Lucid *Existenz* during dreaming

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Summary. In waking *Existenz* (Heidegger) we always find ourselves already "thrown" amidst the world, whereas in lucid dream *Existenz* there is sometimes this remarkable difference: *we are actually able to throw the world*. The operation of intentionality, conceived as the brain's self-tuning capability, is discussed with respect to its role in lucid world throwing. This ability raises doubts about the seeming transcendence of world during waking and opens the monadological possibility that we actually throw the world during waking too. To appropriate Freud's dictum: the lucid dream is *via regia* not to the unconscious mind but to world as such.

Keywords: Lucid dreaming, Heidegger, existence, *Existenz*, quantum brain theory, world thrownness

Now, what prevents the course of our life from being one long well-ordered dream, about which we could be undeceived in a moment? (Leibniz (1666-1676) 1956, p. 27)

Our *Existenz*, pace Heidegger (1927), is to *always* find ourselves *already* "thrown" amidst the world "at hand" (*zuhanden*), or to substitute Gibson's (1979) term, thrown amidst the world of "affordances" (in the sense that a chair "affords" sitting, makes possible that behavior). There is no thrower, no subject, only an unobservable, inscrutable, even indescribable (for Heidegger literally unspeakable) fundamental dynamical process, labeled *das Ereignis* (Heidegger 1999), in which the existential fact is we **always** find ourselves **already** amidst some world or other. The world is "there" transcendently and we Da-seins are "there" (Da) immanently. *Existenz begins with thrownness*: there is no prior to thrown *Existenz*. *Existenz* is absolutely inequivalent to consciousness, as will be brought out below. Of course consciousness reigns by and large unchallenged today, so the present existential approach is an outlier, whose justification I have discussed in detail elsewhere (Globus 2003, 2009, 2013, 2018).

A unique perspective on Heideggerian *Existenz* is offered by the lucid dreaming phenomenon, in which the dreamer is aware of dreaming and has some control over the dream scene and happenings (e.g. Erlacher and Schredl 2008; Kahan and LaBerge 1994; LaBerge 1985, 2007; LaBerge, Levitan and Dement 1986; Zinc and Pietrowsky 2015; Saunders et al 2016; van Eeden 1913; Windt 2015). The lucid dreamer finds himself or herself thrown amidst an authentic world without benefit of a sensory input stream. In this remarkable event lucid dreaming is an exceptional form of *Existenz* which offers insights into *Existenz* as such.

The situation of the lucid dreamer, whose sensory systems are damped down, is reminiscent of Leibnizean "monads," which lacking "windows" are sensorily bereft (Rescher 1991). For lucid dreamers and monads both, worlds are created within. However *lucid dreamers find themselves heterogeneously thrown amidst their own particular dream world*, whereas the monads' worlds are in synchrony, having a "pre-established harmony" in virtue of God's action and abiding love. Leibniz thought that a compassionate God would not dupe his beloved monadic subjects, so He *thinks* an actual transcendent world into existence, which fits with the consistent worlds, hoisted in parallel within the windowless monads. Thus God in effect rescues the otherwise hapless closed-off monads. So there is a great difference between lucid dreamers—each with their own idiosyncratic world—and Leibniz's monads with their harmonious worlds. Lucid *Existenz* offers a fresh incision into the quotidian *world* as such, which we each seem to waltz through in common on our daily rounds.

Prior to the empirical discovery of a correlation between a special form of sleep—rapid eye movement (REM) sleep—and dreaming by Aserinsky and Kleitman (1953), and the subsequent burgeoning of electrophysiological research in sleep laboratories, the most widely discussed work on dreams was Freud's (1899) *The interpretation of dreams*. Freud interpreted the dream life in the dream world as a "composition" of memory traces stitched together by a process he called the "dream work," which followed the peculiar logic of its own irrational "primary process," rather than the rational "secondary process" that dominates waking life. The dream life fulfills unconscious wishes, Freud claimed, fulfills them in a disguised form, so as to not alarm and thereby awaken the dreamer. (Dreaming lucidity in the contemporary sense was not discussed by Freud.)

Freud's compositional theory of the dream life in the dream world persists today, albeit updated. Thus for Llewellyn (2013) episodic memories are related and integrated into "a mnemonic compositional whole" (589) which constitutes the dream. But Llewellyn, like Freud, provides no explanation for how a seamless "merging," "fusing" and "integrating" of elements from different times, places and perspectives might actually be accomplished. How do we get from disparate elements to an authentic seamless dream life in a dream world? The term 'composition' just papers over the problem with a dream work *bricoleur*.

The present discussion focuses on how world might be created *de novo* during lucid dream *Existenz*. It will be argued that lucid dreaming provides an incision to under-

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Submitted for publication: October 2018
Accepted for publication: January 2019

standing the way that world is disclosed in ordinary waking life too. The present endeavor will end up deconstructing the quotidian world we unconcernedly take for granted as we skillfully move through it along our particular world lines. Thus lucid dreaming is not only a fascinating pastime for its *aficionados* but has profound consequences for ontology. If dreaming was Freud's "*via regia*," the royal way to the unconscious mind, then lucid dreaming, I claim, turns out to be the *via regia* to **world**.

Preliminary: Consciousness vs. *Existenz*

"Consciousness" so dominates our thinking today that it is easy to forget it was not always so. A behaviorism which specifically eschewed consciousness mainly reigned from the second decade of the 20th century into at least its sixth decade. An indicator of the recent arrival of consciousness studies is that the now highly respected *Journal of Consciousness Studies* did not even begin publication until 1994. And looking back to historical times, it is not clear that the wise ancient Greek philosophers even had any concept of consciousness. The English term 'consciousness' did not appear until the late 16th century and its etymology is *epistemic: con-scieri*, to *know* with, *know* together. My Heideggerian turn from lucid consciousness to lucid *Existenz* thus "marches to a different drummer" and hopefully will lead to fresh insights regarding lucid dreaming.

The problematics of "consciousness" are more than the epistemic connotation. Consciousness (at least in non-meditative quotidian states) is always a consciousness-**of** (Husserl 1960; Globus 2018). The "of" separates, so we end up with a distinction: the vexing ontological duality of conscious mind and its non-conscious objects. The prodigious, confusing, contradictory, indecisive literature on the "hard problem" of the consciousness/brain relation persists. But no "of" divides thrown *Existenz*. Thrownness is "always already" (*immer schon*) amidst (bei) world (Heidegger 1982). (For extensive critiques of consciousness and succeeding it by existence see Globus (2003, 2009, 2013, 2018).) So the present focus is not on lucid consciousness while dreaming but lucid *Existenz* while dreaming.

Tuned *Existenz*

Before discussing lucid *Existenz* a conceptualization of Existenz as such is offered, which is teased out from the often opaque Heideggerian account and turns out to be, indeed, quite at odds with the orthodox Heideggerian spirit, while compatible with science. (Heidegger (1999 198) would scornfully "leave science to its mania for its own usefulness." Strictly speaking, he meant technology, but would mush these enemies together.) I have detailed elsewhere (Globus 2003, 2009) the way in which the living brain might achieve *Existenz*—again, an inquiry totally at odds with Heidegger's *oeuvre*.

A first factor that constrains *Existenz* is sensory input and a second factor is memory. A third factor is a bit more elusive: intentionality. The term is derived from the Latin *intenderi*, which means being directed toward … . Brentano (1973) provided the contemporary meaning and intentionality was greatly elaborated by Husserl (1960), with whom Heidegger studied. Merleau-Ponty provided a comprehensive definition of intentionality. We exist within what he calls an "intentional arc,"

> *which projects round about us our past, our future, our human setting, our physical, ideological and moral situation. (Merleau-Ponty, 1962, p. 136)*

In Dreyfus' (1991) terms, we are comprehensively *situated* by our intentionality.

I shall appropriate the idea of the intentional arc in stating that situated *Existenz* is **self-tuned**. Self-tuning takes over the role performed by the dualistic Cartesian subject in traditional accounts: "I" **am** the process of self-tuning. So during waking life: **Existenz** is **other-tuned** by sensory input (of course including inputs from the body), **past-tuned** by memory, and continually **self-tuned** by intention. *Existenz* is thrice-tuned and in consequence of these attunements always finds itself already world-thrown. To illustrate my theses in terms of Freud's dream formulation: day residues are related to other tuning, the incorporation of memories into dreams is related to past tuning and the intentional self-tuning during REM sleep, emanating from the unconscious, is wishful. But such intentionality is disguised enough that the dreamer would not be disturbed and awaken.

Tuned *Existenz* In Dreaming

The conditions of dreaming *Existenz* are of course quite different from those of waking *Existenz*. The sensory receptors are to a significant extent shut down (though some infiltration from the external world may take place). But there are remnants of sensory inputs left over from waking life, which Freud called "day residues," remnants that retain some activation, especially when they have some emotional or wish-relevant significance. But there is more importantly an intentional factor with respect to sensory input as well.

Intentionality is directed towards sensory input. We are self-tuned or "primed" to *expect* certain inputs which satisfy the attunement. (When opening the refrigerator door we are self-tuned to expect food inside.) While the sensory receptors have a tendency to be closed down during sleep, in REM sleep there is intense internal random activation which is energizing enough to trigger the more salient low threshold intentions. (That dreams can be sometimes "foggy" and insubstantial reflects a weak triggering of intentions by random activation.) For Freud these salient intentions were primarily unconscious and wishful, but in lucid dreaming the intentions can be conscious self-instructions with associated expectations (e.g. the intention to fly away from a scene).

So lucid dreaming, like waking, is past-tuned and self-tuned. However, the other-tuning of waking is mostly minimized during dreaming sleep, replaced by day residues and by intentional priming of sensory systems whose satisfaction is triggered by the general activation during REM sleep. Other-tuning in REM sleep is to a significant extent a misnomer. Instead the "other" is mainly day residues plus a general activation triggering lucid *Existenz*, which is thus a unique but intelligible form of *Existenz* under the physiological conditions of REM sleep.

World

We take the world for granted during waking, dreaming, and lucid dreaming too. In waking the world is—or seems to be—right there, and the same is true for vivid dreaming. As noted above, Freud (1899) held that the dream world is a composition of memory traces, fashioned into a world by a

process he called the "dream work." The dream work is essentially a *bricoleur* and the memory traces *bricolage*. What amounts to the same thing in Llewellyn's contemporary and highly sophisticated language,

> *[h]yperassociations wrought between episodic memories through elaborative encoding engender a fabricated visual image. (Llewellyn 2013)*

But Freud and Llewellyn's proposals are both sham explanations. Just how could disparate memory traces from different times and places be fabricated into a seamless authentic world thrownness? "Composition" and "elaborative encoding" give the process title but provide no plausible mechanism. Lucid dreaming, however, reveals the possibility of a scenario different from that of a second-hand dream world. Instead of the dreamer finding himself or herself thrown amidst the dream world, on occasion *the lucid dreamer throws the world.*

To illustrate, Waggoner (2008) describes a dream of attending a classroom in which he felt there were not enough attractive women. He shouts that he wants to see more attractive women, steps briefly out of the room and then returns.

> *I open the door into the school room and find a U-shaped line of perhaps fifteen attractive young women, completely naked. … I walk along and briefly touch each one, awestruck by the ability to create all this. (Waggoner 2008 p. 48)*

Here is another particularly instructive example of the lucid dreamer throwing the world, rather than being thrown amidst a wake or a dream world.

> *… I was flying back through a wall that I had previously flown through. Suddenly, I had* just a tinge of doubt about flying through it—just a speck. The result? I became stuck halfway through the wall! Just that little bit of doubt tinged my expectation, and my situation symbolically reflected my mental state. Hanging there in the wall, half in and half out, I realized the absurdity of the situation, and proceeded to "expect" my successful passage through it. … Changing your mind, even slightly, changes the lucid dream experience to correspond to the minor gradations of your expectation. (Waggoner 2008, p. 116-117).

Here we see the cognitive act of doubting while lucidly dreaming becomes concretely manifest as a world situation. Intention creates world thrownness, like Athena from Zeus' brow!

Lucid dreaming, then, demonstrates the capability of intentionality per se to create authentic worlds *de novo*, without benefit of cotemporal sensory input. Lucid dreaming demonstrates that—*mirabile dictu!*—there does not need actually to be a world out there for the brain to disclose an authentic-seeming one amidst which we are thrown. Maybe, as the old "row row row your boat" song goes, "Life is but a dream!" **How can we be certain there is really a transcendent world out there when we find ourselves world-thrown while wide awake?** As implied by Leibniz's epigraph above, our very world thrownnesses in waking, too, might be brain creations, without any external world to provide the model. Why if this were so, we would be windowless monads! To rationalize this implausible possibility, I turn to quantum brain theory.

Quantum Thermofield Brain Dynamics

Now there is a commonly held but *erroneous belief that quantum theory applies strictly to the extremely small*, what physicists call the "microscopic" scale, rather than applying to the "macroscopic" scale of daily life. (*"Microscopic" means the quantum scale here*, which is not to be confused with what we see under a microscope.) However contemporary quantum theory applies equally to the macroscopic scale of world. Condensation of particles in the near-zero energy vacuum state "creates a rich variety of orders in a system of quantum fields" (Umezawa 1993 99). The macroscopic scale

> *is dynamically generated out of the microscopic scales of the quantum elementary components. Such a change of scale is understood to occur through the condensation of the Nambu-Goldstone boson quanta in the system ground [vacuum] state. (Blasone et al, 2011, p. ix, bracket added)*

This applies to all macroscopic ordering, including biological structures, which "appear to be the manifestation of the microscopic dynamics ruling the elementary components of these systems" (Blasone et al, 2011, p. ix). So stable, ordered, classically behaving, *macroscopic* quantum systems are a function of dynamical quantum fields.

The version of quantum field theory adopted here is known as Thermo Field Dynamics (TFD), originally formulated by the Nobel Laureate Takahashi and Umezawa (1975), where the central role is played by a *doubling of the degrees of freedom*, which is an essential structural feature of quantum field theory. Further,

> *Any microscopic system is in fact an intrinsically open system permanently interacting with the vacuum quantum fluctuations. (Blasone et al 2011).*

In TFD the vacuum state has *dual modes*, arbitrarily labeled 'tilde' (~) and 'nontilde' (non~). The ontological innovation here is that *the vacuum state is a "between,"* between dual modes. It is this "between" which gives TFD its ontological chops.

The brain itself is a macroscopic quantum system (Vitiello 2001 p.77). For contemporary quantum thermofield dynamics size does not matter. Physical reality comes under quantum field theoretical description at all possible scales from subPlanck to cosmological, including the scale of quotidian life. Quantum theory even applies to brain functioning (Freeman and Vitiello 2006, 2008, 2016; Hameroff and Penrose 2014; Penrose 1989, 1994; Vitiello 1995, 2001). *What if quantum brain theory could explain the appearance of the quotidian world?* It is beyond the present scope to provide a thorough explanation (see Globus 2003, 2009, 2015, 2017), but a general notion will be given here.

The focus is on the near-zero energy vacuum state of the brain, a "between" with its dual modes (Vitiello 1995, 2001). Sensory signals, after transduction at sensory receptors, as well as intentional self-tuning signals generated within the brain, fall into the vacuum state and break the symmetry (invariance) property of its water molecule dipoles. Under the Nambu-Goldstone theorem, the broken symmetry (order) is conserved by the formation of a near-zero energy boson condensate which serves as a dual mode memory trace of the sensory signals' orders. On repetition of the signals their memory traces are converted to traces of recognition.

On re-repetition of the signals there is a match of complex conjugates between the signals and the traces of recognitions, a match which is real. This real match is the state of world-thrown *Existenz*.

So world-thrown *Existenz*, as lived by each of us, is the real state of the dual mode vacuum state between. There is no world outside the brain, only objects under quantum description at all scales. The quantum brain's vacuum state between is continually tuned by three sources: (1) other-tuned by sensory signals, (2) past-tuned by memory traces of recognitions, and (3) self-tuned (intentionality). A real match that is world thrownness is the fruit of the thrice-tuned between.

This formulation holds that there is no transcendent ordinary classical world outside the brain. But this is not solipsistic: *there is a physical reality but it is not worldly.* A physical reality consisting of macroscopic quantum objects will result in energetic signals impinging on the sensory receptors of the living brain as macroscopic quantum object, and by the triply-tuned mechanism just described, it comes about that the brain vacuum state's dual mode matchings of sensory and intentional signals with recognition traces will be real. To *be* that embodied brain *qua* macroscopic quantum object is to find oneself thrown amidst some world or other, waking and dreaming. World thrownness (not consciousness!) is the matched state of the quantum thermofield brain's thrice-tuned vacuum state between, whether waking, dreaming or lucidly dreaming. To *be* such a brain is to be world-thrown, even though there is no transcendent world beyond the brain, only an ordered physical reality under quantum description at microscopic, mesoscopic and macroscopic scales. *Existenz is between-two*.

Conclusion

The account of world thrownness in lucid dreams and application of the formulation of quantum thermofield brain dynamics to lucid *Existenz* leads to the deconstruction of the common sense notion of world. We are actually windowless monads in parallel, along the lines of Leibniz (but bereft of any saving grace by Godly interventions). The lucid dream surprisingly turns out to be the *via regia* to world.

Acknowledgement

I thank Donald Mender, Daniel Oldis and a determined reviewer for thoughtful comments on the manuscript.

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