

SGEME 5: SUBMISSIONS OF WORK IN PROGRESS

By Terry Quinn, Cecilia Moloney, William Zanardi, John Benton and Michael Shute

In an effort to further initiate collaboration, the central focus of the SGEME society, members have been invited to submit summaries of projects in which they are presently involved. The purpose of this venture and the posting of the projects is an attempt to provide an opportunity for people to link up with students, teachers, and/or researchers in related areas of work. Complementary to that opportunity is the possibility of sharing questions, concerns, struggles and insights that will assist individuals in their own work, but also offer the chance to work together. Their names and email addresses will end each submission.

From: Terry Quinn

Thinking toward future meetings, possible collaborations, and so on, I thought it might help to include a few biographical details. I did my various university degrees at the University of Toronto, Dalhousie University and the State University of New York, Long Island. I'm presently in the Department of Mathematical Sciences, at Middle Tennessee State University. My interests have included the arts, the sciences, theology. A difficult decision at the time, those years ago, but for university degrees, I concentrated on mathematics. It was a type of work for which I had an affinity. Partly, though, I was wondering what might be best for my "foundational" development. Also, I was advised that teaching mathematics might be somewhat less problematic than teaching some of the other disciplines. Of course, I also enjoyed mathematics in its own right. Teaching has been enriching - helping me learn more mathematics, and also helping me with questions about mathematical and scientific learning, of students and professionals. But, taking the institutional route also has been costly in various ways. One of those ways has been the amount of time and energy needed to establish and maintain a traditional university career -- publish articles (in mathematics and applications of mathematics) [1]; get through tenure systems (because of moves, three times at three universities); and 2006-2009 I served as Chair of a large department in Tennessee, USA. (It turned out to be a seven-day-a-week job. That left no time for quality studies, or much else. I stepped down in May 2009.)

My interest in the work of Lonergan and McShane has developed steadily over the years. I have tried to stay in touch with things, but haven't yet been as consistently involved as I would have wished -- efforts often frustratingly limited to "concentrated forays" a couple of months or so of a given year. And for me, I have found that being time-constrained does not usually make for good work. Still, with the help of McShane's leads, this led to some publications -- not new results as such, but elaborations on what I learned about some of the implications of Lonergan's work to mathematics and science education. (I am, of course, greatly indebted to McShane for his ongoing help and writings.)

Foundationally, then, I have made slow (and interrupted) progress. (I suppose this has been further compounded by the fact that foundational growth is normatively slow

anyway -- according to McShane and Lonergan, needing decades of directed effort.) But I have made enough progress to feel comfortable in reporting what I already have found to be a few of the positive outcomes: 1) Exercises in self-attention have helped me become more efficient as a mathematician, as well as in collaborations with colleagues in biology, medicine, and most recently in computational science [with applications in biology]; 2) I have improved as a mathematics teacher (trying to help students grow, in mathematics); 3) I have grown somewhat in a (so far mostly descriptive) appreciation of my own operations; 4) I am increasingly seeing the need for foundational development in the community as a whole. In particular, there is a need for mathematicians and other scientists to begin working toward a shared third stage control of meaning (as described in Lonergan's *Method in Theology*); 5) My efforts so far have helped me grow toward a beginner's grasp of a central significance of growth in understanding -- and in particular as it relates to a "structural isomorphism" between knowing and the known (see, e.g., *Insight*, Ch. 14); 6) Of course, in a way, my progress so far consists of mere surface marks of a touchstone, personal clues for me toward future needs of mine and the community. Already though, within the present contexts of mathematics and science education, modest development along these lines has helped me become slowly but increasingly able to draw on my own experience (data of consciousness). This provides a line (or rather a ground) of defense against combinations of reductionism and conceptualism, as well as various related teaching methods promoted in contemporary teacher colleges (methods that block student understanding, or redirect understanding toward various types of naming and mere techniques). 7) In a positive way, I am finding a deepening resonance with a stanza by the American poet Wallace Stevens (1879-1975), the poem given to me as a birthday gift by my then living brother John Quinn: "*Within as pillars of the sun / Supports of night. / The tea, The wine is good. / The bread, The meat is sweet. / And they will not die.*" For I have found that efforts in self-attention ("attention within"), efforts toward control of meaning, have helped guide my thoughts toward a focused dark mystery, the Good mystery that is Unlimited Understanding.

These days I now am thankfully past the demands of the tenure systems, and (as mentioned above, as of May 2009) no longer have any major administrative duties. Ongoing teaching duties aside, I plan to maintain a focus on the leads of Lonergan and McShane, especially as foundational, for whatever studies I may be getting up to in the future. Last summer and fall (2009) I was trying to learn about the distinctions in generalized empirical methods, pointed to by McShane in two source articles. [2] This is empirical work needing self-attention. I made a little progress in beginning to recognize some of the corresponding differences in data of consciousness. More recently, I am looking toward a presentation for the Vancouver 2010 conference. I hope to touch on the problem of how physics; chemistry; and biology "work together" in cells and other biological things. [3] For biology, as well as the other sciences, there is the foundational work of Lonergan (*Insight*) and McShane (various works). Looking ahead, there is the opportunity for us to work toward making similar foundational control part of the community. For the 2010 conference, I hope to be able to present some examples from elementary biology, as material that could be helpful for us in possible follow-up reflection. The difficulties involved in understanding such lower *aggreformic* (name invented by McShane) entities increase in the higher instances that are human beings,

“rational animals”. So, I hope that the context of my presentation also will complement what John Benton will be presenting on language and neuroscience.

[1] If interested, my CV has more details, posted on the MTSU Mathematical Sciences department website <http://www.mtsu.edu/math/faculty.shtml>, or link directly to <http://frank.mtsu.edu/~tquinn/TerranceQuinn.pdf>

[2] “On the four definitions of generalized empirical method see Joistings 21 ‘Research, Communications, Stages of Method’ and Joistings 22, ‘Reviewing Mathews’ Lonergan’s Quest and Ours’. Roughly speaking, GEM2 is the directive of A Third Collection, 141, the top: tandem attention to subject and object. GEM3 shifts to a mediated attention on the subject.” GEM4 is functional collaboration. From McShane’s Preface to the McShane-Lambert Biography of Lonergan, Note 13.

[3] See, e.g., McShane’s metagrams W1, W2 in Prehumous 2, Metagrams and Metaphysics. See also Insight, Chs. 8 and 15. So, “a concrete plurality of lower entities may be the material cause from which a higher form is educed or into which a subsistent form is infused: ...” Lonergan, B., “Finality, Love, Marriage”, in Collection, CWL 4, University of Toronto Press, 1988/1993, p. 20.

I am looking forward to our SGEME projects; and I welcome correspondences at tjquinn@gmail.com See some of you in Vancouver, July 2010.

Terry Quinn, Professor of Mathematics, Middle Tennessee State University, USA.

From: Cecilia Moloney

For the past twenty years my professional work has been as a professor of electrical and computer engineering at Memorial University of Newfoundland. For five of these years, 2004-2009, I held a research chair position which had as its main mandate the development, communication, and implementation of strategies to raise the level of participation of women in science and engineering. During my work as the chair, and in large part as a direct result of a collaborative research project with others across Canada, I developed a deeper interest in pedagogy as a key factor in encouraging women (or anyone) to pursue further studies and careers in engineering and the natural sciences.

As a result, in 2010 I am starting a pedagogy project, as a legacy project from the research chair, to develop and support innovative approaches and methods for teaching in science and engineering, and especially methods which may lead to increased diversity within these fields. One of the goals of the legacy pedagogy project is that it result in conversation and collaboration among those at the university who are interested in science and engineering pedagogy.

Earlier this winter I helped to organize a half-day symposium at Memorial University titled, “Challenges of Teaching Science and Engineering in the 21st Century.” The

speakers at the symposium offered a range of strategies to increase student engagement, both with course material and with their fields of study more broadly. I opened the symposium with a short presentation addressing some of the motivations and theoretical underpinnings for the symposium topic. The event was attended by a keen group of faculty, staff, and graduate students. Follow-up events are being planned to keep the conversation going among this group and others.

In April I will be presenting a paper at an IEEE/IBM-sponsored Transforming Engineering Education conference (TEE'10) in Dublin, Ireland. The conference theme is "Transforming Engineering Education: Creating Interdisciplinary Skills for Complex Global Environments." (See conference website at http://www.ieee.org/web/education/transforming_engineering_education_conference/Index.html)

My TEE'10 paper is titled, "Understanding Understanding Across the Disciplines: Towards Strategies for Sustainable Engineering Education for the 21st Century." The full 8-page paper is available upon request.

In summary, I start the paper by noting that sustainability applied to engineering education includes the sustainability of the individual engineer over his or her lifetime. This view of sustainable engineering education is consistent with other current approaches within engineering education in both Canada and the US.

Since we cannot fully predict the changes in technology and other conditions over the working careers of current and future engineering students, engineering education should not only educate for our best estimates of what students will need in the future but also include elements to assist its graduates to adapt over time. The paper claims that knowledge from a variety of different fields can be used to devise a framework for such a transformation of engineering education. Since the human person is both the constant factor within the practice of engineering, and the reason for engineering education, it makes sense that the framework for change start from fundamental aspects of personhood. This paper thus suggests that there are two key questions to be answered, one about the learning process within the engineering student, and one about the engineering community which is seeking to make that learning most effective.

The paper addresses these questions based on models of cognitive process in the work of Lonergan and others. It proposes that "understanding understanding" across engineering disciplines can motivate the introduction of elements of sustainability within engineering education and across the disciplines of engineering. Examples are provided from elementary mathematics and from the systems and signals stream within electrical and computer engineering. Finally, the paper argues that a framework for change in engineering education which is based on the human person can also extend to collaboration within the engineering community and between engineering and other sectors such as economics, law, and business.

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Cecilia Moloney, cmoloney@mun.ca
 Professor of Engineering
 Memorial University, Newfoundland, Canada

From: William Zanardi

Five years ago I began researching the neuroscientific literature on what occurs in paying attention. That research became an opportunity to work toward an explanatory understanding of what it means to pay attention. The larger project that slowly took shape was to understand another of the transcendental imperatives, "Be responsible." A 300+ page manuscript, A Theory of Ordered Liberty (under review at a university press), was a first step in that project.

Currently I am trying to operate in the functional specialty of dialectic. The focus is on a type of economic realism that makes use of the language of "self-interest," "preference-ordering" and "rational agency" to talk about market exchanges. My hypothesis is that this realism is traceable to two counterpositions on human capacities to know and to develop morally. That realism leaves little room for a principle of benevolence guiding a completion of the pure economic cycle with a basic expansion.

This experiment in dialectic has a couple of purposes. It will be part of my contribution to a collaborative project in Lonergan's macroeconomics and functional specialization. Mike Shute and Paul St. Amour are partners in the project, and others are invited to join us. We intend to have a web site ready in the fall for posting draft papers reflecting a functionally specialized approach to common questions. Eventually we will have an electronic journal to publish papers that have been "cycled" through rounds of criticism and revision.

The experiment is also my effort to learn how to do the fourth functional specialty. The eventual posting of my draft paper and those of others will be part of the cycling of materials among the specialties and so part of a larger project of educating ourselves (educating our liberty?) in functional specialization.

William J. Zanardi, williamz@stedwards.edu
 St. Edward's University
 Texas, USA

“E = ME [Squared]” by John Benton

It is an honour to be invited by Bob Henman to make a contribution to SGEME 5. It is also a great pleasure to reach out to the SGEME group and to introduce myself. I look forward to meeting more members of our group in the near future. It is also a privilege to be given this opportunity to draw attention to some key turning points in my past that have lead to my current project on language.

The mystery of vocal and written language has held my attention from a very early age. That wonder slowly came into focus in my education and professional background as artist, philosopher and teacher over the past thirty-three years. It began in the years between my graduation in English Literature at Toronto's York University (1977) and as an actor's apprentice at the Stratford Festival (1980) when the problem of "how to read the plays that Shakespeare really wrote" gradually gave way to struggling with the broader, more

neglected problem of “how to read anything.” By then I had been introduced to Bernard Lonergan’s writing, as well as the writing of Philip McShane. In various ways, McShane pointed to the challenge *how to read the book of Lonergan (or anybody else) is concomitant to how to “read the book of myself.”*² Even then, I suspected that coming to serious grips with what he was pointing to meant I was in for decades of struggle.

Twenty-five years later, with some perseverance, my struggle found expression in related contexts in an article and a book. The article, “Lonergan and the Meaning of Word,”³ searches for an explanatory perspective on the question, “what is a word?” by drawing attention to the complex problem of *aggreformism*.⁴ The same problem lurks throughout the book, *Shaping the Future of Language Studies* (2008), which raises the key question of what happened to Helen Keller, and what happens to us, at the moment of grasping the meaning of our first word?⁵

Of course, by then it was clear to me as a secondary teacher in Ontario’s public education system, the neglected problem of “how-language” was lurking in classrooms everywhere. However, it was only when I made the difficult transition from student to teacher of philosophy, as well as collaborating on, and implementing, a grade twelve textbook, *Introducing Critical Thinking* (2005)⁶ where “how-language” is introduced, could I sense I was making a little progress in my long struggle.⁷

Now, it is on the basis of that little bit of progress I venture now, in collaboration with Terry Quinn, into a heuristics of language that both enlarges and enriches those earlier efforts. We hope to complement our efforts in a presentation at the Vancouver conference in July 2010. What is the direction of those efforts? We seek to point toward “how-language” lifts the meaning in all of us to an explanatory plane in a way that parallels Einstein’s reach for an explanatory plane in the field of physics. I happen to mention Einstein here, not only out of convenience because his famous equation is echoed in the title, but also because the direction of his spontaneous what-questions about the data of physics, and their expression, runs in parallel lines to McShane’s pointing in his follow-up to Henman’s introduction to the SGEME blog. McShane distinguishes „EME“ from „SG“ in SGEME and notes a “second strategic connection pointing towards a beginning of functional collaboration. My stand, My Explanation, can be identified – slowly, collaboratively – as belonging to a particular functional zone....We need to focus on Explanation: the word, the strategy [comes out of dialectic into foundations as a basis.]⁸ Bob draws our attention to this: „the difficult task of theoretical understanding.“⁹ Now, relating the event of spontaneous what-questions to the reflexive pronoun, My stand, My Explanation, to “myself,” draws us closer to the meaning of the suggestive title and the orientation and expression of our project. And so, after many years, I struggle to ask, self-luminously, what is the neurochemistry of a what-question?¹⁰

Thus, the word, the strategy, the question and the quester are rounded up in the symbol “E = ME [Squared]” to raising the foundational question: what is a heuristics for an explanation of description? So, by the term, description, we are referring (vaguely, at this stage) to the achievement of commonsense expression, vocal or written, spontaneously emanating from an individual human organism in the concrete.¹¹

The symbol “E = ME [Squared]” emerged for me as a parallel expression that resonates with that reach for the zone of EXPLANATION.¹² And so the meaning of the symbol “E” points to the problem of *aggreformism*, coined by Philip McShane.¹³ And the meaning of the symbol “ME [Squared]” points to the need for a self-luminous response to the problem of

aggreformism, the remoteness of which reaches its zenith in that fiercely dense second canon of hermeneutics.¹⁴

Notwithstanding, this occasion presents an opportunity to invite our SGEME community to join the pilgrimage of how language works.¹⁵ And for ME the tricky part in venturing into the EXPLANATORY zone of how-language, is that I can't explain *what* I am reading or writing without paying proper attention to ME, the WHOLE human organism *whattin* about it, and I can't explain ME, the WHOLE human organism *whattin* about it without paying proper attention to *what* I am speaking and writing. Thus, E = ME [Squared] → *what's what* in "How-language: Works?"¹⁶

1 The name of the course in which I received my early Shakespearean actor's training, taught by Neil Freeman at Toronto's Actor's Equity Studios, and later presented in Neil Freeman, *Shakespeare's First Texts*. Vancouver: Folio Scripts, 1994.

2 Later, McShane would put it thus: ".,The interplay of philosophy and world is then captured in my simple slogan, when teaching children geometry, one is teaching children children, where geometry can be replaced by any other topic, and children replaced by any age group." This is a pedagogical strategy that also includes the person who is teaching."

3 *Journal of Macrodynamic Analysis* 4 (2004): 82-110. See pp. 96-7.

4 For fun, take a peek at a peak in *Insight*, Chapters 8 and 15. I recall, but can't pin down the reference at the moment, McShane's remark that it took him the winter of 1964-65 to struggle through the problem, "What is a Thing?" in Chapter 8 of *Insight*. In that light, my puny bit of progress adds up to a gargantuan amount of humility.

5 Chapter 4, "The Grounding Language Universals," *Shaping the Future of Language Studies*, Axial Publishing: South Brookfield NS, 2008. A revised second printing is now available at www.amazon.com.

6 John Benton, Alessandra Drage, Philip McShane, *Introducing Critical Thinking*, Axial Publishing, Halifax, NS, 2005.

7 The "interplay" noted above gradually draws the students' attention to, and focused puzzling over, the data and meaning of their spontaneous what-questions.

8. The word "basis" points to Lonergan's massive challenge in *Method in Theology*, Herder and Herder: New York, 1972. **Out of**, "5. Dialectic: The Structure," pp. 249-250, "...**when positions** and counter-positions **are developed** and counter positions are reversed," **into**, "Foundations: 6. General Theological Categories," pp. 285-87, "If categories are to be derived, there is needed a base from which they are derived...**From such a broadened basis one can go on to a developed account...**"

9. The context for the parallel is discussed in "Plane Speaking," Monday, January 25, 2010, www.sgeme.org.

10. For anyone drawn to this problem best refer to Philip McShane's website for "Metagrams and Metaphysics," Prehumous 2. His opening is not for the faint-hearted: "Consider W1 mainly as a help to notice that the human language user, oneself, is a layered reality of physical, chemical, botanical, zoological, rational and supernatural actualities. The really important and difficult part of the symbolism is the **semi-colon** that separates the layers. It points to the difficulty of coming to grips with *aggreformisms*, a massively difficult personal struggle."

11. I'm thinking here of the epiphany shared by parent and child at the moment of this distinctively human rite of passage. I am also thinking of McShane's startling description of humans as "gorillas with an edge," the realities of that edge operative in the neurochemical origins of language symbolized in W2.

12. That reach intimates the exigency of human desire: What defines a man [and a woman]? Yes. **What** defines a man [and a woman].

13. It should be noted that Lonergan neither named, nor symbolized *aggreformism* in *Insight*. He got the ball rolling in "Finality, Love, Marriage," in *Collection, CWL 4*, University of Toronto Press, 1988/1993, p. 20: "a concrete plurality of lower entities may be the material cause from which a higher form is educed or into which a subsistent form is infused..."

14. Bernard Lonergan, *Insight* 17.3.8, p. 587 "Secondly, there is the canon of explanation. The interpreter's differentiation of the protean notion of being must be not descriptive but explanatory...the three elements in the explanatory differentiation of the protean notion of being **fuse into a single explanation.**"

15. I note McShane's sobering preliminary comments concluding his Fusion website series with "Sorting Out the Second Canon of Hermeneutics" Fusion 18. Again, McShane bluntly and uncompromisingly sets the mood: "It is a matter of a wake-up call for most, and a reminder to a few. Our problem is picked up from late in the book *Insight*, a light-weight doctrinal book which, on the main, dodges the genetic symbolisms..."

16 "How-Language: Works?" The title of Chapter 2 in Philip McShane's *A Brief History of Tongue*.

John Benton teaches senior classes in the English and Humanities Departments at West Hill Secondary School, Owen Sound, Ontario, Canada. He can be reached at jbjh@sympatico.ca.

From: Michael Shute

I have recently completed two volumes on Lonergan's Economics that will be published by University of Toronto Press consecutively in April and June of 2010. What follows is the description of each text as it appears on Amazon.com.

(1) LONERGAN'S EARLY ECONOMIC RESEARCH

I provide in the first volume transcriptions of many of Lonergan's private files on economics for a deeper understanding of his groundbreaking macroeconomic theory. The introduction contextualizes the works, which also serve as archival materials relevant to the companion volume **LONERGAN'S DISCOVERY OF THE SCIENCE OF ECONOMICS**.

Organized around specific themes such as dialectic of history, methodology, economic history, and price equilibrium, the book makes available a substantial amount of previously unpublished texts. Materials include Lonergan's earliest notes on economics prior to his move to Rome in 1933, the complete surviving portion of 'An Essay in Fundamental Sociology,' and notes on economists Heinrich Pesch and Lionel Robbins, among others. These early works show that Lonergan built his economic discoveries on the methodological developments that he founded in his writings on the philosophy of history.

(2) LONERGAN'S DISCOVERY OF THE SCIENCE OF ECONOMICS

Bernard Lonergan's economic writings span forty years and contain ideas that differ radically from those of his contemporaries. His theory of macroeconomic dynamics was developed through the 1930s and 1940s, culminating in the composition of **FOR A NEW POLITICAL ECONOMY** (1942) and **AN ESSAY IN CIRCULATION ANALYSIS** (1944).

I use archival material in order to examine the influence of Lonergan's early work in methodology, social history, and theory on the developments of his economic theory. The book traces the development of Lonergan's economic ideas from the late 1920s to the publication of his significant economic works of the 1940s. Together with its companion volume, **LONERGAN'S EARLY ECONOMIC RESEARCH**, this volume outlines the process behind one of the great intellectual discoveries of the 20th century and uncovers Lonergan's framework for a genuine science of economics.

I continue to have a keen interest in Lonergan's economics. In the past year, I have written two papers: "The Two Fundamental Notions of Economic Science and the Economic Crisis" for *The Lonergan Review* and the "Basic Economic Variables" for *Divyadaan: Journal of Philosophy and Education*. In both papers, I am exploring ways

to communicate Lonergan fundamental insights in economics to non-economists. In a similar vein, I am working on a paper on finance. As well, I am thinking a lot about Lonergan's work on ethics and economics might work together.

Michael Shute is an Associate Professor, Department of Religious Studies at Memorial University of Newfoundland, Canada. mshute@mun.ca