Changing Our Minds: Bernard Lonergan and Climate Change

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...we must keep in mind that anything less than the most efficient procedures threatens the survival of the mass of mankind (Bernard Lonergan, 1985, 186).

The story is told that Bernard Lonergan, one of the 20th century’s outstanding theologians, was once asked to dine with the board of the Woodrow Wilson Institute in Washington, DC. After some polite chatter, someone asked, “Father Lonergan, if you were to found a research institute, what would its question be - its focus?” Without missing a beat, Lonergan replied, “Why do people change their minds?” Indeed, in all of Lonergan’s many writings on theology, philosophy, methodology and economics, one could say that his fundamental interest was in tracking “why people change their minds.”

In Insight: A Study of Human Understanding, his major philosophical work, Lonergan’s interest was, first, in analyzing the change of mind involved in doing science; and secondly, in drawing out the correct implications of such scientific performance. Lonergan’s conclusion was that an adequate analysis of science, far from justifying a positivist or empiricist vision of scientific understanding, was the most important contemporary evidence for a critical realism and the philosophical basis for a dignified view of the human person. Such critical realism is the most adequate basis for integrating all the sciences within a coherent view of the universe as well as raising the question of God and grounding moral and religious concerns. Of course, the key moment in appropriating such a critical realism was a change of mind regarding mind itself. Thoroughly understand what it is to understand, and not only will you understand the broad lines of all there is to be understood but also you will possess a fixed base, an invariant pattern, opening upon all further developments of understanding (Lonergan, 1992, 22).

Such an understanding of understanding – an event he elsewhere called “intellectual conversion” – was a breakthrough from inadequate images of knowing, objectivity and reality to a full appreciation of the world of theory within an adequate knowledge of our own minds (1972, 238-240). It was a radical breakthrough from the “already out there now” image of reality so prevalent even among scientists and philosophers, to a full appreciation of the world of science and theory – and to the real world to be known, not through imagination but through refined understanding and tested judgment (See Liddy, 2006).

Thus, although Lonergan largely began his analyses from the modern empirical sciences, and in all his writing fully appreciated the remarkable discoveries of the sciences, he never naively acquiesced in “what scientists say” about science. His critical realism, rooted not just in experience, but in penetrating understanding and tested judgment, was more developed and nuanced than that. In essence, he had a much wider view of humanity and history than “what
science says.” Furthermore, his *Method in Theology* and other writings provide a set of heuristic categories for analyzing humanity’s history.

Although Lonergan never directly treated the issue of climate change directly, his work does present a heuristic framework for analyzing the different sets of questions that arise in relation to this pressing issue. Some of these questions are empirical: what in fact does the destruction of the rain forests have to do with climate change? What about the depletion of the ozone layer? What has this to do with aerosol emissions and with modern processes of industrialization? And all of these empirical questions are related to another set of questions about the particular configuration of human economic activity. What in fact is our understanding of the economic system that we are daily involved in? And by what scale of values do we evaluate our present lifestyles and economic activities and how are we to evaluate future possibilities in the light of what we know both from climate change science and from other sources? What notion do we have of “who we are” – the *humanum* – in relation to these questions? Do we have a notion? As he once wrote in relation to large-scale economic crises: these are not due to “the reason on which simple-minded moralists insist. They blame greed. But the prime cause is ignorance” (Lonergan, 1992, 82).

So sets of questions are related to each other. Some sets have to do with empirical facts in the natural world, including the destruction and dissolution of natural structures. Another set has to do with human economic choices and their effect on such underlying natural processes. But beyond these sets of questions there are further questions about the very “light” within which we ask and answer these questions. Here philosophical questions arise: in the light of what scale of values should we be addressing these issues? These are ethical and normative questions: what ought we be doing? But there are further religious and theological questions as well. How are religious people to think about all these questions in the light of faith?

Lonergan was perhaps the most unabashedly “scientific” of modern theologians, and yet he was basically a theologian. He did not believe the world went along the smooth rails of scientific progress. He believed there was the surd, the irrational, the unreasonable. Surveying human history, he would not at all have been surprised that there was clear evidence of anthropogenic climate change endangering large numbers of humanity and, at the same time, massive human resistance to either considering the evidence, listening to those who have considered the evidence, or once having considered the evidence, doing anything about it. He knew about the surd of sin: the basic lovelessness that threatens humanity: the original sin that is the inability for sustained development and the ensuing aberration that is both individual and social (Lonergan, 1992, 750-770). At the same time Lonergan the theologian emphasized “redemption.” He was convinced that in order to understand human history in all its concreteness, one had to take into account these three “vectors” of history: progress, decline and redemption (1974, 271-272). Otherwise, one is only analyzing an abstraction. It is from this three-fold perspective that we will consider the changes of mind relevant to the issue of humanly caused climate change.

To fully spell out the first vector of human history, progress, Lonergan gave a detailed analysis of the development of the modern sciences as a primary example of the self-transcending character of human consciousness as it moves from attentiveness to experience to refined understanding to critical judgment. In *Insight* he analyzes such process in the development of
mathematics and the natural sciences. His analysis of the modern sciences resulted in his overall view of world process as emergent probability, a topic we will focus on in our first section.

But Lonergan also highlighted the need for intellectual conversion in order to understand science correctly and how the sciences are linked together in an overall view of human history. For there are the biases against intelligence and its smooth functioning, as well as concrete and massive moral failures. Both *Insight* and *Method in Theology* as well as Lonergan’s other writings provide ample analyses of the historical vector of decline.

Finally, in his theological writings, beginning with his doctoral dissertation on *Grace and Freedom in Aquinas*, as well as in his theological writings on the Trinity and the Incarnate Word, there are ample analyses of the dynamics of redemption and conversion, the change of mind and heart brought about by the grace of Christ. Lonergan’s contributions, therefore, were on three basic levels and our paper will touch upon each of these in relation to the issue of climate change.

1) An analysis of contemporary scientific methods and the basic world-view of emergent probability that emerges from such an analysis. Closely related to this world-view is an analysis of human consciousness as ethical, as deriving the “ought” of moral obligation from the “is,” the facts of the situation. That is, if it is true that human activities -- carbon emissions, deforestation, etc. -- contribute to climate change that is harmful to the natural world and to human survival within the natural world, then there emerges the “ought” of appropriate public policy;

2) A more fundamental analysis of the human biases against recognition of the “is” revealed by intelligence and the “ought” revealed by ethical questioning: that is, an analysis of the biases and aberrations affecting human intelligence and activity in the world;

3) Finally, Lonergan illustrates how the question of God: that is, the question about the absolute intelligence at the basis of human intelligence as well as the absolute good presupposed to ethical analysis, arises in human consciousness (Lonergan, 1972, 101-103). One way to formulate the latter question would be: What is God doing about the absence of intelligibility in the world, specifically the absurdities revealed in the climate change debate? In response to such decline there is the Christian assertion of historical redemption in Christ and the gift of the Holy Spirit. How does transforming grace, a “falling in love with God,” heal both ill will and distorted reasoning? Does such grace involve, not a rejection of reason but a “leap to reason” and a willingness to do what people previously did not at all want to do -- in this specific case, adequately address the contemporary issue of climate change?

1. Progress and Emergent Probability
One can begin by asking how many sciences go into analyzing humanly induced climate change? Name them: physics, chemistry, biology, psychology, sociology, economics, politics, etc. As we mentioned above, some of these are natural sciences about the empirical ascertainable world, and some are human sciences, that is, sciences that in one way or another deal with human understanding, judgment and decision making. From such an analysis flows the following question: how can we link all of these sciences together in such a way as to come to an adequate understanding of the issues involved in humanly induced climate change?
An article in the journal *Science* lists nine crucial issues involved in climate change science, namely: climate change itself; the rate of biodiversity loss (terrestrial and marine); interference with the nitrogen and phosphorous cycles; stratospheric ozone depletion; ocean acidification; global fresh water use; change in land use; chemical pollution; and atmospheric aerosol loading (Rockström and others, 2009). The authors seek to identify acceptable boundaries which, if transgressed, threaten biological and human life. Although the authors describe the planetary boundaries in terms of individual quantities and separate processes, the boundaries are tightly coupled. That is, if one boundary is transgressed, then other boundaries are also under serious risk. “For the first time, we are trying to quantify the safe limits outside of which the Earth system cannot continue to function in a stable, Holocene-like state” (474). How did the authors arrive at such conclusions? In other words – asking a question Lonergan would ask - what areas of scientific inquiry, what methods, did the authors pursue in arriving at their conclusions?

This approach rests on three branches of scientific enquiry. The first addresses the scale of human action in relation to the capacity of Earth to sustain it. This is a significant feature of the ecological economics research agenda, drawing on the knowledge of the essential role of the life-support properties of the environment for human wellbeing and the biophysical constraints for the growth of the economy. The second is the work on understanding essential Earth processes including human actions, brought together in the fields of global change research and sustainability science. The third field of enquiry is research into resilience and its links to complex dynamics and self-regulation of living systems, emphasizing thresholds and shifts between states (475).

One thing to note about these various methods is that some of them are natural sciences regarding earth processes and some of them are human sciences regarding the relation between human action and the life-support properties of the environment. A science such as “ecological economics,” for example, would relate both natural and human sciences in a common goal of understanding. But at this point one can ask: what is the notion of “human” operative in such a science? Is it a reductionistic notion: reducing the human to the biological or the mechanical? (Lonergan, 1974, 143) Can “the human” – including the ability to do magnificent science, be conceived in another way? A fuller way?

Finally, in their article the authors ask what level of probability should attach to their conclusions? This is a question Lonergan would ask.

Although we present evidence that these boundaries have been overstepped, there remain many gaps in our knowledge. We have tentatively quantified seven boundaries, but some of the figures are merely our first best guesses. Furthermore, because many of the boundaries are linked, exceeding one will have implications for others in ways that we do not as yet completely understand. There is also significant uncertainly over how long it takes to cause dangerous environmental change or to trigger feedbacks that drastically reduce the ability of the Earth system, or important subsystems, to return to safe levels (Rockström, 475).
Let us shift now to Lonergan’s over-arching philosophical viewpoint that involved an understanding of how all these scientific inquiries might be related. In *Insight* he begins his analysis of scientific consciousness with the analysis of mathematics: for example as exemplified in the distinction between understanding a circle as “something round” – that is, in a descriptive or common sense way, and, on the other hand, understanding a circle in a theoretical way as “a locus of co-planar points equidistant from the center.” Description relates things to ourselves and our own senses while explanation relates things to each other within a universal viewpoint: for example, the various chemical elements within the periodic table. Explanatory understanding demands the creation of a theoretical language to mark such a differentiation of consciousness.

This clear distinction between description and explanation is central to all of Lonergan’s analysis of scientific method. In the natural sciences explanatory understanding is made possible by mathematics, but as one proceeds toward the human sciences, mathematics takes second place in relation to understanding human understanding and free decision-making (1992, 488).

Lonergan’s analyses of empirical physical science involves an understanding of classical scientific laws as correlations verified in data. The correlation of the time squared with the distance travelled - “the law of falling bodies” - is a correlation that, “all things being equal,” has been verified for the last four centuries. It is quite distinct from Aristotle’s descriptive understanding of bodies falling according to some force within them - a *vis materiae insita* (1992, 47). Galileo made the transition from such imaginative understanding by abstracting from such a visual images and limiting himself to understanding correlations actually attainable in the case of falling bodies (1992, 57-59).

However a major point for Lonergan can be found in the phrase “all things being equal.” For all things are not always equal. What has become abundantly clear in the history of science is that there is another method at work in scientific understanding, and that is statistical method. Classical laws hold under proper conditions and “other things being equal.” Statistical method deals with the probabilities of how often other things are in fact equal (1992, 70-92).

This combination of classical and statistical methods yields an understanding of the universe as emergent probability. For example, Lonergan remarks that the focus of Darwin’s evolutionary accounts was the gradual accumulation of small “sensible qualities,” that is to say, observable and describable phenotypic characters (Lonergan, 1992, 290). By way of contrast, the focus of his own account is what he calls “schemes of recurrence.” The small variations of classical Darwinism do not merely pile up; rather, they must be understood in their intelligible relationships to the internal and external functioning of the organism and its environment:

> …the concrete living of any plant or animal may be regarded as a set of … recurrent operations … Within such schemes [of recurrence] the plant or animal is only a component. The whole schematic circle of events does not occur [solely] within the living thing, but goes beyond it into the environment (1992, 156).

By “scheme of recurrence” Lonergan means a series of events or operations that are intelligibly linked together by natural laws of physics, chemistry, biology, etc. Schemes of recurrence can
be represented by the series of conditionals, If A occurs, B occurs; if B occurs, C occurs; if C occurs, … A will recur” (1992, 141). The intelligible connection between the occurrence of A and B, between B and C, etc. is determined by some law of physics, chemistry, biology, etc. Simple examples of schemes of recurrence include the hydrogen-helium fusion cycles in the interiors of stars, the Krebs cycles in cells that continually regenerate energetic ATP from depleted ADP, and the mutual regeneration of atmospheric CO2 and O2 by animals and plants (Byrne, 2003, 8).

Lonergan’s analysis of classical and statistical scientific methods and their inter-relationships leads to his insistence on the “conditionality” of the laws of science.

To put the matter bluntly: the laws of science in and of themselves determine nothing. It is only the laws plus specified conditions that determine concrete events (Byrne, 2003, 9).

In other words, if all of the other appropriate conditions happen to be already fulfilled, then the occurrence of A will result in the occurrence of B and if B occurs, C will occur; if C occurs … A will recur. Lonergan goes on to note that schemes of recurrence are usually far more complex, involving intricate sub-loops and alternative pathways. Science, Lonergan argues, seeks correct understanding of how events are intelligibly connected within schemes of recurrence. When new schemes begin to function, really new intelligibilities emerge, and it is the task of science to correctly understand those newly emergent intelligibilities.

In Lonergan’s explanation of emergence certain kinds of schemes of recurrence themselves from the prior conditions for other subsequent schemes (1992, 145). He writes, for example, that a biological species “is an intelligible solution to a problem of living in a given environment;” that “later species are solutions that … rise upon previous solutions;” and that “a solution is the sort of thing that human insight hits upon” (1992, 290). Simply put, the intelligibility of strictly natural emergent probability is compatible with the termination and even extinction of particular schemes of recurrence.

Lonergan’s way of situating the “conflict” of development within the larger context of evolutionary emergent probability raises a significant issue. On the one hand, emergence depends on the continued functioning of prior recurrent schemes that constitute ecosystems. If these are violently destroyed, both they and the subsequent emergent forms that depend upon them are lost. On the other hand, development cannot proceed without the transformation of prior schemes by later ones. In nature, emergent probability “respects” its underlying conditions, and yet it does not leave prior schemes untouched. Human development can profit by learning to respect this delicate interplay (Byrne, 2003, 11).

Lonergan sets all this within his world view of emergent probability. If the point of metaphysics is to be able to talk in a general way about the relationships among the disciplines and the dimensions of the world they explore, this includes the question of the finality of the universe. If the universe is intelligible, if it responds to our questioning – as science presupposes - where is all of this heading? If human questioning heads toward answers, where is the universe heading?
By finality we refer to a theorem of the same generality as the notion of being. This theorem affirms a parallelism between the dynamism of the mind and the dynamism of proportionate being. It affirms that the objective universe is not at rest, not static, not fixed in the present, but in process, in tension, fluid. As it regards present reality in its dynamic aspect, so it affirms this dynamism to be open (Lonergan, 1992, 470).

Lonergan works out various characteristics of finality as the dynamism of the real, but two characteristics relevant to the climate change debate are important here. One characteristic of the directed dynamism of the universe is that it is realistic. Here again Lonergan’s initial distinction between description—things related to ourselves—and explanation—things related to each other—is important.

Men are apt to judge the universe by anthropomorphic standards. They look for the efficiency of their machines, the economy of their use of materials and power, the security of their comprehensive plans, the absence of disease and death, of violence and pain, of abuse and repression that reflects the desires and the aspirations of their hearts. But human utopias are paper schemes. They postulate in the universe more perfect materials than those with which it builds. They suppose that the building can be some extrinsic activity apart from the universe itself. They forget that they themselves and all their great achievements and all their still greater hopes and dreams are but byproducts of the universe in its proper expansion in accord with its proper intelligibility (1992, 473-474).

Furthermore, this finality of the universe is universal.

It is no less the sadness of failure than the joy of success. It is to be discerned no less in false starts and in breakdowns than in stability and progress. It is as much the meaning of aberration and corruption and decline as of sanity and honesty and development. For finality is an immanent intelligibility operating through the effective probability of possibility. Effective probability makes no pretense to provide an aseptic universe of chrome and plastic. Its trials will far outnumber its successes, but the trials are no less part of the program than the successes. Again, in human affairs finality does not undertake to run the world along the lines of a kindergarten; it does undertake to enlighten men by allowing their actions to have their consequences, that by this cumulative heaping of evidence men may learn; and if one tribe or culture, one nation or civilization, does not learn, finality will not stoop to coaxing and pleading; it lets things take their course, that eventually tribes and nations, cultures and civilizations may reach the degree of intelligent and rational consciousness necessary to carry forward the task of finality in transcending limitations (474).

But does such universal finality mean that the universe is ultimately cold and unfriendly to humanity, as imagined by many writers? Besides many inadequate common sense
misunderstandings, might this also be an extra-scientific opinion? We will return to this question in our last, theological, section.

Emerging Schemes of Human Cooperation

Lonergan goes on to show the relevance of emergent probability to the realm of human affairs and human decision making. He points out that the human world is permeated by schemes of recurrence. As in the fields of physics, chemistry, and biology, so in the fields of human events and relationships there are schemes of recurrence. For the advent of humanity does not abrogate the rule of emergent probability. Human actions are recurrent; their recurrence is regular, but their functioning is conditioned, not inevitable (1992, 234-35).

In Lonergan’s account, human social and economic schemes operate, not with the blind laws of natural selection, but through the conscious, self-correcting activity of human inquiry and insight. Human schemes consist of intelligible patterns of relationships that “condition the fulfillment of each man’s desires by his contributions to the desires of others” (1992, 239). For example, every commercial enterprise is a scheme of recurrence of human actions that involves recurrent transactions among suppliers, workers, buyers and recurrent patterns of payments that condition their functioning. Every family involves recurrent schemes that not only continually takes in sustenance from the economy and regularly disposes of waste products, but also regularly develops or declines according to its intelligent or unintelligent adaptation to the social and historical opportunities open to it (Byrne, 2003, 11-12).

What radically distinguishes human schemes of recurrence from natural ones is that their emergence and survival depend upon acts of human intelligence and choice. Human “practical intelligence devises arrangements for human living” (1992, 239). These arrangements are largely patterns of cooperation that depend upon understanding “what one can expect” of the other person (1992, 248). Human practical intelligence or “common sense” is the accumulation of innumerable such insights that make possible the participation in human economic, social and political institutions.

Human insights not only maintain the schemes of human living; they also constantly transform and bring about new schemes. Prior schemes “set problems calling for” insights into inventions, insights into how to organize and distribute the fruits of production in ever better ways, insights into how to reach group agreements and decisions ever more fairly and effectively (1992, 233-34). The ongoing development and emergence of human schemes follows what Lonergan calls a “self-correcting” process of

1) existing human schemes, giving rise to
2) questions about how to do things better, giving rise to
3) insights for improvements, giving rise to
4) actions that modify the schemes, giving rise to
5) further questions and insights,
6) and so on.

The processes of environmental science, advocacy and the long painful revisions of public policy illustrate such self-correcting human schemes of recurrence.
The creative task is to find answers. It is a matter of insight, not of one insight but of many, not of isolated insights but of insights that coalesce, that complement and correct one another, that influence policies and programs, that reveal their short-comings in their concrete results, that give rise to further correcting insights (Lonergan, 1999a, 100; see also 1985, 186 on the importance of feedback processes).

The Role of Belief

One thing scientists do is believe other scientists. Lonergan often emphasized the large role belief plays, not only in human life in general, but in science as well.

Human knowledge results from a vast collaboration of many peoples over uncounted millennia. The necessary condition of that collaboration is belief. What any of us knows, only slightly results from personal experience, personal discovery, personally conducted verification; for the most part it results from believing. But the eighteenth-century Enlightenment was not content to attack religious belief. It prided itself on its philosophers. It set up a rationalist individualism that asked people to prove their assumptions or else regard them as arbitrary. In effect it was out to destroy not only the religious tradition but all tradition. Such rationalist individualism in the twentieth century seems to have infected our educationalists. Students are encouraged to find things out for themselves, to develop originality, to be creative, to criticize, but it does not seem that they are instructed in the enormous role of belief in the acquisition and the expansion of knowledge. Many do not seem to be aware that what they know of science is not immanently generated but for the most part simply belief (Lonergan, 1974, 185-186; see also 1992, 725-740 on the structure of belief).

So most of what forms the furniture of the scientific mind consists in believing what other scientists have concluded. Scientists, for example, do not begin their investigations by doubting the legitimacy of the various measuring instruments that they use in conducting their own experiments. If on occasion they are led to re-check a measurement or a means of calculation, still the majority of their work consists in believing the conclusions of other scientists and working from there.

Nevertheless, what characterizes the scientific process is the control of belief through empirical testing. Not only is there direct confirmation through the repetition of experiments, but there is also indirect confirmation: the long and difficult process of peer review, of judgment by others, of the only gradual acceptance of conclusions. This involves a great deal of believing others in the process of arriving at probably warranted assertions. It is a long social and communitarian process. We are within that process presently with regard to climate change science and concomitant public policy decisions. In other words, there is within the practices of the human community a major place for reasonably arrived at belief ultimately controlled by an appeal to empirical tests and the process of communal review. This is because the scientific judgments
generally arrived at are not certain but only probable. As Lonergan would so often put it, scientific conclusions are “the best available opinion of the time” (1985, 43; 1996, 315).

How then can we make reasonable and responsible decisions? How can we make public policy based only on the best available opinion at the time? John Henry Newman wrote about “a convergence of probabilities” asymptotically approaching certitude to justify action. In the history of his own intellectual development he writes of coming to the conclusion that

...probabilities which did not reach to logical certitude, might suffice for a mental certitude; that the certitude thus brought about might equal in measure and strength the certitude which was created by the strictest scientific demonstration; and that to possess such certitude might in given cases and to given individuals be a plain duty, though not to others in other circumstances… (Newman, 1967, 31).

One piece of evidence by itself might not warrant a judgment of value, but there can be a convergence of evidence that allows one to arrive at an objective and genuinely probable judgment justifying a decision. If this is the case -- the depletion of the forests, the rise in water temperature, ozone concentration, etc. -- then there emerges a moral necessity for responsible decision-making and appropriate public policy regarding climate change.

Climate change science has been going on for many years and there is a history of that process. Such science has led significant groups of scientists to advocate public policy changes with regard to human cultural and social practices. The cultural has to do with the prioritization of our human values; the societal has to do with the exercise of our political preferences, our economic expenditures, the uses of our technology, etc. Obviously, this whole process has been contested. Climate change deniers have appeared to declare that the evidence has been fudged, skewed on behalf of vested interests, for example, governmentally or internationally funded agencies whose very existence depends on the articulation of the problem in a particular way. These critics have succeeded in sowing doubt in the public mind resulting in a lowering of public support for policies aimed at addressing humanly induced climate change issues (NY Times, May 25, 2010, 1 + 8). In response, a group of 250 scientists published a letter on May 7, 2010 in Science, claiming that the basic science behind the assertion of humanly induced climate change is valid. And as some have asserted vested interests behind climate change proponents, many have pointed out the vested interests behind the assertions of climate change deniers (Brin, 2010, 13-17).

So that is where we are. And that is precisely where Bernard Lonergan’s psychological, philosophical and theological analyses can be very helpful. They provide a template for understanding how human development and education is constituted by two dynamics: one, a development from above constituted by the influence of people and groups we trust: our parents and teachers, even the scientific “experts” and communities of experts. At the same time there is development from below, that is, our own experience, understanding, judgment and decision by which we come to personally appropriate and critically control our own beliefs. Ideally, these two developments go hand in hand: the communities of those who have a beneficial influence on us can bring us to use our own heads and come to our own measured judgments. Nevertheless,
there is bias, prejudice and skewed judgments and we will look at Lonergan’s analysis of that in our next section.

2. Decline: Bias and Self-destruction

In *Insight* Lonergan notes that fully intelligent and ethical choices “cannot consistently” undertake initiatives that destroy their underlying conditions, including natural ecological conditions (1992, 629). This brings up the issues of bias and self-destruction. If the human mind, the human spirit, is made for being, for the answers to our questions, for the totality of true judgments, there are also at the same time biases in the concrete exercise of such intelligence. For example, besides psychological blind-spots, there is the individual bias of selfishness…

…prior to the criteria of truth invented by philosophers, there is the dynamic criterion of the further question immanent in intelligence itself. The egoist’s uneasy conscience is his awareness of his sin against the light. Operative in him, there is the Eros of the mind, the desire and drive to understand; he knows its value, for he gives it free rein where his own interests are concerned; yet he also repudiates its mastery, for he will not grant serious consideration to its further relevant questions (Lonergan, 1992, 247).

Prominent also is the group bias of prejudice and tribalism that skews the operations of intelligence in the social and political arena. Finding expression in such phrases as "My country right or wrong, but my country," or “my party right or wrong, but my party,” such bias feels itself supported by normal intersubjective feelings while individual bias has to overcome such feelings. Such group-feelings certainly characterize progressives bonding together to change the status quo as well as conservatives wanting to protect vested interests.

Just as the individual egoist puts further questions up to a point, but desists before reaching conclusions incompatible with his egoism, so also the group is prone to have a blind spot for the insights that reveal its well-being to be excessive or its usefulness at an end (248).

Group bias is responsible for the historical conflicts between the privileged and the oppressed, the have's and the have-not's. There results the distortion of social process. “The sins of group bias may be secret and almost unconscious. But what originally was a neglected possibility, in time becomes a grotesquely distorted reality (250).” Through such group conflict the have-not's sometimes replace the have's in the halls of power in what Lonergan calls "the shorter cycle" of human history. Eventually, however, the dialectic, the back-and-forth between vested interests, brings to light the fact that all groups are subject to a bias against intelligence as such. This is what Lonergan calls the “general bias” responsible for the longer cycle of human decline. Such a general bias opposes the priority of intelligence as such: the practical conviction that we can get somewhere by understanding, that understanding is what we are made for. Ordinary human common sense does not know this.

Common sense knows, but it does not know what it knows nor how it knows nor how to correct and complement its own inadequacies. Only the blind and
destructive blows inevitable in even a partial breakdown of social order can
impress on practical common sense that there are limits to its competence and
that, if it would master the new situation, it must first consent to learn (241).

The general bias against the priority of intelligence manifests itself in common sense rejections
of intellectual and scientific contributions to solving human problems. Inversely, it can manifest
itself in a dedication to purely technological solutions to human problems.

Applied science and consequent inventions have given us our vast industrial,
commercial, financial, administrative, educational, military complex. Technicians
are the people with the task of figuring out the most efficient use of currently
available hardware. The more successful they are, the greater is the domain that
they organize, and the less the domain under the control of old-style decision-
makers, of managers, directors, mayors, governors, presidents. Again, the more
brilliant they are, the less is it possible to explain to the uninitiated why things are
done the way in which they are done. Finally, the more thorough the application
of the principle of efficiency, the more must men adapt themselves to its dictates
in all their labor hours and in all the goods and services they purchase from the
 technological establishment. Yet we must bear in mind that anything less than the
most efficient procedures threatens the survival of the mass of mankind (1974,
184).

The general bias against the priority of intelligence also surfaces in inadequate philosophies and
symbolically expressed world-views. Such would be materialist, empiricist, reductionist and
relativist accounts of the sciences that either implicitly or explicitly negate the priority of human
intelligence. Such also would be symbolic world-views expressed in popular culture that would
negate the possibility of attaining to convictions on the nature of the human person. Writing on
modern distortions of human knowledge, Lonergan wrote:

A second distortion occurs in man's apprehension of man. Positivists, naturalists,
behaviorists insist that human sciences have to be conducted on the same lines as
the natural sciences. But the resultant apprehension of man, if not mechanistic, is
theriomorphic. Nor is this view of man as a machine or as an animal confined to
some rarefied academic realm. It is applied. The applications reach out into all
departments of thought and into all walks of life. They have the common feature
of omitting advertence to human dignity and respect for human morality (1974,
184).

Is this general bias present in the climate-change controversy? Because the questions might not
seem “immediately practical,” might they not be particularly important to ask nonetheless? Are
we truly seeking to understand the valid points that “the other side” – our adversaries – are
seeking to make? It was said of John Henry Newman that he could make a better presentation of
his adversary’s point of view than the adversary himself. Such a real encounter with the other
challenges us to our core.
The needed higher viewpoint is the discovery, the logical expansion and the recognition of the principle that intelligence contains its own immanent norms and that those norms are equipped with sanctions that man does not have to invent or impose. (259)

Unlike natural ecologies, innovations in human social and economic arrangements are all too frequently implemented without the fullness of intelligent self-correction (Byrne, 2003, 13-15). Real self-correction can occur only when the full complement of further pertinent questions and problems are taken into account and answered with creative solutions. According to Lonergan, biased courses of action that evade intelligent self-correction initiate the downward spirals of decline, degradation and destruction, not only in the natural world but also in the cultural environment itself.

Decline disrupts a culture with conflicting ideologies. It inflicts on individuals the social, economic, and psychological pressures that for human frailty amount to determinism. It multiplies and heaps up the abuses and absurdities that breed resentment, hatred, anger, violence (1996, 117).

Certainly, the massive industrialization characterizing modernity was not accompanied by sufficient reflection on industrialization’s perverse effects on nature and humanity within nature. And when perverse consequences became clear to many, others refused to listen. In the face of significantly more scientific evidence, is there still an unwillingness to face the facts—an unwillingness to listen? An unwillingness to grow in understanding and/or an unwillingness to act in the light of what is with high probability the case?1 And is such moral failure connected to a basic lack of love? A basic lovelessness? Lonergan is in fundamental agreement with St. Augustine’s characterization of evil as nothing but the removal of good until finally no good remains (Byrne, 2003, 14).

Opposite to religious love there is a hostility toward and hatred of nature embedded in the seminal works of some founders of modernity like Machiavelli and Bacon. There is also misanthropic hatred to be found in certain strains of environmental activism (Byrne, 2003, 15).

How break through such iciness? For Lonergan the theologian, there is need for healing and creating love.

3. Redemption: Healing and Creating

For Lonergan redemption consists in a falling in love with God that opens the eyes of the heart to God and to what God wants to do in the world; it also gives the strength to collaborate with others in the transformation of the world. As a Christian theologian, he affirmed that the reversal of sin and its devastating social consequences is accomplished by grace, that is, a falling in love.

1 See Bernard Lonergan, “Healing and Creating in History,” where he contrasts Bertrand Russell’s assessment of the human situation as one of human malice with that of Karl Popper as one of basic stupidity.
with God that changes our hearts of stone into hearts of flesh and, besides elevating us to friendship with God, helps us to do what previously we did not at all want to do.

...religious love is love of God, and to love God unconditionally is to love everything God loves -- all of natural and human creation. Grace is religious love, and it sets about undoing hatred. Loving grace makes possible healing, discerning, and creatively intelligent responses to degenerating situations (Byrne, 2003, 15).

Reductionistic forms of Darwinism tend to eliminate theological considerations of grace as superfluous and even as dangerous distractions from urgent mundane matters. Lonergan, to the contrary, integrates God’s grace into the evolving character of the world and shows the relevance of grace to the challenges of human existence. The Christian doctrine of the Word of God finds insertion into the understanding of the world marked by science and the human world challenged by meaninglessness and disintegration. Early in his life Lonergan found a great deal of inspiration in Saint Paul’s letter to the Ephesians where he writes of the reconciliation of all things in Christ:

Such is the richness of the grace
which he has showered on us
in all wisdom and insight.
He has let us know the mystery of his purpose,
the hidden plan he so kindly made in Christ from the beginning
to act upon when the times had run their course to the end:
that he would bring everything together under Christ, as head,
everything in the heavens and everything on earth.
(Ephesians 1, 8-10)

This seemed to be the ultimate thrust of Lonergan’s *Insight*, to link all the natural and human sciences into a vision of the human person and humanity needing to be redeemed by an incarnate savior who can truly “change our minds” and our hearts. Certainly Lonergan would be against any “interventionist” view of God’s relationship with the world (Edwards, 2006). At the same time, in line with Aquinas’ understanding, Lonergan held that God controls each event in the universe by his action on the whole. As early as his dissertation from the 1930s, Lonergan’s insistence on the importance of moving beyond “picture thinking” to explanatory thinking influenced his conception of the divine-human relationship.

The first fallacy lies in a misconception of time. To a temporal being our four-dimensional universe has three sections: past, present and future. To an eternal "now" this division is meaningless. On this point St. Thomas never had the slightest doubt: he was always above our pre-Einsteinian illusions that still are maintained by our cosmology manuals; strenuously and consistently he maintained that all events are present to God. (Lonergan, 2000, 105)

He adds in a footnote, "before time" is "an illusory figment of the imagination." The basic issue is as always the issue of picture thinking. We accept the assertions of faith – the full humanity of Christ, the action of Christ in the Church and the sacraments, the life of grace, our understanding
of prayer, etc.-- within a notion of God in which there is fullness of act. All the assertions of the Creed are to be accepted in faith even though it is only “through a glass darkly” that we can get a glimmer of how it is that these are so. In this process modern science, whose seemingly contrasting assertions, also baffle the mind, can give us something of an analogy. Speaking of Athanasius’ quasi-theoretical rule for Trinitarian theology that “whatever is said of the Father can also be said of the Son, except that the Father is the Father and the Son is the Son,” Lonergan notes:

...the terminal notion of consubstantiality not only transcends all imagery but in some way also transcends all intelligibility grasped in an image. For just as Maxwell’s equations for the electro-magnetic field were derived from images yet without any image corresponding to them, so also the rule laid down by Athanasius refers only to concepts and judgments. For the same things are said of the Son as are said of the Father, except that the Son is not the Father. Not only does this rule prescind from images but it also cannot be grasped or understood in anything imaginable (Lonergan, 2009, 197-199).

Still, this whole increasingly critical process of purifying, not only our conceptions of God’s actions in time, but also our understanding of the natural world in which we live, fits into a perspective of divine love and faith as “the eye” of that love. Faith not only relates us to God but it also transforms and magnifies and glorifies our understanding of the natural world as well.

Without faith the originating value is man and the terminal value is the human good man brings about. But in the light of faith, originating value is divine light and love, while terminal value is the whole universe. So the human good becomes absorbed in an all-encompassing good. Where before an account of the human good related men to one another and to nature, now human concern reaches beyond man’s world to God and to God's world. Men meet not only to be together and to settle human affairs but also to worship. Human development is not only in skills and virtues but also in holiness. The power of God's love brings forth a new energy and efficacy in all goodness, and the limit of human expectation ceases to be the grave (1996, 15).

Such power coming from faith and love is needed to address the present challenge of humanly rooted climate change. Such faith sees God’s glory reflected in a humanity fully alive and striving to make our world a better place for ourselves and for our children.

To say that God created the world for his glory is to say that he created it not for his own sake but for ours. He made us in his image, for our authenticity consists in being like him, in self-transcending, in being origins of value, in true love.

Faith as the eye of religious love sees the hand of God beneath the struggles of human existence and without such faith we can become overwhelmed at the magnitude of the challenge.

Without faith, without the eye of love, the world is too evil for God to be good, for a good God to exist. But faith recognizes that God grants men their freedom, that he wills them to be persons and not just his automata, that he calls them to the
higher authenticity that overcomes evil with good. So faith is linked with human progress and it has to meet the challenge of human decline. For faith and progress have a common root in man's cognitional and moral self-transcendence. To promote either is to promote the other indirectly.

In this light, we can say that, in spite of the apparently terrifying perspectives opened up by scientific understanding, still we can say that we live in "a friendly universe" (Byrne, 2010)? The Christian tradition would answer "yes."

Faith places human efforts in a friendly universe; it reveals an ultimate significance in human achievement; it strengthens new undertakings with confidence.

Faith even sets technological and scientific achievement progress in a positive light for such progress realizes human and natural potentialities. It reveals that the human person exists to bring about an ever fuller achievement in this world; and that achievement because it is for the good of the human person, is also for God's glory.

It is not propaganda and it is not argument but religious faith that will liberate human reasonableness from its ideological prisons. It is not the promises of men but religious hope that can enable men to resist the vast pressures of social decay. If passions are to quiet down, if wrongs are to be not exacerbated, not ignored, not merely palliated, but acknowledged and removed, then human possessiveness and human pride have to be replaced by religious charity, by the charity of the suffering servant, by self-sacrificing love.

This basic "change of mind" involves repentance and life-long conversion; for humans are sinners.

If human progress is not to be ever distorted and destroyed by the inattention, oversights, irrationality, irresponsibility of decline, men have to be reminded of their sinfulness. They have to acknowledge their real guilt and amend their ways. They have to learn with humility that religious development is dialectical, that the task of repentance and conversion is life-long. (1972, 117-118)

Lonergan was no illusion that philosophy could save the world. A correct philosophy, precisely because it was correct, would seem "out of it" to the great run of people. Still, the community of Christ is called to preach to the world the Good News and to do so today in a way that fits into the scientific and historical consciousness of the contemporary world. What is needed, Lonergan felt, is a Christian humanism that affirms the inter-relationships of all things and the dignity of the human person.

So a contemporary humanism is dynamic. It holds forth not an ideal of fixity but a program of change. It was or is the automatic progress of the liberal, the dialectical materialism of the Marxist, the identification of cosmogenesis and christogenesis by Pierre Teilhard de Chardin (1974, 93).
As I read Lonergan’s work there is often in the back of my mind the dramatic vision described by Teilhard De Chardin of the universe as a vast upwardly directed dynamism stretching from the depths of matter to the human person, human community, the noospshere, and ultimately the “Omega Point” of divine love (Haughey, 2009, 108-113). Lonergan’s approach was less poetic, but it perfectly complements Chardin’s. Taking the sciences on their own terms as instances of human explanatory understanding, he wove them together into a world vision of emergent probability in which the human person plays a central role in creating new emergent technological, economic and political schemes in continuity with and not destructive of the natural schemes of the universe. Both Lonergan and Chardin spoke to a human need for a vision of history that could both enlighten the minds of people and motivate their hearts to action.

Concretely, such initiatives will involve great processes of collaboration and feedback. Lonergan once spoke to Jesuits about facing the gains of modernity in the natural sciences and he urged them to work out strategies for dealing with secularist views on religion as well as with concomitant distortions in the very notions of the human. Such strategies will involve creative projects emerging from “a thorough understanding of a situation and a grasp of just what can be done about it” (Lonergan, 1974, 184). Such projects will not be a static proposal, but rather an ongoing project constantly revised in the light of the feedback from its implementation. Finally, …it will not be some single, ongoing project but a set of them, constantly reported to some central clearinghouse with the twofold function (1) of drawing attention to conflicts between separate parts and (2) of keeping all parts informed both of what has been achieved elsewhere and what has been tried and found wanting. Finally, all such projects must be in Christ Jesus, the work of those who take up their cross daily, who live by the Spirit in the Word, who consecrate themselves to loving, who banish all tendencies to hatred, reviling, destroying (1974, 187).

May this volume, dedicated to bringing together various perspectives on humanly generated climate change, effect a change of mind regarding this and other aligned issues as well.

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Works Cited


