

Dream Life, Wake Life: The Human Condition Through Dreams. Gordon G. Globus. Albany: State University of New York Press, 1987, 200 pages, \$34.50 hard, \$10.95 soft.

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When I received this volume for review and opened it to the contents page, my initial reaction was that of irritation at the thought of having to read a volume with a Chapter Five titled "The Dream as Oracle" and Chapter Six "Dreaming as Dasein." Both my philosophical bias and my cognitive style felt put-upon at the very anticipation of reviewing another nonmethodological book on interpreting dream messages; worse yet, another existential-philosophical work which promised to be either too specialized; or a semi-popular new age exposition of existential despair over the restricted horizons of the scientific investigation of dreaming—what Abraham Maslow in another context called high I.Q. whimpering—that I clenched my jaw and continued to read the remaining chapter headings: Chapter One on "The Creativity of Dreaming;" Chapter Two on "Dream Phenomenology;" Chapter Three on "Waking and Dreaming;" and to my unabashed delight, Chapter Four on "The Cognitive Approach to Dreaming" which based on the volume's sweeping subtitle, "The Human Condition through Dreams," I fully well expected to be lacking in its own horizon. I read the slim 179 pages of text. Then I read the volume again.

Dream Life, Wake Life is an exceptional volume, both in terms of horizontal breadth and vertical depth. It is self-admittedly philosophical in that it explores the processes of dreaming ontologically. But it is more than "just philosophical." This work is empirical-theoretical in that it is an attempt to integrate and critique the cognitive approaches to dreaming with philosophy, with empirical data from biology, and with neurophysiology. Gordon Globus provides an intellectually sound basis—without even a hint of "Whimpering," though the I.Q. is certainly there—for bridging what C.P. Snow years ago called the gap between the Sciences and the Humanities. While many scientists and humanists have been called upon to bridge this gap, few have been chosen. Gordon Globus is one of those chosen few. *Dream Life, Wake Life* is oracular for dream research, and only the most diehard of scientists and humanists will not hear its voice.

At this point I will continue to ask the reader's forbearance with my prologuing before outlining the main thesis of the volume. Due to my cognitive style—which many of my colleagues share—I have always found Heideggerian-Bossian existential phenomenology quite irritating. I still do; Globus' explication of this philosophical position is an accomplished performance that has decreased my irritation. I point out my bias and subsequent increased appreciation in hope of convincing my colleagues

who have a similar cognitive persuasion to not, at worst, close the book upon reading the chapter titles, or, at best, not to skip the phenomenology chapters, even though Globus suggests they can be bypassed, a statement, no doubt, reflecting book publishing today where it is expected that a book be all things to all people. Nevertheless, to ignore these chapters is to facilitate the current antagonism between the sciences and the humanities.

Gordon Globus, M.D., is Professor of Psychiatry and Philosophy at the University of California at Irvine, and he is Director of Training and Program Development at the University of California Irvine Psychiatric Service, Capistrano by the Sea Hospital. His dual title structurally signifies his background in both the sciences and the humanities. While the interdisciplinary weave of Globus' volume is integral and important, I will focus on its warp: the Thesis, or better yet, the Hypothesis.

The hypothesis of the volume is that dreaming like waking is "formatively creative." By that Globus means—contrathetical to Freud and mainstream cognitive science—that dreaming is created *de novo*; that no mnemonic or picture-like copies of the world are composited or rearranged to produce a dream image; the dream is created without "copies or building instructions from the surrounding world . . ." (p. 127). Philosophically speaking, this idea is certainly not a novel one, but it is just as certainly bizarre, *prima facie*. Globus' intellectual force comes from his conceptualization of the thesis, the models he bases it upon and the extensions he gives to it—a thesis contrathetical to mainstream cognitive science and computational theories of mind which hold that the mind is an abstract formalized system of symbolic tokens, an internal set of representations that are transformed and rearranged.

Instead, Globus suggests the mind is a "Leibnitz Machine," that deals in possible worlds . . . This machine's condition is methodologically solipsistic: It admits of no copies of its surroundings and detects only whether or not its internally generated abstract specifications have been satisfied. Indeed *The Leibnitz Machine contains all possibilities a priori*" (p. 125). Let us get it straight here. Globus is suggesting that the mind functions relatively independent of the external world. This is not an alien hypothesis in classical philosophy, but it certainly is for modern cognitive science. But where are the data for such a bizarre hypothesis, one asks? Even most philosophers would ask for an "existence proof." The basis for this hypothesis Globus finds in the biology of the immune system. As a model, Globus applies the Nobel Prize winning work on the immune system by Jerne (1967) and Edelman (1978) and specifically Edelman's application of the immune system model to brain function. As Globus describes the system, it is a closed world, an *a priori* plenum of antibody *generation* that does not need to directly interact with the antigen world to recognize the world and deal with it. "So," says Globus, "the immune system is a very wet monad. It generates a representative sample of all possibilities *a priori* (making notable use of random factors). It sets up specifications (conditions of satisfaction) and its *interface* with the surrounding world . . ." (italics added) (p. 127).

As the second and third models, Globus applies findings from optical information processing, more specifically from holography and the work of Cavanaugh (1985). He also uses the work of physicist David Bohm. Without going into extensive detail suffice it to say that like the immune system, like the holographic process, and like the physical universe (see Bohm, 1980), the physical order and all world possibilities are enfolded in the "object." Psychological reality is an unfolding that requires no direct interaction with the surrounding environment. (It might be added here that Pribram [1971] also suggested a holographic theory of mind/brain). Globus' basic point is that cognitive theories are based on a computer model which is inadequate to explain

mind/brain without a *deus ex machina*. The models that Globus utilizes have no need to invoke such ad hoc mechanisms.

Further, Globus suggests the existence of "hyperneurons" which function equivalently to B cells in the immune system and/or to interference wave patterns that enfold specifications just as an image is holographically enfolded. According to Globus ". . . the world is *de facto* enfolded originally through genetic and random factors, modified by adaptive resonance a posteriori and continually internally tuned (cognitively penetrated) and environmentally modulated. World production is not instructed by synthesis but by selective unfolding from an a priori plenum of hyperneuronal possibilities in virtue of the match" with the world (p. 135). Thus, world models (i.e., ideas, dreams, etc.) are created *formatively*. The hypothesis itself needs to be extensively unfolded; its relational possibilities are indeed dense. Further, how would a researcher test such a hypothesis?

What are the implications of this hypothesis? While I will not presume to answer the question en toto, the implications are at least as bizarre as the hypothesis itself, and probably more unsettling, especially to cognitive science—for if Globus, Edelman, Bohm, and Pribram are correct, then we in no figurative terms may witness a Copernican revolution. Cognitive science (the computational model) for all its concrete pragmatic workability and prediction of cognitive mechanisms becomes simply an elaborate Ptolemaic system (simply one unfolded possibility).

There can be no more *responsible* cognitive theorizing without taking into account the above research. In this sense the mystically oriented humanists are ahead of us scientists—but alas, not for the right (read: informed) reasons. Globus' monadological realism (his term) is different from idealism in that by way of inherent interfacing-filters the world models—as well as modulates—the mind. Globus is quick to point out, however, that monadological realism is not the creation of an illusionary world concept found in transpersonal psychology. In monadological realism "Even the world perceived undistortedly, without ego, the world seen in truth by those enlightened, remains formatively created" (p. 108). So, it is a Copernican revolution, too—for those humanists who hold that reality can, in principle, be apprehended.

A further implication suggested by Globus is that dream interpretation—that anathema to cognitive science—is cognitively important. "Dream interpretation," says Globus, "has a formal significance, since it unveils universal abstract a priori structures" (p. 142). Perhaps one of the more significant implications is that an enfolded order accommodates easily that which we all feel but which mainstream cognitive science tends to deny—the concept of intentionality, motivated purpose (Haskell, 1986).

This review does not do justice to Globus' volume, nor, for that matter, does Globus. The volume presumably is an initial formulation, broad in its sweep, with numerous ambiguities. One could not expect more in 179 pages of text. Even the title *Dream Life, Wake Life* seems an injustice. The book is really about mind and cognition, using dreaming as a vehicle.

Were it not for his modeling of the workings of the immune system, holography, and the concept of an enfolded universe, it would be just another wildly speculative "philosophy" book. But, of course, the whole point is that it is not just that and it is because it is not, that the book provides empirical leverage for people with feet of clay like myself to be pulled, perhaps begrudgingly, into a world that others more of a mystical persuasion can just feel and accept. I must confess, however, I was primed to read Globus' book, as I am generally familiar with Pribram's work on the holographic theory of mind and with Bohm's work on the implicate order of the physical universe. In any event, I would suggest that the scientific type mind read, as I did, Chapter Four first.

One would hope to hear more from Globus. I personally would like to hear more from Globus the "cognitive scientist" and less from the "phenomenologist." But I am still willing to read Globus the "cognitive phenomenologist" and I am willing to accept that perhaps it is by virtue of the enfolded configuration of the order of possibility which constitutes the mind of the Gordon Globus I just finished reading that made it possible for him to only write what I just read. And if this is so, it is more than sufficient for now.

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