

*Quodlibet 17***The Origins and Goals of Functional Specialization**

“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 in a 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.”¹

It is important to say, up-front, that this is a type of journalistic endeavor. As I begin writing I happen to be reading such a journalistic endeavor in physics: Brian Greene’s most recent book, *The Fabric of the Cosmos*.² Starting with that book is not at all whimsical: indeed, it is key to what I wish to be the drive of this short paper. Greene belongs to a school of “String Theory” enthusiasts, a theory that the group claims is significant in pulling together the spectrum of forces know to contemporary physics, and doing it in a way that the Standard Model, as it is called, seems incapable of doing. His earlier popular presentation in *The Elegant Universe* is, I would say, a superior presentation, and I shall return to that aspect of his effort a little later.³ But let me meantime import into my journalism the mood of Greene’s writing. Greene waxes eloquent on the discovery by Gabriele Veneriano, in the late 1960s, of the seeds of what

¹I quote from p. 14 of a Lonergan archival file labeled A697. It contains a typescript numbered pp. 8-23. Very plausibly it is a continuation of a sketch of a first chapter of *Method*, of which there is a first nine typed pages and a handwritten sketch in file V.7. That is the file which contains “the discovery pages” (February 1965) of functional specialization: more about it later.

²Brian R. Greene, *The Fabric of the Cosmos. Space, Time, and the Texture of Reality*, Alfred A.Knopf, 2004. Referred to below as Greene.

³Brian R.Greene, *The Elegant Universe. Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory*, Vintage Paperback, 2000.

was to become a solution to an ancient problem. “Some 2500 years ago, the ancient Greeks had posed the problem of determining the finest, uncuttable indivisible ingredient”⁴ of the cosmos. So my shorter effort here, a *Scientific American* article rather than a book, waxes eloquent on another theory of ingredients, one that promised to solve an ancient Greek problem. Some 2,500 year ago Plato posed the problem of determining the finest implementable philosophy, if you like an invisible ingredient to culture’s progress. Later it would be called a search for metaphysics and, for some, associated with Aristotle’s musings about a happiness beyond military and political endeavor, a happiness in a life seemingly too high for man, yet a life that could add *character* to the affairs of state. “We must first inquire of what character is a branch. To speak concisely, then, it would seem to be a branch of nothing else than statescraft”⁵.

Neither Plato nor Aristotle had much success in the world of statescraft: but could they have envisaged that failure rolling forward in the West through Bismark to Bush? Eric Voegelin smiles from his grave, yet with Platonic daftness he began his last short bed-ridden book with the optimistic question “Where does the beginning begin?”⁶ And might one not say that this same question sits hauntingly in the middle of Lonergan’s first long mind-ridden book, *Insight*, in the darkness of the end of chapter 7 and in the hopelessness of the inclusion of **implementation** in the task of metaphysics?⁷ Yet he is vigorous in his stand regarding the existence of a solution to the problem of statescraft, and he drives on thorough a quite crazy optimism in the seventeenth chapter - we must

⁴Greene, 344.

⁵I quote here from the beginning of *Magna Moralia*, as translated by St.G.Stock, *The Complete Works of Aristotle*, volume 2, edited by Jonathan Barnes, Princeton University Press, 1984, 1868. The previous sentence above refers to the passage in *Nicomachean Ethics* X, 7, 1177 b, 1-30: p. 1861 of this volume.

⁶Eric Voegelin, *In Search of Order*, Vol. 5, Louisiana State University Press, Baton Rouge, 1987, 13.

⁷*Insight*, 726[747].

return to that below - to envisage a fresh effort. "The antecedent willingness of hope has to advance from a generic reinforcement of the pure desire to an adapted and specialized auxiliary ever ready to offset every interference either with intellect's finality."⁸ He fingered those words hurriedly onto a page with his old typewriter in 1953, knowing that he was due in Rome in a few months. "Has to advance": could he have suspected that the advance he was reaching for would hold him up till February of 1965, when he would flash forward to the required adaptable specialized auxiliary?

At that time did his mind flash to his view of 1959, when he had said: "The fact is that wherever there is a final cause, there also is an efficient cause, and it is quite legitimate to seek in the efficient cause of the science that is, in the scientist, the reason why a science forms a unified whole?"⁹ Perhaps, since all he knew was somehow with him, but the evidence points elsewhere.¹⁰ Still, we may cherish the possibility that he was luminous about his discovery as a magnificent discontinuity in the search for the unity, beauty and efficiency of metaphysics, a startling characterization of that stumbling word, *implementation*?¹¹ Nor would it have taken a great leap from the fresh integrating heuristic for him to see the link between history and system collaboratively locked into the cycle that the heuristic grounded. When he completed *Insight* he had soundly conceived system in terms of genetic system, but in the decade before 1965 he

⁸*Insight*, University of Toronto Press, 1992, 747.

⁹Lonergan, *Topics in Education*, 160.

¹⁰The implicit reference is to the final paragraph of chapter 9 of *Insight*.

¹¹The word does not occur in either index of *Insight*. This should not surprise. Fr. Crowe and I have joked each other for years about the gaps we left in indexing, respectively, *Insight* and *Method in Theology*. A few years ago he remarked to me, with a smile, that there was an awful lot more on *feelings* in the new index of *Insight*. My own random referencing of the word *Implementation* gives entries on the following pages of *Insight*: 229[254], 234[259], 236[261], 238[263], 391[416], 493[517], 507[544], 524[547], 685[708], 726[748].

struggled endlessly with the problem of the link.¹² Now he had found it, so to speak, on a string, in a String Theory of the Cosmos of meaning. The scattered beads of disciplinary sweat could be seen now as strung together sweetly. The jumble of theology's fragmented areas - Scripture studies, doctrines, history, dialectical and pastoral scholarship, strung together in a circle of eight handing-round efforts.

Certainly he must have mused about these aspects of his achievement as Spring moved on and his cancer took firmer hold. But the evidence of his further flashes are in what I call his "discovery file", catalogued as Batch V.7, mentioned above in note 1. So, there is, in the file, a set of quotations from the *Summa's* effort to define the foundations of theology, which Thomas did in Aristotelean axiomatic terms. I cannot say whether Lonergan came to grips then with the magnificent antifoundationalism of his achievement, but he knew that axiomatics were out, except in a subordinate sense.¹³ Further, the file contains a powerful outline of a first chapter, and it is of interest to draw attention to two nudges that he roughed out then.

There is his fresh cherishing of Hegel's insight regarding history, quoted at the beginning, that one might well associate with a new humility towards the past: secondly, there is the seed of a new science with a new inside-out Hegelian humility

¹²I think here of the work of Robert Doran during the past decade, brought into focus in his book *What is Systematic Theology*, University of Toronto Press, 2005.

¹³This is an extremely complex issue. Certainly there is the simple point that foundations are subjects, not axioms (*Method in Theology*, the first two sections of chapter 11, 267ff). But a type of axiomatic thematic dominates the cycling and re-cycling of functional specialization: "The use of the general theological categories occurs in any of the specialties" (*Method*, 292). Furthermore, in the functional specialty Systematics, which is to emerge as a genetically structured sequence of axiomatics, there will be a subtle interplay of that sequence. Think, perhaps of the sequence of axiomatic integrator-operators that thematize the tadpole-frog at any stage of the science. A shift in discovery regarding any stage 'sends vibes' up and down the sequence. A context here is Lonergan's discussion of the genetics of logical systems in *Phenomenology and Logic*.

about the future.¹⁴ It is present in his reflection of a third order of consciousness that would thematize genetically the sequence of findings of the second-order consciousness that is method at any particular stage of its evolution: methodology would then emerge as a *logos* of method, yet open and genetic, and so antifoundational.

Those pointers were never followed up, though the ongoing genesis of mind and method is an evident interest of the writing of *Method in Theology* and of later writings. I suspect, indeed, that Lonergan never returned to his Roman scribbles and typescripts, but moved on after 1966 to see how he might present his discovery: so we have his brief coherent sketch in the *Gregorianum* of 1969, which found its way into the longer tired effort published in 1972.

I suppose that it is difficult for those who had not lived with the problem of fragmentation and inefficiency in the 1950s and 1960s to sense the lift, the shock, of its solution. I got word of his breakthrough at the time of its discovery while I was in the Jesuit tertianship in Paray le Monial and, in the Summer of 1966, sat in front of him in his room in Regis College, Toronto, dazzled by his laconic presentation. "Well", he said, "its easy", holding up then his eight fingers, "you just double the structure". In ten minutes I had it. Of course, I didn't have it, nor do I yet have it, that strange restructuring of culture. "Man can pause and with a smile or a forced grin ask what the drama, what he himself is all about. His culture is his capacity to ask, to reflect, to reach an answer that at once satisfies his intelligence and speaks to his heart."¹⁵ We can think

¹⁴I am indebted here to Mark Morelli's work on Hegel and Lonergan, to be presented in the Boston Workshop of June 2005.

¹⁵*Insight*, 236 [261]. "and speaks to his heart". That concluding remark raises a major question that needs altogether more than a footnote. Lonergan's capacity to ask was both religious and aesthetic. I recall, after listening to Beethoven's Kreutzer with him one evening in the 1976, his telling me of his first hearing of it, in the garden of his home as a little boy: his mother was playing a piano version. He described his halted hearted poise. In the Florida Interview (published in *A Second Collection*, where, in editing, I omitted the names of questioners) one silly fellow asked Lonergan when and from what author he discovered feelings. Lonergan looked him in the eye and remarked in his characteristic up-toned manner: "I've got

here of Lonergan as he began his reflections, within his capacity of the early 1950s, on “Culture and Reversal”. And he ended that short dark section with the “tall order for human science”¹⁶: “What is necessary is a cosmopolis that is neither class nor state, that stands above their claims, that cuts them down to size that is too effective to be ignored.”¹⁷

What he had discovered was a towering tall ordering of human science, though what he wrote was *Method in Theology*. Karl Rahner caught this on reading the *Gregorianum* article, and made the point against its being strictly theological method in that same journal the following year.¹⁸ I had the advantage of the years since 1966 to move to the same conclusion, and tackled the need for Lonergan’s divisions of labor in musicology for the Lonergan International Conference at Florida. The new view, however, was not a topic at that conference: it was too soon after its publication. But, curiously, it did not become a serious interest in the decade that followed.¹⁹ There were all sorts of reasons for this: the disappointing brevity of *Method*, the undeveloped and “old style” treatments of topics there, but most of all, I think, there was the richness of

feelings too!” But his answer should settle the matter of misrepresentation: the paragraph on the turn of the page, 221-2 leaves no doubt about his strategy in writing *Insight*. I recall, too, talking to him in the mid-1970s about psychic conversion as included in *Insight*. His comment: “well, its nice to see it spelled out”. Lonergan had been doing the Ignatian exercises for almost thirty years when his discernment of spirits led him to tackle *Insight* while excluding there the fundamental dynamics of personal relations.

¹⁶*Ibid.*

¹⁷*Insight*, 238[263].

¹⁸“Die theologische Methodologie Lonergan’s scheint mir so generisch zu sein, dass sie eigentlich auf jede Wissenschaft passt”, Karl Rahner, “Kritische Bemerkungen zu B.J.F.Lonergan’s Aufsatz: ‘Functional Specialties in Theology’”, *Gregorianum* 51(1971), 537.

¹⁹Terrance Tekippe and his colleagues made a gallant effort at doing functional specialist work on the infallibility issue, but it was not well received. Terrance Tekippe, *Papal Infallibility. An Application of Lonergan’s Theological Method*, University Press of America, 1983.

the shifts of the first part of the book. Meaning, religious experience, good, value, feelings: these became the topics of the 1970s. Still, as we moved into the 1980s two slogans emerged: Crowe's quiet question, "What functional specialty are you working in?" and my own "If a thing is worth doing it is worth doing badly".

I suppose I might say, "presenting an idealized version of the past, something better than the reality,"²⁰ that we did, thus, make a start. But we were all busy in relation to new angles on meaning and stuck in the styles of past conventions. Looking back now I see more clearly the significance of fantasy as Herbert Marcuse described it: "Without fantasy, all philosophic knowledge remains in the grip of the present or the past and severed from the future, which is the only link between philosophy and the real history of mankind."²¹ Add to that the point Lonergan made about theologians' post-Tridentine entrapment, "big frogs in little ponds".²² The start that was made by Lonergan people was for the most part a matter of simply identifying parts of their work as dialectic or systematic or doctrinal or historical or whatever. Lonergan himself was not a help here: first, he had opted for a predominantly descriptive book, limited in its interest to the zone of theology. Secondly, he opted not to pursue the topic further: he returned exhausted from his final presentation of it in Dublin, 1971, and, until he moved full time into economic studies in 1977, met more immediate demands and needs: papers requested, etc.

So, the Lonergan community moved on in various zones of interest, especially in comparative studies, with some few identifying their work as related to some specialty. That, indeed, seems to be where we find ourselves now, precisely forty years, almost to the month, after the great discovery.

²⁰*Method in Theology*, 251.

²¹Herbert Marcuse, *Negation. Essays in Critical Thinking*, translated by Jeremy L.Shapiro, Boston, 1968, 155.

²²A remark Lonergan made in Dublin, Easter, 1961.

That it was a great discovery, or uncovering I might say in anticipation of my next paragraph, will be gradually noticed when it blossoms out into the difficult differentiated work for which it calls. Then it will be “too effective to be ignored”, and indeed it will take on the characteristics Lonergan attributed to Cosmopolis: “not a police force,”²³ “not a busybody,”²⁴ “protecting the future,”²⁵ and “not easy.”²⁶ Indeed, I suspect that it will meet the fate that Lonergan describes in the final Chestertonian paragraph of “Healing and Creating in History”: “Is my proposal utopian? It asks merely for creativity, for an interdisciplinary theory that at first will be denounced as absurd, then will be admitted to be true but obvious and insignificant, and perhaps finally to be regarded as so important that its adversaries will claim that they themselves discovered it.”²⁷

And perhaps he is right there: for he is not the father but the foster father of functional specialization. It is not, however, “they themselves discovered it”: it is being uncovered by history, mothered by the dynamics of global inquiry. Beyond the zone of theology, isolated in manners that are all too neatly summed up in Lonergan’s quip, the scientific revolution has brought forth both massive and massively fragmented riches of meaning, and the not-at-all easy task of “protecting the future”. That question of protecting the future has become a clear concern of the various groups, like the Gaia movement, attentive to global problems of warming, erosion, etc. And the need for division of labor has even become an explicit topic. Arne Noess, the recognized father of an ecological movement and founder of the journal *The Ecologist*, wrote of this need in

²³Insight, 238[263].

²⁴Ibid., 239[264].

²⁵Ibid., 240[265].

²⁶Ibid., 241[266].

²⁷Lonergan, *Macroeconomic Dynamics: An Essay in Circulation Analysis*, University of Toronto Press, 1999, 106.

that journal.²⁸ In the 1970s a group working in the English department of York University Toronto drew both Lonergan's and my attention to a book by Wellek and Warren on the character of literary studies in which the chapter headings almost repeat the titles of the specialties.²⁹ Since then the need has been discussed in other areas such as law, linguistics, economics, medicine, mathematics, physics. My son Jamie, a climber, makes it evident to me that the need has emerged even in the field of mountaineering. So, two or three hundred years of fragmentation and zone-specializations has made evident that what Smith wrote on the first chapter of *Wealth of Nations* is true of pin and pen: "The division of labor, so far as it can be introduced, occasions, in every art, a proportionable increase in the productive power of labor." What is true of theology is, then, a fermenting fact of all areas of cultural reflection.³⁰

I have drawn attention in the previous paragraph to a problem in each zone of cultural inquiry, but quite evidently there is the fuller problem of the unity both of global concern and of metaphysics. Lonergan, as I have just quoted him from "Healing and Creating in History", wrote of "an interdisciplinary theory that at first will be denounced as absurd". Thirty years earlier, in 1942, having produced a theory that is still considered absurd, he wrote passionately about the future, and it seems fitting to pause for a paragraph over the hopes of the thirty-eight year old genius in one of his greatest works, *For A New Political Economy*.

"Nor is it impossible that further developments in science should make small units self-sufficient on an ultramodern standard of living to eliminate commerce and

²⁸Arne Noess, "Deep Ecology and Ultimate Premises", *The Ecologist*, 18(1988).

²⁹R.Wellek and A.Warren, *Theory of Literature*, Brace and World, New York, 1970.

³⁰That the solution was thematized first within Christian theology belongs within the general question of the providence of the emergence of Christian philosophy, a topic that deserves separate treatment, perhaps as a sub-theme of the genetic systematics that would sublimate Lonergan's hoped-for treatise on the mystical body. That systematic sub-theme would, of course, be "strung out" through fresh searchings of the truth of history.

industry, to transform agriculture into a superchemistry, to clear away finance and even money, to make economic solidarity a memory, and power over nature the only difference between high civilization and primitive gardening.

But we are not there yet. And for society to progress towards that or any other goal it must fulfil one condition. It cannot be a titanothore, a beast with a three-ton body and a ten-ounce brain. It must not direct its main effort to the ordinary final product of standard of living but to the overhead final product of cultural implements. It must not glory in its widening, in adding industry to industry, and feeding the soul of man with an abundant demand for labor. It must glory in its deepening, in the pure deepening that adds to aggregate leisure, to liberate many entirely and all increasingly to the field of cultural activities. It must not boast of science on the ground that science fills its belly. It must not glue its nose to the single track of this or that department. It must lift its eyes more and ever more to the more general and more difficult fields of speculation, for it is from them that it has to derive the delicate compound of unity and freedom in which alone progress can be born, struggle, and win through. Unity without freedom is easy: set up a dictator and give him a secret police. Freedom without unity is easy: let every weed glory in the sunshine of stupid adulation. But unity and freedom together, that is the problem."³¹

How the problem of unity and freedom is pragmatically solved is a topic for collaborative fantasy and fragmentary tadpole implementation. We will recognize the frog when it emerges, and its pond will have become a Pacific Ocean. But an image may help. It involves envisaging the conventional roof, but with asymmetric slopes up from research at one angle in a curiously random pattern; down from foundations in a smooth comprehensive reaching for the gutter. Think of this first roof-structure as a theological division of labor. Other areas of culture are to have their own roofs but sloping at other angles. The concrete reality of human inquiry is that while the up-slopes

³¹*For A New Political Economy*, 20.

have different starting points and different angles of climb to a dialectic plateau, that plateau turns out to be common to all.³² Then there is the turn to the other slope of the roof, overseen by the foundational plateau: have you got my image, from a type of German housing with a “flat top” of dialectic and foundations where the sides meet? That turn is a focused turn to the future but it is vital for us to intussuscept the new *ethos* of all the specialties, the *ethos* named *Praxis* to be incarnated in each of us leaning forward even in the reaching back of research and history, leaning forward in our seats herenow towards what might be, what we might scheme towards making being. We return to this in the concluding section.

I mentioned an asymmetry between the slopes: relevant discoveries in the past are evidently random - gun-powder in China, Gutenberg printing - but the global forward motion is democratic towards all latitudes and longitudes of human needs. And that global motion of common meaning needs an uncommon tower of collaborative meaning that sublates Simmel’s *Wendung zur Idee*, which Lonergan translates as “displacement towards system.”³³ The emergence of that global tower requires random present surging in random areas and disciplines: a gun-powder start in California, foot-printing in the sands of physics: whatever. Perhaps I might turn first to the sands of physics, secondly add a familiar context from the problem of transposing *Insight’s* discussion of hermeneutics, and conclude with reflections on our gathering here.

It seems peculiar to speak of the sands of physics, one of those zones that Lonergan would characterize as a successful science from which to learn. But, yes, we can also learn from its confusions. In a paragraph I can only give random journalistic impressions: it is best to leave to footnotes indications of the larger functional

³²I dealt with this topic in some detail in Cantower 8, “Slopes: an Encounter”.

³³Lonergan, *De Deo Trino I. Pars Dogmatica*, Gregorian Press, Rome, 1964, p.10, n.10.

challenge.³⁴ And there is also the larger challenge within physics that I would associate with Lonergan's later view of generalized empirical method.³⁵ I began by calling attention to Brian Greene's recent book, *The Fabric of the Cosmos*. It manages to illustrate, within physics, confusions that have concerned Lonergan throughout his life, a concern brilliantly bifurcated by him in February 1965.³⁶

For a start, the book can be identified as very poor teaching or a low grade of

³⁴I am using physics as a paradigm much as I used standard problems regarding space-time as a paradigm problem in "Elevating Insight. Space-Time as Paradigm Problem", *Method: Journal of Lonergan Studies*, 19 (2001). I do not think that one needs to be a physicist to get a sense of this, or of the bifurcation of concern that I introduce shortly. In that article I give indications of the need for functional specialization in physics, 215ff. The need crosses all cultures and disciplines. Indeed, I would claim that we are facing here a shift in cultural ethics. See note 70 below. Further, within that cultural ethic there is the sub-ethic of generalized empirical method as defined in the next note.

³⁵"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." Lonergan, *A Third Collection*, 141. This is a profoundly significant revision of the thematic of generalized empirical method in *Insight*, but it thematizes his own practice in that book.

³⁶The notes here compactly express the thesis of this article. *Insight* tackles problems in a wide range of disciplines. In Greene the muddles about the nature of space-time dominate, indeed disorient the entire book. The conjugates of the things of physics get lost in space, so to speak. Reductionism is there, but the problem of hierarchic patterns simply does not seem to trouble him (see notes 38 and 59 below). Problems of parsimony, verification, objectivity, realism: they are all there, and they will show up for you existentially if you tackle the exercise presented in note 38 - Lonergan identifies them in the passage indicated. But how, really, does one solve these problems *ut in pluribus*? The book *Insight* has had little effect on culture, but certainly an individual could break with truncated culture by working hard at its program of self-appreciation. The brilliance of the bifurcation is that it promises to recycle effectively (beautifully, efficiently) works like *Insight*. The promise is focused effectively by the strategy of p. 250 of *Method in Theology*. Will the strategy be accepted? As the cycling division of labor becomes a cultural reality there arises a pressure of excellence and embarrassment that adds to the lift of probabilities already present in the cycling. On the broader shift, due to cyclic stringing, of probabilities from products to sums see *Insight*, 121[144]. Finally, I would draw attention to the fact that the division of labor grounds an operative global invitation to discover the levels of consciousness.

haute vulgarization.³⁷ That poverty is rooted in its being shockingly muddled foundationally.³⁸ Greene, comfortably truncated yet a talented physicist in his own right, has no serious grasp of what physicists do, nor has he anything like a coherent world view into which he might fit his presentation.³⁹ The result is a simple-minded totalitarianism. Still, there are foundational and scientific pointers that an astute reader might exploit. One illustration of this is worth giving here in the text, since it brings out features of Lonergan's achievement in both *Insight* and *Method* and the difficulty our past couple of generations had in trying to absorb it.

Greene's special interest is in string theory. In spite of the centrality he gives it, it

³⁷*Haute vulgarization* is criticized biting by Lonergan in volume 6 of the *Complete Works, Philosophical and Theological Papers 1958-64*, University of Toronto Press, 1996, 121, 155. There is a certain irony here, since the volume is an illustration of the pressure on Lonergan, throughout his life, to present his views in a palatable fashion. This is a large and important topic. Herbert Butterfield, in the concluding chapter of his book, *The Origins of Modern Science*, identifies Fontenelle as key in the move towards popularization in science. I tackle this in a separate essay, "Quantumelectrodynamics, Pedagogy, Popularization", originally listed as Cantower 55, but to emerge now as *Quodlibet* 20. The reason that the essay is associated with quantum theory is rooted in the fact that Richard Feynman, a magnificent presenter, is at his best in his little book, *QED: The Strange Theory of Light and Matter* (Princeton University Press, Princeton, 1985): so it provides a concrete context for asking the question, what is the character of the communication in popularization, and how does it relate to pedagogy, to culture, to mystery? On popularization in the teaching of physics, see Lonergan, *Topics in Education*, 145.

³⁸A footnote is not the place to get into this, but I suggest an exercise that anyone who can get their hands on the book could do: this is in line with the point about 'tough exercises' mentioned on the next page here. The present 'tough exercise' incidentally would make a neat doctorate thesis or book. The problem is about Newton's bucket of water, spinning or not: a glance at Greene's index shows that the problem haunts the book. First, then, you could tackle Lonergan's compact reflection on the problem in section 3.3 of chapter 5 of *Insight*. Then see if you can sort out the mess that Greene and others get themselves into. This is an extremely good exercise towards learning how to read Lonergan's work. While I am at it I should mention my own efforts to provide such exercises. The 5 Cantowers 27-31 parallel both *Insight*'s first five chapters and the first five chapters of Feynman's famous *The Feynman Lectures In Physics* (3 volumes, regularly reprinted in paperback, Addison-Wesley). They are not rushed exercises. So, for example, the main effort in Cantower 27 is indicating the difficulty and strategy of getting to grips with the Archimedes business on the first page of chapter one of *Insight*.

³⁹See note 59 below. Greene seems to be a very simple-minded reductionist.

is not central to present physics. Indeed, I am in agreement with Lochlain O’Raifeartaigh’s view: “The next step in creating a more unified theory of the basic interactions will probably be much more difficult. All the major theoretical developments of 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 speculations.”⁴⁰ Further, there is the problem of realism regarding dimensionality: a geometrical entity of one dimension is no less abstract than a dimensionless point.⁴¹ Still, there are comments that are remarkably suggestive regarding the advancing of physics. “According to string theory, there is only one fundamental ingredient - the string - and the wealth of particle species simply reflects the different vibrational patterns that a string can execute.”⁴² If one replaces “the string” with the words “the empirical residue” and lifts the comment - with various counter-positional reversals - into the metaphysical context of chapter 15 of *Insight*, then one is moving in the right direction, especially with Lonergan’s identification of empirical residue and energy.⁴³

Coming to grips with that identification is no mean task. In my own case, incredible as it might seem, it took me 45 years.⁴⁴ Eventually I would hope that the identification be a topic in undergraduate studies. In this connection, you may find it useful to think of *Insight*, as I have done now for 25 years, as a graduate text lacking an

⁴⁰ L.O’Raifeartaigh and N. Straumann, “Group Theory : Origins and Modern Development,” *Reviews of Modern Physics* 72(2000), 15.

⁴¹A significant context for thinking this out is Lonergan, “A Note on Geometrical Possibility”, *Collection*, University of Toronto Press, 1988.

⁴²Greene, 346.

⁴³The two relevant sections in *Insight* chapter 15 are titled “Potency and Limitation” and “Potency and Finality”. Above I mention the instrumental finality of energy, a full thematic of which would illumination the nature of both the origin and the term of the material universe.

⁴⁴I give clues to the identification in Cantower 28.

undergraduate tradition. Indeed, I have in my possession such a graduate text in physics, *Theoretic Physics* by Georg Joos,⁴⁵ and I have used it regularly to make that point concretely, in a manner relevant to our present focus on Lonergan's old and new hermeneutics. What I noted was that there are the same number of pages given to hermeneutics in *Insight* as are given by Joos to particle dynamics: about 30 pages. Now anyone familiar with a good physics course on planetary motions etc etc has memories of the many texts and the many tough exercises needed to reach mastery of that topic. But there are no such texts and exercises thus related to Lonergan's 30 pages. The same applies to the key developments in *Method in Theology*. So, in the last paragraph I mentioned the reversal of counter-positions. Where does that take place in physics? At present it is random, as it is in theology or philosophy.⁴⁶ But, within the new unity, beauty and efficiency, it takes place within the precise program sketched on page 250 of *Method*. What is that program? Well, I had occasion to have a shot at answering that question for a group in Australia during 2004. The result of my reflections over seven months runs to over 200 pages: perhaps the beginning of an undergraduate help.⁴⁷

But the concrete immediate help for us now is personal leisured fantasy, and

⁴⁵My copy is from 1951: Blackie and Son Limited, London and Glasgow: a total of 853 pages, so slightly smaller than the new *Insight*, slightly larger than the original printing.

⁴⁶One may illustrate this in physics from the works of Kuhn or Whittaker or John Bell. A clear account of the dialectic struggle of physics in the first half of the twentieth century is Lochlain O'Raiheartaigh, *The Dawning of Gauge Theory*, Princeton University Press, New Jersey, 1997. A book of interest to students of Lonergan's economics, dealing with the oldest problem in theoretical economics, is Mark Blaug et al, *The Quantity Theory of Money from Locke to Keynes and Friedman*, Edgar Elgar publishers, Vermont, 1995. I presented Lonergan's solution to that problem in "Trade Turnover and The Quantity Theory of Money", an Appendix to *Pastkeynes Pastmodern Economics. A Fresh Pragmatism*, Axial Press, Halifax, 2002.

⁴⁷The pages are contained in two Website [www.philipmcs Shane.ca] series, SOFDAWAREs 1 - 8 and *Quodlibets* 1 - 11. The Australian interest led me to break off the Cantower series, a promised million-word 117 monthly essays, at Cantower 41, with 600,000 words till pending. I would note that the break-off is intimately connected with the collaborative goal of functional specialization: what is relevant in our times is a fermenting towards community.

here I suggest a useful exercise of fancy.⁴⁸ Imagine, then, a medieval writing a single page that summarizes the methodological achievements of the scientific revolution - a dense page, then, that packs in the perspective of Kuhn, Lakatos, Butterfield, Gould, etc. What would her contemporaries make of that page? Good for a laugh, perhaps: "get thee to a nunnery!" What have we made so far of page 250 of *Method*? My own view is that it is the finest page in the book.

But my key point here is against discouragement. We face the tough work of a nest of deep paradigm shifts: we each must find out modest place in the groaning of the cosmos that it represents.

Back, then, to Greene's *Fabric of the Cosmos*. In spite of his insightful contributions, he winds forward finally towards a naive enthusiasm for string theory that blossoms into a distorted popularization of contemporary advances in physics and indeed into a distasteful fairyland of possibilities of theory and practice, a massive foisting of a pretentious mythic consciousness on the public.

So we find ourselves, if you like, at the end of the first section of chapter 17 of *Insight*, "we are brought to the profound disillusionment of modern man, and to the focal point of his horror that the advance of human knowledge is ambivalent, that the fact of advance and the evidence of power are not guarantees of truth, that myth is the permanent alternative to mystery."⁴⁹

At the Florida Lonergan Conference of 1970 this was one of two parts of *Insight* that were heavily questioned, the other being his proof for the existence of God. But the

⁴⁸The topic of fantasy is a difficult one related to the steps towards decision discussed by Thomas in the *Prima Secundae*, qq. 7-17. It is a mediator of the future and its theoretic will sublimate Lonergan's various suggestions regarding quasi-operators. See, for example, *A Third Collection*, 29, where Lonergan writes of the underpinning of the passionateness of being. "Its underpinning is the quasi-operator that presides over the transition from the neural to the psychic". A fuller metaphysics would reveal the deeper root in the finality of energy, and in the layered negentropic infoldings of it that spiral being towards mind.

⁴⁹Insight 549[572].

point missed in this case is that, while Lonergan footnotes Eliade here, he is writing more broadly about myth, about the horror of the contemporary world of academic and popular culture, where academics, popularizers, and “philosophers for at least two centuries, through doctrines on politics, economics, education, and through ever further doctrines, have been trying to remake man and have done not a little to make life unlivable.”⁵⁰

What is Lonergan answer to this horror? Yes, “the real issue is truth” - he thus begins the next section - but I must pass over that strange and powerful second section of chapter 17 to follow our trail of the origins and goals of functional specialization. He has been thinking and typing forward now in towering solitude for four years and finds himself breaking off the final sixth sub-section of this second section to finger forward into that great obscure symphonic final section of the chapter. What can he have meant by the title “The Truth of Interpretation”? There is *The Problem*, part of the problem we have identified as one fermenting out of history, a fragmentation of meaning with its concomitant shrinkages and distortions of presentations of meaning. So he begins: “The problem of interpretation can best be introduced....,”⁵¹ and he drives on mercilessly, with refinements that are quite private, towards his notion and theory and application of a Universal Viewpoint.⁵² I think it is important to view this section in some comic

⁵⁰Lonergan, *Topics in Education*, 232.

⁵¹*Insight*, 562[585]. Later he might say that it is best introduced by randomly moving into the cycling collaboration of functional specialization. See the quotation at note 58 below. However, I think that he would advocate the presentation of the structure of collaboration at an early stage in one’s education. “Descriptive categories are not very convenient even in the beginning of science” (I am translating loosely here from Lonergan, *De Deo Trino II. Pars Systematica*, Gregorian Press, Rome, 1964, 308.) So, an early presentation of the division of labor is somewhat analogous to the presentation of the periodic divisions in chemistry: they generally appear inside the covers of text-books.

⁵²Ivo Coelho, *Hermeneutics and Method: A Study of the Universal Viewpoint in Bernard Lonergan*, Rome, 1994, discusses the fate of the “universal viewpoint” of *Insight* in Lonergan’s later work. A revised version of the thesis was published by University of Toronto Press, 1999.

spirit, so that “it enters not by argument but by laughter.”⁵³ To whom was he writing? Certainly he did not reach the experts that gathered in Concordia decades later with a focus that failed entirely to home in on *Loneragan’s Hermeneutics*.⁵⁴

The comic reaches its high point, for me, well before the incomprehensible canons of hermeneutics, when he introduces the topic of “pure formulations” in *The Sketch* of section 3.6. “They are pure formulations if they proceed from an interpreter that grasps the universal viewpoint and if they are addressed to an audience that similarly grasps the universal viewpoint.”⁵⁵ Wow! This certainly reads like one of those “blueprints for Utopia”⁵⁶ requiring “a vivid imagination that puts a familiar Tom, Dick and Harry in unfamiliar roles.”⁵⁷ Fifteen years later his tired fingers pointed out the long march towards that Dark Tower of pure formulations: “One of the advantages of functional specialization is precisely this possibility of separate treatment of issues that otherwise become enormously complex.... see my own discussion of the truth of an interpretation in *Insight* and observe now ideas presented there recur here in quite different functional specialties. For instance, what there is termed the universal viewpoint, here is realized by advocating a distinct speciality dialectic.”⁵⁸ *Method in Theology* did not map out that trek with any adequacy except for that single masterly section 10.5 of *Dialectic*, “The Structure of Dialectic” where he is both merciless and

⁵³*Insight*, 626[649].

⁵⁴The proceedings of the Conference were later published as *Loneragan’s Hermeneutics. Its Development and application*, edited by Sean E.McEvenue and Ben F.Meyer, The Catholic University of America Press, Washington D.C., 1989. There was, of course, a great deal of good stuff discussed at the Conference, and some masterly papers produced, but neither the canons of hermeneutics nor functional specialization were seriously aired.

⁵⁵*Insight*, 580[602].

⁵⁶*Insight*, 626[649].

⁵⁷*Ibid.*

⁵⁸*Method in Theology*, 153, note.

cunning in his demand for a stand. But the stand required is not a stand for his universal viewpoint: it is the stand of Tom, Dick and Mary just as they are, struggling towards a luminous thematic of their present viewpoint.

Here we may return with profit to the issues of contemporary physics. Greene and others give the impression of physics heading towards a sort of universal viewpoint, a TOE (theory of everything) or a GUT (grand unification theory). But the real situation, whether one thinks of the Standard Model or of String Theory, is that this physicist and that struggle towards their own TUTs, tentative unification theories.⁵⁹ That struggle has “become enormously complex”, shuffling reluctantly towards “the advantages of functional specialization.” Similarly this theologian and that struggle towards TUVs, tentative universal viewpoints, whether they admit it or even deny it in some claim of *Voraussetzungsglosigkeit*. For the present the Standard Model of theology holds sway, even among Lonergan scholars: claims of doing dialectic, for instance, just don’t stand up to a reading of page 250 of *Method*, nor does a type of filing-system use of functional specialization echo the global interdisciplinary challenge. But eventually the String Theory of functional collaboration will show its power as a heuristic Theory of Everything, still distant from a shared universal viewpoint, but so structured globally

⁵⁹I have been critical of Greene’s popular presentations of contemporary physics above, but there are reasonably good presentations among the flood of books emerging. But what about getting a serious view, such as was offered by Lindsay and Margenau, *Foundations of Physics*, (Dover) in Lonergan’s day? That book, in fact, is still a sound grounding, even though it is not at all up-to-date on the particle families. My recommendation for a single present book to fill one out on the contemporary theoretic scene is Ian Lawrie, *A Unified Grand Tour of Theoretical Physics*, Institute of Physics Publishing, Bristol and Philadelphia, 1998 paperback.

One has to take the “Unification Theory” stuff with a grain of salt. First, within physics itself, there is such a muddle about primary and secondary determinations that the remoteness of theoretic unification is muddied, even by the leading physicists. Secondly, there is a tendency, call it reductionism, to over-rate the reach of unification. There is at present no serious culture of what I call aggregreformism, Lonergan’s upgrading of Aristotle’s hylemorphism. A useful introduction to thinking towards it is available in Cantower 29.

as to yield cyclically “cumulative and progressive results”⁶⁰

“But we are not there yet unity and freedom together, that is the problem.”⁶¹ Furthermore, in the new *ethos* of efficiency and *Praxis*, the **we** I write of is the **we** of this gathering, leaning forward in history, remembering the future. Might we begin to do our little bit to “protect the future”⁶² even though that little bit “is not easy”⁶³? “There is such a thing as progress and its principle is liberty”⁶⁴ and “*The Problem of Liberation*”⁶⁵ has been lifted into a new ethics by emergent probability’s genesis of schemings of recurrence: “the solution will consist in a new and higher collaboration of men in the pursuit of truth,”⁶⁶ a collaboration secretly powered by grace. Might we take a free stand on, within, that new ethics? Might we make that new ethics of global collaboration a topic, an embarrassing doctrine,⁶⁷ eventually an evident culture and a popular tradition? “Popular tradition, whether it be poetry, fiction, or acceptable history, is something essential to human living. It is what the existentialists would call

⁶⁰*Method in Theology*, 4.

⁶¹See above, note 31. It is a problem in the sense indicate in that final chapter of *Insight*: it has a solution through the creative minority’s climb to uncommon meaning in a Tower of Able, mediating a common meaning. This is the pointing of the first two sections of chapter 14 of *Method in Theology*.

⁶²*Insight*, 240[265].

⁶³*Insight*, 241[266].

⁶⁴*Insight*, 234[259].

⁶⁵*Insight*, 630[653], 619[643].

⁶⁶*Insight*, 719[740].

⁶⁷“Doctrines that are embarrassing will not be mentioned in polite company” (*Method in Theology*, 299) may be true of philosophy and theology, but in the world of science, which knows little of closed schools, embarrassment is regularly a private thing, resulting from reading the recent journals and finding that one is being left behind. See note 36 above. On the new ethics, see note 70 below.

an existential category. The aesthetic apprehension of the group's origin and story becomes operative when the group debates, judges, evaluates, decides and acts - and especially in a crisis."⁶⁸

"The culture has become a slum,"⁶⁹ so there is no doubt but that we are in a crisis, whether we think of the short-term crisis of a neglect of Lonergan's challenge or of the long-term crisis of bringing to an end the second stage of meaning with its lengthening cycling of decline. Might we here-now make some definite moves towards the "control of the emergent probability of the future"⁷⁰ that would be a nudge towards a new operative integral unity, beauty and efficiency of a cyclic concrete metaphysics?

⁶⁸Lonergan, *Topics in Education*, 230.

⁶⁹*Method in Theology*, 99.

⁷⁰*Insight*, 226[252]. Might we? The question belongs to a new ethical context of culture. Within the broad ethics of *Praxis*, of merging one's life with the groaning of the cosmos touched on in *Romans* 8; 19-23, there is the emergent ethics of cultural reflection that has been our topic all along, that relates to the differentiated concern that dovetails with the bifurcation mentioned at note 36. Ken Melchin raised the question in his work, *History Ethics and Emergent Probability*, University Press of America, but does not solve it in the fashion suggested above. However, the book is an excellent introduction to the task of getting a serious grip on what Lonergan means by emergent probability. I was privileged to have lengthy discussions with Ken while he worked on this subject: neither of us glimpsed this fresh perspective, this fresh pragmatism, this emergent high moral imperative.