Are We Close to a Theory of Energy Medicine?

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ABSTRACT

Critical phenomena offer an attractive new theoretical resource for biophysics. Physical instabilities result in fluctuations, the quantum properties of which can be applied to regulatory control mechanisms in living organisms with promising results. Many aspects of energy medicine can be scientifically modeled, in agreement with previous theoretical ideas and speculation, such as the existence of macroscopic quantum coherence in living systems. Light is shed on areas of complementary and alternative medicine (CAM) such as Ayurveda, naturopathy, and the nature and action of potentized medicines in homeopathy and other aspects of vibrational medicine.

INTRODUCTION

Much of energy medicine traces its origins to the traditional systems of medicine in Asia, such as Ayurveda and Traditional Chinese Medicine, and is far closer in spirit to these systems than to modern biomedicine. Bodeker (2001) points out that, rather than being based on chemistry, most concepts at the root of traditional medicine are physics concepts such as fields, and that to elucidate the whole subject area, what is needed is new physics. Similarly, Smith (1999, 2003) emphasizes that the gap between physick and physics is what really needs to be bridged.

This paper points to a new way of achieving these aims, while at the same time tying the new physics of physick back to the underlying biochemistry. It develops a way of presenting the concept of “subtle energy fields” (Tiller, 2001) in terms of an unusual quantum field, the quantized fluctuation field, based on theories of far-from-equilibrium thermodynamics of cycles of biochemical reactions, as occur in the regulation of living cells. Quantized fluctuation fields apply to all chemical molecules, becoming most relevant at critical or instability points.

Such fluctuation fields are well known; they have long been investigated at the critical points of thermodynamic systems such as magnets and fluids, and their quanta subjected to investigation by interactions with photons, neutrons, and electrons: their quantum field nature is well established. However, the far-reaching significance of their ubiquity in biosystems does not hitherto seem to have been appreciated.

The new physics and physical chemistry proposed here complements the other new physics presented by Smith (pp. 69–78), Liboff (pp. 41–47), Curtis and Hurtak (pp. 27–39), Rein (pp. 59–68), and other contributors to this most stimulating and exciting issue of The Journal of Alternative and Complementary Medicine. In no way should it be regarded as an alternative, in opposition to such developments. Indeed, later in the paper, we point to possible connections based on how the internal dynamics of DNA (Gariaev et al., 1994) may interact with the regulatory control mechanisms of DNA expression proposed here.

CRITICAL POINTS AND BIOLOGIC SYSTEMS

Let us therefore consider critical points in more detail. Critical points exhibit a rich variety of physics (Stanley, 1971) yet to be systematically applied to biologic systems. This paper proposes they have the potential to account for many unusual phenomena in complementary medicine, particularly in vibrational and energy medicine (Gerber, 2001).

Critical points occur in many complex physical systems at precise values of variables such as temperature, pressure, or chemical potential, at which a fundamental stability condition breaks down. Close to a critical point, the instability gives rise to fluctuations in the physical property that has become unstable. For the following reasons such critical point fluctuations hold rich possibilities for biology.
First, feedback control is well known to give rise to instability of the kind found at critical points; all living organisms have complex feedback control systems, which offer the potential for rich critical point phenomena (Prigogine and Stengers, 1974). Vibrational and energy medicine are thought to influence biologic control mechanisms, so the association is natural.

Two recent papers indicate that critical points may hold the key to theories of many disciplines in CAM. Torres (2002) models the action of potentized medicines in terms of critical points in networks, which possess analogous properties to instability points in chemical systems. He suggests that systems close to their critical points function more effectively. Weingärtner (2003) shows that the therapeutically active ingredient (TAI) of a potentized medicine must be transformed into some multiple of itself by the process of dilution.

Mathematical physics represents the dilution process by an operator, which expands or dilates the system in a continuous fashion: the dilatation operator. Also, if an operator transforms some function into a multiple of itself, that function is termed an eigenfunction of the operator. Thus, if the TAI is to be represented by some function in mathematical physics, it should be an eigenfunction of the dilatation operator.

This property is satisfied by mathematical functions at critical points: the physical instability results in fluctuations on all possible scales from the smallest to the largest, with the relevant atoms or molecules seeming to cooperate in a mysterious way. Such cooperative phenomena appear the same when the size of the system is rescaled (i.e., when expanded or dilated: they are said to obey scaling laws; see Hankey and Stanley, 1972).

Thus, Torres’ insight that critical points are involved in the action of potentized medicines, and Weingartner’s that the (ultra) dilution process can be represented by dilatation complement each other. At critical points, all physical functions satisfy Weingärtner’s condition. As eigenfunctions of the dilatation operator, critical point fluctuations are prime candidates for the TAI of all potentized medicines.

In confirmation, many properties of biologic systems obey scaling laws (Torres, 2001), which can best be understood if internal regulation processes involve critical phenomena. This paper suggests that regulatory control is naturally centered on critical points, with consequent increase in efficiency and precision of performance.

PHYSICS OF CRITICAL POINT FLUCTuations

As candidates to describe potentized medicines, critical point fluctuations possess two invaluable properties. First, they exist as quanta in their own right, obeying laws of quantum theory. Second, they can create observable transitions in complex systems operating near their critical points.

The first property applies to life itself. If, as Torres (2002) suggests, biologic systems function close to critical points, all living organisms would contain an abundance of such fluctuations. As quanta, quantized fluctuations could transfer their energy and organizing power from one system to another: a possible intermediary in theories of energy medicine. The way is opened for a radical new understanding of life on the quantum level: a microscopic theory of the so-called quantum mechanical body.

Quantized fluctuations possess high quantum coherence, the negentropy for which derives from the latent heat of the incipient phase transition. Their scaling property then results in a further important consequence: at large scales, the long-range coherence transforms them into high-temperature macroscopic wave functions, a phenomenon hypothesized by Smith (1998, 2000, and this issue, pp. 69–78) to explain the high negentropy observed in living systems. This provides a second, independent reason for quantized critical point fluctuations being valuable additions to biophysical theory.

PHASE TRANSITIONS AND CRITICAL POINTS

To maintain a distinct form, any physical system has to satisfy stability conditions. Under appropriate physical conditions, some systems exist in two phases such as liquid and gas, one of which is more ordered than the other. When ordering and disordering tendencies are in perfect dynamic balance, the system becomes unstable (e.g., at a specific temperature and pressure, the attractive forces organizing a fluid into the liquid phase, and the disordering energy of heat tending to vaporize it, make it impossible for it to assume either liquid or gaseous form). Its density becomes unstable; no longer observable in the quantum sense, fluctuating at all scales from the smallest to the largest over the full range of possible values.

In Order Out of Chaos, Prigogine and Stengers (1974) show that because living cells operate far from thermodynamic equilibrium, feedback loops in their biochemical reactions necessary for regulatory processes produce regions of instability. In such systems, the concentration of each chemical species has to be stable; a sharp change in concentration of any one molecule is analogous to a phase transition. Instability fluctuations between different phases of biologic function involve fluctuations of single chemical species, together with those to which it is metabolically connected.

Regulation often concerns genetic expression: two phases represent states where a gene is on or off, with differing concentrations of RNA and encoded protein. One such phase might be pathologic.

Glansdorff and Prigogine’s work on instability points in far-from-equilibrium thermodynamic systems (Glansdorff and Prigogine, 1971) can be expanded to include self-orga-
nized criticality (SOC) (Bak et al., 1988), suggesting that instability points are natural attractors for complex systems*: complex regulatory processes such as occur in living systems, naturally gravitate toward their critical points, operating under a regime termed critical regulation, thus justifying Torres (2002). Further away from a critical point, phase transitions will become harder to make: a living system may become stuck in a pathologic phase.

THE ACTION OF VIBRATIONAL MEDICINES

Addition of the correct critical point fluctuations from an external source, such as a potentized medicine will:

1. facilitate the system to return to the healthy phase
2. restore healthy critical regulation function.

Applied this way, quantized fluctuations model vibrational medicines (Gerber, 2001); they directly connect physick and physics (Smith, 2001, 2003). The work of Prigogine and collaborators can thus open the door to the following radical development in understanding biology and medicine:

quantized fluctuations can induce phase transitions between different phases of regulatory control processes in biological systems. If such a system is stuck in an undesirable, pathological phase, the induced phase transition may return the system to a healthy phase, effecting cure.

The idea that disease arises when the physiology makes a transition to a pathologic phase and is unable to make a transition back to the healthy phase first arose in a modern theory of Ayurvedic etiology (Hankey, 2001). These ideas both complement and substantiate that theory.

In this model, all vibrational medicines are quantized fluctuations, of mineral, vegetable, animal, mental, psychic, or spiritual origin. Succussion and dilution potentize the first; correct formulation of phytomedicines, the second; while the last four are all involved in various levels of healing. For example, in Maharishi Vedic Vibration Technology (Nader et al., 2001), use of a mantra develops the specific healing vibration within the technician’s nervous system, for transferal to the patient.

DERIVATION OF THE HOMEOPATHIC PRINCIPLE

Establishing that a potentized toxin will cure a pathology identical to the one it causes, the fundamental principle of homeopathy, is a compelling result of the new theory. Deriving it uses critical regulation as a secondary assumption. This means a biologic control system in a healthy condition will exhibit quantized fluctuations. A toxin, which destroys the activity of a regulatory system by coupling chemically to some part of it (such as the active center of an enzyme), will also destroy the quantized fluctuations of regulatory control.

The key to the derivation lies in establishing that fluctuations of one molecule will induce corresponding fluctuations in molecules with which it reacts chemically.* Chemical coupling between a toxin and a physiologic process therefore also enables quantized fluctuations of the toxin to create fluctuations in the regulatory system it poisons. If a pathology originates in failure of a function blocked by a particular toxin, so its symptoms mimic the toxin’s (i.e., it is homeopathic to it), then the toxin’s fluctuations will induce quantized fluctuations in the disabled control system, restoring its critical regulation, and its function Q.E.D.

IMPLICATIONS OF CRITICAL REGULATION FOR DNA RESONANCES

Gariaev’s (1994) discovery of electronic resonances in DNA, which may couple to acoustic resonances (see also Curtis and Hurtak, pp. 27–39) implies that under critical regulation, quantized fluctuations continuously switch DNA expression between on and off states at a quantum level. This process almost certainly creates superpositions of the on/off states, transforming their information states into quantum information states. If this is true, regulation of living cells functions according to the laws of quantum information: they function as quantum biocomputers.

Another equally important consequence of critical regulation is that the quantized fluctuations will couple to resonant acoustic vibrations, thus affecting the electronic resonances and their associated rf/microwave transmissions (Gariaev et al., 1994). The ideas presented by Curtis and Hurtak (pp. 27–39) result in a possible explanation for the observed effect of vibrational medicines on em frequencies at acupuncture points and vice versa (Smith, 2004).

STRATEGIES FOR IMPROVING HEALTH

The concept of critical regulation implies that good health depends on the power of the critical fluctuations in the physiology’s control systems. Any strategy that increases their power, such as rest, balancing activity, fresh foods containing active fluctuations et cetera, will improve health.

These strategies turn out to be identical to those of natur-
PATHOPHY, which aims to increase the power of the *vis viva* or life force. Comparison shows a detailed correspondence. Previously the *vis viva* has been discredited for lack of available theoretical tools to model it. Quantized fluctuations and critical regulation seem to be able to fill the gap.

**CONCLUSIONS**

The proposed chemical use of quantized fluctuations, combined with their application to biologic regulation, yield a vision of how to transform biology to include most modalities of vibrational medicine: a biophysical basis for a significant fraction of CAM. It agrees with Tiller’s (2001) picture of interrelated theoretical concepts, but with subtle energy fields exchanged with electromagnetic fields:

Function ↔ Structure ↔ Chemistry ↔ Subtle Energy Fields ↔ EM Fields

When combined with ideas of Curtis and Hurtak (2004), the foregoing gives hope that it may soon be possible to scientifically model a significant fraction of energy medicine. The author has expanded material to present in future issues of this Journal that will attempt to develop this vision in rigorous detail.

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