

# The Being/Brain Problem

Gordon Globus

## Abstract

The unresolved and seemingly unresolvable consciousness/brain and qualia/brain problems are bracketed in order to focus on the neglected Being/brain problem. How might our experience of Being—the very presencing of world—be explained in terms of brain functioning, without bringing in the miasma of consciousness and qualia? A thermodynamical theory of quantum brain dynamics (QBD) offers an answer. Thermofield QBD as developed here proposes dual quantum modes: 1) the  $\sim$ mode retains traces of past successful recognitions, and 2) a non- $\sim$  mode that expresses the current sensory input. The dual quantum modes share the vacuum state, which is their between. Ontological primacy goes not to the dual quantum modes but to their vacuum state between. Being is disclosed in the unique state of this entre-deux, the between-two in which the dual modes of QBD belong-together in a  $\sim$ -conjugate match. Philosophical implications are discussed.

**Key Words:** being, consciousness, dualism, Maya, monadology, qualia, quantum brain dynamics, thermofield dynamics

NeuroQuantology 2005;4: 256-263

## Introduction

Revolutionary quantum brain theory has been eager to tackle that most difficult problematic: consciousness and its relationship to brain functioning (Bernroider, 2003; Hameroff and Penrose, 2003; Hu and Wu, 2004; Penrose, 1994; Stapp, 1993; Vitiello, 2001, 2003). Consciousness is so peculiar for science, perhaps introducing peculiar quantum degrees of freedom into brain functioning will finally explain it. Although highly intriguing theories have been proposed, no consensus has emerged. The consciousness/q-brain problem, as a philosophical problem, has made no clear advance on the consciousness/brain problem.

What has not been thematized in this continuing stalemate is that the extremely revolutionary q-brain idea gets mixed with extremely classical conceptions on the consciousness side (essentially the tradition of metaphysics that stretches back to the Socratic philosophers in ancient Greece). On the face of it, prospects are dim for success,

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<sup>1</sup> Corresponding Address: Gordon Globus, 2990 Zurich Court, Laguna Beach, CA 92651, USA. E-mail: ggglobus@aol.com. Fax: 949 760 3671, Phone: 949 759 9515 (office). 949 275 1633 (cell)

given the history of failure, and even the willingness of some (Mc Ginn, 1991) to declare *Ignoramus et ignoramibus* ... we are ignorant and shall remain so. But what if the difficulty has been that consciousness is the wrong concept to link with q-brain functioning?

I have argued at length that continental postphenomenological ideas fit better with neuroquantology than consciousness does (Globus 2003). The key problematic for present purposes is not “consciousness” but “Being,” presence as such, what *is* to our immediate acquaintance, the quotidian world appearances that we encounter right *now*. The present strategy is to consider the relationship between Being and the q-brain, instead of the conventional consciousness and q-brain.

A particular quantum brain theoretical account that fits with postphenomenology is a version of Vitiello's (1995, 2001, 2003, 2004) dual mode quantum brain dynamics. Dual mode dynamics (Umezawa, 1993) has ontologically rich resources that can provide an account of Being as such.

A key distinction (Heidegger, 1999) that comes up below separates “Being” that presences from an “Abground” that does not. Being is not ontologically independent but depends on Abground. Being is constituted through the contribution by the q-brain's Abground. Other than Being there is only the “is”<sup>2</sup> of default, an *Alter* that is an unknowable and indescribable Abground lacking in all Being.<sup>3</sup> Abground cannot be “outside” the brain because Abground has no spatial properties, indeed, “defaults” space altogether. Abground should be sharply distinguished from nothing, no-thing. Standard negation depends on some thing to negate. Abground is beyond objectuality, originary to no-thing, indeed, even no-thing is annihilated “there.” The only trace of Abground: addresses of default in the ground.<sup>4</sup>

Such disparate and uncustomary resources ... Being, Abground, dual mode q-brain with its *entre-deux*. Let's see what can be made of it.

### Dual Mode Quantum Brain Dynamics

Dual mode QBD is founded in an extension of quantum field theory called “thermofield dynamics” (Umezawa, 1993).<sup>5</sup> Neither quantum mechanics nor quantum field theory naturally provide thermodynamical degrees of freedom and so are not strictly applicable to living dissipative systems like the human brain.<sup>6</sup> Quantum field theory becomes thermodynamical in Umezawa's thermofield theory and so smoothly applicable to biological systems.<sup>7</sup>

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<sup>2</sup> The quotation marks remind that language forces us to use “is” here, even though there is no connotation of any Being.

<sup>3</sup> Cf. Plotnitsky, 2002.

<sup>4</sup> At a default in space all spatial properties disappear. The default retains a spatial address but even no-space is annihilated at that address. (The blindspot found on probing the visual field is a species of default.)

<sup>5</sup> For unimode QBD, see Jibu and Yasue (1995).

<sup>6</sup> It should be recalled in this regard that quantum systems are unobservable; they require complex numbers (c-numbers) for their mathematical description of the form  $a+bi$  and  $c-di$ , where  $i = \sqrt{-1}$  (). Classical physical systems, in contrast, are mathematically described by real numbers.

<sup>7</sup> A deep connection between thermofield brain dynamics and the famous Riemann Hypothesis (RH) in mathematics has been suggested (Globus, 2004, in press). For another attempt to relate RH and quantum neurophysics, see Planat (2004). A possible rapprochement between these two approaches is under investigation.

Umezawa (1993) accomplishes his thermodynamical formulation of quantum field theory by positing<sup>8</sup> an inaccessible alter q-universe, labelled the “~universe,” a heat bath which exchanges energy with our “non~” q-universe, while the total energy of system and heat bath remains constant (under the first law of thermodynamics).<sup>9</sup> This gives dual universes in a certain relationship. We know of the ~universe only through its efficacy<sup>10</sup>, that is, its effects on our conventional non~ q-universe. The relations between the ~q-universe and our non~ q-universe are governed by a thermofield logic, which we shall see is very different from conventional logic.

The conventional q-mode and the alter q-mode share a common q-state that is the state of minimum energy, called the “quantum vacuum state.” The q-vacuum state is the *between* of dual ~ and non~ modes under thermofield logic. Thermofield “logic” is the logic of the between. The irreducible between-two (*entre-deux*) is more fundamental than the dual modes (Vitiello, 1995, 2001, 2003, 2004). This is a new form of ontological duality, not a Cartesian interaction between two fundamental “substances,” *res cogitans* and *res extensa*, but a quantum vacuum state of *betweenness as such*. So ontological primacy goes to the *entre-deux*.

Thermofield logic comes in two forms (Umezawa, 1993, Chapter 6). In the “Hermitean” form the dual modes must always belong-together locally, make a match. This “match” has the form of the match between a complex number (c-number),  $a+bi$ , and its complex conjugate,  $a-bi$ . When a c-number is multiplied by its c-conjugate, the imaginary terms disappear, leaving real numbers. The balance of complex and complex conjugate replaces dual modes by Being. In Hermitean thermofield logic the dual modes must belong-together, ~conjugately, constituting Being for itself.

In the “nonHermitean” form of thermofield dynamics of living systems, however, the dual modes need not match locally (although they must match globally, in conformity with fundamental energy conservation law). Here the match is a unique case, where the dual modes *belong-together* in the q-vacuum state upheld by the living brain. The nonHermitean version thus opens up a logic in which belonging-together is not necessary but a variable, with its unique state of balanced match a delicate achievement. The *extent* of belonging-together is a new degree of freedom; its special perfectly-belonging-together zero state is a *~conjugate match between dual modes*. Being is constituted in the ~conjugate match between dual modes in the q-vacuum state. The rest “is” Abground.

So the q-brain has dual ~ and non~ modes, but gets free of the necessity to make a match, when its thermofield logic drops the Hermitean assumption. Belonging-together here becomes an achievement rather than an obligation, constituting Being out of dual mode matching.

The q-brain’s ~mode may be conceived as a plenum of possibility, all interpenetrated, mutually “enfolded,” “implicate” (*pace* David Bohm (1980)). The possibilities are traces of past re-cognitions. The possibilities of world are weighted through repetition of successful

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<sup>8</sup> Vitiello (2001) shows that the ~mode is not an assumption but a requirement for dissipative systems. In the energy exchange between our non~ q-universe and its ~ heat bath, total energy remains constant, under the first law of thermodynamics.

<sup>9</sup> Note that ‘~’ does not mean “not” but nihilates it too.

<sup>10</sup> On the “efficacy” of quantum systems, see Plotnitsky (2002).

cognitions (re-cognitions). The weight gives the propensity for actualization. The attunement of memory traces is a “holoworld” of weighted (“tuned”) possible worlds generated by the q-brain in its ~mode. The narrow possibilities contained within the highly ordered input to the q-brain is non~ mode. When non~ input meets ~attunement and makes a ~conjugate match within the holoworld of tuned possibilities, then lo! Being appears. World is disclosed in the match and simultaneously Abground “withdraws” (a Heideggerian theme), as tuned implicate possibility.

So thermofield dynamics and dual mode QBD can explain Being as a unique state of the q-vacuum upheld by the dissipative q-brain. Unlike a bowling ball or a dead brain, the living q-brain controls the dual mode ~conjugate match, controls Being by its q-attunement, controls what appears as input encounters attunement. The input/attunement meeting only lets the agreeable be, that which is coherent, a belonging-together that is Being as such.

### **Maya and Monad**

This proposal may come out sweetly with Being in the vacuum state ~conjugate match of the q-brain’s input and memory modes, but the ontology is absolutely bizarre ... it is *monadological*. For now the deepest reality “is” Abground with scattered Monads “amidst” it. These Monads each have an enfolded memory of weighted possibility—weighted by past recognitions—and continually unfold an actuality in the interaction with reality, whose information impinges on the monad’s sensory transducers. Scattered monads move “through” the energy Abground, each unfolding its own world, depending on its attunement and the input information at its address. The manifest coherence of these worlds leads to the illusion of a world-in-common, *maya*, when actually we are separate Monads in good synch.

The monads operate in parallel (as Leibniz proposed, but his with a much more general conception of the monad). If monadic q-brains are locally tuned much the same way, and have much the same input, then the Being disclosed by each will more or less fit together. It certainly seems like there is a “world-in-common,” a quotidian world we all share, each taking our own perspective on it. Experience is almost without exception consistent with a quotidian world-in-common (and the abyssal exceptions are so *Angst*-filled we get easily addled over them). Monads accordingly would not naturally discover their true isolated nature, would not easily “break the chains of *Maya*.”

The relationship between *Maya* and Monad is that *Maya* derails authentic recognition of our monadic state. We are all Monads in parallel, constituting worlds within our bubbles of monadic disclosure, constituting worlds more-or-less coherent with other bubbles of world disclosure. (This consensus is exploited in *Maya*’s guile.) The monadic concept bridges the split between Being and brain, in that Being is constituted by q-brain in its dual mode ~conjugate match. The Being/brain problem is relieved, for now q-brain discloses Being in the belonging-together of its between. The relief is short-lived, though, since we are left facing the lonely prospect of a monadic existence.

### **Discussion**

The Being/brain problematic has been explored. A resolution has been found in the *entre deux* of our q-mode and an *alter* q-mode. Being is a special state of dual mode quantum brain dynamics, the q-vacuum state when the dual modes achieve a ~conjugate match

between a weighted attunement of re-cognition traces and the flux of input order. World appears in the dual mode q-vacuum state, in its ~conjugate match, while unsatisfied attunements withdraw into ~Abground. Where does this theory leave “consciousness,” having relinquished world, *sans* Being as such?

Stripped of Being and perception, consciousness is left purely cognitive and highly linguistic. (After all, con-sciousness, *con-scieri*, etymologically means knowing-together, which must be importantly linguistic, for us to agree.) Consciousness self-tunes by linguistic thought that silently goes through our minds. Thought tunes the ~mode attunement that participates in belonging-together with what reality offers, and so the Being disclosed is to significant extent controlled by thought. (Unbridled disclosure under wishful thought may be found in dreaming under thin disguise (Globus, 1987).) Each Monad has conscious thoughts which participate in attuning it for what reality brings, and so each Monad’s consciousness participates in Being. Consciousness turns out to be cybernetic for Being.

This type of process can be seen askew in the philosophical case of *akrasia*, “weakness of will.” Attunement not only half-determines what *is*, Being, but also what actions take place. We are attuned to act by desire, by mood, by memory, and also attuned to act by what we willfully say to ourselves—“do this,” “think about that,” “decide such.” When the contribution to attunement by will does not prevail, we speak of *akrasia*. Freedom of will acknowledges the unpredictable spontaneity of nonlinear self-tuning linguistic processes but such free will only participates in control, participates along with other factors, at times weak in its participation in the tuning process that influences both Being and action, weak enough that the akrasic will fails to control.

Consciousness has been restricted in the present formulation, restricted to the cognitive, where language enters in. But the cognitive still has a crucial role to play and so consciousness retains its importance despite some contraction with the loss of perception. Not so for qualia—they go out of the picture altogether ... there are no qualia. After all, despite what our language makes us say, *qualia are only theoretical entities* (Gibson, 1979; Sellars, 1963). Stub your toe and the pain is experienced *in your toe*, not as a painful quality of consciousness. The bloom is on the maiden’s cheek, not in her suitor’s mind. See it there in good light? The theory that there is a painful quale and a pink quale is motivated to save common sense and its philosophical fellow-travelers (the representational theory of mind, indirect realism). This would be fine if it worked out nicely, but there is left the seemingly ineradicable stain of the qualia/brain problem.

A sharply defined perspective can be gained on the qualia problematic by considering Searle’s (2005) pungent philosophical critique of Koch’s<sup>11</sup> (2004) recent neuroscientific book, *The quest for consciousness*.

Koch thinks ... we never perceive objects in the real world, not even our own bodies. For example, you never see the chair in front of you, but only a mental representation of the chair in your brain (Searle, 2005, p38).

The external world of material objects is completely inaccessible, forever hidden from us for Koch. Koch’s stance is the classical scientific one of indirect realism; we don’t have the real world as it is “in itself” (Kant’s *ding an sich*), we have the brain’s constructed pictures of it.

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<sup>11</sup> Koch emphasizes the influence of his long-time collaborator, the late Sir Francis Crick.

Searle says (p38) he admires Koch's book "enormously," but goes on to catastrophize,

The theory that we can never perceive the real world but only our inner pictures of it is the single most disastrous view in the past four centuries of epistemology (p38). Searle (1992) also brings in representations, "in conscious perception the organism has representations caused by states of affairs in the world" (p107). Again, "By way of the sensory modalities, for example, the organism gets conscious information about the state of the world" (p107). Whereas for Koch we never reach the world out there but our confined to our representation of it, Searle speaks blithely of "my access to the world through my conscious states" (p95). (This access is via *intentionality*, which is home ground for Searle.) Searle (1983) is straightforward about this achievement, in his direct realism.<sup>12</sup>

When I see a car, or anything else for that matter, I have a certain sort of visual experience. In the visual perception of the car I don't see the visual experience, I see the car; but in seeing the car I have a visual experience, and the visual experience is an experience of the car ... (p36).

So for the tough-minded Searle, there is world-out-there, just as it appears, and then the brain gives us a "visual experience" of it—but visual experience has a "quale," which just gives us back the interminable problem of the relationship between brain and qualia in all its twists and turns. Seeing the car is just seeing the car; any visual experience of seeing the car is theoretical.

It is easy to confound the consciousness/brain relationship and the qualia/brain relationship. The consciousness/brain problem, with qualia extirpated, is merely the consciousness-as-cognition/brain problem, which is congenial to cognitive science anyway. The embarrassment of qualia remains, Searle's "visual experience." Searle wants to get on with the project of explaining consciousness as a real neurobiological phenomenon caused by brain process and realized in the brain (p36).

Searle explicitly thinks consciousness is a function of the brain system like digestion is a function of the gastrointestinal system. Since consciousness tightly covaries with the brain system, Searle's approach sounds plausible. Anesthetize the brain and consciousness goes out (leave the puzzling covariance of categorical incompatibles to the clean-up crew.)

The monadic conception avoids this avoidance, but at the expense of common sense. When I see a car parked there, or anything else for that matter, I see the car, a Being, a car that is there. In ordinary active life we find ourselves amidst a world where sits a car. Whenever we take time to reflect (mainly the business of philosophers), we always find ourselves already amidst some world or other. We cannot get behind amidst-a-worldness. Amidst-a-worldness is the case of each ordinary existence. Each monad is an existence, a unique life amidst Being.

Sure I see a car there but the entire I-see-a-car-there is just a state of a dual mode monad, a unique state, the state of a certain ~conjugate match between the modes, a belonging-together of dual modes in which we find ourselves amidst a world with a car there, as life under *maya* trudges on. Amidst-a-worldness, Being and existence, is a monadic state, the unique state of matching dual modes, the achievement where fluctuating

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<sup>12</sup> Searle's direct realism is tantamount to J.J. Gibson (1979) supplemented by Neisser (1976).

attunement and fluctuating reality belong-together. Then Being appears as the world amidst which we are thrown. All the rest "is" Abground.

The present proposal is a form of "dualism," but quite distinct from Descartes' *res cogitans* and *res extensa*. The great tear in Cartesian thought has been how two ontologically distinct modes—mind v. matter—might interact. The present proposal is an abground dualism of q-modes in which *res extensa* is constituted by their between. *Res cogitans* is one of the dual underlying modes. Being is the fruit of the between when the dual modes match ~conjugately. The dualism here is formatively creative, gives birth to *res extensa*, within the monadic bubble where *lumen naturale* shines in the match, out of the formatively creative abground..

### Summary

The stalemated consciousness/brain and qualia/brain controversies were avoided to consider the Being/brain problematic as a Being/q-brain problematic, according to nonHermitean dual mode quantum brain dynamics. We are monads in parallel, each disclosing our own world in the between of our brains' dual modes, in the case that reality and our brain attunement make a ~conjugate match. Our attuned subjectivity is ~subjectivity, our q-reality is non~, and the state of their controllable match in our q-brains is our thrownness amidst Being.

To be ensnared by *Maya* is to believe there is a world-in-common which we each take in our partially unique but highly socialized way. To break the chains of *Maya* is to forego the comforting one world-in-common-for-all, for the many worlds-in-parallel of Monads, forego the homey community for the *Angst* of principled isolation. Since discussion of consciousness/brain and qualia/brain problems has been stalemated, exploration of revolutionary conceptions is warranted. It is only to be expected that such an adventure will turn out "strange" (*unheimlich*), when the profoundly uncommonsensical quantum revolution in physics is extended to neurophysics.

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