Cosmic Evolution and the Theology of Social Solidarity

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Introduction

The great development of the natural sciences and the rise of evolutionary theories have also had their effect upon Christian theology. That there are vast numbers of protestant Christians who have been scarcely touched by these influences is true; but these influences are shaping the thought of the world, and it is impossible that the theology of a living Church should not be profoundly affected by them. For natural science is simply telling us what God is doing in His world, and evolution is simply explaining the way in which His work is done. At bottom, all this is religious truth, of the most fundamental character; and, if Christian theology is true theology, it must include the truths of science and evolution.

--Washington Gladden

For more than a century now, there has been a consensus about evolution among the leading scientists and theologians. Indeed, an increasing number of prominent thinkers have professional qualifications both as scientists and theologians. If one includes the work of a scientist and natural philosopher such as Paul Davies (a winner of the Templeton Prize), who is extremely interested in questions of a religious nature--bearing in mind that his books sell by the proverbial truckload--then it is clear that there is a serious desire among educated people to find a vision for life that is at once spiritually edifying and intellectually sound. There may be some ruffling of the feathers at the margins of scientific and theological discourse--I speak of the "scientific creationists"--but most people concur with Arthur Peacocke's assertion that, "after two centuries or more of bickering, or of sullen silence with demarcation of spheres of interest, these two fundamental activities, the search for intelligibility and the search for meaning, that characterize respectively, but not exclusively, science and religion, find themselves inextricably interlocked with each other in the common human enterprise of seeking both intelligibility and meaning."

A very clear example of what Peacocke is suggesting is provided in the work of astrophysicist Eric Chaisson. Chaisson defines cosmic evolution as "the study of change through time." Over the course of time, this process of change has brought forth all the features of the physical universe, and the emergence of life itself. Cosmic evolution thus includes biological evolution as a subset of the whole. Chaisson holds that "cosmic evolution is an attempt to build a cosmology in which life plays an integral role. It is an attempt to frame a heritage--a cosmic heritage--a sweeping structure of understanding based on events of the past (for as we look out in space we probe back in time), an intellectual road map identified and embraced by humans of the present, indeed a virtual blueprint for survival if adopted by our descendants of the future." According to this description, Chaisson's "scientific philosophy" clearly brings him into the ambit of theological exploration.
Indeed, the key point for the purpose of this essay—and one certainly of central importance for contemporary theology—is that with the emergence of the higher forms of life, and in particular the rise of consciousness, the very process of cosmic evolution is given a creative direction. This is a theme that Chaisson expands on in his book, *The Life Era: Cosmic Selection and Conscious Evolution*. Peacocke puts this idea into a somewhat more traditional theological form:

It is as if man has the possibility of acting as a participant in creation, as it were the leader of the orchestra of creation in the performance which is God's continuing composition. In other words man now has, at his present stage of intellectual, cultural, and social evolution, the opportunity of consciously becoming co-creator and co-worker with God in his work on Earth, and perhaps even a little beyond Earth. To ask how to fulfil this role without the hubris that entails the downfall classically brought upon those who 'would be as gods' is but to pose in dramatic fashion the whole ecological problem. But at least one who sees his role as that of co-creator and co-worker with God might have a reasonable hope of avoiding this nemesis, by virtue of his recognition of his role ipso facto as auxiliary and co-operative rather than as dominating and exploitative.7

This is an exciting idea, not just because it offers a potential synthesis of scientific and theological concepts, but also because it provides the grounds for a truly global ethics—one in which two features impress themselves upon us: (1) the interdependency of all living things in the biosphere (the web of life), and (2) the responsibility that humans have towards the future direction of evolution within the biosphere (and possibly beyond). We will shortly discuss this point in more detail in relation to the work of Daly and Cobb. Of course, theologians will rightly interject that such a vision might engender the kind of hubris to which Peacocke alludes. Certainly, there is a danger of idolatry—humankind will not just become like God, but will act as God in the scheme of things. Interestingly enough, this universal human temptation was alluded to in the Hebrew creation stories. We are warned by the wisdom of the sages.

Nevertheless, the arrow of time in the process of cosmic evolution cannot be reversed. Humans are indeed in a unique position, and undoubtedly hold a privileged position as the species that possesses not only consciousness (and the ability for reflexive and creative thought), but the ability to redirect the very process of evolution itself. For this reason, evolution has never been more central to the task of theology, and theology has never been more important as a means of interpreting this stage in the unfolding of a cosmic purpose. One cannot put it any more succinctly than Gordon Kaufman has:

[Humans have a power of creativity, a power to transform their inherited conditions of existence, which is unique among all living beings of which we know. Humans have produced a whole new order of reality—culture, the symbolic world, the order of meaning—which they have superimposed on the natural order into which they were born, and they have made this artificial world their home. Of course, all living beings are able to process information, and animals are able to communicate with one another and to rearrange their natural environment so that it will be more suitable to sustain them (by building nests, storing food, and the like). Humans, however, have gone far beyond all others in constructing an entire artificial world which does much more than simply meet their biological needs: it introduces a wholly new realm of being, the symbolic order, the order of meaning (what we shall later call the order of 'spirit'), and this has in turn generated in men and women new desires, interests, and needs which go far beyond strict biological utility, and sometimes even contradict it.8

As already intimated, the theological enterprise (in Kaufman's "order of spirit") has never been more important as a means of navigating into the future.9 Our realization of this fact has been brought on by a growing sense of a looming ecological crisis, the result of our technological development. But even more than this, humankind is threatened by a fundamental spiritual and ethical crisis (not necessarily related to increasing secularization—as this has often been liberating—but owing to the rise of egoism and materialistic values). As Chaisson says:

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It is important to realize that the problems we face today are not similar, not even in principle, to those of previous generations. The recent exponential rise in technological achievements and the inability of society to cope with them have led to problems basically different from those confronting earlier civilizations. We are in a transition period that no Earth society ever has encountered. This is not a doomsday forecast but a statement that social and political organizations appear unprepared to deal with the widespread changes necessary for our continued existence.\(^\text{10}\)

Chaisson continues to provide a sketch of a solution to this crisis in the “life era.”\(^\text{11}\) It has now become imperative that human beings develop a “global culture” and a “planetary ethics.”\(^\text{12}\) This ethics must of necessity be able to apply to all of humanity and be flexible enough to fit the process of change itself. He doubts whether philosophy, religion, and even science (given its specializations) can effectively carry out this task, owing to the pluralistic nature of our societies. No single religious tradition would be able to generate a sufficiently global ethics.

However, Chaisson turns to evolution itself as the source of this planetary ethics.

**Humans hold a privileged position as the species that possesses the ability to redirect the very process of evolution itself. For this reason, evolution has never been more central to the task of theology, and theology has never been more important as a means of interpreting this stage in the unfolding of a cosmic purpose.**

He believes that evolution provides sufficient common ground for religion, philosophy, and science to be able to subscribe:

“[T]he concept of evolution, invented by philosophy and now fully embraced by science, is acceptable to all but the most fundamentalist religions. Its broad approval is an appreciation and understanding of evolution in its most awesome sense—cosmic evolution, a scientific philosophy capable of applying the tools of technology to the time-honored questions first posed by philosophers and theologians—can provide a map for the future of humanity.”\(^\text{13}\)

It has become our task to make the next phase of evolution an “ethical evolution,”\(^\text{14}\) in which we play an active and creative role. In so doing we implicitly transcend the Darwinian principles of natural selection. Thus:

To employ cosmic evolution as an intellectual as well as a practical guide toward the Life Era is to think in dynamic rather than static terms, to forge a link between natural science and human history, to realize the evolutionary roots of human values, to renew a sense of hope…. I suggest that cosmic evolution is a powerful synthesis to use as perspective. From the study of cosmic evolution may well emerge a sense of ‘big thinking’ and with it the global ethics and planetary citizenship needed if our species is to have a future. In the words of Soren Kierkegaard, ‘Life can only be understood backwards, but it must be lived forwards.’ Tritely stated though no less true, our future will likely be a measure of our current wisdom.\(^\text{15}\)

There is no question that this credo of Chaisson’s has a religious quality.\(^\text{16}\) And perhaps it marks the possibility of a true revival of interest in the religious spirit itself.\(^\text{17}\) Alfred. North Whitehead’s remark comes to mind: “Religion will not regain its old power until it can face change in the same spirit as does science. Its principles may be eternal, but the expression of those principles require continual development… The progress of science must result in the unceasing codification of religious thought, to the great advantage of religion.”\(^\text{18}\)

As Gordon Kaufman correctly reminds us, theology is “a human imaginative task.”\(^\text{19}\) I would argue that the issue of “planetary ethics” is indeed a fundamental question that must be addressed by theologians within all the major religious traditions. Perhaps the theologian who has most directly tackled this issue to date is Hans Küng in his *Global Responsibility: In*
Search of a New World Ethic. For Küng, a "world ethic" would reflect our common evolutionary heritage, and even more particularly, our willingness to embrace a common future destiny. As such, "theologians should attempt to construct conceptions of God, humanity, and the world appropriate for the orientation of contemporary human life." 20

Washington Gladden's "Organic Law of Human Society"

The social gospel movement took shape during the years when evolution was making its converts among the progressive clergy, and since ministers who were liberal in social outlook were almost invariably liberal in theology also, the social theory of the movement was readily affected by the impact of naturalism upon social thought. The growing secularization of thought hastened the trend among clergymen to turn from the abstractions of pure theology to concrete social questions. The liberalization of theology broke down the insularity of religion. Social gospel leaders were also inspired by the vistas of development opened both forward and backward in time by the evolutionary perspective; and their belief in an inevitable progress toward a better order on earth - the Kingdom of God - was fortified by the evolutionary dogma.... This combination with scientific evolutionary thought has freed the kingdom ideal of its catastrophic setting and its background of demonism, and so adapted it to the climate of the modern world. Spencer's organic interpretation of society also appealed to the progressive clergy, although they usually put it to uses of which he would have sternly disapproved. For them the social organism concept meant that the salvation of the isolated individual had lost its meaning, and that men in the future would speak with Washington Gladden of 'social salvation.' --Richard Hofstadter 21

It may seem a little incongruous to consider at this point the work of a theologian who commenced his pastoral ministry over a century ago. And yet, the work of Washington Gladden (1836-1918), while somewhat in eclipse for most of this century, is instructive for a contemporary theology of social solidarity. Gladden, regarded as the "father" of the social gospel, 22 attempted to fit a distinctly liberal theological focus on the progressive emergence of the kingdom of God (the primary theological motif of the social gospel movement) into an evolution-ary theoretical framework. However, Gladden's interpretation of Social Darwinist ideas was especially critical of Spencer's laissez-faire economics and non-interventionist social policies (championed in America by the Yale sociologist William Graham Sumner), while also steering a path away from the more radical versions of socialism.

According to Jacob Dorn, whose work constitutes the major single study of Gladden's life and teaching, "Evolution became the leaven of his religious and social thought, and the authority of its philosophical implications was, for him, unchallenged." 23 Gladden was particularly influenced by the philosophy of John Fiske, who maintained "that evolution was another evidence of divine purpose and the optimistic law of progress." 24 Like Gladden, Walter Rauschenbusch saw that the progressive nature of the kingdom of God was supported by the scientific theory of evolution: "Translate the evolutionary theories into religious faith, and you have the doctrine of the Kingdom of God." 25

As early as 1870, Gladden was preaching about Darwinism and the link between natural and social evolution. He argued that while evolutionary theory had shown a natural progress in life forms best adapted to their environment, this did not guarantee that the best or ideal forms ultimately survived. In a mean society, the mean are probably the most fitted for survival. It was therefore the role of religion to foster the social virtues of love and compassion, and to promote the common good. In this way the recognition that we are part of a social organism dawns upon humankind, and we realize our divinely appointed role in fostering the divine consciousness that leads inevitably to the fullness of God's kingdom.

Throughout his many books and published sermons, Gladden stressed three related ideas in social Christianity consistent with an evolutionary approach: (1) the immanence of God in the cosmic process, (2) the organic or solidaristic view of society, and (3) the presence and growth of the kingdom of God. For Gladden, the
evolutionary view of the universe helped to ground the doctrine of divine immanence:

The God in whom we live and move and have our being will not need to be certified by documents or symbolized by sacraments or demonstrated by logic; our knowledge of him will be immediate and certain. If He is, indeed, the Life of all life; if He is 'more present to all things He made than anything unto itself can be'; if He is 'stream of tendency, whereby all things fulfill the law of their being'; if He is really 'working in us, to will and to do of His good pleasure,' then life possesses a sacredness and a significance which few of us have yet conceived. This truth sanctifies and glorifies the whole of life. It is the truth which lies at the heart of what is known as the 'new theology'; and, if the Christian pulpit can but grasp it and realize it, we shall have such a revival of religion as the world has never seen. 26

For Gladden, the theological appropriation of evolutionary ideas supported the two principal truths of the social gospel: the "Fatherhood of God" and human "Brotherhood." The doctrine of the "Fatherhood of God"—as exemplified in the life and works of Jesus—shifted the focus away from the view of God as a distant monarch, to that whereby God and the creation are enmeshed in a relationship of filial love:

The doctrine must have vast social consequences. When it is once fully accepted, and all that it implies is recognized and enforced, society will be regenerated and redeemed. If all men are, indeed, brothers, and owe to one another, in every relation, brotherly kindness; if there is but one law of human association—"Thou shalt love thy neighbor as thyself"; if every man's business in the world is to give as much as he can, rather than to get as much as he can, then the drift of human society must now be in wrong directions, and there is need of a reformation which shall start from the centers of life and thought. 27

As a liberal, Gladden believed that with sufficient moral education mediated by the key social institutions, 26 people could be made aware of their organic relationship to each other and to God. However, he was also disturbed by the fragmentation of knowledge, whereupon scientific knowledge could be isolated from humanitarian, cultural, and religious knowledge. If, as he believed that evolution showed, the whole universe was revelational, then all knowledge, whether of the rational, mystical, moral or cultural dimensions, were to be integrated as truth. 29 Gladden addressed the issue of reconciling religious and scientific knowledge in his book, Burning Questions. In the first essay, entitled, "Has Evolution Abolished God?" he not only answers in the negative, but goes on to argue that evolutionary theory can be put to use as an apologetic for the existence and activity of God in the cosmos. Indeed, the "dynamic and creative cosmos of Darwin was a much more exciting, mysterious, and free universe than the static, self-contained, mechanical one of Copernicus and Newton." 30

For Gladden, developments in nineteenth century science had shown that God was immanent and omnipresent. Fry and Fry express this idea of the dynamic evolutionary model quite nicely: "History moved into eschatology--liberty now joined spirituality, rationality, community and morality in the process. Freedom with faith and reason, coupled with fellowship, led to a forward momentum for the human family." 31

One of the reasons why the social gospel lost its momentum after World War I was precisely the fact that it was seen to be overly optimistic about the human condition. As Hopkins shows in his classic study of the movement, "[t]he religious rationalization of evolution carried with it the uncritical assumption of the corollary belief in progress. Many Protestant thinkers saw the process of development at work in the religious and moral realms as well as nature. Progress was held to be real and evolution to provide cosmic sanction for trust in the ultimate triumph of good." 32 There is no doubt that the major theological work of our century to express such optimism in progressive evolution is that of Pierre Teilhard de Chardin. But in effect, this is probably nothing more than the last sigh of a theology of predestination. We cannot escape the fact that we live in a contingent universe. Nothing is determined--cosmic evolution is an open process. As reflexively conscious beings, we have reached the stage in cosmic evolution where we are able to act as creative agents in the whole process. We may not be able to have Gladden's confi-
dence in the divine unfolding of the kingdom of God through evolution, but we can at least recognize the invaluable role that an ecologically sound theology of social solidarity can play in shaping the future.

Templeton Prize-winning Australian scientist and process theologian, Charles Birch, makes the point that since both science and religion are moving away from substantialist presuppositions—recognizing that they use different models for explaining the world—it may be that they will “find new depth in each other’s endeavours.” Moreover, one “objective of theology is to bring science and religion closer together in a ‘deeper religion and a more subtle science.’”

It is certainly true that theology can no longer claim to read directly the divine revelation in the book of nature; the truth about nature is best approached through the application of scientific methodology. Theologies are constructed to serve a hermeneutical purpose. They exist as cathedrals of the mind; places where spiritual, aesthetic, and moral concerns can be crafted and sent forth into the world. Washington Gladden’s evolutionary theology of social solidarity is one such example. It has the distinct virtue of providing a meaningful social vision for humanity that directly challenges the destructive acids of atomistic egoism, cynicism, and despair:

“Human beings are made to live together upon this planet and to find in mutual cooperation a large part of the good of being. The law of life is therefore love or good will. They are sharers in one another’s welfare; each one is largely dependent for his happiness on the well being and well doing of his fellows. This is the organic law of human society....”

The human factor: Hefner on evolution, culture, and religion

Philip Hefner’s *The Human Factor* is a major work of constructive theology. It encompasses a breadth and depth of learning that is impossible to convey in such a short summary. Starting with biocultural evolution and leading to a balanced ecological view of humans as co-creators, it offers perhaps the closest theological counterpart to the work of Eric Chaisson.

Following the same perspective as Chaisson, Hefner writes:

The picture of cosmic evolution contains, therefore, at least four segments: Big Bang cosmology, biological evolution, human ontogeny, and cultural development. Although each of these is distinct from the others in its particular laws of unfolding, more and more observers are recognizing that the several phases can be considered as portions or dimensions of one cosmic evolution.

He wants to construct a framework of meaning that locates the human person within the whole scope of cosmic evolution. This task of explication he holds to be primarily that of the theologian, although philosophers, scientists, artists, and poets each have a role to play in the formation of a meaningful symbolic cultural world. However, he is quick to point out the past failures of theology to work constructively with the sciences in articulating a cogent worldview:

Theology has far to go if it is to engage the possibilities offered by the sciences for articulating the Christian insights in a way that is intelligible, let alone cogent, within the configurations of mind that have been nurtured in the bosom of the modern sciences.

His theology (which he proposes as a fully fledged and testable theory after the analysis of Imre Lakatos) is an attempt to address this problem and thus contribute to the reconciliation between science and religion.

The work commences with the question, “Who are human beings?” And the core proposal for his answer is: “Human beings are God’s created co-creators whose purpose is to be the agency, acting in freedom, to birth the future that is most wholesome for the nature that has birthed us—the nature that is not only our own genetic heritage, but also the entire human community and the evolutionary and ecological reality in which and to which we belong. Exercising this agency is said to be God’s will for humans.” Moreover, the evolutionary process is the conditioning matrix that produced the human being as a more complex phase in the emergence of a free creation. This free creation—an open-ended process—has come about because
humans have evolved as reflexively conscious creatures and have developed cultures and technologies that now directly influence the on-going process of creation. Human consciousness is nothing short of the cosmos becoming conscious of itself.

Hefner reduces his theological theory to three basic points:

1. The human being is created by God to be a co-creator in the creation that God has brought into being and for which God has purposes.

2. The conditioning matrix that has produced the human being—the evolutionary process—is God's process of bringing into being a creature who represents the creation's zone of a new stage of freedom and who therefore is crucial for the emergence of a free creation.

3. The freedom that marks the created co-creator and its culture is an instrumentality of God for enabling the creation (consisting of the evolutionary past of genetic and cultural inheritance as well as the contemporary ecosystem) to participate in the intentional fulfillment of God's purposes.

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Hefner goes to considerable lengths to ground his theological theory and the created co-creator in the natural evolutionary order. As he puts it:

This creature not only creates its meanings, grounded in its experience of the natural world, but it has adapted so successfully to its global ecosystem that it has been able to impose an overlay upon the pre- and nonhuman systems of nature, such as those systems are thoroughly conditioned by human cultural inputs. All this is rooted in the evolved human creature, who is within itself a symbiosis of genes and culture, and who through its culture continually seeks to bring its genes and the rest of its environment into conditions of existence that only the culture-forming co-creator would ever dream of. The point is that nature should function, in large part, as Homo sapiens desires it to function, so as to become in fact the world that the created co-creator believes is most desirable for its existence.

This awesome responsibility has now become ours, and in order to resist the temptation to anthropocentrism, the created co-creator needs to work at developing an appropriate ethics that takes into account the entire planetary ecosystem.

Justice for the whole creation: Daly and Cobb

In their influential book—synthesizing political, economic, and theological concerns—Herman Daly and John Cobb have called for a "biospheric vision." By this they mean, first of all, a paradigm shift away from the contemporary economic understanding of human beings as Homo economicus. Homo economicus is the assumption that discrete individuals exercise rational choice so as to maximize their self-interest. In terms of social policy, this economic view has led to the breakdown of the welfare state (a particular politico-economic organization of the common weal) and the resurgence of Social Darwinism, taking us back again to the domain of conflict in which Gladden's ideas emerged. As Daly and Cobb put it, "Economists typically identify intelligent pursuit of private gain with rationality, thus implying that other modes of behavior are not rational. These modes include other-regarding behavior and actions directed to the public good."

This narrow view of the human person is not merely mistaken—failing to take into account all the socializing influences that persist in an individual’s life—but it is extremely dangerous from the perspective of enhancing the ecology of the social and environmental worlds. Rather than building on the ecological vision implicit within evolution, the Homo economicus is a throwback to the dualistic pre-evolutionary doctrine of dominion, in which human beings are created as distinct entities to lord it over the rest of creation. For Daly and

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Cobb (as process theologians), stewardship of the earth starts by recognizing *Homo economicus* as "person-in-community." 45

A “biospheric vision” recognizes that anthropocentric dualism is an inadequate framework within which to build a global ethics. “The point here is.” Daly and Cobb remind us, “that when economists deal with living things, and especially with large systems of living things, they cannot think of these only as resources for fueling the human economy. Instead, the human economy needs to be shaped with the health of the biosphere in view.” 46 The biosphere is a society of interrelatedness, a society of societies: “To view human relations with other living things in the context of a community of communities is to move into a biospheric vision.” 47 Evolution clearly provides epistemic grounds for an ethics that moves us from the flawed notions of atomism and anthropocentric dualism to “a homeostatic one serving the common goal of individual and communal survival and growth.” 48

Daly and Cobb stress the need to move from *chrematistics* to *oikonomia*. In doing so, they borrow a distinction made by Aristotle. Chrematistics “can be defined as the branch of political economy relating to the manipulation of property and wealth so as to maximize short-term monetary exchange value to the owner. *Oikonomia*, by contrast, is the management of the household so as to increase its use value to all members of the household over the long run. If we expand the scope of the household to include the larger community of the land, of shared values, resources, biomes, institutions, language, and history, then we have a good definition of “economics for community.” 49 Oikonomia does not lend itself to the kind of reductionistic forms of rationalism evident in what we have come to know as economic rationalism. Economic rationalism (which is closely allied to social Darwinist policies) is perhaps the most obvious example of chrematistic thinking in political economy. Oikonomia is as much concerned with social capital as it is with monetary capital. Indeed, it sees the economy as simply one means by which benefits might be generated for the community as a whole, rather than reducing all social interactions to questions of instrumental economic rationalities.

Daly and Cobb—as Christian theists—acknowledge that the biospheric vision is not only consistent with evolution (to coin a metaphor: we are all cut from the same cloth), but also with a rich religious understanding of the cosmos. For instance, many traditional religious worldviews have expressed the deep sacred ties that exist between all living entities; and in the case of the Australian Aboriginal “dreamtime,” these sacred links extend to the land, sea, and air. Daly and Cobb agree, however, that modern Western Christianity has often been opposed to biospheric thinking, given that it has readily been expressed in terms of anthropocentric dualism. 50 Nevertheless, the biospheric vision “is richly inclusive and transformative of human perceptions. Once community with other living things is truly experienced and appreciated, aspects of our thinking and our way of life previously taken for granted become unacceptable. In short it is in itself a religious vision. The rise of this vision, especially through the influence of ecological and feminist sensibilities, has been one of the great advances

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of this generation. Only as the vision deepens and spreads is there hope for making the changes that are required....” 51

The biospheric vision of “deep ecology” is therefore intimately related to evolution for its epistemological grounding, and to religious sensibilities for its ethics of social

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solidarity. The task of a theology of social solidarity is to bring these two facets—the epistemological and the ethical—together.

**Conclusion: Towards a “Planetary Theology” in the reconciliation between science and religion**

Darwinian evolution, in indicating that all species of earthly life are related and that all arose from ordinary matter, made it clear that there is no wall dividing us from our fellow creatures on earth, or from the planet that gave us all life— that we are such stuff as worlds are made of. —Timothy Ferris

The links between social solidarity and evolution extend beyond the fact that life is “all of a piece.” In a real sense, our very survival depends upon our mutual cooperation. We are therefore inextricably bound together in a common destiny.

Jürgen Moltmann reminds us from a theological perspective of what Eric Chaisson has to say from a scientific one—that evolution implies an open-ended view of the creation:

Today, the direct continuation of the evolution that led to the origin of the human species on earth lies in the hands of human beings themselves. They can either destroy this stage of evolution, or they can organize themselves into a higher form of common living than before, and advance evolution further.

Indeed, one might even find within this open-ended, contingent view of cosmic evolution the intimations of a democratic social order. Moltmann argues that as an open system, the universe is both a participatory system and an anticipatory one: “It would seem that the universe contains within itself the trend towards the universal symbiosis of all systems of life and matter.” As an anticipatory system, the universe is capable of self-transcendence, which has become possible through its having evolved reflexively conscious creatures, capable of being co-workers in the process of evolution.

To conclude then, many of the themes already covered in this essay have been summed up in the profound liberation theology of Sri Lankan theologian Tissa Balasuriya. A Roman Catholic, he speaks of a “planetary theology” and the need for a holistic perspective to tackle social, economic, and environmental problems from a world-systems perspective. Indeed, “[t]he present world system of human relationships did not arise in a day or a generation. It is the result of a protracted historical evolution of the human race in its relationship to nature, of different peoples and cultures to one another, of the sexes to each other.” He concludes:

The spirituality of the Christian must therefore include a love of the whole of humanity in its return to the Creator; it also requires a love and service of the universe, and of our planet earth. Christian spirituality has to be open to the good in all others whatever their religion or ideology, for Christ is all in all. Christians have to be both radical and conservative—radical in order to participate in the revolutionary changes that reshape our societies for the better and conservative in order to preserve what is valuable in all ages and cultures. They are called on to conserve the radicality of the revelation in Jesus Christ. This is an important challenge to all believers in Christ, especially those in the Western countries and the local elites of poor nations. A rethinking of Christian theology is essential today for both the personal fulfillment of each unique human person and the global survival and evolution of the human race and of the universe.

As we have seen throughout this essay, both theology and science have important roles to play in the formation of a new “planetary ethics.” May it be that the reconciliation between these two noble disciplines will lead humankind to a fuller realization of its co-creative task in the evolution of the cosmos.

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——. Burning Questions of the Life that Now is and of That Which is to Come. New York: Century, 1892.


Endnotes:


2Among the many one might think of: T. F. Torrance, Karl Schmitz-Moormann, Arthur Peacocke, John Polkinghorne, and Charles Birch.

3An admirable account of the rise of this fundamentalist movement is given by Numbers.

4Peacocke, Theology for a Scientific Age, p. 5.


6Ibid., p. 471.

7Peacocke, Creation and the World of Science, p. 305.

8Kaufman, p. 105.

"In the earlier part of this century the Harvard geologist, Kirtley Mather, touched rather presciently on this point: “To discover the moral quality of the universe, man must be vividly aware not only of those things which have time-space relations, but also of those values which transcend such relations. That discovery is possible only through the cooperative endeavor of those who strive to utilize all potential capabilities of mankind. Toward this goal, science and religion are advancing hand in hand.” Mather, p. 156.

9Chaisson, Cosmic Evolution, p. 38.

10Chaisson believes that the Life Era heralds a whole new direction for cosmic evolution since human technology actually begins to influence the future. “Because technology, for all its pitfalls, enables life to begin to control matter, much as matter evolved to control radiative energy more than ten billion years ago. As such, matter is now losing its total dominance, at least at those isolated residences of technical competence. This change, from matter-dominance to life-dominance, I claim is the second of two preeminent events in the history of the Universe.” Chaisson, “Our Cosmic Heritage,” p. 473.
In his book, *A Common Faith*, John Dewey foreshadows the emergence of humanistic religious ideals: “It is widely supposed that a person who does not accept any religion is thereby shown to be a nonreligious person. Yet it is conceivable that the present depression in religion is closely connected with the fact that religions now prevent, because of their weight of historic encumbrances, the religious quality of experience from coming into consciousness and finding the expression that is appropriate to present conditions, intellectual and moral.... I believe that many persons are so repelled from what exists as a religion by its intellectual and moral implications, that they are not even aware of attitudes in themselves that if they came to fruition would be genuinely religious” (p. 9).

What is needed is to “emancipate the religious quality from encumbrances that now smother or limit it...” (p. 10). Moreover, “[w]e who now live are parts of a humanity that extends into the remote past, a humanity that has interacted with nature. The things in civilization we most prize are not of ourselves. They exist by grace of the doings and sufferings of the continuous human community in which we are a link. Ours is the responsibility of conserving, transmitting, rectifying and expanding the heritage of values we have received that those who come after us may receive it more solid and secure, more widely accessible and more generously shared than we have received it. Here are all the elements for a religious faith that shall not be confined to sect, class, or race. Such a faith has always been implicitly the common faith of mankind. It remains to make it explicit and militant” (p. 87). This is not unlike what Chaisson is trying to do.

Arthur Peacocke addresses himself to issues similar to Chaisson’s, albeit from a theological perspective, in a chapter entitled, “Natural Human Being: The Perspectives of the Sciences and Their Implications for Theology,” *Theology for a Scientific Age*, pp. 213-54.

Whitehead, p. 219.

Kaufman, p. 32.


Hofstadter, pp. 88-89.

Dorien, p. 19

Dorn, p. 168.

Wish, p. 327.

Rauschenbusch, p. 90.


See, in particular, his *Social Facts and Forces*. This book represents his major contribution to the emerging discipline of sociology in the United States. Many of his ideas about social solidarity in industrial society are quite like those outlined by Emile Durkheim’s “organic solidarity.”

Charles Birch deals with this same problem from a contemporary perspective, and his answer is not unlike that of Gladden’s: “The fragmentation of knowledge has its far-reaching implications. It has produced destructive conflict between individuals, disciplines, ideologies and nations. It has helped to plunge the world into the global crisis of management in which we seem unable to utilize the world’s resources without massive environmental deterioration. As we attempt to save ourselves we are in danger of losing the world. The problems of global management are all connected. You can no longer do only one thing. Resource shortages, unemployment, inflation, environmental deterioration, population explosion and crime are all interconnected. This network of problems won’t be solved by any one expert or any number of experts. It is one problem and has to be tackled as one. Experts can’t do that because they have tunnel vision. What is needed is a panoramic view.” Birch, p. 140.


This perspective is quite different from the one proposed by social Darwinists—where only the fit may survive. It is not surprising to see this view held most strongly by people inclined towards economic rationalism. Their worldview grew out of the Enlightenment’s fascination with a mechanical universe, and as a consequence they find it extremely difficult to see the world from a holistic (ecological) perspective. Because they see evolution from the perspective of the many parts, they are led to believe that it involves merely a competition in which the fittest survive the process of natural selection. This, however, is not the tive of the whole is a history of gains through the accumulation of more and more complex interrelations between cooperating systems. See Dawkins.

51Moltmann, p. 196.
52Ibid., p. 205.
53Balasuriya, p. 17.
54Ibid., pp. 191-92.

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