

How does Climate Change challenge the Understanding and Praxis of Contemporary Mission?

Brendan Lovett

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I

Introduction: A *Moral* Climate?

In the past, on what seemed to be solid grounds, it was assumed that the weather was beyond our control. Clearly, it did not make sense to raise a question of moral responsibility in regard to what was inherently beyond our control. It is true that we spoke of ‘moral climate’ to refer to a particular state of affairs in our cultural world but it was clear to everybody that this was figurative language. The strangeness of our present situation is that we find a need to speak in literal terms of ‘moral climate’, of climate change as constituting a real moral challenge to us. What has effected this rather startling change is the ever-increasing evidence of the extent to which our human behaviour is contributing to climate change. This discovery does not of itself change the earlier perception that the weather is beyond our control. In the nature of things, our understanding is so limited that reliable long-range weather prediction is quite beyond us. There are too many interacting variables from which we cannot fruitfully abstract. But, even if we knew all relevant variables and used computers to envisage all possible variations we still would not reach predictability. How do we know this?

The mathematician and meteorologist, Edward Lorenz, established in 1963 the inherent impossibility of reliably predicting weather for more than a week in advance. The immediate cause why weather behaves so unpredictably must be that

obscure, unforeseeable and idiosyncratic events are producing disproportionately large consequences. This discovery he later called the *butterfly effect*.¹ That small events can produce disproportionately large consequences was some thing already well known; recall the old saying of how a kingdom was lost ‘all for want of a horse-shoe nail’. Lorenz’s discovery was to the effect that, even if we knew every single influence in certain kinds of complex systems such as the weather, we would still not be able to achieve predictability. Underlying unpredictability, therefore, is the truth that ecological systems *make themselves up as they go along*. There is at this level no such thing as a governing central nervous system. Rather, there are endless adaptations to contributions of a multiplicity of particular agents.²

When we speak today of our responsibility, the focus is on our efforts to determine what aspects of our human behaviour are contributing towards potentially Earth-threatening changes. Even if we are not in a position to control our climate, it is said that we can at least refrain from activities already identified as contributing towards destruction of the biosphere. But even that much may be too easily said. How do we manage to refrain? What should we develop and what should we cease producing? Nobody truly knows the concrete solution to the crisis that is upon us. We cannot ask the government to legislate the path because, in the nature of things, nobody in government could know the path. It simply is not within the power of governments to successfully tell enterprises what they must do in respect to pollution or waste of resources: they can, and should, legislate standards but cannot possibly mandate how those standards are to be met. For them to attempt to do so would be to freeze development at current unsatisfactory levels.³

Complicating our difficulty is the truth that it is a whole way of life, embodying convictions of what is humanly desirable, which has given rise to present ecological crisis. Value judgments at the cultural level sustain forms of economics and politics inextricably linked into the destruction. The political will to

¹ Cf. Edward Lorenz, *The Essence of Chaos*, Seattle: University of Washington Press, 1993, which includes the text of his original 1972 lecture, “Predictability: Does the Flap of a Butterfly’s Wings in Brazil Set Off a Tornado in Texas?” The question is radically – not just temporarily – unanswerable.

² That James Lovelock’s Gaia hypothesis has now been upgraded by the generality of scientists to the status of theory – earth system science – does nothing to modify the extent of this unpredictability.

³ Cp. Jane Jacobs, *The Nature of Economies*, New York: Vintage, 2001, 140–41.

‘at least refrain’ from such deeply entrenched patterns of activity will simply not be available without extraordinarily far-reaching change in our values and without a sustained exercise of human creativity in developing more symbiotic ways of sustaining life on a threatened planet. The further question as to what might make such a ‘change of heart’ possible and renew creativity in the face of crisis is unavoidable. The central role of the faith traditions of humankind in shaping our attitudes towards our environment suggests that they may have a key role to play.

Faced with a challenge of such complexity, any hope of contributing to even minimal advance depends on a cooperative division of labour. I have been asked to concentrate on the implications of global warming for the understanding and praxis of Christian mission. Theologically, I find that answering this request coincides with attempting to specify the deepest challenge to Christian living today.

In what follows I begin by drawing attention to hopeful developments deriving from the on-going self-corrective process of learning that is as essential to our empirical sciences as it is to all of our living. I am particularly concerned to draw attention to developments which contribute significantly towards our achieving something closer to a genuinely explanatory economic science than anything so far available to us.⁴ These developments provide essential guiding values for creative ways forward. Following this, I attempt to explore the area of the empowering resources that can engender the creativity needed to meet the moral challenge of our times. This will involve the creative transposition of the guiding symbols of a Christian anthropology, a transposition deeply needed in our historical moment.

In conclusion, I hope to clarify why it is that a theology of nature must take the form of a political theology of nature.

⁴ For pithy summary of what has been so far available to us in this field, see Jacobs, *The Nature of Economics*, 158: “Possibly because so many ambitious and expensive attempts to force or coax economic expansion have failed during the second half of the twentieth century, it has finally become permissible to say that the emperor has no clothes – that economic theory cannot explain economic expansion. For example, a roundup article, ‘The Chemistry of Growth,’ in *The Economist* (March 5, 1999), begins: ‘Economic growth is notoriously the blackest of the many black boxes in economics,’ and after breezily disposing of current explanations, it concludes: ‘What is the main thing governments must do to spur economic growth? Ah, well, that remains a mystery.’” Jacobs finds the very formulation of the question totally misguided. For full critical analysis of standard economic text-books, see Bruce Anderson and Philip McShane, *Beyond Establishment Economics*, Halifax, Nova Scotia: Axial Press, 2002.

II

Signs of Hope

More than two decades ago, Tom Berry was drawing attention to the total absence of any advertence on the part of mainstream economists to what he termed ‘the earth deficit.’ He was referring to the general refusal by economists to include in their accounting of costs the toll that production processes were exacting in terms of environmental impact on the life-sustaining dynamics of the planet.

Now, writing at the end of a brilliantly creative career of research and publications,⁵ Jane Jacobs has made a significant beginning in articulating the world of human economics *within* its planetary *oikos*. It is true that Jane Jacobs is not a ‘main-stream’ economist: had she been so, she would not have revolutionized the whole field of city planning for all those at present working in that demanding discipline. Drawing on her earlier achievements, she now offers us *The Nature of Economies*, a book which is capable of going far toward changing for ever the way we talk about the economy. Further, she uses her formidable literary talent to present the material in the digestible form of a Socratic dialogue between people around a coffee-table.⁶

Jane Jacobs: Across the Nature/Human Divide

⁵ Cf. Jane Jacobs, *The Death and Life of Great American Cities*, (New York: The Modern Library, 1993); originally published (New York: Random House, 1961); idem, *The Economy of Cities*, New York: Random House, 1969; idem, *Cities and the Wealth of Nations: Principles of Economic Life*, New York, Random House, 1985; idem, *Systems of Survival: A Dialogue on the Moral Foundations of Commerce and Politics*, New York: Random House, 1992.

⁶ Jane Jacobs, *The Nature of Economies*, New York: Vintage, 2001.

Jane Jacobs came to prominence when in the early 1960s she spearheaded a community organizing effort to block construction of the Lower Manhattan Expressway, handing New York City's planning czar, Robert Moses, his first ever defeat. During that same period she also wrote and published her book, *The Death and Life of Great American Cities*, which has become mandatory reading for urbanologists. Her book presented a powerful critique of the then prevailing theories of urban development that underpinned the redevelopment projects of R. Moses's generation. Just as importantly, Jacobs also offered a nuanced alternative theory of her own, whose principles have received wide reception and verification.⁷ Jacobs has since gone on to extend her original line of investigation in several additional books and numerous articles. In these works she presents her analyses of the ways urban economies function and become dysfunctional. "The basic idea," she wrote, was "to try to begin understanding the *intricate* social and economic order underlying the seeming disorder of cities".⁸ In her second-last book *The Nature of Economies*, Jacobs draws the results of her previous work on urban economic patterns into a synthesis with recent researches into biological and dynamic systems, sometimes called "chaos" or "complexity" theory.⁹ She argues that exclusive reliance on prevailing economic assumptions – such as marketplace "laws" regarding maximization of profit – are both too abstract and too inadequate. The same assumptions, she claims, that have in many ways led to destruction of natural ecosystems, also lead to destruction of economic vitality as well. She further argues that exactly the same "processes" (her preferred term) that sustain vital, evolving natural ecologies also underpin robust and dynamic economies: "it's stupid to try to circumvent universal processes."¹⁰ According to Jacobs, both healthy biological systems *and* healthy economies have four common

⁷ I am indebted for this background information to the web-published article of Patrick H. Byrne, "Ecology, Economy and Redemption as Dynamic: the Contributions of Jane Jacobs and Bernard Lonergan", available on www.nd.edu/~ecotheo/text_byrne.htm . Byrne is concerned to show the remarkable commonalities in the analyses of two people working respectively in the very diverse lines of research of urban economics and systematic theology. In the present paper I concentrate on the work of Jacobs.

⁸ Jane Jacobs, *The Death and Life of Great American Cities*, 21-22.

⁹ As far as I know, Jane Jacobs' last book was *Dark Age Ahead*, New York: Vintage Books, 2005. There she analyses the dangerous state of four of our major social institutions.

¹⁰ Jane Jacobs, *The Nature of Economies*, 146.

characteristics: all function by means of (1) development, (2) expansion, (3) self-maintenance through "self-refueling," and (4) evading collapse. We go immediately to explaining her analyses of these four fundamental and interconnected characteristics, sharing some of the illustrations she uses to make the case that both ecologies and economies remain vital and sustainable only when all four processes are present and allowed to operate.

(1) Development

"Where do new things come from? YAn animal, a plant, a [river] delta, a legal code, an improved shoe sole – they all depend on the same underlying process for development."¹¹

Jacobs initially characterizes all kinds of developments as the interplay of two processes: differentiations emerging from within generalities; and differentiations becoming new generalities from which further differentiations then emerge.¹² By her imaginative and strategic use of illustrations, Jacobs makes a persuasive case that both natural and human developments all follow the same patterns: "economic development is a matter of using the same principles that the rest of nature uses".¹³ Examples: (a) An originally generic, undifferentiated cosmic cloud differentiated into a star (our sun) and nine very different sorts of planetary climate systems. One of those (our earthly system) became in turn the new "generality" within which diverse ecosystems and life forms differentiated. (b) In mammalian evolution, successive sequences of differentiations of vertebrate forelimbs have produced hoofs, paws, hands, flippers, and wings. (c) In embryogenesis, the generically indistinguishable cells of a zygote differentiate into ectodermic, mesodermic, endodermic cellular layers, which become new generalities, which in turn differentiate into the multifaceted tissues and systems of an adult mammal. (d) The first crude wheel, whatever its origin, has been modified, and its modifications modified, over and again into such differentiations as rimmed

¹¹ Ibid. 15–16.

¹² Ibid. 16–17. This closely parallels Lonergan's schemes of recurrence emerging from prior conditioning schemes. Cf. Bernard Lonergan, *Insight: A Study of Human Understanding*, Toronto: Univ. of Toronto Press, 1992, 233–34.

¹³ Ibid. 31.

spoked wheels and "rimless spoked wheels such as: water mill-wheels, windmills, fans, paddle wheels, propellers, food blenders," solid wheels like "the potter's wheel Y circular saws, rotating dials, phonograph turntables, movie projectors," and so on.¹⁴

To the interplay of these two principles, Jacobs adds a third: all development depends upon co-development.¹⁵ Jacobs insists that it is a great mistake to think of development linearly, as is suggested in biology textbooks by evolutionary trees that trace lines of descent. Such "trees" are too abstract. They prescind from the real fact that concretely, evolution operates not *linearly*, but "as a *web* of interdependent co-developments". In other words, any newly differentiated innovation needs a habitat, and habitats consist of intricately interconnected differentiations, each of which itself had to have been developed. This is evident in the intricacies of evolved natural ecologies. It is no less evident in human economies, Jacobs argues. In this way Jacobs contextualizes and relativizes competition and survival: "Competition for feeding and breeding take place in an area. That area is a [co-developed] habitat".¹⁶

(2) *Expansion*

*"Development is qualitative change. Expansion is quantitative change. The two are closely linked."*¹⁷

The second component in Jacobs's analysis, expansion, begins with the question, "Why don't new developments crowd old ones out?" From this question flows her analysis of how both biological and economic environments expand. "The most amazing demonstration of expansion is the sheer volume and weight of biomass on the earth. It expanded from nothing before life began."¹⁸ Expansion here can mean growth in spatial extent, but more to the point, it means growth in complexity. Webs of co-developments do not merely multiply instances; they multiply

¹⁴ Ibid. 25.

¹⁵ Ibid. 19.

¹⁶ Ibid. 21.

¹⁷ Ibid. 37.

¹⁸ Ibid. 43.

differences and intertwine differences together into ever more complex systems. In this way co-developments are constantly providing new interstices and niches for still further developments. This is why old developments are not automatically crowded out.

Not content, however, to merely solve the crowding problem, Jacobs offers an account of how the dynamics of expansion work. She explains that

Expansion depends on capturing and using transient energy. The more different means a system possesses for recapturing, using, and passing around energy before its discharge from the system, the larger are the cumulative consequences of the energy it receives.¹⁹

In order to illustrate her point, Jacobs contrasts desert with forest environments. Both receive comparable amounts of energy from the sun. Yet in forests

energy flow is anything but swift and simple, because of the diverse and roundabout ways that the system's web of teeming, interdependent organisms uses energy. Once sunlight is captured, it's not only converted but repeatedly reconverted, combined and recombined, cycled and recycled. Energy flow through an intricate conduit of this kind leaves behind, complex webs of life."²⁰

By way of contrast, deserts have relatively few systems for capturing sunlight and converting it into forms usable by other biological systems. The lesson that she wishes to draw from this analysis is that expansion is not primarily a function of external inputs – sunlight – but rather of internal complexity. Jacobs then turns this analysis upon the phenomena of economic growth.

[U]ntil I began thinking about settlements= economies as instances of natural energy-flow I couldn't see that imports came in at the receiving end of their conduits, exports left at the discharge end, and the interesting question was what went on within the conduits.²¹

¹⁹ Ibid. 47 & 46.

²⁰ Ibid. 46.

²¹ Ibid. 53.

What "goes on within the conduit" are the complex, interdependent patterns of working, producing, trading, and living that characterize each particular settlement. She argues that theories and policies intent upon promoting development have focussed too much upon introducing external inputs – such as large grants and loans – and too little upon existing webs of complexity and the means needed for differentiating and diversifying patterns that already exist. The result of input theories, she argues, has been devastation both of economic and natural ecologies. Here Jacobs is incorporating her earlier work on the dynamics of urban economies (1969, 1985) into the more comprehensive world-view linking natural and human orders.

(3) *Self-maintenance through Self-refueling*

"Machines lack equipment for refueling themselves."²²

Jacobs distinguishes dynamic natural ecologies and economic ecologies from mere machines by their capacities to "refuel" themselves. What she means by this is that part of the system's operation is devoted to obtaining the forms of "energy" usable by the system itself. "Part of the energy each takes in from outside itself is spent to capture subsequent infusions of energy, and part of that to capture more infusions, and so on, repeatedly."²³ Mere mechanical systems, by comparison, are passive with regard to energy acquisition; someone else has to turn the crank or fill the tank, so to speak.

In line with her endorsement of the value of diversity and complexity in other contexts, here, too, Jacobs insists that

Each system has its own integrity as a discrete, tangible unit. One organism's waste is another's dinner. Self-refueling has no generalized form – only many, many specific forms.²⁴

²² Ibid. 66.

²³ Ibid. 65.

²⁴ Ibid. 67.

Because self-refueling is so crucial to a system's integrity and survival, this assertion of uniqueness implies, therefore, that it is imperative to learn how each system effects its own form of self-refueling, and to undertake no policy that would imperil it. Once again drawing upon her earlier work, Jacobs argues that vital economic systems refuel themselves by beginning to produce locally what they had previously been importing from outside. Earlier she had devoted much attention to the dynamics of this "import replacing" process (1969, 1985); here she is integrating that earlier analysis into her broadened framework of natural/human ecology.

Jacobs explains that she deliberately coined the term, "self-refueling" in order to avoid certain kinds of moral principles associated with environmental movements that she has found inadequate:

What about *self-relying*, *self-sustaining*, and *sustainable*? **Y** Those expressions overlap with *self-refueling*, although we tend to give them moral overtones. For example *self-reliance* is generally taken to be so admirable that lack of it is seen as unfortunate or even bad. *Sustainable* commonly applies to the practice of drawing on renewable resources at a rate no needier or greedier than the rate at which the resources can renew themselves; the practice implies environmental morality. Self-refueling [rather] is a basic natural process **Y** so fundamental to survival **Y** that conceptions of whether it is a good or bad thing are pointless.²⁵

Her point is that simplistic versions of these moral principles can interfere with really understanding how refueling works – pre-emptively classing certain forms as "bad" before they are properly understood in relation to their environments. This is not to say, however, that Jacobs is unconcerned with the rate at which resources can renew themselves. Quite the contrary; she explicitly acknowledges that all natural systems and human settlements require unearned "gifts" – Lonergan's earlier schemes of recurrence – that are "inheritances from earth's past developments and expansions" in order to start their own developments.²⁶ What she opposes is policies based on moral principles that would declare certain categories of innovations in self-refueling to be "off limits" before

²⁵ Ibid. 67–8.

²⁶ Ibid. 54–5.

the concrete situations are fully explored. Rather, in healthy economies, "chains of replacements typically start with goods and services that are easiest to replace at a specific time and in a specific place and replacements can proceed to more complex and difficult ones as **Y** its refueling equipment **Y** diversifies and expands."²⁷

In dynamic ecologies self-refueling is itself a dynamic process. It is no mere matter of constantly taking in the same forms of energy in the same way year in and year out. She points out that if this were so, the system would eventually perish. The constancy of the form of its input energy cannot be guaranteed; moreover, by its own expansion, it produces ever increasing amounts of dissipated energy that begin to accumulate in its own environment. Unless the system adapts, it will cease to function.

In any healthy biological or economic ecosystem, therefore, the dynamics of self-refueling both presuppose and are presupposed by the dynamics of development and expansion.²⁸ Self-refueling takes in appropriate forms of "energy" (inputs, imports). Development modifies the system=s "equipment" including its mechanisms of self-refueling. Expansion converts, recycles, and recombines the energy, altering its dissipated energy (outputs, exports). Altered outputs provide new potential energy sources, which further development, expansion, and self-refueling can make use of.

Insistence on the principle that there is no development without co-developments is what illumines the difference between what is meant by import replacing and the fiasco of import substitution popular in the 70s.²⁹

²⁷ Ibid. 78–9.

²⁸ See *ibid.* 82.

²⁹ "Poor countries were provided with loans and expertise to construct factories intended to produce various things they imported – electric motors, shoes, lightbulbs, medicines, whatever. At the same time, they could save on foreign expenditures." It sounded good in the abstract. But "self-refueling isn't an abstraction. It's specific to discrete units with tangible equipment suited to the purpose. The import-substitution programs fixed upon items selected abstractly, from statistics on imports. Factories were located in semi-rural economic deserts because jobs were most needed there. Although labor costs were low, the factories and their imported equipment and imported managers and supervisors were expensive. Markets weren't at hand; co-developments were missing; nothing meshed" (*ibid.* 81).

(4) *Evading Collapse/Maintaining Dynamic Stability*

*All dynamic systems are in danger of succumbing to instability, which is why they need constant self-correction.*³⁰

Because there is no such thing as a "total system," dynamic biological and economic systems characterized by development, expansion and self-refueling also need processes that enable them to survive (when they do survive) both dramatic changes to which they are not already adapted, and unintended consequences of their own functioning. Jacobs argues that there are four basic processes for evading collapse: bifurcations, positive feedback, negative feedback and emergency adaptations.

Bifurcations are instances of developments, although not all developments are bifurcations. "A system's instabilities of some sort can have become so serious that for it to continue operating as it has been is not a practical option. It must make a radical change – take a fork in the road, travel into new territory."³¹ "...Agriculture was a more momentous and more stabilizing new fork in the road, particularly as grain cultivation became combined with horticulture, arboriculture, animal husbandry, crop rotation, and appropriate tools, together making long-sustained farming possible."³²

Bifurcations have complex consequences, changing the very systems that gave them birth or that adopt them by imitation. That successful bifurcations are timely raises acute questions for the challenge of global warming now facing us. "Bifurcations are corrective only before a system has collapsed. Later is too late. It follows that they must already be available – ready and waiting somewhere – before instability has become desperate or terminal. [...] Sidelines are bifurcation incubators. Opportunity, not necessity, is the mother of invention. The necessity is seen by hindsight."³³

While a particular bifurcation may be successful in overcoming a particular instability, all bifurcations generate new instabilities calling for further use of the

³⁰ Ibid. 85.

³¹ Ibid. 87.

³² Ibid. 89.

³³ Ibid. 90.

four processes involved in evading collapse. In fact, the hidden trap in bifurcations is their unintended and unforeseeable consequences. In the nature of things, the trap is inevitable: "Earth's crust itself never finishes with correcting its instabilities ... adjustment of tectonic plates can be only temporarily corrective."³⁴

"*Positive feedback* loops are the very structure, the very context, within which bifurcations and diversity can emerge; positive feedback loops permit biomass expansion and economic expansion without loss of dynamic stability."³⁵ Feedback here refers to information regarding a system that the system both reports and responds to. Positive responses reinforce or intensify what the feedback is reporting. But precisely here is another trap resulting in a vicious circle.

Feedback reports that operating income isn't sufficient to cover operating expenses. Suppose the response is to obtain a loan to make up the discrepancy. The loan itself adds interest costs to operating expenses. That increases the discrepancy. Therefore still more money is borrowed. That increases the discrepancy further, and so on. This vicious circle is called deficit financing, and finally it becomes financially insupportable.³⁶

Jacobs illustrates the role that positive feedback can play through an analysis of the dynamics of Grand Banks cod fishing. Here is a clear instance of a system of intertwined natural biological and human economic systems. Processes of development and expansion led to technological innovations in trawlers, nets, sonar detection, etc., as well as growth in the yield of cod. However, the numbers of fish caught and their sizes eventually began to decline. This led a rise in prices. Rising prices, declines in fish size and yield were forms of positive feedback information. They suggested to many that the intelligent response would be to cut back on the rate of fishing. But in fact just the opposite happened. Instead, the fishing industry responded with more sophisticated equipment and more intensive fishing, requiring greater financial investments. But catches continued to decline, and returns on investments were disappointing: more positive feedback. Yet in 1992 Grand Banks cod fishing collapsed, "a horrendous economic and social

³⁴ Ibid. 92.

³⁵ Ibid. 94.

³⁶ Ibid. 96.

disaster **Y** to say nothing of an ecological disaster, whose ramifications are still unknown".³⁷ The problem, Jacobs argues, was not "the feedback information, but the response to it." The root problem, she claims, was government subsidies of the escalating growth of fishing.³⁸ Had the subsidies been added into the costs, "cod would have priced itself out of the market before fish stocks collapsed."³⁹ Both benign feedback loops and vicious circles have limits, those of vicious circles being dead ends.

Negative feedback controls are operative everywhere in the human organism. One example is to be found in routine breathing:

We know when it's time to take another breath, because a rise in the level of carbon dioxide in the bloodstream automatically triggers the brain stem's breathing centre to shoot a message to the diaphragm to contract and allow the lungs to fill with another breath.⁴⁰

Such controls regulate the work of our immune, digestive, metabolic, muscular, reproductive, and nervous systems. Reflecting on the dynamic order our own bodies impose on themselves may help us to appreciate the dynamic order that a complicated economy imposes on itself. The brilliance of Adam Smith lies exactly here in his grasp of negative feedback control: "he realized that feedback is only as good as the accuracy of its reporting" – the data themselves may be false.⁴¹ Because of the many ways in which real costs and, consequently, accurate prices can be distorted – from speculative trade in currencies, to monopolies, to pervasive extortion and corruption, to tax policies and tariffs [the very purpose of these being to falsify prices] – Smith's 'invisible hand' of the market labours under many grave disabilities.

But the failures just mentioned do not attach to negative feedback itself but to people gumming-up its workings. What trap attaches to this corrective process of

³⁷ Ibid. 97.

³⁸ Economic vicious circles are meant to solve problems but they don't. They tend to be subsidized. The cost of automobiles doesn't begin to pay for their many indirect costs: waste of land and energy, loss of amenities, and the expense of traffic enforcement, pollution, and accidents caused by uninsured drivers.

³⁹ Ibid. 100.

⁴⁰ Ibid. 102.

⁴¹ Ibid. 109.

itself? Jacobs suggests that its robotic nature, that which makes it reliable, can sometimes become its flaw. Ability to contradict the robot becomes essential in some cases: over-riding the command of the breathing mechanism described above when we fall into a deep pool, for example.

The fourth and last of the corrective processes is that of emergency adaptations: whatever works in a crisis. Some instabilities may be temporary but yet devastating. If all that can be done isn't enough, the system collapses. The trap here is the temptation to prolong the 'solution' after the crisis has passed. A fever can be the body's way of combating infectious disease but, if it continues too long, can be fatal. Great economic depressions and wars call for swift and extraordinary adaptations.

Farm subsidies were instituted in the 1930s to save family farms in the Great Depression; then as anachronisms, permanent and bloated, they disproportionately rewarded large-scale factory-farming – ironically, to the disadvantage of smaller-scale farming. [...] Armament manufacturing soars during wars, of course; if it remains anachronistically inflated, producers seek wars, arms smugglers, and civilian customers for assault guns and ammunition.⁴²

From consideration of each of these four manners of evading collapse along with their associated "traps", Jacobs raises the question: "whether our species has inborn traits that restrain habitat destruction"?⁴³ This is a way of posing the question of redemption, even though she is not a theologian. She considers several possibilities, among them aesthetic appreciation, fear, awe, but ultimately concludes that the relevant traits lie in our intelligence, our moral consciousness, and our awareness that we partake of "processes of development and diversification" that we receive as gifts – which is one way of talking about the awareness of grace.⁴⁴ Elsewhere she identified love as the source of recovery as when people chose to stay and work together in slums out of love of their neighbourhoods⁴⁵ and when people act out of care for future generations they will never see. Like Lonergan, therefore, Jacobs is keenly aware of the need for the

⁴² Ibid. 117.

⁴³ Ibid. 125.

⁴⁴ See *ibid.* 130–2, 146.

⁴⁵ Cf. *The Death and Life of Great American Cities*, 279–83.

healing and restorative power of love to reverse the effects of bias against understanding.

Conclusion

Of what value is all this exploration by Jacobs of the dynamics of biological and economic ecologies? Jacobs herself offers an answer:

Is there any practical value or advantage in knowing that economic development is differentiations emerging from generalities? **Y** It tells us that development isn't a collection of things but rather a process that yields things. Not knowing this, governments, their development and aid agencies, the World Bank, and much of the public in general put their faith in a fallacious **>Thing Theory=** of development. The Thing Theory supposes that development is the matter of possessing things such as factories, dams, schools, tractors, whatever **Y** [However, things] don't mysteriously carry the process of development with them. To suppose that [they do] creates false expectations and futilities. Worse, it evades measures that might actually foster development.⁴⁶

Just as Lonergan emphasizes that emergent probability is not primarily about things but about natural and human processes and schemes, so also Jacobs. These are the "gifts" with which human actions operate. Hence, our focus should be upon them and their natural dynamics of development, their delicate and intricate interdependencies. The better we understand them, the better we can cooperate with them. Actions that ignore or flaunt these dynamics are doomed to have unintended and disastrous consequences. Whether gifts of creation or gifts of grace, they only become effective in human action when they are recognized, properly understood, and willingly cooperated with. The work of Lonergan and Jacobs invite us to take on the hard work of understanding how nature and grace are already at work developmentally, and how to better cooperate with their dynamics.

⁴⁶ Jane Jacobs, *The Nature of Economies*, 32.

III

Transposing Theological Anthropology

*Differentiations emerging from generalities are
exhibited by bodies of knowledge unless
and until they become fossilized.*

–Jane Jacobs⁴⁷

Preliminary Clarifications

The preceding major section culminated in the question whether our species has been gifted with traits which might restrain habitat destruction. Attention was drawn to our intelligent capacity for self-corrective learning and our moral consciousness.

Lonergan has clarified that 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."⁴⁸ These arrangements are largely patterns of cooperation that depend upon understanding "what one can expect" of the other

⁴⁷ Ibid. 155.

⁴⁸ B. Lonergan, *Insight*, 239.

person.⁴⁹ Human practical intelligence (or "common sense") is the accumulation of innumerable such insights that make possible the full 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 to distribute the fruits of production ever better, insights into how to reach group agreements and decisions ever more effectively.⁵⁰ The ongoing development and emergence of human schemes follows what Lonergan called a "self-correcting" process: existing human scheme η questions about how to do things better η insights into improvements η actions that modify the schemes η further questions and insights, etc.

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.⁵¹

But such use of our intelligence will always be governed by our evaluation of what is truly worthwhile. The workings of our intelligence will always be sublated by our judgments of value and the commitments that flow from them.

The faith traditions of humankind agree in finding our ultimate moral resource, not in commands, rules or codes, nor even in human values, but in beliefs about God. "The ultimate basis of morality is not the command or the will of God, but the character of God, how God is given to behaving. It is *how God has behaved towards humans* which forms the basis of ethics, of how one should behave toward God and toward one another."⁵² As 1Jn 4:11 has it: "If God so loved us, we also ought to love one another."

In greater detail, our ultimate moral resources are to be found in how God has loved us *as it comes to articulation in* the four great doctrinal pillars of

⁴⁹ Ibid. 248.

⁵⁰ Ibid. 233-34.

⁵¹ *Collected Works of Bernard Lonergan*, vol. 15, *Macroeconomic Dynamics: An Essay in Circulation Analysis*, edited by Frederick G. Lawrence, Patrick H. Byrne, Charles C. Hefling, Jr., Toronto: University of Toronto Press, 1999, 100.

⁵² Jack Mahoney, S.J. "Christian Doctrines, Ethical Issues, and Human Genetics," *Theological Studies* 64 (2003) 719-49, 721.

Christian belief about God: creation, sin, salvation, and fulfilment.⁵³ There can, however be no such thing as a timelessly invulnerable articulation of such doctrines. Fidelity to them in a historical world demands creative efforts of interpretation. Constantly shifting meanings within ongoing cultural process will attribute meanings to traditional symbols of faith which will tend to undermine the original insight of faith that gave birth to the symbols. This will happen unless there is a creative engagement with the cultural process as it unfolds. This creative meeting of the mutual challenge of a living culture to a faith tradition is that to which the term ‘transposition’ refers.

Theology and the Danger of Fossilization

Taking our clue from the Jane Jacobs’ quote used as epigram to this third section of the paper, we would expect any vibrant theological science, creatively responding to developments in cultural worlds, to be endlessly challenging us to new differentiations of understanding. If, in the moral sphere, we find resistance in many to the idea that we need to continuously grow in our moral consciousness, could this be indicative of fossilization in the discipline of moral reflection? A similar question arises in relation to the doing of theology in the area of the Church’s mission.

More particularly, we might ask how we should judge the weakening if not the loss in more recent Christian tradition of the cosmic context deemed essential to the understanding of the Christian message in its inception. What complex cultural processes caused the biblical centrality of the whole of creation to be displaced and reduced to the incoherence of cosmos being simply the ‘stage’ on which we work out ‘our salvation’? Above other economic, social and political changes to be considered, Jürgen Moltmann has placed as key to how people began seeing themselves four hundred years ago the new picture of God offered by the Renaissance and by nominalism. God is almighty and his absolute power his pre-

⁵³ Unfolding these doctrinal pillars is the strategy behind Denis Edwards’ *Ecology at the Heart of Faith: The Change of Heart that Leads to a New Way of Living on Earth*, New York: Orbis, 2006.

eminent divine attribute. The human being, image of God on earth, must strive for power and domination “so that he might acquire *his* divinity”.⁵⁴ One cannot help but wonder why no theological voice was raised to point out that these meanings had *nothing* in common with the Christian faith tradition.

Since the modern industrial countries developed in those parts of the world which were under Christian influence, “Christian theology is no less affected by the ecological crisis than the sciences and technologies.”⁵⁵ A scientific search for knowledge driven by concern for power ensures that power will be the very mould in which the sciences are cast:

Through this method the human being confronts creation from the outset and in principle as its ruler. He is no longer one member of the community of creation; he confronts creation as its lord and owner. Consequently he can no longer identify himself in terms of body and nature. He becomes merely the subject of cognition and will. The reduction of the natural environment to the status of mere objects corresponds to this subjectification of the human being.⁵⁶

Why was there no theological critique of ‘the mould in which the sciences were cast’? The answer would seem to lie in the failure of the creative transposition of a tradition. “A theology mediates between a cultural matrix and the significance and role of a religion in that matrix.”⁵⁷ With every development and differentiation of a culture, there arises the challenge to theology to transpose its whole tradition in a manner that shows its significance in the new cultural context. The withdrawal of theological reflection from all that is going forward in a culture signifies the betrayal of the theological task.⁵⁸

The lesson here is the ease with which a tradition may become perverted, may succumb to unauthenticity. The struggle to understand what was meant in

⁵⁴ Jürgen Moltmann, *God in Creation: An Ecological Doctrine of Creation*, London: SCM Press, 1985, 27. Cp. Louis Dupré, *Passage to Modernity: An Essay in the Hermeneutics of Nature and Culture*, New Haven and London: Yale University Press, 1993, 174–81. For treatment of the pervasive distortion of traditional theological language in the modern period, see Nicholas Lash, in *The Beginning and the End of ‘Religion’*, Cambridge: Cambridge University Press, 1996, esp. chapter 7, “When did the theologians lose interest in Theology?”: “In the self-assured world of modernity, people seek to make sense of the Scriptures, instead of hoping with the aid of the Scriptures to make some sense of themselves”(148).

⁵⁵ Ibid. 29.

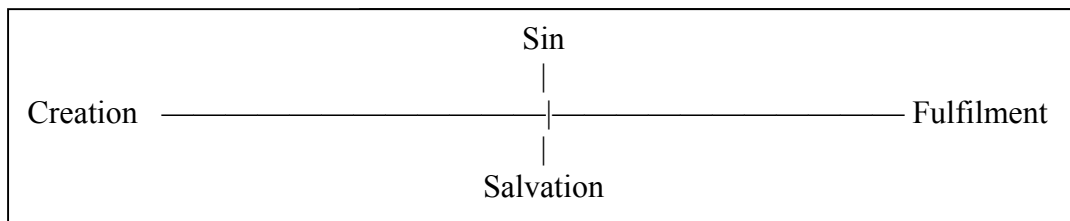
⁵⁶ Ibid. 27.

⁵⁷ The introductory sentence of Bernard Lonergan’s *Method in Theology*, London: Darton, Longman and Todd, 1972, xi.

⁵⁸ Cf. Louis Dupré, *Passage to Modernity*, 69: in its failure to incorporate the findings of the sciences into Christian doctrine “theology gradually withdrew from its millennial task of defining the fundamentals of the world view”.

earlier articulations of faith and what that might mean in today's world is a never-ending task. Given this Christian responsibility for 'the disgracing of nature', the question facing a contemporary theology of nature is whether or not a dialectical reading of Christianity can be sustained: is a political theology of nature possible which might offer a liberative account of humanity?⁵⁹

Creative Tension Between Doctrines



In the Catholic tradition of theological anthropology, the above four, mutually qualifying, symbols are to be kept in creative tension, no one of them being exaggerated at the expense of the others. Other expressions of Christianity may show a preference for one over the others, allowing that inclination to influence moral positions. For example, the tendency in some forms of Protestant Christianity has been to stress the doctrine of sin, viewing human nature as radically suspect. Maintaining the tension sees the doctrine of sin as balanced by the hope-filled doctrines of creation and salvation. It is not true that we live in a fallen world: we live in a fallen-and-redeemed world!

Simply to draw attention to the diverse ways in which appeal has been made to the guiding symbols of Christianity shows that an incessant process of interpretation is demanded of any faith tradition in regard to its guiding symbols.

⁵⁹ Cf. Peter Scott, *A Political Theology of Nature*, Cambridge: Cambridge University Press, 3–13.

Creation

Without denying what has just been said about the interconnection of all four irreducible symbols, it can safely be asserted that the most central symbol in the Hebrew Bible is undoubtedly that of creation. So far from being a symbol the meaning of which is confined to creation ‘in the beginning’, the whole hope of Israel is formulated in terms of what God intended from the beginning for God’s creation. For the language of the New Testament, the central revelation is ‘what was hidden from all ages’, the answer to the question as to what God’s purpose was in creation, an answer that could only be discovered ‘at the end’ of the divine creative activity. The line of thought is straightforward: we will only know what is going forward in God’s creation in the culmination of God’s creative activity. The new naming of God in the New Testament is the One who raised Jesus from the dead. Such naming is done in relation to the destiny of the whole creation. We in our longing participate in the longing of the whole of creation. We make no sense apart from our universe. Our hope is hope for the universe.

It is necessary to stress today that the creation insight is a Hebrew, not a Greek, achievement. Aristotle had no sense of creation. The scientific rationalism of the seventeenth century could make no sense of an activity possible only to God and so the very notion of divine causality became questionable.

When efficient causality, conceived on the model used in modern science, came to define the relation between Creator and creature, the more intimate dependence implied by the traditional doctrine was lost.⁶⁰

It should be recalled that the Catholic tradition of natural law is grounded on the doctrine of creation, a tradition which has “found modern enrichment in the powerful program of fundamental human rights, now such a central element of the Church’s moral and social teaching.”⁶¹ The human made “in God’s own image and likeness” is the basis of asserting the fundamental dignity of all humans without exception, along with their inalienable value. How this phrase is to be understood

⁶⁰ Louis Dupré, *The Enlightenment & the Intellectual Foundations of Modern Culture*, New Haven and London: Yale University Press, 2004, 230.

⁶¹ *Ibid.*, 722.

has led to notoriously diverse interpretations. The Catholic tendency has been to search for that in the human which *marks them out from other creatures*. Taken to an extreme, such a tendency can not have happy consequences in relating us to the rest of creation. One stream, dominant in the modern period, finds the appropriate candidate in ‘power’, a share in the divine power over creation. Another stream, historically the most popular, pursued by Aquinas, is focused on the gift of intelligence or rationality which enables us to appreciate the divine plan and through our actions help bring it about.⁶² The path of Aquinas has the great advantage of pushing us towards grasping the integrity of God’s one creation.

Though the insistence that the question to which creation is the answer does not fall within the range of what can be entertained by the methods of empirical science is true, this does not mean that learning through science the ‘what’ of creation does not pose challenges to theological understanding. *Emergence* has always been a problem for hard-core materialism, which tends to regard underlying matter (elementary particles) as ultimately unchanging: although the rearrangements of matter change, ultimately no real change occurs. This materialist philosophy tends to fly in the face of common sense and religious belief as well. Lonergan argues that it is only a *philosophical* position, incompatible with *scientific* study. Science, he argues, seeks to correctly understand how events are intelligibly connected within schemes of recurrence, and when new schemes begin to function, really new intelligibilities emerge.

As man becomes more and more self-creative God does not fade out of the picture, he fades in. The pictures of God, however, fade out. The God who makes us instead of us making ourselves is replaced by the God who makes us make ourselves.⁶³

Mahoney suggests that thinking of species as coming directly from the hand of God has us tending to view God as the transcendent craftsman who occasionally intervenes in history and shapes individual unconnected things. Taking the evolutionary view, on the other hand, causes us to view God in a more immanent

⁶² Mahoney suggests that a third possibility might be personhood, reflecting personhood in God: “as a species we are also created together in God’s image, to form God’s human family, commissioned to mirror in all our human relationships the loving intercommunion of persons that is of the very nature of God” (723).

⁶³ Herbert McCabe, *God Matters*, Springfield, IL: Templegate, 1987, 170. The undermining of the faith tradition’s insight into the universe as created occurred when the very notion of divine causality became questionable in the modern period. See text at note 25 above.

mode, as the creative spirit dynamically present and active within the physical and biological worlds as these are continually developing.

There God is envisioned as the inherent cause of causes, enabling things from within to develop themselves and to transcend themselves in their increased becoming. This is seen particularly and uniquely in the case of emerging humankind, as God impels the infrahuman to a qualitative leap to the higher plane of hominization, so that what was hitherto a member of the animal kingdom has now crossed a threshold to become a human person endowed with intelligence and freedom in the image of God.⁶⁴

One immediate consequence of the shift in understanding is that the evolutionary past must throw light on humanity's present constitution, while its evolutionary future must be one in which humanity has a conscious part to play and a moral responsibility to collaborate.

A related challenge arising out of our understanding of an emergent universe is that we are faced with the enormous cost of creation over the 13.7 billion year story. Denis Edwards has detailed the moral challenge which belongs to this data and the necessity of its being addressed in relation to all of our four guiding symbols/doctrines.⁶⁵

Sin

Our experience of our failures to respect our responsibilities is what gives rise to the second of our four doctrinal pillars, sin as our capacity to misuse the gifts of God. If a theology of sin gets out of hand it vitiates all human behaviour and endeavour at their core, radically undercutting the inherent dignity and goodness of God's creation.⁶⁶

Given the interconnection of all four symbols, the damage of such exaggeration does not stop with creation. It undercuts the doctrine of salvation, threatening to make meaningless the claim of Rom. 5:20, that 'where sin increased,

⁶⁴ J. Mahoney, *op. cit.*, 724.

⁶⁵ Cf. Denis Edwards, "Resurrection and the Cost of Evolution: A Dialogue with Rahner on Noninterventionist Theology", *Theological Studies* 67 (2006) 816-33.

⁶⁶ Mahony is inclined to believe that there is no sharper ethical divide among Christians than that which flows from the place they assign to sin and sinfulness as a characteristic of human society. On the other hand, he believes that this could be as much a matter of individual temperament as of theology.

grace abounded all the more.’ The Resurrection is a cosmic event, affecting the whole of creation. Christ’s resurrection is “in living and historical continuity with the divine action of creation.”⁶⁷ From his fullness we have all received and it is the creation that is on the way to the culmination willed by God from the beginning, the theme of the fourth doctrinal pillar of fulfilment.

On the other hand, minimizing this doctrine results in imperceptibly cultivating moral blindness: “conscience can become almost blind from being accustomed to sin.”⁶⁸ It would be absurd to forget that we can act from wrong motives and there is no lack of opportunities for such sinful behaviour in the energy field with its competitive pressure to achieve marketable results. We have substantial reason to fear that needed developments in face of global warming will fall under the heartless rules of the market.⁶⁹ The politically powerful easily succumb to the technological imperative and have inevitable interest in the political fall-out of ‘inconvenient truths’. With them we get the danger of rationalizing the global underclass in our world and refusal of responsibility for its generation. They resist the suggestion that the cost of our self-induced crisis is not to be borne by the poorest. Perhaps it would be possible to be more hopeful if we had evidence of the existence of relevant wisdom in the control of our environment or in public policy-making in social and political matters.

Lonergan understands all sin as flight from understanding. He transposes the complex analogical language of sin into an equally complex language of four-fold bias: psychological, individual, group, and general. It is in the contrast between the final two forms of bias that we can name the form of sin with which we are faced in Global warming. Group bias refers to the manner in which a particular group becomes blind to the excessive and unwarranted nature of its privilege. The contrasting category of ‘general’ bias is typified by being shared by *all* members of a society. It pertains, then, to cultural aberration. It is the bias that attaches to common sense in its workings, deriving from its illusion of omnicompetence. Needed correctives to it come from science, and art, and faith.

⁶⁷ J. Mahoney, *op. cit.*, 726.

⁶⁸ *Gaudium et spes*, no. 16. This connects with Lonergan’s suggestion that ‘the rule of sin’ is equivalently ‘the expectation of sin’.

⁶⁹ At present, carbon trading is a dismal failure: it does not promise quick and large returns and therefore is being ignored. Opportunistic politicians find in it an ‘acceptable’ appearance of response to our crisis.

Again, there are moral imperatives governing the doing of science. In the context of the present paper with its focus on global warming, it is both possible and necessary to identify persistent moral failure to implement scientific procedure. In both our approach to the issue and in exploring responses we suffer from a failure to be consistently scientific. Successful bifurcations, as was said above, need to be developed *before* crisis sets in. They tend to start modestly and be tested out as they work their way into economic life – or else they are dropped. The mistake in regard to nuclear power was not in trying it: it was the mistake of *concluding in advance* that we had the answer we needed. The billions of dollars being force-fed into nuclear power were at the expense of starving, neglecting and deriding other possibilities. That is not an experimental approach and therefore not scientific. As a result, when, as now, we are confronted by self-induced crisis, we lack empirically tested alternatives.⁷⁰

Salvation

The various healing miracles and cures that Jesus is described as performing show him ushering God's saving and healing power into human history. There are good reasons for arguing that Christianity began as a message about God in relation to human suffering. Theologically, the entire practice of medicine is a practical extension in society of this healing ministry of Jesus to his sisters and brothers and of what Paul calls the power of his Resurrection affecting all humankind since that cosmic event.⁷¹

A Christian Ethic?

The majority of Catholic moralists today take the view that the context and motivation of Christian ethics may differ from the context and motivation of

⁷⁰ To insert a hopeful moment, in some regions of Europe wind generation has become as cheap as, or cheaper than, coal-fired generation. In California, wind-power production is presently the equivalent of the power used in San Francisco. However, those supporting renewable-resource energy warn against a one-shot answer: they do not wish the development of solar- and geothermal-power generation to be neglected as a mix of methods is always more flexible. See, Jane Jacobs, *The Nature of Economies*, 2001, 176.

⁷¹ Phil. 3:10.

secular ethics, yet the content of Christian ethics – the practical positions it will reach – is basically the same as the conclusions that can be arrived at by the best of human rational ethics. Catholics see nothing inconsistent in this: God’s work in creation and Incarnation are continuous, even cumulative, rather than discontinuous; the Word who was in all that is created is also the Word who was made flesh.

Yet it remains true that a purely rational rather than religious approach constitutes an impoverishment for the Catholic. The Christian world view provides a rich range of considerations for the Christian ethical stand, of which only one or two may be shared with others who are not Christian.⁷² Very often it is the specifically Christian that gives to believers the particular intensity, urgency, and priority to various moral issues compared to other people’s.

The more intractable moral issues are those which involve a conflict of values. The issue in such cases is of priority of one value over another. The opposed voices are not of people who reject any of the values; each side simply prioritizes the same values in different ways. Mahoney suggests that doctrines, especially those of Incarnation and salvation, could lead Christians in certain situations to give a particular urgency to some human moral values over others. When the values of justice and mercy are at odds, the Christian will be inclined to give priority to mercy. Attention has often been focussed on how Christian writers have what others see as distinctive themes: the social as well as the individual character of human beings, the claims of justice, the sacredness and value of the human person, and the interests of the poorest and most vulnerable in society.⁷³

This dynamic of faith affecting the intensity of the Christian approach to particular moral values can not be viewed in terms of the Christian having stronger motives. “The motives themselves are born of the belief in the Christian doctrine of salvation in Christ, and of the deepened appreciation of the richness of reality and of the importance of what is at stake in all our moral choices to which that doctrine

⁷² Murder may be seen to be wrong because it is the unjustifiable killing of a fellow human being, or because it is the killing of a fellow creature of God, or because it is the killing of a sister or brother for whom Christ died (see 1Cor.8:11).

⁷³ Cp. the survey of Audrey R. Chapman, *Unprecedented Choices: Religious Ethics at the Frontiers of Genetic Science* (Minneapolis: Fortress, 1999) 119-20. Her list coincides rather exactly with the genetic moral criteria put forward by Richard McCormick, *The Critical Calling: Reflections on Moral Dilemmas since Vatican II* (Washington: Georgetown University, 1989) 267–71.

gives expression.”⁷⁴

And yet believing this doctrine does not mean that we must succeed at all costs.

Fulfilment

In the end, God heals absolutely, makes all things new. We do not understand this because [...] no future that we can imagine could justify injustice, make sense of innocent suffering, or yield an ending that would permit us to forget the children’s pain. But what, I think, needs emphasizing is that to ‘believe in God’ after the pattern of the Creed is, nevertheless, to hope for nothing less than this, to hope for nothing less than everything.⁷⁵

Mahoney sees possibilities of a new imbalance in the renewed theology of eschatology, in its transformation through the development of political theology. This current emphasis in our eschatological belief stresses God here and now at work in human history, bringing it to completion through the active collaboration of humans. This new view of eschatology gives rise to a new understanding of Christian hope, an active theology of hope that is operative in both political and liberation theologies. Hope is not simply a matter of patiently awaiting the future but of acting to bring the future forward into the present, in the lives of individuals and where possible in the institutions and structures of society. The hazard here, as Mahoney sees it, is of prophetic impatience which can overshadow the other doctrines, a striving to realize heaven on earth in neglect of a realistic recognition of the human resistance and intransigence to which sin can lead.

The doctrine of final fulfilment provides a cosmic context to all our human choices. There cannot be *an absolute imperative* to improve our human lot: that is, that *all* means must be used to promote earthly well-being. The Christian perspective on a future which is not limited to present earthly existence de-absolutizes our earthly concerns and puts them into perspective. In this light,

⁷⁴ Mahoney, *op. cit.*, 745.

⁷⁵ Nicholas Lash, *Believing Three Ways in One God: A Reading of the Apostles’ Creed*, London: SCM Press, 1992, 120.

earthly well-being – even earthly survival – are not absolutely essential and therefore do not justify the choice of absolutely any means.⁷⁶

We are not to act here in desperation. For hope, no earthly state of affairs is ground for despair because “the eternal God is your dwelling and beneath are the everlasting arms.”⁷⁷ Whether human action be governed by evolutionary optimism or by hope makes an enormous difference to how we proceed. We are not permitted to seek our own survival by exacting the cost of our failures on the very victims created by those failures. If you *have* to succeed – the absolutely imperative – life is intolerable in the face of failure.

We are now involved in a struggle to recover a more complete and single sense of what it means to be a human being, a sense of our interconnectedness and belonging to our universe. We are searching for a vision that has not been available to us since the seventeenth century. It may help us to keep in mind that people can only be in communion, have a common life, through sharing in things. But now we begin to see that our sharing needs to be with *all* things – all rocks and stars, all plants and animals, not only our fellow humans. In the Spirit’s gift, “we are enabled and required, as constituents of God’s one creation, to live in harmony or communion.”⁷⁸

Concluding Challenge: A Political Theology of Nature

In face of the present crisis with its implied distortions of human sociality, the question to theology is whether, within a doctrine of creation, theology “can offer a perspective in which human freedom and contingent nature might be related to secure their mutual affirmation and healing”.⁷⁹ If it can, such a theology will be named a political theology of nature, theological anthropology in a liberative key. “The theological task is the analysis, criticism and reconstruction of humanity-nature relations which obscure the visibility of the environment as the common realm of God, nature and humanity.”⁸⁰

⁷⁶ For sustained reflection on the nature and implications of Christian hope see Nicholas Lash, *A Matter of Hope*, London: Darton, Longman & Todd, 1981, 231–92.

⁷⁷ Dt. 33:27, RSV.

⁷⁸ Cf. Nicholas Lash, *Believing Three Ways in One God*, 89.

⁷⁹ Peter Scott, *A Political Theology of Nature*, 4.

⁸⁰ *Ibid.* 29.

What was avoided in recent centuries must be tackled now. Mention was made above of the failure of theology to critically engage with the scientific revolution and integrate its findings within its own doctrines. Subsequently, this on-going revolution has brought forth both massive – *and massively fragmented* – riches of meaning, and the not-at-all easy challenge of “protecting the future”.⁸¹ A symptomatic consequence of such fragmentation in action is the global warming to which we are belatedly advertent.

Protecting the future from what? If, like the people at NASA, we find ourselves answering in terms of comets hurtling at us from other parts of the galaxy we are surely missing the primary threat. Primarily, the threat is from ourselves. Nicholas Lash echoes a theme from the *Rig Veda*: “it is evening in the forest and, when we think we hear the sound of someone crying, we are right to be afraid, but it is ourselves we have to fear.”⁸²

But it is our social, institutionally structured selves we need to have in view: “most of the threats to the planetary ecosystem are the results of habitual human ways of relating to the physical world, ways dictated by institutional arrangements. Inversely, our relations with nature – the way we have used land, materials, other species – both reveal and shape the institutions through which we deal with each other.”⁸³

Every doctrine of our tradition needs to be articulated in conscious effort to recover from the distortion of its meaning involved in *our own* involvement in the institutional arrangements of modernity.

The Good News is experienced as such in its power to engender indefeasible hope in human beings. The reach of this hope encompasses all creation: it empowers an ethic of the Groaning of Creation?⁸⁴ The past that we need to retrieve is that of a 13.7 billion year process of emergence. We need to come to appreciate that the framework for the ethical challenge that now faces us is set by emergent probability’s genesis of schemes of recurrence, operating now at the human level and telling us that “the solution will consist in a new and higher

⁸¹ The reference here is to Lonergan’s musing in *Insight* on the needed higher viewpoint. It cannot be ‘a police force’; neither can it be ‘a busybody’; it will have to ‘protect the future against the rationalization of abuses’. See *Insight*, 263–7.

⁸² Nicholas Lash, *The Beginning and the End of 'Religion'*, 4, echoing *Rig Veda*, 10.146.4.

⁸³ Peter Berger, *The Good Society*, as cited in Scott, *A Political Theology of Nature*, 27.

⁸⁴ Cp. Denis Edwards, “Resurrection and the Costs of Evolution”.

collaboration of [people] in the pursuit of truth,”⁸⁵ a collaboration secretly powered by grace. Might we make that new ethics of global cooperation a topic, 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 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.⁸⁶

Contributing to the creation of such a popular tradition may not sound of great moment. However, what the quotation says is that such a contribution could be of enormous historical significance. So, 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 was at the heart of Lonergan’s breakthrough.⁸⁷ It calls for a dialectical human science and a dialectical component in the doing of all science.

The unavoidability of the challenge should be clear: Gospel witness is always in relation to threatened existence; that which is in danger of going out of existence, whether it be AIDS victims or species – inclusive of our own – now endangered by humanly-engendered global warming. The challenge of global warming is directed to the very heart of a conscience formed by Christian faith.

⁸⁵ *Insight*, 740.

⁸⁶ B. Lonergan, *Collected Works of Bernard Lonergan*, vol. 10, *Topics in Education*, Toronto: University of Toronto Press, 1993, 230.

⁸⁷ In focus here is what Philip McShane has named ‘Lonergan’s Standard Model of Effective Global Enquiry’. Its explicitation needs to be provided for feasible implementation of the creative responses demanded in the present paper. Such explicitation calls for another paper, if the formidable length of this present one is to be at all acceptable.