery.²⁷ But now we are talking about the sublation of Zen and Ken in THEN.²⁸

²⁶A *Brief History of Tongue*, chapter four deals with these matters in an introductory fashion, twisting round the meanings of *mos* and *nomos*.

²⁷I am recalling two books in the Zen tradition from my past that give the mood of the Zen struggle in these two quite different areas. The main issue is the expectational mood regarding the long haul of intussusception. You may recall the old story of the disciple asking the Zen master about the time to enlightenment. "Ten years". "But if I try harder?" "Then, twenty".

²⁸The title of Cantower 5 is "Metaphysics THEN". It follows Cantower 4, with its focus on feminism. These two Cantowers are probably good starting places to reach

And perhaps here is the rub, the **Really Useful Beginning**: you need the slow delight of a master or mistress who enjoys the dewdrop²⁹ pace of cherishing and the poise of sharing it with you.

Might we thus move towards a THEN community, a fresh contemplative tradition?

In this you may be more optimistic than I. Perhaps there are Lonergan enthusiasts of which I do not know that have this quiet poise before the elusive unknown, the Elysian field?³⁰ My sad claim is that the visible, operative, Lonerganesque work is a stranger to this *ethos*. Am I wrong? THEN I am delighted to be so wrong. THEN you have no need of the overlap of my context, my Kontext.

But it may not be true of you, or those close to you: THEN, invisibly, inaudibly, your context is a lost hunger, even a buried hunger.³¹

for the new mood both of adult growth and of the need to lift both the Zen tradition and the Western traditions into a 'lean enlightenedly towards the future' tradition that I associate with a capital THEN.

²⁹I am thinking here of a verse of Dogen, the Japanese Zen master (1200-1253), quoted in Heinrich Dumolin, *Zen Buddhism: A History. Volume 2: Japan*, New York, Macmillan, 1990, 72. "To what indeed shall I liken / The world and human life? / Ah, the shadow of the moon, / When it touches in the dewdrop / The beak of the waterfowl." [Yo no naka wa / nani ni tatoen / mizutori no / hashi furu tsuyu ni / yadoru tsukikage]

And one may make explicit the full perspective, expressed in Teresa of Liseaux's words to Mother Agnes of Jesus (her elder sister, Pauline) regarding Mother Agnes' death: "God will sip you up like a drop of dew" (*St. Teresa of Liseaux: her Last Conversations*, translated from the original manuscripts by John Clarke O.C.D., ICS Publications, Washington D.C., 1977, 37).

See also note 51 below.

³⁰Here I think of the rich pointers of Lonergan regarding the notion of *field*: see the index to *Phenomenology and Logic*. Page 382 there speaks of "the elusive field", which you can relate to my twist in the text above.

³¹I would claim, to the horror of many, that truncated subjectivity is a prevalent sickness within Lonerganism. "..... the truncated subject does not know there is

When I brooded over and planned this section it complexified considerably, sketching ranges of possible and probable contexts in which a reader might find a home, might travel with me. But I have talked of these contexts all too much already, sketched invitations, and done all this indeed to little avail except for some close associates. So it strikes me now, in this predawn quiet, that I should fall back on where I ended one of my many efforts at inviting the using, not of Cantowers, but of the Cantor that you are and the Cantor that I am. So, I quote the beginning of one of my many Epilogues, this one suitably entitled "Sharing the Intussusception of Progress".³²

"Obviously I am saying Hello, Greeting you. Who are we that so greet? How are we handicapped by the axial air, in which "the social situation deteriorates cumulatively"?³³ The cancerous professor of English in the film *Wit*, a John Donne expert magnificently portrayed by Emma Thompson,³⁴ has that high moment of revelation, ecstasy (for Donne, not wild delight, but movement of soul out of body), in which she bewails in her solitude the tone of her previous conversation with her nurse and the disemboweling hold of the abstract. 'We are discussing life and death and not in the abstract, either. We are discussing my life and my death. And I cannot conceive of any other tone. Now is not the time for verbal thought-play. Nothing would be worse than a detailed scholarly analysis of erudition, interpretation, complication. Now is the time for simplicity. Now is the time for, dare I say it, kindness'".

And if you have a sense of that need for simplicity and kindness, have read thus

anything there to know" (Lonergan, *A Second Collection*, 73).

³²I quote the Epilogue of *Lack in the Beingstalk. A Giants Causeway*, a four page effort bracketed by two selections from Donne, the first of which gives the tonality of Aristotle's view of asymmetric friendship, the second being more directly related to the invitation to the ever-fresh dark lightsome climb.

³³*Insight*, 229[254].

³⁴She wrote the screenplay for the film (2001) with Mike Nichols, the Director, from a play by Margaret Edson.

far within that need, not as Lonerganesque critic of my accepted lunacy, but as secretly lonely in your axial abuse, then this Cantower or that could be useful in stepping privately away from that abuse. What might be useful? You might suspect that the advice of the song from *The Sound of Music* is good: "Let's start from the very beginning / a very good place to start". But you must remember that the 41 Cantowers, however twisted towards communication, really represent the strange climb of a seventy-year old climber, a Celtic Stranger becoming daily stranger to himself. But does age matter? That is yet another axial problem challenge, discomforting quest yon quest you quest. We shall brood over it a little in the following section.

But is there some useful general way in? Perhaps I would say, "let's start at the very end", at the last sentence of Cantower 41,³⁵ or you might start with those odd doctrines of mine in a previous section of that Cantower.³⁶ THEN again, you might find useful my nudge towards a new contemplative tradition as expressed in Cantower 21. Or if your mood is feminist, and I hope it is, then you might find that my Pert suggestions of Cantower 4 moves your bones and molecules.

Of course, your real beginning is in your context of loneliness and personal

³⁵The last sentence of that last Cantower reads: "Lonergan took a stand on, lived to promote, that page, the crowning point of his work on *Method in Theology*." The page in question is *Method in Theology* 250. The title of that last section, 41.5, is "Self-Assembly", which is of course the name for what we are at here, in our "Form of Inference". But isn't that a shocking final claim? And isn't going with it, SOFDAWARE, a pretty reasonable bent for anyone taking Lonergan academically serious?

³⁶The previous section, 41.4, has the title "Some Methodological Doctrines". Like the concluding "statements" that I put in Lonergan's mouth in note 14 above, the seven doctrines proposed here are in plain English. This may pose a large challenge to you in that the doctrines of the sixth specialty are, normatively, incomprehensibly remote in meaning. Go figure this doctrine about methodological doctrines! And you may have a struggle - I know I did for many years - at differentiating between the meaning of these plain statements for common sense and for the sixth specialty. Might you have a clue in the quite distinct meanings of "acceleration"?

upheaval,³⁷ fostered by aesthetic tonalities,³⁸ be they the tonalities of Schubert or Sinead O'Connor, Beethoven or Emma Bovary,³⁹ or millennia of the poetry of women.⁴⁰

4. Core Adult Growth

Here I might best just hold to the suggestions of the **Bacchus Page** that concludes *Lack in the Beingstalk*.⁴¹ But I cannot resist adding a few further pointers.

³⁷See *Insight*, the end of the page in both versions: 625[648].

³⁸“What is needed is a qualitative change in me, a shift in the centre 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....” (Lonerger, in a book review, *Gregorianum*, 1955).

³⁹Reflections on revelatory moments of Emma Bovary are to be found in chapter 4 of *Lonerger's Challenge to the University and the Economy*: see especially p. 74, where I quote the famous passage of discontent as she faces Charles across the table: “ all the bitterness of life seemed to be served to her on her plate”. One must aspire to bear in mind and molecules what Flaubert said, “*La Bovary, c'est moi*”, when one meets Emma. Or when one meets a symphony that Beethoven ‘bore in mind’. Beethoven’s skimpy sketchings are famous: the details were within. A decade ago there was a poor attempt to lift some Beethoven’s sketchings to the status of a tenth symphony. I think of the almost-last letter of Beethoven, thanking the Philharmonic Society for the too-late gift of one hundred pounds. He offers to write something for them. “A symphony [the 10th] lies fully sketched in my desk” (Beethoven’s Letters, vol. 2, 252, Longmans, Green and Co, London, 1866]. For Beethoven that sketch, heart-held, was enough. Might one not liken the sketched tenth to the inadequate sketch that is Lonerger’s *Method in Theology*, served up on your plate, so often by a poor cook?

⁴⁰*Women in Praise of the Sacred: 43 Centuries of Spiritual Poetry by Women*, edited by Jane Hirshfield, Harper Collins, New York, 1994. You might find it worthwhile to note how I used these poems to structure the three-part essay that concludes volume 3 of *Journal of Macrodynamical Analysis*: “Our Journaling Lonelinesses: A Response”.

⁴¹*Lack in the Beingstalk*, 195-7. The key question of growth-bent is posed on page 196.

Core adult growth is a life-long dogged yet gentle self-digestion of the *exigence*⁴² mentioned in the first sentence of Aristotle's *Metaphysics*. It begins with a freshness in each dawn, thinking about thinking in all its mediations including that mediation that is the cos-mi-cauling⁴³ Thinking Thinking.⁴⁴ Its growth pattern echos, within the infolding of energy that is human minding, the mathematical measure of growth as dancing on the level of its own achievement:

$$d/dx [e^x] = e^x.$$

And there is a history to that dance. Aristotle's climb to pinnacles of thinking of thinking, cherishing that good, was in a smaller mind-cosmos than Thomas', and Thomas could not think of thinking in the wonderland of a statistical glory.⁴⁵ Do I speak in riddles? "The Method of Theology is coming into perspective. For the Trinity: Imago Dei in homine and proceed to the limit as in evaluating $[1 + 1/n]^{nx}$ as n approaches infinity. For the rest: ordo universi. From, the viewpoint of theology it is a manifold of

⁴²It is worth pausing over the rich set of connections given in *Phenomenology and Logic* on the topic of *exigence*: see the index there. One could also venture into Lonergan's Latin notes, *De Ente Supernaturale*.

⁴³One need the context of the end of chapter 2 of *Lack in the Beingstalk* here, with its twists on cos mi c all and cauling fetus-containment, the exigence in the womb of history's pilgrimage.

⁴⁴See *Verbum* 196, 320, regarding the translation. "Thinking thinking" as a name seems good in closing the infinite gap. In relation to the point of the next note I suggest brooding over that glorious paragraph in the *Metaphysics*, XII, 1072^b 14-31: how distant was the vision of this strange lonely man?

⁴⁵Few have climbed as Aristotle did, or Thomas did, but what is important for us to notice now, darkly, is that few have attempted to climb as Lonergan did. Who has read seriously that short section of chapter 19 of *Insight*, "The Secondary Component in the Idea of Being"? Is there not a grossly ignorant tendency to assume that it only adds bothersome details to what is 'familiar to us' from Aquinas?

unities developing in relation to one another"⁴⁶ Lonergan wrote this in May of his fiftieth year: has it something to do with core growth, and with the task of the *Sargawit*,⁴⁷ the suffering servant of foundations? Core growth is infolded and infolding energy capturing itself neurochemically in the unities of human exigencies' galactic dance, critical hoding with respect to the ultimate,⁴⁸ but in frontline fantasy within the heart of the *Sargawit*.

But let me come back from this high-flying to a statement that can be challenged by low-flying theology. I have appealed regularly to the analogy with learning physics. Each week, each year, a keen student of physics grows in understanding, and there is no short cut. In theology the whole process is cut short. Enough said. If one continues to inquire, should one not continue to grow in understanding? And should one not move better the more one has grown? Low-flying theology would claim that somehow you arrive at an essential view - does it come with a doctorate or perhaps already at the end of first-year studies? - to which you add details perhaps even throughout a long life. Low-flying theologians make this a compulsory recurrence-scheme, destroying first-year students, even in the name of Lonergan. So we have Lonerganism, as we had Thomism and Aristotelianism. So much for historical consciousness. Less than 1% of

⁴⁶I am quoting a letter from Lonergan to Fr. Crowe written in May 1954. If you are not mathematically inclined you may not notice the connection between the bracketed statement and e^x : with a little help you will arrive at enlightening identifications, including the identification of e and its rate of change: e is not magical, it is simply a curious number of our decimal system, 2.71828... , worth months of cherishing.

⁴⁷Chapter 6 of *Process: Introducing Themselves to Young (Christian) Minders* centers attention on the role of the *Sargawit*. I am borrowing here from *Finnegans Wake*. A marginal note in the "Triv and Quod" section (p. 294) indicates "Sarga, or the process of outgoing". *Sarga* is the Sanscrit for 'process of world creation or emanation'.

⁴⁸See *Insight* 685[708]. "What, then, is critical method? It is method with respect to the ultimate". Critical Method in the third stage of meaning is to be a luminous darkness of communal hodic cycling.

theologians grow, and competence in Lonergan does not seem to derail the statistics.

So, the question of core adult growth is yours, but I would draw your attention to the two senses in which it is yours. It may be yours to realize as pilgrim at some level: but if it is not your circumstanced calling, then it is yours to cherish and respect in others in so far as they seek to embrace the universe in a hearthold beyond your dreams.⁴⁹

And, if you-now-reading are such a strange one, at least you have my encouragement to meet tomorrow's dawn with the expectation of light. I suspect that there are a few such readers in our desperate times who can still thus cling, despite the academy's best-dressed efforts. The prejudice of an axial sin haunts our molecules, cutting us off from immortal-diamond minding,⁵⁰ from the cosmos which is the Word's vanes.⁵¹ "History, heredity, personal experience, all combine to rivet my prejudice upon me. Under their influence, I gradually out-distance the disturbing echo of His words, spoken without reservation to me as to everyone else who should believe in Him, until at last it happens that I hear it no more".⁵²

5. What of the Missing Cantowers?

⁴⁹This is the challenge lurking in *Insight* 417[442].

⁵⁰I am recalling here the final words of Hopkins' poem, "That nature is a heraclitean fire and of the comfort of the resurrection".

⁵¹I find the word *vanes* wonderfully suggestive in its etymological reaches: pennant, pane, turbine-vane, compass-, feather- There is a massively rich dew-drop drop-dead cosmology seeming lost to our axial selves that includes vibrantly e.g. the efficient presence of the Galilean in the flight of birds. Recall note 29 above.

⁵²R.H.J. Stuart, *The Inward Vision*, London, 1929, 113. I take this quotation from the end of chapter two of *Music That Is Soundless*, [3rd edition, Axial Press, 2004] where I first used it in 1968. I appeal to you not to take this in some pious way. I am talking about thinking, as one would think about a friend, Friends. It amazes me that a religion whose divinity is Thinking can devote so much twisted energy to avoiding thinking.

First, I must repeat that, while the Cantower project came to me initially as a million word project distributed over 117 monthly essays, the only essay pinned down at that stage was the Sunflower essay, dancing within what I would now call the Cantower poem.⁵³ Slowly the list of essays took shape. There was a weaving around the West Dublin Conferences.⁵⁴ Gradually there emerged the weaving round *Insight* and *Method*. But it was not an orderly march, but rather forays into various territories.⁵⁵ An instance will enlighten and amuse. Cantower 21 was fixed as dealing with contemplation long before I built up a parallel in the Cantowers to the run up from *Insight* chapter 14 to the Epilogue that corresponds to a 21st chapter and to 21st Cantower: “Epilodge”. But why 21? Because I was thinking in terms of both volume 21 of Lonergan’s *Complete Works* and Mozart’s 21st *Piano Concerto*.⁵⁶ Again, at an early stage

⁵³The Poem begins and ends the second Cantower: “Sun, flowers, Son-flowered, / Speak to us of growth / Seed cauled, cribbed, / Kabod yet confined. / Crossed with dark earth, / Light-refined, / Rill open-ends a trill / Annotaste of Throat. “

⁵⁴I would draw attention in particular to Cantowers 3, 6, and 13, which give an idea of the type of work done at those gatherings.

⁵⁵There is no point here in going into too much detail; Cantowers 14-21 run parallel to *Insight* chapters 14-20 and the Epilogue; Cantowers 27-31 run parallel to *Insight* chapters 1-5 and are a good place to start; Cantowers 34-41 take up the problem of functional collaboration and follow *Method in Theology* through chapters 7 - 12. The five Cantowers 27-31 also run parallel to Feynman’s first volume of *Lectures on Physics*; Cantower 15 weaves around the work of Gould; Cantower 16 picks up on Kuhn; and so on. One parallel that I develop, beginning with section 3 of Cantower 17, is worth serious attention: it is the parallel between the search for GUTS in physics and the search for UVs, universal viewpoints in hodic work.

⁵⁶One of my oddities is to generate curious parallels, e.g. between the three movements of that piano concerto of Mozart and the three parts of *For a New Political Economy*. Then there is a quarter of a century of contemplation behind my editing of Lonergan’s economics: why should I not associate with volume 21 the contemplative challenge of finding an Epilodge? Odder, no doubt, is the way I associate the second movement of the Mozart - five and a half minutes long - with the problem of the complexification of images. Various listeners will remember my favorite illustration of

I knew that I had best leave the topic development to a later stage of my struggle:⁵⁷ it is listed as Cantower 59, right after a listing, quite some time later, of “Tadpoles, Tell us Talling Tales”.

And this last listing, as Cantower 58, helps me to write about the missing Cantowers and their abandonment. What would Cantower 58 have been? I recall now, indeed vividly, writing “*Insight and the Strategy of Biology*” forty years ago. I came to that part of my struggle where I had to deal with the botanical *vivens* as “higher” reality. I was still young in aggreformism, indeed I had not even invented the word. But I began a scribbled struggle with Thomas and Lonergan and books on chemistry and biology, and I marked the scribbled pages of some weeks with capital letters, A, B, ... I arrived at W, and I had it! So I wrote a sentence,⁵⁸ and moved on. Is there some crazy equivalence here to Fermat’s Last Theorem? Worth thinking about.

phantasm: holding up the 2 meter-long score of this magnificent movement. What is it to see, and seize, that presentation, in heady toe-teasing finger-bending neurodynamic richness?

⁵⁷See note 59 below. In the essay mentioned in the note to follow, note 58, there is a page on the problem of development. It intrigued me then, and I envisaged doing a thesis on the logic of development in Oxford, but went rather the way of *Randomness, Statistics and Emergence*. The thesis remains to be tackled, but it should be done empirically: with a daisy or a frog in mind. Eventually the community has to reach to the massive task of handling the development of logics and the problem of adequate con-genetic expression.

⁵⁸I checked back on that essay of 1964, written when I was supposed to be doing my fourth year of theology, “*Insight and the Strategy of Biology*”. What sentence was it? At note 6 I pose the question “Why is *Chaos* alive?”. A page later, after pausing over the ‘vacuole process’ I write “By means of the lower level correlations the biologist must move towards an understanding of the process in the life-pattern of *Chaos*, and explanation on this level requires that one grasp the total process not only as correlated with other functions within the animal but as related to similar processes in a range of animals”. Go figure! The article was written for Lonergan’s 60th Birthday *Festschrift, Spirit as Inquiry*, edited by F.E.Crowe, Herder and Herder, 1964. It is reprinted as chapter 2 of *Lonergan’s Challenge to the University and the Economy*.

What if I tackled, moving towards January 2007, the problem of the growing tadpole? I would write, not a sentence, but the 25 pages of Cantower 58. But it would still be doctrinal writing, a ready victim of axial mis-reading or non-reading. It puts me in mind of a prior effort in the same area, "Image and Emergence: Towards an Adequate *Weltanschauung*", which I presented at the Florida Conference of Easter 1970. In a conversation with Lonergan during those days he remarked, "well, it just opens up area after area". But for whom?

What is needed, of course, is the *ethos* of seriousness, of sweat, of radical and humble empiricity, of generalized empirical method, that is to be the tone of mature post-axial culture. And what is needed now - surely it is time, after fifty years? - is for some people interested in Lonergan to bring forth a serious expansion of his brilliant doctrinal pointers regarding development.⁵⁹ But then, is it not time that some of his disciples pushed on in quantum mechanics, relativity theory, linguistics, neurochemistry, psychology, foundational education, economics, cosmology, fundamental aesthetics, and the exigent exigence for the *field* that could seed an eschatology?⁶⁰

You can notice that I am weaving round my list of 76 missing Cantowers. What of that list in my own regard? My discernment this February involves the shift about which I write here, my shift from Cantowers to SOFDAWARE. It is not a shift away

⁵⁹This is a massively complex topic, especially when it is enlarged to envisaging the genetic structure of the seventh functional specialty (see, e.g. Cantower 7, "Systematics and General Systems Theory"), but the references in *Insight* are a start. I have found it very difficult to get my colleagues to *think* genetic system in relation to theology. I hope we get back to the strategic needs in this area in later essays.

⁶⁰Some may object that the pushing on is occurring now. I would claim that in general it lacks the full lift of Lonergan's mature view of generalized empirical method (*A Third Collection*, 141, lines 1-5: see note 63) and of course it lacks the mediation of functional specialist work. "Without the first seven stages, of course, there is no fruit to be borne" (*Method in Theology*, 353).

from my own climb: that is to continue, in a private reach for a full explanatory heuristic incarnateness that is an energy-embrace of the galactic gauged universe in its eschatological dynamic. But it is the *praxis*-intussusception of a desperate prior need, the need to foster, with luck, the *ethos* about which I have written over the past three decades.

In so far as that *ethos* emerges in this century, the messes and muddles of present sciences and arts will be faced in hodic recycling with a statistics of success that dances on the structures Lonergan suggested.

Think now of the problem of the “next” Cantower, number 42, on “Quantum Mechanics and Measurement”, the first of four about which I have brooded over now for two years or indeed for five decades.⁶¹ Recall what I wrote above about the Tadpole Cantower. What might I say here in 25 pages that would help the physicist forward in and into generalized empirical method and into the clearing up of this mess?

It is obvious to me at this stage in my work of quantum theory and relativity that the non-believing⁶² possession of the solution requires the context of “The Words of

⁶¹One has to use all sorts of trickery to keep oneself alive in the face of the invitation to “settle down” at 20, at 50, at 70. I pass on one trick that gives me a lift these years: I began four years of mathematical physics when I was 20; I began those years again when I was 70. I am doing much better in physics now than I did between 1952 and 1956! But the broader psychic front is the mood a fresh daily beginning. I like to tell the story of von Karajan, after he spent a summer recording the Beethoven symphonies, traveling to conduct an early one. When asked if he would not be bored, he remarked “for me, it is a new symphony”. So, for instance, for me *Insight* is a new book.

⁶²I throw in this word to draw attention to a zone that is central, even if I have not mentioned it. The hodic enterprize drives towards a maximization of operative luminosity. On the elementary level, of course, there is the tough challenge for both physicists and Lonergan students of grappling adequately with the dynamics of believing. That grappling has to move from the generic description given in chapter 20 of *Insight* to precise samplings of instances: a great deal of what might be called laboratory work is involved. Without that work on knowing, doing, and the doing that is believing, the core context is crippled.

Metaphysics" incarnate in positional subjects who have intussuscepted chapter 16 of *Insight*. Would I, then, be writing the 25 pages for you? A few of you? A few more of you before the end of this decade?

If not for you, still it might become for you, if you are up to some preliminary climbing. I am distracted here by an anecdote regarding Hilbert when asked why he did not solve the problem of Fermat's Last Theorem: he remarked that it would take him three years to do the preliminary work.

You get the point, not just with regard to you but with regard to the communities of physicists and of Lonergan students. The preliminary work for physicists involves the shocking transition to generalized empirical method.⁶³ The preliminary work for Lonergan students? Well, it would be, for most, a good deal of the same shock: the climb through the exercises of *Insight* involved is not the usual semi-doctrinal climb of the Lonergan school but such a climb as would pick up on the word "complete" and on the paradigm problem of space-time.⁶⁴ My old contextualization of *Randomness, Statistics and Emergence* would help, but that context is much enriched in its grim empirical focus by the exercises that move one to luminosity with regard both to

⁶³No harm in drawing attention, by quotation, to the discomfiting perspective, which should shock the majority of Lonergan students, if they read it accurately: *A Third Collection*, 141, lines 1-5: "Generalized empirical method operates on a combination of both the data of sense and the data of consciousness: it does not treat of objects without taking into account the corresponding operations of the subject; it does not treat of the subject's operations without taking into account the corresponding objects".

⁶⁴A context is McShane, "Elevating *Insight*. Space-Time as Paradigm Problem", *Method. Journal of Lonergan Studies* 19(2001), 203-229. *Journal of Macrodynamical Analysis* 4(2004) contains two relevant articles: Terrance Quinn, "The Twin Paradox. Working towards Functional Interpretation"; P. McShane, "Lonergan's Meaning of *Complete* in the Fifth Canon of Scientific Method". These works point in various ways to the complex problem of the aggregate of real geometries laced through the universe, a dominant confusion both in contemporary advanced work and in the surging popular literature.

measurement⁶⁵ and to aggreformism.⁶⁶ One has thus to rise to a precise grip on the feeble subjectivity of frames of reference and to the clear objectivity of randomness in aggreformic structuring: the looseness, for example, of the secondary determinations of the conjugates of physics in the zones of chemical specification and quantum chemistry.⁶⁷ The work of John Bell and his followers is relevant⁶⁸ but it must be lifted into the context of the W1, the First Word of Metaphysics, if the answers are to emerge and be properly “Speakable”, and established conventional contexts of discussion of Bell’s Inequality, Gleeson’s theorem, etc etc⁶⁹, have to be moved into the precise extreme realism that would shake that discussion free of illegitimate experimental imaginings. That move might have been handled to some extent in Cantower 44.⁷⁰ But notice that I have not even mentioned the muddles regarding statistics and probability, much less

⁶⁵To the context of the previous note add that of Cantowers 12, 31.

⁶⁶Cantower 29 gives helpful leads on coming to grips with aggreformism.

⁶⁷To the context of the three previous notes one might add that of Cantowers 28 and 30.

⁶⁸One could begin here with John Bell, *Speakable and Unsayable in Quantum Mechanics: Collected Papers on Quantum Philosophy*, Cambridge University Press, 1987. See also *Quantum Reflections*, edited by John Ellis and Daniele Amati, Cambridge University Press, 2000 and *Quantum [Un]sayables. From Bell to Quantum Information*, edited by R.A.Bertlmann and A.Zeilinger, mSpringer-Verlag, Berlin, 2002.

⁶⁹A useful introduction here is Michael Redhead, *Incompleteness, Nonlocality and Realism*, Clarendon Paperbacks, 1987, reprinted 1992. More recent and more complex is Jeffrey Bub, *Interpreting the Quantum World*, Cambridge University Press pb, 1999.

⁷⁰Cantower 44, “Quantum Mechanics and Locality, Temporality” was the third in the series of four that I intended to devote to quantum mechanics. There were later series (54-57; 60-62) to focus on quantumelectrodynamics and quantumchromodynamics, contextualized by work on relativity geometry, energy and entropy, etc. The drive was to be towards a fully explanatory heuristic that would be a mutual mediation of controlled expression within a new grammatology. That in turn would be a context for the detailed anticipation of a genetic heuristics of controlling expressions. See note 78.

opened up the relevant topics of energy and entropy and the Principle of Least Action.⁷¹ Probability would have been the focus of Cantower 43, “Quantum Mechanics and Probability”, but was I to repeat there the invitations of *Randomness, Statistics and Emergence*? One of my schemes for that Cantower, indeed, was to include a lengthy section on the third volume of *Feynman’s Lectures on Physics*, cataloguing, from my well-worn copy of Volume 3, Feynman’s muddled usage of words like chance and probability.⁷² But then, if you had digested the pointers of *Insight* and *Randomness*, this would be relatively routine work.⁷³

However, it is not enough to struggle with what I might call secondary literature.⁷⁴ Generalized empirical method demands a thorough empiricity that lifts

⁷¹An early compact statement of the central problem here is Sir Arthur Eddington: “We may identify action provisionally with minus the logarithm of the probability of the state of the world which exists” (*Space, Time and Gravity. An Outline of the General Theory of Relativity*, originally Cambridge University Press, 1920, available in Harper Torchbooks, 1959, which is the page reference I give: 178. A book I highly recommend). The Principle of Least Action is central to Feynman’s thinking and it hovers over his path integral approach, relevant here. See R.Feynman and A.R.Hibbs, *Quantum Mechanics and Path Integrals*, New York, McGraw-Hill, 1965.

⁷²I note too the context of “positional extreme realism” (see Cantower 9) which would lift one away from problems of imagination regarding e.g sensible-identifiable differences that ground *a priori* probabilities: think and imagine differences that ground fractional probabilities 1/6 in relation to a perfectly spherical “dice” as opposed to the usual (topologically equivalent) six-sided dice. Might this have something to do with the debate about hidden variables?

⁷³Relatively routine? There is no such thing, in one sense. But a discussion of the creativity of learning and application would carry us into many troublesome zones. In general I would claim that students of Lonergan’s works who have no experience in learning serious mathematics or physics have no serious analogue for the effort to learn in the mode of generalized empirical method.

⁷⁴Good secondary literature is doctrinal, inspirational and sometimes illustrative. I pose an interesting question here regarding *Insight* and *Method*. What do you think of the suggestion that they are doctrinal works, but in different ways?

one, exercise by exercise, beyond the doctrinal suggestions of such works as those of Lindsay and Margenau, Ian Lawrie, Feynman.⁷⁵ One must do the line-by-line work involved in reading properly such a series as that associated with Greiner.⁷⁶ Nor is that enough. Without some hands-on, imagination-in, laboratory *ethos* one can too easily slip into a fairyland of pseudo-philosophy, pseudo-science, pseudo-experiments.⁷⁷

So much for my four 25-page Cantowers on quantum mechanics. Further, I would call your attention to the fact that I do not consider that the luminous solution of standard problems there, such as are associated with the Copenhagen interpretation, can be solved without the full context of a solution to the deep problem of real geometry that meshes with the problems of general relativity, quantum electrodynamics and quantum chromodynamics. And, alas, that full context involves a development of language which would lift the second word of metaphysics into, through and beyond,

⁷⁵I have referred to works by Feynman here and there. *Foundations of Physics* by Lindsay and Margenau, used by Lonergan, is amazingly not dated, but one needs something like Ian D. Lawrie, *A Unified Grand Tour of Theoretical Physics*, Institute of Physics Publication, 1998, to get the up-to-date context.

⁷⁶Out of a range of possible working contexts I picked, for my own efforts, the series associated with Walter Greiner. If you are working in the area you may find it useful. You could make a beginning with three basic books: Walter Greiner, *Quantum Mechanics*, Springer-Verlag, pb 2001; Greiner, with Reinhardt, *Quantum Electrodynamics*, 2003; Greiner, with Schramm and Stein, *Quantum Chromodynamics*, 2002. The spread of other books is listed in each volume. These are all, of course, translations from German: the originals are easily available.

⁷⁷I do not wish to enter here into the increasing problem of popularization which I mention shortly (the second last note) in speaking of Feynman. Cantower 54, "Quantum electrodynamics, Pedagogy, Popularization" was to deal with the topic in the context of what for me is Feynman's best shot at such communication: *QED: The Strange Theory of Light and Matter* (Princeton University Press, 1985). On popularization and bad teaching in physics see Lonergan, *Topics in Education*, 145, and add the comment in Volume 6 of his *Complete Works*, pp. 121, 155 on *haute vulgarization*. Read these last two pages with Lonerganism in mind. You will later find my No-Go theorem or doctrine in the final Cantowers, a theorem which can be hot-vulgarized as saying that "if you are doing serious theology, then it is incomprehensible to common sense".

present searchings in linguistics and mathematical logic.⁷⁸

I am writing here from my own solitary perspective of random dialectic work, a struggle of fifty years for a full explanatory heuristic, now focused on physics. What is needed for the operative emergence of the solution is the massive shift of culture that I name *hodic*: a topic I have dealt pretty regularly.⁷⁹ But I would note the hopeful signs in physics that allows me to bow out writing those essays, and to bend my energies in the new direction of SOFDAWARE.⁸⁰ There is the clear-headed work of my old colleague, Lochlainn O’Raifeartaigh, that I wrote of particularly in Cantower 39, edging forward towards a critical perspective that anticipates the emergence of functional specialist collaboration in physics. And there are those like Carver Meade who reach beyond the twentieth century muddle “that has force us to wander seventy years in the

⁷⁸I wrote of this in the conclusion of Cantower 33, but the project was one for the year 2008, 12 Cantowers working towards the sophistications of controlled expression in the context of the suggested Words of Metaphysics (see Cantower 24). To get a sense of our emergent need you might envisage the meshing of the scripting of various musics: Jazz, piobrach, Indian, contemporary classical and electronic. Or simply take a look at the elementary symbolic complexity of the *Journal of Symbolic Logic* as it moves into the new millennium. Then pitch in the problem of genetic luminosity of control. “The problem of working out types of expression (*genera literaria*) is to be met, not by assigning some static classification that claims validity for all time, but by determining the operators that make the classifications relevant to one level of expression relevant to the next. Moreover, the most significant elements in the theory of types of expression will be the operators” (*Insight*, 572[595]).

⁷⁹No harm in recalling for beginners the origin of my usage of *hodic* to designate functional specialist collaboration: it comes not just from the Indo-European, but also from the song *Finnegan’s Wake*: “...and to rise in the world he carried a hod”.

⁸⁰ Later, as we shall see, this series evolves into *Quodlibets*, a reach for collaboration. In the text of note 22 above I remarked on waiting for signs of a shift of interest in functional specialization in this centennial year of Lonergan Conferences. So far the signs are not good. It remains at best of marginal interest. I wont go into detail: my original version of this gave offense, so I will only say now that my interest in functional specialization is considered by some eccentric, unwarranted. I take my stand still on its centrality to the future of methodology. I have no doubt but that history will force its operative distinctions upon us.

bewilderness of 'principles' - complementarity, correspondence, and uncertainly. We have seen that complementarity and uncertainly are natural attributes of any wave theory. Correspondence to classical mechanics was the root cause of the worst conceptual nightmares The path has been, as Einstein predicted, lengthy and difficult; the challenge is how to put all of that behind us, and to start anew".⁸¹

And what of the large goal of reaching within and beyond astronomy to an eschatology that would do better what Thomas attempted with his poor cosmological background?⁸² It is still the center of my climb of this next decade. I am making slow

⁸¹Carver A.Mead, *Collective Electrodynamics. Quantum Foundations of Electromagnetism*, MIT Press, 2000, 123-4. Mead is a great admirer of both Einstein and Feynman. On p. xx he remarks, "As I walked away from Feynman's wake, I felt intensely alone. He was the man who had taught me not only what physics is, but also what science is all about, what it means to *really understand*." As I walk away from the Cantower Project I regret that I will not spend the months and years on Feynman's *Opera Omnia* that I had originally hoped. He had a magnificent dogged empiricity in his approach. Still, on the present view he did not *really understand* what science is and this shows up not only in flaws in quantum theory but also in a flawed view of popularization that makes his presentations more valuable to graduates than to grunts. But he was wonderously committed and honest. I cherish his last words, quoted in J. and M.Gibbin, *Richard Feynman, A Life in Science*, A Plume paperback, 1998, 258. "This dying is boring".

⁸²A curiosity of this final reference is that it brings to mind my first week of conversations with Lonergan, when he was in Dublin in Easter of 1961. As we walked in Dublin - we were heading towards a store so he could buy shoes - we spoke of cosmology. He remarked that one could get a quite coherent cosmology out of Aquinas. No doubt the conversation lurked in my molecules through these four decades and fermented forward towards inferring the Cantower Project. The time is ripe now for a fuller cosmology, inclusive of eschatology. But the present inference towards the SOFDAWARE project dances to other tunes. I see Aquinas' climb of his last decade neglected for seven centuries, a road not taken. I see a new cyclic communal empirical answer to his first question of the *Summa* that would slope and swirl all cultural reflection up and round his road in an ever-freshening awakesness. "Whish! A gull. Gulls. Far calls. Coming, far! End here. Us then The keys to. Given! A way a lone a last a loved a long the riverrun past Eve and Adam's" (*Finnegans Wake*, the end and the beginning).

and startling progress, winding stellar meaning into my Cantower Poem. But will there be graduates at the end of that decade to listen to my song? Or might it be better to just leave a Philmac's Last Theorem? At all events, to twist a phrase of the fictional American president in the Film *Independence Day*, I will not go quietly into the Light.