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REFLECTION ON MODES OF FUTURE THOUGHT

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Modes of Future Thought: Can strategic concepts move beyond ideology? Political Ideologies and “Global Thought”: Can there be a Synthesis of Scientific Theories and Spiritual Traditions?

Big History encounters a universe’s movement into greater complexity rather than its entropy. We are engaged in studying the great difficulty and limitedness with which such an apparent anomaly occurs. Our own biosphere, which, following the thought of Panov¹ and others, includes human civilisations and technologies, is one island of this increasing complexity. Such complexity brings with it fragility and vulnerability, and this is a theme that should be of special interest to us, as our own biosphere is at the point of a singularity which must be examined in all earnestness.

1. Panov, Alexander D., Singularity of Evolution & Post-Singular Development (2011, unpublished).

SINGULARITY AND MODELS

A Definition

The term “singularity” will be defined in different ways by some of the disciplines that speak at this conference. We all agree, however, that our biosphere is at a critical point, which we generally refer to as a “singularity.” In terms of the overall subject of Big History, a singularity is a convergence of compound crises on a global scale. For the context of this paper, we will define the “singularity” as a crisis of transition from Axial I and Axial II, into what we will posit as the transition into a third Axial Era. Here, “singularity” designates the critical point in a phase transition which creates a structural conflict among differing premises for the conceptualization, interpretation and expression of systems. With changes in technologies, political and social theories and structures, there is a necessary dislocation that is often lengthy and subtle, but nevertheless dramatic. Since mankind generally operates within the framework of “models of reality” rather than a concrete reality, we will deal with the concept of these models.

Models and Models of Reality

Since we will be using the term “models of reality” and “models” let us offer a definition of the

manner in which we are using them. Models may be used as constructed metaphors for expressing meaning beneath surface appearances.

Models help us create a common ground and vocabulary to enable conversation, providing an economy of expression. A specialised model can make it possible to communicate more quickly and smoothly once its meaning has been agreed upon (not without built in hazards, of course). A carefully developed model gives us the common ground on which dialogue and consensus may occur. Models also give us a base upon which to build and develop working concepts and make predictions.

Models of reality must be seen on more than one level. A model may represent something we believe to be true based on the best information available to us at a given time and place but which are subject and open to change as new information, experience and knowledge appear. This helps us to maintain flexibility, avoid ossified perspectives and respond in an appropriate and creative manner to changing circumstances and new developments.

Models are also used to express concepts or constructs the explication of which exceeds ordinary language. An example of this is the use of mathematical formalisms in physics, in the words of physicist Werner Heisenberg who says of quantum physics that “*we have no framework for correlating*

the mathematical symbols of it with the concepts of our human language, nor can we satisfactorily discuss atoms in normal language.”

In the context of Big History, models are educated presumptions upon which we hope to base predictions, hopefully after having reached a general consensus on their meaning.

Models of reality are also used, unfortunately, to form ideologies or to dogmatize ideas. This can create sometimes critical conflicts with new discoveries and expanded understandings in every field. We saw an example of the latter in the trial of Galileo. Moreover, Models which rely too much on science and do not have sufficient regard for culture and various world-views and spiritual traditions can create not only a mechanistic and dehumanizing view of humanity, but can render predictive efforts vain and undependable. Certainly our considerations about these matters should not be merely Eurocentric, but should embrace as many dimensions as possible, which is one of the basic premises of “Big History.”

I find Ortega’s definition of “theorems” and his limitation to them useful in explaining the use of models:

Theorems [models of reality] are imaginary figures with contours of geometric neatness. But reality never exactly

coincides with theorems. And yet there is no other manner of understanding reality than to fit, as best we can, its perpetually shifting shapes into such prefabricated molds as our imagination produces. Theorems allow us to take our bearings in the chaos of reality. They may even supply the means to determine the discrepancy between reality and the cobweb of our ideas.²

2. Jose Ortega y Gasset, *Concord and Liberty*. (The Norton Library, N.Y., 1963. Tr. Helene Weyl) pp.35-36

OUR CONTEXT OF BIG HISTORY

The history of all that exists is written in subatomic particles and deciphered by physicists. The long-term history of our own species is also written in our DNA and genes, and deciphered by the appropriate fields of science. Archaeologists and geologists add the textures and colours to the picture. There is an advantage to the history written in subatomic particles, as David Helfand says, “Atoms are not culturally biased as human historians are.”³ History also comes to us through written texts, inscriptions, myths and traditions. All of these have their own particular place and value.

So many sciences and approaches to the history of mankind, the earth, indeed the universe, are focussed on the effort to establish these stories that the past is continuously becoming more clarified. Nevertheless, the past is a foundation, not a destination.

We are in the midst of a “singularity” which we defined above. Part of our effort here, and in Big History in general, is to reflect on the nature and roots of this singularity, as defined by each of the speakers at this conference, coordinate our study and

3. Helfand, David J., *The Physics of History* (The Teaching Company, 2009) p.1.

analysis of it and, together as a collective of disciplines, project into the future. Big History is a phenomenon rather than a discipline. It has no boundaries and is limited by no “compartments.” It takes us from the Prime Singularity, through the present and into the future. The power of Big History lies in the coordination of all disciplines, integrating or melding them in such a way that we uncover a more complete and profound meaning than each alone could manifest.

We are projecting forward up to 2045, though we might suggest looking toward 2050 when the present population of the earth will have doubled, exacerbating many of the crises we are analysing today.

Reality at all levels and in every dimension is a mystery. I will not suggest that the world we experience with our own senses is not reality; nevertheless, what we perceive is the surface of reality, which is penetrated only with great effort over time. The more deeply we penetrate into this perceived reality, the greater the mystery becomes.

As with every human excursion into the nebulous realm of reality, we can at best create models of systems and seek to make predictions based upon them. We cannot function without “models.” The complexity of systems requires a model dependent view of reality, and all our projec-

tions into the future are based on models of systems. It is important to realise this, and vital that our models be kept flexible, resilient and able to respond rather than react. Models of reality that become rigid and narrow generally collapse into erroneous ideologies about reality, and this can lead to a doctrinalized ignorance, a “systems failure” and often to cruelty and violence. The economic near-collapse in America during 2008- 2009 was, to a large degree, the result of a false model that had become an ideology of deregulation and the withdrawal of governmental oversight.

Aside from predictive models for economics, other models must relate to ecological systems, financial and management systems, as well as interactive models for governmental jurisdictions and communities. Our work is to integrate the models and elucidate the interdependence of all these systems. Without predictive intervention we are faced with a gradual entropic implosion of economic and social structures. We must, however, always beware of distorted or preconceived models, particularly those which are self-serving or ideological.

Single or limited discipline models often suffer from cascading, in which results are projected and extrapolated as universals or as models of regularity and consistency. Such cascading inevita-

bly gives false results. What we mean here is that a model which proves accurate in one place and under one set of circumstances cannot necessarily be applied under other circumstances or in other places, nor can it give an accurate picture of the overall state of affairs at any given time. This can present serious distortions and false conclusions. In tracking pandemics or in food safety, for example, this could be disastrous. Not recognising the interdependence of complex systems is crippling and prevents both sound predictions and meaningful action. Dirk Helbing has conceived a comprehensive, computer based modelling and predictive programme that takes every possible discipline and force in our biosphere into account and synthesizes them. This produces a matrix for prediction and predictive interventions. It cannot, however, assure us that we will be aware of an impending major geo-catastrophe or other unheralded and unexpected asymmetry. Intersecting vulnerabilities are also difficult to predict.

In speaking of such predictive models, we would suggest that the Helbing System,⁴ which is

4. The brilliant Dr. Dirk Helbing has presented a theory of mass computer analysis and prediction, taking into account every discipline, force, event and power. He is an expert in stochastic processes and doubtless has worked this into his computer model proposal. The unpredictability of human emotions, especially when motivated by a defence of deeply held beliefs and values, would seem to be the main weakness in Helbing's system, as it must be in all predictive systems.

compelling, appears to have a weakness other than the ones mentioned above. This is one that ought to give us some humility in our efforts to be predictive and project into the future with over-confidence. The difficulty with forming predictive models is the fact that the whole model may be shattered by the unpredictable actions of a single, often non-nondescript, person or incident. When a deranged Serbian student stepped out of the shadows in Sarajevo on Vidovdan 1914, and fired his pistol he set off a cascade of events, long in the making, that ultimately led to two world wars, destroyed empires and changed the face of Europe and the world. Yet who today remembers Gavrilo Princip?⁵

In a singularity of compound crises such as those that encompass our world today, there is sufficient powder everywhere that a single, non-nondescript person or action lighting a fuse can set it to explode, collapsing the best formed models, predictions and plans. Bio and cyber technology are benign in and of themselves, but the more they develop, the more they are open to being used by some brilliant but deranged person to create a catastrophes far more serious than do those that cyber hackers or the people who take delight in creating computer viruses and causing havoc. The

5. Although, unfortunately, he is still considered a hero by some Serbs.

remote intervention in the Iranian nuclear programme by either America or Israel is an example of the possibilities. What could such a person do to an artificial intelligence system? These are all things that we in the Big History movement need to discuss among ourselves and others in seeking to construct predictive models.

We might be able to speak of a technological era but it would be foolish to presume a “Post-Religious” era or an era not profoundly affected by religio-political ideologies. Many of these have powerful impacts on economic, ecological, social and geopolitical prognoses. This impact appears in ways that are often unpredictable. It is as yet not possible to predict with accuracy the direction and flow of human emotions under sets of variable circumstances. When people are guided by powerful religio-political ideologies, such predictions are even more unstable and complex.

One of the ideological models that we must surely overcome is the notion that people who are in some way different from “us” can be defined as “the other.” There is no “the other,” there are only variations on a theme in the great symphony of humanity. If we accept the proposition that some human beings are “the other,” by which one always means “inferior” or “defective,” then we become part of the crisis rather than the solution. We are, all together, related

organically to every star that lights the heavens, every planet that circles every sun, every moon, every asteroid, every comet that arouses our wonder and every meteor that falls from our sky. Resolving our critical singularity depends, in part, on our realising this truth and convincing mankind that it is so.

Science and other disciplines are quite capable of developing ideologies that can cause their experts to make biased conclusions. Science alone cannot bring about a greater potential for unity of understanding and purpose. This is why Big History seeks to encompass so many disciplines and give consideration to so many forces and energies. Spiritual traditions, from the aboriginal to the most contemporary, are certainly among these forces and energies.

MODELS OF REALITY AS SOURCES OF CONFLICT

In the list of subjects for discussion at this conference, I had chosen aspects of two of them, since they are intertwined. Modes of Future Thought: Can strategic concepts move beyond ideology? Political Ideologies and “Global Thought:” Can there be a Synthesis of Scientific Theories and Spiritual Traditions?

We would cautiously, and with caveats, suggest that the answer to both these questions is “yes, perhaps.” We have probabilistic brains, inclined to interpret probabilities, not certitudes. When certitudes are forced into theoretical dimensions, we end up forming strong ideologies, and ideologies are always crippling, never completely true, and often the sources of dissension and stagnation.

Can we, as individual thinkers or as a collective of disciplines, form strategic concepts that move beyond ideology? We can, we must, but will we? So much of the problem is that often we do not believe what we see, rather we see what we believe. Can we help each other move beyond this? We are gathered here today to test that possibility. If we are sincere and have any sense of the humility that we deserve, then we should be open to each other’s critiques so that we can help one another avoid developing

ideologies. Let us suggest that the biggest enemy of this endeavour is the human penchant for pettiness.

On a larger scale, strategic concepts can move beyond ideology, but only with considerable education and the kind of rethinking that generally takes place only as a result of some catastrophic event. During the Cold War, many science fiction stories and cinemas had the theme of an extraterrestrial threat that forced America and the Soviet Union into cooperation. Both of them had to yield in their ideologies for the sake of survival. In the course of such stories, the two sides discovered the equal humanity of each other.

We are not presently facing an extra-terrestrial threat (though one is possible), but rather one that we have planted ourselves, and of which we are now reaping the harvest. We are at a point at which we can still turn back the threat of an ecological collapse that is every bit as dangerous as a nuclear war. Even at the point of this crisis, nations are taking actions or avoiding them on the basis not only of national self interest, but also of religio-political ideologies.

Differing and often conflicting models are at work. If I am expected to make a prediction at this point, then I would suggest that we must come to the edge of a great precipice before there will be any consensus on meaningful actions and that even then,

national self-interests will hinder the common action necessary for resolute, cooperative action.

Overcoming political ideologies involves dislodging the deeply held national mythologies which have developed and been nurtured as part of the self-identity of every nation-state. The European Union is a bold experiment in this direction, an experiment which is being sorely tested and may fail. Can a lesser experiment of concrete global cooperation without integration succeed? Of course it is possible, but I would predict (since we are supposed to do so at this conference) that it is not probable. Indeed, I want to assert that in many areas in developed nations, the economic and social structures are in such dire condition, the gap between the wealthy and the poor so great and the middle class so disenfranchised and religio-political conflicts sufficiently intense that violence of a revolutionary nature is a real possibility.

The social injustice of consumer capitalism is becoming of such magnitude that some completely unexpected event could set off a great explosion. The present world economic system can survive only on over-consumption, and fewer and fewer citizens are financially able to fulfil this “obligation” and we can only consume so much for so long before there is little left to consume. Moreover, the population of the earth is increasing rapidly, but our

free market, consumerist system presses for technological innovations that will leave more and more people unemployed. The economic system needs to evolve to something more rational, but I predict that common greed and power lust will hinder this until a catastrophic meltdown occurs. Consumer capitalism is supported by strongly held ideological formations.

Let us turn to the second part of my subject, an area which, I submit, is the least predictable.

IS A SYNTHESIS OF SPIRITUAL TRADITIONS WITH SCIENTIFIC THEORY POSSIBLE?

As, perhaps, a caveat, but certainly as a clarification: as an Orthodox Christian, I deeply believe in the Orthodox Christian faith and its doctrines. What I am presenting here is strictly in the context of the “Big History” project. In the context of our own focus as Orthodox Christians, I make this presentation as a way of discussing the problems facing us in this century, in this era.

We are well aware that when one begins a discussion of the taboo subject of religion, one is walking on thin ice over a pit of quicksand. Religion and culture are powerful forces in our biosphere, and one can ignore this aspect of the world only to the detriment of all that Big History is attempting to accomplish. In speaking of spiritual traditions, we should also have culture in mind. Matters of spiritual traditions and cultural concerns are intense aspects of our world, and large vacuums in our thought and projections would be left were these not included as integral aspects of our efforts.

With regard to spiritual traditions, there is good reason to believe that there can be a symbiosis with scientific theories. My own efforts in this direction, aside from several essays and lectures, are

my two books, *Evidence of Things Not Seen* and *On the Neurobiology of "Sin."*⁶

One must be much more cautious with regard to religious bodies, many of which no longer have a strong consciousness of their own spiritual traditions. Such creative forces have been overgrown with rules, regulations, laws, ideologies, power structures and other hubris. As an example, while we can appreciate the advanced cosmology in the Hindu tradition, it is difficult to separate it from the caste structure. When we take the cosmology as a spiritual tradition that transcends the system itself, we can certainly find a complementarity. There are similar qualities in many spiritual traditions. In some traditions, spirituality is based in the concepts of energy and light, and the idea that energy is about relationships (as, in fact, it is in physics). This fact and the common use of *theoria* in both Orthodox spiritual tradition⁷ and quantum theory clearly invites a complementarity. This is only possible when the spiritual tradition in mind is maintained with some integrity.

How is it that a spiritual tradition can lose its

6. Synaxis Press (Dewdney, B.C., 2005; 2010 respectively)

7. In Orthodox Christian usage, the idea of "theoria" includes "vision" and "revelation." In the Hellenic (where the word and concept originated, it essentially means contemplation in a disciplined manner, and the discoveries or concepts that arise from that.

manifestation as a life-giving landscape of meaning and collapse into a religio-political ideology? The same way that science or any other discipline can follow a similar path and forfeit its integrity. Entities concerned with power, profits and corporatism can preempt both spiritual traditions and science to foster their own ends. Governments areas adept at manipulating science as they are and subverting religions.

In both cases, for religion and science, we need to remember that when you dance with Caesar, Caesar always leads. Spiritual traditions, however, are often reduced by the same enemy we mentioned above – pettiness. A penchant for overlaying an original synthesis with a super-structure of abstractions, with concepts of an “absolutes” is a danger to both science and spiritual traditions.

The interweaving of the religious systems into the national mythos of a nation contributes to undermining the actual spiritual tradition and shifting the religion into a component of religio-political ideology. The greatest civilisations are capable of great injustices and cruelties, and both the misuse of science and religious ideology is capable of the same. Combine the two into a national mythic ideology, and one has a powerful force for violence and injustice.

Left intact, as a formation of a deep human

intuition, spiritual traditions could very well form a symbiosis with scientific theory, and greater harmony in the efforts to stabilise our world can be attained by a synergy between science and spiritual traditions. There are some dimensions which both together can provide but which neither can offer alone. The concepts of human rights, social justice and an egalitarian ethic, for example, were elucidated by the great religious “refuseniks,” or, as Robert Bellah⁸ calls them, “renouncers,” of the First Axial Era, and they drew their ideas from the best of their spiritual traditions, which generally have transcended the outward religious structures themselves. From Confucius to Zarathustra, Isaiah and Joel to Hesiod, the spiritual traditions of that great epoch shaped the theories of natural rights, responsibilities to the defenceless and destitute, a concept of human equality, and social justice. It has taken centuries, wars and revolutions for many of these concepts to be realised, and it remains that part of our efforts to resolve the crises we speak of rests in breaking down ideological boundaries and completing this great task.

If these traditions can be brought out of the hobbles and leg-irons of ideologies and absolutes and find their transcendent spiritual plane and

8. Bellah, Robert N., *Religion in Human Evolution* (Belknap-Harvard, Cambridge, 2011) p.573

content once more, then they can be of great service in helping to resolve the confluence of crises in which we find ourselves, and assist in moving us into the future with more hope. Personhood and interpersonal relationships are at the heart of many spiritual traditions, and such concepts can help bond us together and give us common ground for working out existential crises. Being freed of ideologies and antique models of reality, they can form a symbiosis with scientific theory that is creative and which satisfies some of the deepest psychological needs of mankind at the same time.

The first caveat with regard to religious bodies is that, in systems which are highly structured and internally considered to be “absolutes,” models are often built on preconceptions and outdated understandings or information, and manipulated in order to certify them, often even in the face of clear proof that they are untrue. This is a fault found in all systems. “Absolute” is a synonym for tyranny, not for truth. The conflicts between science and religion, and between science and political ideologies appear to always be interrelated in some manner.

I submit that such conflicts are the result of a combination of inflexible models of reality and common fear. Anxiety and fear are sources of ideology and motivators for its defence. In encountering religio-political systems, we are almost

always encountering deep-structural fear and anxieties, and we should be aware of this. When erroneous models of reality are called into question and doubt is created about them, we should remember that the greater the doubt, the stronger the impetus for advocates to fall back on the preconceived ideas and rigid ideological thinking. These latter two projections may help to explain why religio-political ideologies have been at the root of so much violence, persecution and human destruction in much of the world.

Nevertheless, in any integrated curriculum focussed on Big History, it is important to include the study and analysis of the development and influence of religion and political theory. Let us suggest only two reasons for this inclusion. First and most immediate to the singularity we have defined is the inevitable entanglement of religious and political ideology. This is a symbiosis which must be encountered and taken into consideration in all predictive efforts.

Many of the “unpredictables” in the unfolding of world events and “future history” will be framed in the realm of the religio-political, and will be driven by specific ideologies and inflexible models. It does not appear to us to be possible to fulfil the mandate of this conference, or of Big History in general, without a regard for these matters. The

possibility of one or two more theoretical theocracies being added to our geopolitical landscape in the near future should alert us even more urgently to this need to encounter such issues and factor them into our considerations.

The second aspect of our proposition is that the study of the development of religious systems demonstrates both commonalities and the degree to which borrowing and sharing of religio-political and philosophical concepts and ideas has moved among societies from the dawn of humanity. This has been especially true since the advent of writing, but shared myths and traditions have been handed down from the earliest human settlements. A crude form of globalisation, it would seem, has been with us from the dawn of human civilisations. Globalisation is an evolutionary process which is increasingly fed by shared crises. A symbiosis of spiritual tradition with scientific theory could help in promoting this Mondialisation in part by easing some of the anxieties and fear that arise from new knowledge and dramatic changes.

Religion continues to have a direct impact on geopolitics, economics and our responses to such phenomena as global warming. It is, therefore, important to study the sources and nature of the religio-political ideologies which have helped shape our singularity. Such ideologies must surely impact

upon both our struggles for the resolution of major issues and our predictive efforts. Some of these ideologies are manifested in a war against science, particularly in America, while others seek a complementarity between science and spiritual traditions. Our goal is to explore the most productive and creative ways to integrate the deeper role of spiritual systems in the shaping of our projection from our current singularity or event threshold. We contend that such systems cannot be ignored. Rather, they can be integrated into the scope of Big History in ways that utilise their gifts, overcome the rigidity of ideology and static models of reality, and offer them a more creative role in the unfolding that is before us. Religion is an integral part of our biosphere and it will continue to be so. Let me emphasize once more that one of the areas in our present world that is the most unpredictable and destabilising lies in that of religio-political systems.

The higher sphere of spiritual traditions associated with religious systems can undoubtedly form a symbiosis with scientific theory. Let me suggest that approaching the deeper spiritual concepts, and seeing them in relation to the great cosmic and ecological considerations of our new Axial Era offers an alternative to conflict. Cosmologist George Smoot offers a basis for the symbiosis of spiritual

traditions and scientific theory⁹:

The religious concept of creation flows from a sense of wonder at the existence of the universe and our place in it. The scientific concept of creation encompasses no less a sense of wonder: we are awed by the ultimate simplicity and power of the creativity in physical nature—and by its beauty on all scales. The origins of religion lie in the quest for making sense of the universe, our place in it, and natural phenomena. Many of us believe that our religion is divinely revealed. Without challenging religious tradition, science pursues the same quest, but with testable, predictive theory and in a more convincing manner, even when it is clearly offering models of reality, not professing to explicate reality itself.

It is up to the Big History movement to help develop this symbiosis. It is not going to be reasonable or productive to exclude it. We are framing our research in the context of Big History and of the

9. *Wrinkles in Time* (Morrow, 1993) p.297

singularity in which we find ourselves in this epoch.
We would hope to see our work incorporated into
the Big History movement.

TRANSITION

In my view, we are in a Third Axial Era. The first Axial Era was deeply concerned with the conflicts between permanence and change, the nature of personhood and questions of good and evil. That era was shaped in conflicts both philosophical and military. The quest for certainty and stability in the midst of change and violence, and an explanation of constructs such as good and evil, and the desire to make some sense of the pre-scientific world, meant that the conceptual formation would be essentially religious. Zarathustra was the godfather of this Axial Era and it was further represented by the thought of Hesiod and certain of the Hebrew prophets. They were concerned with social justice and the condition of ordinary people, and the actual duties and responsibilities of rulers.

The Second Axial era was similar in many respects, except that the conceptual bases were the development of science and the scientific method, as well as the beginning of the Renaissance era, which would slowly transform both the concepts of the natural order and of inter-human relations, leading ultimately to elementary democracy and the concept of human rights. It is my view that these transformations were substantial enough to be called a second Axial Era. If they were not, then they were certainly

the prelude to such a transformation. The era was not only motivated by new concepts in science, but the beginnings of new definitions of education and the gradual unfolding of transitions and political structures. As in the first Axial Era, the human condition was changing, and eventually it changed quite dramatically. There was a shift even in the mode of thinking, especially in Western Europe.

A THIRD AXIAL ERA ?

The advent of quantum physics changed the way we view reality and how we understand it. Allow me to repeat the words of physicist Werner Heisenberg, cited above, saying of quantum physics that “*we have no framework for correlating the mathematical symbols of it with the concepts of our human language, nor can we satisfactorily discuss atoms in normal language.*”

The evidence of reality upon which scientific exploration builds *models of reality* can only be expressed symbolically by a mathematical formalism, which might be the closest one can come to expressing in metaphor the great mysteries that are encountered but not resolved. This transition changed the way we view and understand reality. This transition would move slowly at first, but then as technology developed it began to move more quickly. It would change the way the universe itself is understood and the developing technology would slowly change the way people think about “reality,” about the cosmos and even about humanity.

In my view, this Era would fully manifest itself with the rise of the technologies which developed from the mid-20th century onward, and would bring us fully into a new Axial Era, in which technology itself would begin to shape the fundamental

concepts on which we operate.¹⁰ It would also begin the era in which the human impact upon the biosphere, the overall ecology of our planet would become so urgent that it would also impact our understanding of our relationship with the earth itself. Ultimately, it has had an impact on religion and spirituality, particularly going into the 21st century.¹¹

10. As a stunning example of this transition, demonstrating of one of Einstein's most famous equations, physicists have created matter from pure light for the very first time. (Live Science, 15 August, 2021)

11. One of the more negative such developments as being the movement called “trans-humanism.” It is clear how such a movement could have developed, but it is a disturbing development and one that will not soon disappear. In its own way, trans-humanism is a religion because it seeks a form of immortality. One Which has echoes of “The Matrix.”

SCIENCE AND SPIRITUAL TRADITIONS IN A NEW AXIAL ERA

It will be more productive if we can look into the future and seek commonalities and complementarities, including incorporating spiritual traditions and systems into “Big History” in order to come to understand the unfolding, radical changes that are taking place, and will only accelerate with each year.

Ironically, we find ourselves facing one of the major paradigms of the First Axial Era: the conflict between permanence and change. The idea of time as an emergent property and reality as being a state that is not constant, are among these “conflicts.”¹⁰ Our work here is “predictive,” and should deal with change with dynamic models, not static models of reality. The future will continue to distance itself from the past in ways that will be dramatically and violently resisted by some, enthusiastically embraced by others. Nevertheless, the change will come, and we need to anticipate it, looking into the future, and developing a viable concept of “futurology,” which is based in every discipline, power and force. Ideological conflicts are to occur and can interfere with this work, and they can be destructive.

The future of mankind, however, may well

depend on a concerted effort toward a multi-disciplined “futurology” which looks well into the future in a creative and dynamic way. Developments such as artificial intelligence and the discovery of life forms on other planets or moons of our own solar system, perhaps even sentient life-forms in other parts of the universe, are certain to occur and will create new ways of thinking and alternative conceptualisations of humanity. A creative harmony between scientific theory and spiritual traditions can have a stabilizing effect and should be an important aspect of futurology.

Big History can contribute to this aspect of the predictive dialogue. Spiritual traditions and the scientific theory can form a creative synthesis, but only when not hindered by either political or religious ideologies. The concept of a “singularity” also invokes a vision of an explosion of new developments in technology and in the way humans think and react, even evolutionary changes in the human brain. We should be looking into the new epoch that is already unfolding before us with both optimism and caution, and peer beyond 2045, beyond 2050, into long term implications for mankind and for our biosphere.

However, our unfolding ecological crisis can derail all such endeavours and bring us back into some form of “dark ages.” The singularity that we

arrive at may actually be one of catastrophe for the human race, and for all living things. Our “life-support system” itself is in danger of collapsing. If it does so, it will be a form of communal suicide carried out by arrogance, greed, avarice and ultimately even indifference. We are in real danger of destroying ourselves, or at best pushing ourselves into a primitive tribal struggle for survival.