

## BOOK REVIEWS

**The Interrelationship Between Mind and Matter** edited by Beverly Rubik. Philadelphia (PA): Center for Frontier Sciences, Temple University. 281 pp. \$20 (p). ISBN 0-9633272-0-8.

### REVIEW I

This is the proceedings of a conference hosted by the Center for Frontier Sciences in May 1989 at Temple University, Philadelphia. It comprises 14 papers that were written or modified up to 1991 making the material more up to date than the conference date would suggest.

There are sixteen papers plus an introduction by the Editor and Director of the Center, Beverly Rubik. The papers are from well-established contributors to the field of mind-matter interaction. With perhaps one or two exceptions, the authors take the opportunity to write mini-reviews of their fields rather than present new results or theories. For this reason, the book is a very useful reference for those areas it does cover, and excellent for those like me who need to be brought up to date. The subjects range from meditation to the mathematics of coherent states. This breadth means that it is likely that many readers will not be interested in every contribution, though most JSE readers will probably find something of interest.

### *Philosophical Contributions*

In her introduction, Beverly Rubik attempts to unite the individual contributions under the theme of mind-matter interrelation. This is always a difficult task, especially for such a diverse field. I recommend this be read after the subsequent papers.

David Turnbull writes on "Maps, Perception, and Reality." In common with several other papers in this collection, this is a circumspect view about our approach to the problem of understanding (e.g. the relationship between mind and matter). He makes the point that maps help perpetuate the belief in an objective, independent environment; though his interesting comparisons between Aboriginal and Western maps show that there are quite different functionally useful alternative representations of a terrain.

Brian Josephson makes a short but interesting appeal for science to be more open to the consideration of subjective experiences of consciousness.

Rajen Mishra writes on "Dimensions of the Observables and the Nature of Nature." Uplifting stuff about Life, the Universe and Everything, but I must confess not to be sure what it means.

Steven Rosen appeals for a more holistic view of the "mind-matter problem." He begins with an historical perspective as to how we got into this dual-

istic mess. To resolve the paradoxes of mind or matter, he suggests we instead embrace mind and matter as two mutually dependent, reciprocal perspectives. He suggests that the dichotomy is analogous to the two perspectives of the Necker Cube. The two views can be seen simultaneously if the paradox is accepted, whence the opposite sides penetrate each other. Interestingly, there seems to be the implicit suggestion that we can better come to terms with (if not transcend) the paradox of dualism by repeating and absorbing the lessons of the simultaneous perspectives of the Necker Cube.

### *REG/PK Papers*

Helmut Schmidt offers "Progress and Problems in Psychokinesis Research." This is a lucid statement of some of the issues facing PK, especially of the perturbed 'random event generator' (REG) variety. A discussion of retrospective PK action is used to illustrate his Equivalence Hypothesis: "The (strength of the) PK effect is independent of the internal structure of the REG." Thus REG PK results are unaffected by the introduction of a time delay between event generation and the efforts of a PK operator, suggesting a connection between psychokinesis and pre-and post-cognition.

The contribution from Princeton by Brenda Dunne and Robert Jahn is entitled "Consciousness, Randomicity, and Information." An updated-though broadly unchanged-version is available as a report from the Princeton Engineering Anomalies Research group. Like the paper by Schmidt, this is in the style of a review: between the two there are 38 references. Included are the now ubiquitous graphs of probability versus trials showing significant PK effects on REG data. (Beware of the confused axis labeling.) Anyone still doubting the reality of PK should have one of these graphs stapled to the inside of their eyelids.

The authors consider how a quantum-mechanical paradigm might apply to psychokinesis. The key appeal of this approach is the non-local nature of the wave-function, taken to symbolize the consciousness of both man (mind?) and REG machine. Provided we assume that the two were already somehow correlated, we are then relieved of the responsibility of finding a force that propagates between man and machine in order to explain PK. Then we can talk about correlation and synchronicity rather than cause and effect. Presumably to explore this idea, further experiments have been carried out at Princeton involving more than one operator simultaneously applying their PK abilities on a single target ("Co-Operator Experiments with an REG Device"). The meaning of the results therein are unclear: in some cases the combined effect of operator pairs is too high to be a coherent sum of quantum-mechanical amplitudes.

Walter von Lucadou continues the theme with a paper entitled "Nonlocality in Complex Systems: A Way Out Of Isolation?" His claim is that PK is a non-local goal-oriented correlation, not a signal. This hypothesis is worthy of in-

vestigation quite independently of the quantum-mechanical context in which he frames it. His claim is that goal-orientedness and signal-transmission are incompatible. It is based on a thought-experiment in which a PK-detecting filter is interposed between REG source and subject. The filter blocks PK efforts (assuming such were a signal), by transposing base-line and operator data.

Owing to the nature of his proposed filter, I doubt that the Gedanken-experiment proves the point. However, the issue is important and deserves further attention.

Henry Stapp takes up the connection between quantum mechanics and consciousness. His suggestion is that the human brain is the measuring device that collapses the wave-function. He equates conscious events with actual (classical) events between possible states offered by the wave-function. It seems that by conscious events he means 'thoughts,' although he presumably would deny that status to similar events generated outside the brain. The 'decider' of which events to actualize is the self.

The advantage of this approach is that PK is a side effect of cerebral collapsing through the shared, and thus correlated, wave-function. The disadvantage is that it does not offer any idea about the relationship between the self and the actualization. Also, as with Lucadou, the question, how the global wave-function arrived at a such a strong non-local coherence (between brains), is not addressed.

F. Peat writes poetically on the correlative nature of experience ("A Science of Harmony and Gentle Action"). His suggestion is that the non-local correlations (accounting for PK etc.) arise from common initial conditions of a non-linear system. His non-local correlations are quantum-mechanical, presumably based upon the wave-function itself. If that is the case, a question arises concerning the source of the non-linearity and possible chaos, keeping in mind that the wave-function satisfies a linear differential equation.

### *Medicine/Healing*

A paper by Frank Putnam investigates the role of multiple personality disorders in helping us understand the transition between states of consciousness. His suggestion is that this will throw light on the relationship between mind and body, presumably via the physiological correlates of the different personalities.

Larry Dossey begins his article with a discussion of the absence of a role for consciousness and mind in modern medicine. But the main part is a readable, interesting review of the results of controlled trials of prayer for healing illness. Included in these is the Spindrift series of experiments where prayed-for and unprayed-for nutritionally stressed seedlings were compared in their growth rate. It was very interesting to learn that the positive effects of prayer are greatest when no specific outcome is held in mind other than a "pure and holy consciousness of the recipient."

Beverly Rubik writes on "Volitional Effects on a Bacterial System." This paper is about the results of healing trials involving Olga Worrall and others on nutritionally stressed bacteria. The results unequivocally demonstrate the positive effect of healing and are definitely worthy of our attention. If you are not already familiar with this work, then perhaps this paper by itself makes the book a worthwhile purchase.

### *Others*

F. A. Popp writes on the (quantum) coherence of living systems, particularly involving light. The idea is that light may play a role in inter-cell communication and the integrity of living systems. Light carries not just a signal, but maintains quantum-mechanical coherence of electronic or vibrational states of DNA over extended regions of an organism.

There is very little extraneous light emitted by most organisms, and therefore it has to be collected as individual photons. Unfortunately, for very weak sources there is no difference between the photon statistics of random white light, and almost perfectly coherent monochromatic light. The same problem arises when considering fluorescence. The intensity decay signature of monochromatic light from a highly coupled system is hyperbolic rather than the usual exponential; but the same signature is expected from an uncoupled system with a uniform spectrum of radiatory transitions (such as one might expect from long, complex, molecules!) I therefore caution against an optimistic interpretation of these results.

"Meditation and Mind/Matter Interface" is the subject of a paper by K. Rao. His theme is that meditation is a complex field of investigation in its own right. He complains about the failure to properly discriminate between the states of consciousness of participants in experiments designed to test the effects of meditation on PK, etc. The different aims and methods of different meditation techniques, including the spread of ability of practitioners, all combine to create a very wide variety of altered states. These states differ not just in degree, but also in kind.

This contribution is a survey of some of the main schools of meditation. It should at least begin to show how vast this subject is. Unfortunately, I have found that even amongst seasoned practitioners, there is not a great deal of understanding of the methods and qualities of schools outside their own; so it is hard to see how any useful, universally accepted, inference can be drawn about a subject's state of consciousness from their practice. Not until we have a machine to measure it with. . . .

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