JNphi

Doubts about the World Out There: A Monadological Redux

Gordon Globus*

Abstract

The focus here is on the neglected, simply accepted, quotidian world, rather than the much-discussed consciousness. Contra common sense and science both, any actual independent external world out there is here denied. World is conceived instead as a *continual creation* on the part of each quantum thermofield brain in parallel, which is "triply-tuned": by sensory input, by memory and by self-tuning (intentionality). Such a brain does not primarily process information—does not compute—but through its multiple tunability achieves an internal match in which a world is disclosed, even though there is no world out there, only objects under quantum description at microscopic, mesoscopic and macroscopic scales. This unconventional formulation revives a version of monadology via quantum brain theory.

Key Words: monadology, consciousness, Leibniz, quantum brain theory, thermofield brain dynamics, world thrownness, ontological duality

DOI: 10.5281/zenodo.7253788

Introduction

There has been truly prodigious and seemingly inexhaustible discussion in the philosophical literature regarding consciousness and its relationship to the physical world. The ordinary quotidian world we are conscious of, in contrast, is by and large taken for granted. As Heidegger (1927) emphasized, we always find ourselves engaged in some way with world, always find ourselves *already* "thrown" amidst some world or other. It seems utterly ridiculous to deny the external world which we so vividly inhabit, but I shall nonetheless explore that possibility here by showing that our brains could create world thrownness even if we are not immersed in a world, even if physical reality comes strictly under quantum description at all scales: microscopic (quantum), mesoscopic (quotidian) and macroscopic (cosmological). I shall claim that *our brains continually create world*

Corresponding author: Gordon Globus
Address: Professor Emeritus of Psychiatry and Philosophy, University of California Irvine, 2990 Zurich Ct. Laguna Beach, CA 92651 USA
e-mail ✉ ggglobus@uci.edu
Received: 2 August 2022; **Accepted:** 16 October 2022

thrownness de novo, even though there is no world actually out there. What is actually "out there" comes under quantum thermofield theoretical description at all scales. This entails a paradigm shift away from the defining technology of our times, a radical shift in which a brain computer no longer processes information but the brain is instead a continually "tunable system" whose attunement is a function of sensory input, memory and intentionality. This attunement constrains a matching process in which world thrownness is experienced in the match achieved. This match is not equated with consciousness but Heideggerian *Existenz*, thereby eliding consciousness problematics.

This claim is in a way a reversion to Leibniz's windowless monads, but with one crucial difference. For Leibniz there really was a world, but his monads, being "windowless," could not perceive it. God, in his love for mankind, continually *thinks* the world into existence, and since God fortunately never sleeps, the world is always there, even though we windowless monads do not perceive it, but each create our own world in parallel with the other monads. In this fashion Leibniz mitigated the monadic plight to the point of practical irrelevance. Quantum degrees of freedom in brain functioning now open the way to re-engage Leibnizean insights. So, the present problematic is straightforward, albeit daunting: *How could the brain create world thrownness if there is actually no world out there?*

I consider here a theory, known as "quantum thermofield brain dynamics," that has been proposed for over fifty years and remains scientifically relevant, but has not been thought about in terms of ontological duality, since it arises in the context of a fundamental physics. Yet when considered from a fresh angle, quantum thermofield brain dynamics offers a strikingly new version of ontological duality that decisively resolves the traditional mind/matter problem. This fresh focus is not on the duals but on their between.

According to Vitiello,

> The brain is an open system in permanent interaction with the environment. This implies that quantum brain dynamics must be a dissipative dynamics whose treatment requires the doubling of the system degrees of freedom. (Vitiello, 2001:p.103)

The dissipative dynamics of open biological systems sustains a duality of modes that Vitiello labels 'tilde' and 'non-tilde'. *This duality lies at the heart of thermofield brain dynamics.* What makes this duality ontologically distinct is Vitiello's emphasis not on the duality of the modes but on their "between," a "between two." As will be shown below, the classically real comes into being in the thermofield brain's vacuum state "between," in a match of complex conjugates. Beyond the thermofield brain's borders everything is unworldly and comes under quantum thermofield description at all scales.

A remarkable feature of this theoretical framework (not explored by Vitiello and coworkers) is that to our surprise it produces a Heideggerian "world-thrownness" without there actually being a world out there. World-thrownness should not be confounded with "consciousness." Consciousness is a consciousness *of*, so there is a distinction between consciousness and its objects, as indicated by the "of," an ontological duality. Thrownness, in contrast, is unified: always already (*immer schon*) inclusive of world. *Existenz* is *immer schon* dynamically engaged with world.

This is in the vicinity of Leibniz's philosophy (2011) but with one fundamental exception. Although each of Leibniz's windowless monads creates a world within, Leibniz proposes that there still is a world in reality, due to God's love. God (who fortunately never sleeps) continually *thinks* a world into being so his monadic subjects, while trapped inside their windowless abodes hoisting worlds in parallel, are not *de facto* dupes. In the present formulation we, not God, bring the world into being.

The Ontology of Quantum Thermofield Brain Dynamics (QTBD)

In the formulation of QTBD proposed here, *there is no world out there. R*eality comes under consistent quantum thermofield theoretical description at all scales: microscopic ("quantum"), mesoscopic (worldly) and macroscopic (cosmological). Stimulus energies from mesoscopic quantum objects encounter the sensory receptors of quantum thermofield brains as mesoscopic quantum objects and are transduced into the brain system where they dissipate their energy and fall into the brain's quantum least energy vacuum state. Here the symmetry (indifference) of the vacuum's water dipole field is shattered by the sensory input order and the lost symmetry is lawfully preserved by the formation of a condensate of Nambu-Goldstone bosons in the vacuum state. These N-G bosons have two modes, labeled non-tilde (~) and tilde (~), *which are complex conjugates*. This memory code has the dual mode form: particles/anti-particles.

When the stimulus is repeated, the memory code is converted to a dual mode *code of recognition* having the form tilde/non-tilde, which remains in complex conjugate form. Now repeat the stimulus and *there ensues a match of complex conjugates which is real*. So, in this two-step process a real representation of the stimulus is formed in the brain's quantum vacuum state. The same type of process occurs if the stimulus is generated within the brain, rather than at the sensory receptors. This is the dynamical process underlying the crucial process of intentionality. So, in this formulation the brain's vacuum state contains recognition traces of sensory input and recognition traces of self-generated intentional signals. When these traces are matched by fresh signals the result is real, which we experience as world thrownness. That recognition *is*,

counterintuitively, prior *to* perception is actually a Platonic conception.

Stepping back for a broader perspective we can say that the between of the dual mode vacuum state is *triply-tuned*—by sensory signals, intentional signals and memory traces of recognitions—and the match of complex conjugates obtained in the between is real, is world-thrownness. *Rather than information being processed by the brain there is a complex process of triple brain tuning in which a match is achieved.* To be in that state of matching is to exist as world-thrown! There is, then, no necessity for a real world out there to be re-presented within the brain. What is "out there" at world scale is mesoscopic quantum objects, nothing worldly. World thrownness as such is generated within the quantum thermofield brain by a triply-tuned process which achieves a real match.

A unique perspective on world creation is provided by the process of dreaming. Here the triple tuning remains in force, but the sensory signals component is much diminished in the state of sleep to remnants, which Freud (1900) called "day residues." Thus, world thrownness generated during dreaming sleep remains a real match in a triply-tuned process but with the sensory component highly attenuated. The great diminution in participation on the part of one component in dream world formation leads to the common "haziness" of the dream world. The wish-fulfilling intentionality of sleeping self-tuning dominates the matching process in which a world is disclosed.

It is to be emphasized that in this formulation the brain's role is no longer that of information processing, which has been near universally assumed. *The brain is a tunable system*, indeed thrice tunable, and in the dual mode match, achieved by the continually tuned brain, world thrownness results. This shift from information processing to tuning is a profound paradigm shift for the theory of brain functioning. The brain is not a wet computer!

It must be admitted, however, that even if the above unconventional argument is fully embraced, nothing really changes for *Existenz*. In living my life, I still believe in the surrounding world as before, even though my surrounding physical reality is actually purely quantum. World thrownness is inescapable, even though there is no world out there! We are in truth duped at every moment, which is the ironic fruit of ontological insight.

It should be emphasized that this formulation does not stand on its own but requires the broader framework of dissipative thermofield brain dynamics, which remains a work in progress. However, that such profound, unresolved and extremely vexing ontological issues are so simply resolved by an existential thermofield formulation which eschews "consciousness" is worthy of discussion. That this conclusion is profoundly antithetical to conventional thinking--which has been "barking up the wrong tree" --is to my mind

a considerable virtue. Common sense has certainly had its chance to resolve the consciousness problem and it is appropriate to consider radical non-intuitive solutions. This shatters our conception of the familiar commonsensical world-out-there in so doing but we achieve an appreciation of our inescapable monadological human condition.

Data availability

None declared.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Blasone M, Jisba P, Vitiello G. Quantum field theory and its macroscopic manifestations, London: Imperial College Press, 2011.

Capolupo A. Vitiello G, Freeman W. The dissipative many-body model and phase transitions in brain nonlinear dynamics. In: Advances in Cognitive Neurodynamics (IV), H. Liljenstrom, ed. Berlin: Springer, 2015.

Freeman W, Vitiello G. Nonlinear brain dynamics as macroscopic manifestation of underlying many-body field dynamics. Physics of Life Reviews 2006; 3:93-118.

Globus G. Quantum Closures and Disclosures. Amsterdam: John Benjamins, 2003.

Globus G. The Transparent Becoming of World. A Crossing Between Process Philosophy and Quantum Neurophilosophy. Amsterdam: John Benjamins, 2009.

Globus G. Consciousness vs disclosure: A deconstruction of consciousness studies. J of Consciousness Studies 2013; 20:71-83.

Globus G. Heideggerian dynamics and the monadological role of the between: A crossing with quantum brain dynamics. Progress in Biophysics and Molecular Biology 2015; 119:324-331.

Globus G. Quantum brain theory and the appearing of world. Journal of Integrative Neuroscience 2017; 16:37-42.

Globus G. An existential critique of consciousness and a solution to the Existenz/brain problem. Mind and Matter 2018; 16:43-52.

Globus G. Lucid dreaming and world creation: Ontological implications. Mind and Matter 2019; 17:187-204.

Heidegger M. Being and Time. (J. Macquarrie & E. Robinson, trans.) New York: Harper & Row, 1962 (1927).

Heidegger M. The basic problems of phenomenology, A. Hofstadter, trans. Bloomington: Indiana University Press, 1982 (1929).

Islam A. Quantum field models for nonlinear brain dynamics. Jounal of Cognitive Neuroscience 2020; 21:385-428.

Jibu M & Yasue K. Quantum brain dynamics and consciousness, Amsterdam: John Benjamins, 1995.

Jibu M, Yasue K. Quantum brain dynamics and quantum field theory. In: Brain and being. G. Globus, G. Vitiello, K. Pribram, eds. Amsterdam: John Benjamins, 2004.

Leibniz, G.W. (2011) Philosophical Papers and Letters, V.1 and 2 (L. Loemker, trans.) Chicago: University of Chicago Press.

Pessa E & Vitiello G. Quantum Noise, Entanglement and Chaos in the Quantum Field Theory of Mind/Brain states. Mind and Matter 2003; 1(1): 59-79.

Ricciardi LM, Umezawa H. Brain and physics of many-body problems. Kybernetic 1967; 4: 44-48.

Sabbadini SA, Vitiello G. Entanglement and phase-mediated correlation in quantum field theory. Application to Applied Sciences 2019; 9:3023.

Stuart CIJM, Takahashi Y & Umezawa H. On the stability and local properties of memory. J of Theoretical Biology 1979; 71:605-618.

Takahashi Y, Umezawa H. Thermo field dynamics. Collective Phenomena 1975; 2: 55-80.

Umezawa H. Advanced Field Theory: Micro, Macro and Thermal Physics, New York: American Institute of Physics, 1993.

Vitiello G. Dissipation and memory capacity in the quantum brain model, International J of Modern Physics B 1995; 9: 973-989.

Vitiello G. My double unveiled, Amsterdam: John Benjamins, 2001.

Vitiello G. The dissipative brain. In Brain and Being, Globus G., Pribram K, Vitiello G. eds. Amsterdam: John Benjamins, 2004.

Vitiello G. The brain and its mindful double. J of Consciousness Studies 2018; 25: 151-176.