Achieving Planetary Consciousnss; Reality, Reason, and Revelation.

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There are at least two fundamental ways of seeing the relationship between a whole and its parts. One way sees the whole as the sum of its parts (an explicit axiom of Euclid) and thus seeks to understand systems (wholes) by understanding each component (part) of the system. This is the tradition of Western thought, beginning with Greek atomism and ending with modern physics, which sees each physical system as a more-or-less complex configuration of elementary particles. In this view of reality, the worth or value of a system is almost directly proportional to its complexity.

Complex systems frequently have a *modular* structure, in which larger components of the system are themselves systems formed from smaller components. Modularity of structure allows for extreme specialization and individuation of the components of a system, while still maintaining the integrity of the system as a whole.

A typical (and in some ways prototypical) example of a modular system is the overall structure of the human body, which is a complex configuration of maybe a trillion cells. The modular organization of the body is reflected in the fact that the body's cells are not uniform, but highly specialized, where similarly specialized cells are grouped to form tissues, similar tissues form organs, similar organs form systems and the body itself is formed from the interaction of its sytems. Many social and political systems, especially in the West, also exhibit a modular structure.

There are both advantages and disadvantages to modular organization. The advantages are solidity, stability and the emergence, in extremely complex systems, of higher-order properties of the system, i.e., properties of the whole that do not exist in the parts. For example, the human body has the property of autonomous locomotion, but an individual cell or organ does not have this property. The disadvantages, especially in relation to modular social systems, are rigidity, stratification (e.g, social and economic classes), pyramidal, top-down authoritarianism, and a tendency to overspecialization or overindividualization of the components with resulting fragmentation, competition and conflict.

The understanding of a whole by an exhaustive analysis of its parts has, beginning with Descartes, led to modern science. But it

has also led to mechanism and materialism. The reasoning is simple: since God is clearly not present in the parts (i.e., the elementary particles) then He cannot be present in the whole since the whole is just the sum of its parts. Thus, either God does not exist at all or else He exists only metaphorically as a higher-order property of complex systems.

One can, of course believe, as Descartes did, that there is a spiritual realm of existence parallel to the realm of physical systems. But from the Cartesian viewpoint, this "other world" has no real explanatory value or relevance to the operation of material systems. In other words, if it makes us feel better, we may choose to believe that such a realm of spirit exists, but when it comes to undertanding the dynamics of a physical or social system, the spiritual realm is seen as essentially irrelevant. This is the famous Cartesian duality, which holds that the observable world can be explained in itself without reference to spiritual reality.

There is, however, another way of seeing the relationship between whole and part, one which gives rise to the notion of a *distributed system,* i.e., a system in which the whole is contained or reproduced within each part. In such a system, there is no individuality of the components; rather, each component is a representative of the whole.

The (proto)typical example of a distributed system is the human brain: Any given (neuronal) brain cell can assume any brain function and is thus a reflection of the brain as a whole. Indeed, it is now known that such mental functions as perception and memory are not localized in any specific part of the brain but are instantiated in a series of *clichés* by electroform waves, emitted by the thalamus, that sweep the entire brain at regular intervals of extemely short duration. This operational distribution gives optimal flexibility to brain functioning, but exists only because the brain is part of the modularly organized system of the entire body (in which, for example, the vital needs of brain cells are provided by the body's circulatory system). At the same time, the functioning of the modularly organized body is harmonized and unified only because it is directed by the distributively organized brain. Thus, both modular and distributed systems are needed, and the optimal functioning of each type of system depends on the other.

The fact that both modular and distributed systems are reconciled in the reality of the individual human being suggests that the evolution of authentic planetary consciousness may lie in a similar reconciliation of our views of the human social and spiritual reality. Indeed, the modular view of reality is fundamentally linear, whereas the distributive paradigm is nonlinear. The complementarity between modular and distributed

system thus offers a striking parallel with the current dialogue between linearity and non-linearity that is so central to modern systems theory. There is also a striking parallel with the complementarity of science and religion. Let us examine this in more detail.

Beginning with simple observations, science builds upwards towards more general and abstract descriptions of reality by incorporating isolated observations into an overall theoretical framework. In applying this method, science is deliberately minimalist in its theorizing –– avoiding gratuitous postulation of nonobservable entities –– and deliberately exact in its language –– insisting that every word or term have only one logical meaning. This latter condition, especially, gives an essential linearity to scientific language.

The original goal of science was, by persistent application of this method, to arrive at an exact, quantitative, and complete description of reality, thereby obviating the necessity for recourse to more metaphorical, qualitative, and nonlinear descriptions. However, the very pursuit of exactness in science has led to the startling conclusion that exactness and completeness are, in principle, incompatible: such scientifically established principles as Heisenberg indeterminancy and Gödel incompleteness have shown conclusively that there cannot ever exist an exact and complete description of reality in human language.

Thus, the success of scientific method in generating exact descriptions of various portions of reality has also shown that no exact description of total reality exists, and consequently that the original goal of modern science is inachievable. Science must be content with generating a multiplicity of exact, but partial descriptions of reality, much as we would shine a powerful flashlight in different directions on a dark night.[1]

In other words, objective reality is intrinsically and fundamentally nonlinear. Science can, in principle give us an exact, linearized description of any given part of reality, but never of the whole. Moreover, our experience of scientific method has shown that the same portion of reality can give rise to several different linearized descriptions or *models.* For example, cell biology and particle physics give two completely different linearized descriptions of the single nonlinear reality that is the human body.

Thus, by pursuing its initial programme of exactness and linearization, science has succeeded in establishing conclusively the nonlinear character of reality. The methodological consequence of this discovery has been the increasing use of qualitative methods in science. Indeed, in many instances the explicit, quantitative solution of even a simple system of nonlinear differential equations is not only extremely difficult (if not

impossible) but in fact may hardly yield more useful information than does the qualitative analysis of the phase-space portrait of the system.

Turning, now, to a consideration of revealed religion, and to the Bahá'í Revelation in particular, we find first of all that the Bahá'í Writings clearly affirm the nonlinear character of reality. Indeed, it was our colleague Erwin Laszlo who first pointed out that Bahá'u'lláh articulated these insights in the late 19th century, well before they were rediscovered by scientists such as Prigogine in the 1970's and 80's.

But in fact the Bahá'í Writings go further and affirm that the language of revelation is complementary to the language of science precisely in that revelation is a complete (but of course nonlinear) description of reality. In other words, revealed religion is not simply a redundant rearticulation in poetical terms of some of the insights of science: it is in itself a complete, nonlinear description of the structure of reality. Revelation is thus maximalist and top-down rather than minimalist and bottom-up like science. Here are some of the passages in which Bahá'u'lláh describes this characteristic of His Revelation.

> Every single letter proceeding from Our mouth is endowed with such regenerative power as to enable it to bring into existence a new creation —— a creation the magnitude of which is inscrutable to all save God. He verily hath knowledge of all things. It is in Our power, should We wish it . . . to infuse into every letter such a force as to empower it to unfold all the knowledge of past and future ages.[2]

> Within the treasury of Our Wisdom there lies unrevealed a knowledge, one word of which, if we chose to divulge it to mankind, would cause every human being to recognize the Manifestation of God and to acknowledge His omniscience, would enable every one to discover the secrets of all the sciences, and to attain so high a station as to find himself wholly independent of all past and future learning.[3]

That Bahá'u'lláh is speaking objectively and not in metaphorical hyperbole is made clear by such passages as the following:

> Know thou, moreover, that the Word of God —— exalted be His glory —— is higher and far superior to that which the senses can perceive, for it is sanctified from any property or substance. It transcendeth the limitations of known elements and is exalted above all the essential and recognized

> substances. . . . It is God's all-pervasive grace, from which all grace doth emanate. It is an entity far removed above all that hath been and shall be.[4]

Further, with regard to the completeness of His Revelation, Bahá'u'lláh has said, for example:

> Know assuredly that just as . . . the Word of God . . . endureth for ever, . . . its meaning can never be exhausted.[5]

It is important to stress here that, in spite of these and other strong statements which Bahá'u'lláh makes concerning the scope and power of His Revelation, He nevertheless taught that both science and religion are God-ordained sources of truth and that neither is alone sufficient for the achievement of planetary consciousness. Bahá'u'lláh stressed that Reality is one, that its laws are objective, and that a truly integrated worldview can emerge only through the creative dialogue between the linear exactness of science and the nonlinear completeness of revelation.[6]

Indeed, we should reflect that what we normally call progress does not represent a change in objective reality but rather a change in our human awareness of the structure of reality: the laws of aerodynamics or electromagnetism have existed throughout the history of mankind. But it is only through the discipline of scientific method that we have, in the modern period, become aware of these laws. In the same way, the power inherent in divine revelation has always existed, but, for our own good, God has ordained that this power be available to us only through the application of an appropriate spiritual and intellectual discipline. Though this discipline is essentially scientific in nature, as Shoghi Effendi has often stressed, it nonetheless has certain specific features related to the differences between the linear exactness of science and the nonlinear completeness of revelation.

I believe the time has now come when we must deliberately and consciously develop this disciplined approach to the study of the Revelation of Bahá'u'lláh if we are to make any substantial further progress in our evolution towards true planetary consciousness. Such a discipline is necessary to "decompress" or "linearize" the profound insights contained in the Bahá'í Writings, thereby making them available to practical application.

The urgent necessity for such a fresh approach to the challenges currently facing humanity has been aptly described by the Universal House of Justice in its recent statement on *The Prosperity of Humankind.* We therefore conclude with a brief citation from that document:

Since, then, the challenge is the empowerment of humankind through a vast increase in access to knowledge, the strategy that can make this possible must be constructed around an ongoing and intensifying dialogue between science and religion. . . . nothing less than insights generated by the creative interaction of the scientific and religious systems of knowledge can produce so fundamental a reorientation of habits and attitudes.[7]

Notes.

1. This analogy, and indeed the entire discussion, owe much to conversations with Professor Johann Silén, Senior Research Scientist with the Finnish Meterological Institute.

2. Bahá'u'lláh, quoted by Shoghi Effendi in *The World Order of Bahá'u'lláh,* Bahá'í Publishing Trust, Wilmette, 1991; 107.

3. Ibid.; 109.

4. Bahá'u'lláh, *Tablets of Bahá'u'lláh,* Bahá'í Publishing Trust, Wilmette, 1988; 140-141.

5. Bahá'u'lláh, *Gleanings from the Writings of Bahá'u'lláh,* Bahá'í Publishing Trust, Wilmette, 1983; 175.

6. This particular teaching would appear to be unique to the Bahá'í Faith: religious fundamentalists claim they have no need of science while scientistic materialists proclaim their independence from religion.

7. The Universal House of Justice, *The Prosperity of Humankind.,* Haifa, 1995.

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