Australian Journal of Parapsychology
2003, Volume 3, Number 1, pp. 43-58.

Response to Lance Storm's Review of "PSI: What it is and how it works"

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Lance Storm is to be commended on a very sound review of *PSI.* It is not my intention to "cross swords" with him in this article because he has not revealed enough of his own position to justify a debate and in any case I think more is gained from collegial dialogues than adversarial debates. My approach, therefore, will be to clarify and expand points about which Storm has indicated the strongest reservations. To that end, rather than track and reply to his comments point by point in the same sequence he presents them, I have chosen to address them in the context of the fundamental issue that cuts across them all, namely, the philosophy of Mental Realism.

THE MENTAL REALIST CONCEPT OF COSMIC MIND

The fundamental philosophical framework of everything I write is called "Mental Realism." Storm quotes from PSI what he calls its "essence." It is actually the first sentence in the first of six propositions in a three-page summary of the ontology but it can be fairly called the "essence":

> The objective world or universe can best be characterised as the thought process of a Cosmic Mind, the basic structure of whose

> thought is a holarchy[1] of probability fields and the evolution of whose thought consists of generative field equations and multiple trial solutions of those equations (p. 33).

Storm observes that:

> . . . what Chandler is saying is that the universe is not all matter, but is all mind. Actually Chandler proposes a '*psychic universe*.' These concepts need amplification, but the patient reader must read on before Chandler explains and illustrates things more fully.

More precisely, Mental Realism does not claim that the universe is "all mind," which might be construed as panpsychism, but that the universe is *the thought process of a Cosmic Mind*. The concept of a psychic universe was rather thoroughly amplified in *The Mind Paradigm: A Unified View of Mental and Physical Reality* (Chandler, 2001a) and *PSI* is a further application of it. Nevertheless, many of Storm's comments indicate that the concept of a psychic universe is still, at least to him, not sufficiently transparent. For example, he says that Mental Realism "suggests, and proves to be, an Idealistic approach to psi ironically couched in Dualistic and even Materialist terms." Mental Realism is actually far less enigmatic than this cryptic statement implies. Since, however, I believe confusion about it overshadows all of Storm's remarks, dispelling that confusion needs to go to the head of the line.

A Mental Realist perspective demands that we jettison some traditional habits of thought. The primary given or datum in life is what we call our "phenomenal worlds," the worlds that appear to our consciousness in all its so-called "states." Nothing else is so directly cognised. If any other world or aspect of the world exists, it is one constructed by *inference*. There has always been one philosophical question of questions in *all* civilisations (cf. Chandler, 2001c, pp. 112-148): What kind of world, if any, exists apart from the ones of which we are directly conscious? Some people—positivists—consider that an irrelevant unanswerable question, at least for science. All that counts for them is that they can make observations and on

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[1] The term, "holon" was coined by Arthur Koestler (1989, p. 48) to emphasise that all units, from the level of subatomic particles to that of ideas, are "wholes" made up of lower-level parts while also being "parts" of higher-level wholes. A "holarchy" is a "nested" hierarchy of holons, so called to emphasise the interdependence of the levels in the hierarchy rather the dominance of one level implied by the term "hierarchy."

the basis of formulatable regularities in the form of equations, predict the likelihood of other observations. Their judgment is that whatever, if anything, goes on "behind the scene," in what Kant called the *noumenal world*, is never directly knowable and thoughts about it are mere speculation.

However, if we are not content to be positivists, we have to choose a metaphysic, a rational, coherent view of what is "behind the scene" of consciousness. Once we go that far, we have committed ourselves to some form of *realism.* Physicist Bernard d'Espagnat defines realism as follows:

> Realism can be stated formally as the belief that a mere description of data is not all that should be required of a theory. Even an empirical rule for predicting the patterns of future measurements is not enough. The mind demands something more, not necessarily determinism—there is nothing intrinsically irrational about randomness—but at least objective explanations of observed regularities, or in other words causes. Underlying this demand is the intuitive notion that the world outside the self is real and has at least some properties that exist independently of human consciousness. (d'Espagnat, 1983, p. 177)

The issue, then, is what kind of properties do characterise the noumenal world and in some sense "cause" it to be the way it is. The "default" metaphysic of modern science has always been *physical realism* or "materialism." The popular variety of materialism from Newton's time to the end of the nineteenth century was *atomism*, a revival of the doctrine of the Greek philosopher, Democritus (460? - 370? BC). Democritus held that the universe "behind the scene" is composed of invisible, indivisible particles called "atoms" (meaning "uncut") moving in an infinite void. Since there is no "higher" purpose for life derivable from random atomic meanderings, Democritus, like Lucretius, his Roman follower several centuries later, espoused hedonism, the doctrine that pleasure in reasonable measure is the goal of human life. Known in his time as "the Laughing Philosopher," if Democritus were around today he would probably still be laughing at what havoc his atomism wreaked on modern science. At the end of the nineteenth century, the materialist metaphysic viewed the noumenal world as composed of submicroscopic planetary systems with relatively big but still invisible and indivisible particles at the centre and much tinier particles orbiting them, all according to Newtonian mechanics. On the other hand, Newtonian mechanics was simply a set of mental equations, so one could legitimately ask why mindless little billiard balls would pay attention to Newton's mathematical laws? Why would atoms, totally devoid of

intelligence, muster like good soldiers and march in flawless drill to a cosmic cadence? Or, as physicist Richard Feynman put it,

> [Newton's Law of Gravitation] has been called 'the greatest generalization achieved by the human mind', and you can guess already from my introduction that I am interested not so much in the human mind as in the marvel of a nature which can obey such an elegant and simple law as this law of gravitation. Therefore our main concentration will not be on how clever we are to have found it all out but how clever nature is to pay attention to it. (Feynman 1990, p. 14)

Feynman never explained how nature gets that clever and at the end of his book, *The Character of Physical Law,* concluded that it really is not a scientific question. He was right. It is a *philosophical* question. The metaphor that provided a "closet" explanation for the order in nature from Newton to Einstein was God or, in Einstein's terms, *Der Alte*, "the Old One." The Newtonian-Einsteinian God was, however, the *originator* of laws that simply persisted after the "beginning" (or "eternally" if there was no beginning) so that the universe ran on like a clock endowed with perpetual motion (a.k.a. *inertia*). Although Newton believed that the Great Clockmaker had the power to adjust his mechanism on occasion, physicists in general considered that belief unscientific. At the beginning of the twentieth century, the question of how a mindless, mechanical universe obeyed elegant *mental* laws still had no credible philosophical explanation.

In less than a quarter century, however, that question itself had to be recast in different terms because the quantum revolution had demolished the clockwork universe. Unless they were content to remain positivists, both scientists and philosophers had to rethink what lay behind the phenomenal curtain. They had a choice to make that was unprecedented for its future implications. They either had to attempt a restoration of materialism in new terminology or complete the quantum revolution by constructing a metaphysic that was equally revolutionary. The best effort at the former was based on Einstein's matter-energy equivalence. Mini-planetary atoms were discarded and *energy* took their place with "matter" viewed as a condensed form of energy. Physicists found they could live with the idea that energy could come in the guise of either particles or waves. The important thing was that noumenal reality would consist solely of *energy transactions* describable in equations that always balanced. Conservation of energy replaced conservation of matter. At the quantum level linear determinism was bowing out to statistical determinism and electrons were turning into ghostly "potentia" with a "tendency to exist." In a relatively short time

whatever credibility "materialistic" concepts ever had was simply drowned in a spate of *abstract* entities: quarks, superstrings, branes, spin networks, etc., etc. One of the most recent examples comes from the work of a brilliant young Greek physicist, Dr. Fotini Markopoulou Kalamara, who has been working in the area of LQG or loop quantum gravity. Without burdening this paper with the details of the problem Kalamara is involved with, the result of her work today is reported to be a theory of "networks that do not live in space and are not made of matter. Rather their very architecture gives rise to space and matter. In this picture, there are no things, only geometric relationships. Space ceases to be a place where objects such as particles bump and jitter and instead becomes a kaleidoscope of ever changing patterns and processes" (Gefter, 2001, p. 41). As Alice might say, "Reality is getting mentaler and mentaler." We must not forget, however, that "hardbody" materialism has not quite disappeared. Like the smile of the Cheshire cat, energy remains when all else disappears and it is now the last holdout of materialism. But before we eliminate the cat entirely, let us see what the alternative is.

In *The Mind Paradigm*, I made it abundantly clear that Mental Realism is not something I *invented* but a worldview that has deep historical roots and now has at least a tenuous foothold in contemporary science and philosophy. When I wrote that contemporary physicists have learned the mechanics of the quantum revolution but not its wisdom, Storm responded, "Chandler forgets that we cannot be so credulous and accept new theories at an instant." What he seems to have missed is that the "wisdom" to which I was referring, as the text makes perfectly clear, was that exemplified by Jeans, Eddington, Heisenberg, Schrödinger and other pioneer physicists whose understanding that we live in a *thought universe*, not a mindless material one, was expressed no less than *seventy years ago*. It is not a question, as Storm puts it, of "an iconoclastic, even subversive, theory" taking root and then resisting subsequent subversive theories. Quantum mechanics *was* the iconoclastic theory. The problem was that only a *part* of quantum theory took root, namely, the technical, positivist part. Practising physicists, enchanted by predictive success, either naively retained the archaic materialist metaphysic they had inherited from the past or eschewed metaphysics altogether (the positivists). Sir James Jeans observed early in the quantum era that, "the universe begins to look more like a great thought than a great machine," and Sir Arthur Eddington wrote, "The stuff of the world is mindstuff." Both men clearly understood that conceiving the universe as mental would have been the most obvious choice had physicists not been misled by the notion of "matter," which Jeans called "inert and stupid." All I did in *The Mind Paradigm* was argue that "mindstuff" is the stuff of Mind—Cosmic Mind.

How does Mental Realism deal with *energy,* which now seems to be the only concept left standing as a possible metaphysical substrate for the old "materialist" worldview? For an authoritative answer to that question we can look to no less a personage that Steven Weinberg, the Nobel Prize-winning *co-originator* of the electroweak interaction model (who also happens to be quite hostile to the existence of psi phenomena). According to Weinberg, "energy" is quite different from a metaphysical substrate:

> In today's quantum mechanics, we *define* the energy of any system as the change in phase (in cycles or parts of cycles) of the wave function of the system at a given *clock* time when we shift the way our clocks are set by one second. (Weinberg, 1993, p. 139)

Weinberg declares himself a realist as distinguished from the positivists, observing that,

> The positivist concentration on observables like particle positions and momenta has stood in the way of a "realist" interpretation of quantum mechanics, in which the wave function is the representation of physical reality. (Weinberg, 1993, p.131)

But what exactly does "realism" mean for Weinberg? "I certainly do not want to enter this debate on the side of Plato," he avers, while at the same time stating that, "the reality we observe in our laboratories is only an imperfect reflection of a deeper and more beautiful reality, the reality of the equations that display all the symmetries of the theory." (*op. cit.*, pp. 194-5) He "explains" this apparent paradox by saying, "My argument here is for the reality of the laws of nature, in opposition to the modern positivists, who accept the reality only of that which can be directly observed" (Weinberg, 1993, p. 45). What an extraordinary version of "physical" realism! *Equations* and their *solutions* are the reality permeating the noumenal void. In short, the *reality* behind the scenes of phenomenal space is a *thought* reality—the master equations that constitute the "laws of nature" and the specific "formative" or "generative" equations for specific noumenal occurrences.

What seems ironic to me as a Mental Realist is that, while scientists credit *their* minds for "thinking up" or "discovering" mathematical expressions of those equations—and even get Nobel prizes for it, they are content to credit *no mind* with their existence. Mulling on the nature of these equations, another theoretical physicist of considerable repute, Stephen Hawking, says,

> Even if there is only one possible unified theory, it is just a set of rules and equations. What is it that breathes fire into the equations and makes a universe for them to describe? The usual approach of science of constructing a mathematical model cannot answer the questions of why there should be a universe for the model to describe. Why does the universe go to all the bother of existing? Is the unified theory so compelling that it brings about its own existence? (Hawking, 1990, p. 174)

Hawking has highlighted a dimension to reality that Weinberg's words do not reflect. The wave function is a characteristic of an *information* field that defines the probabilities available to any subatomic holon but the reality behind the phenomenal scene is not simply probabilities defined by the wave function. Actual *choices* are made for holons to realise specific possibilities and when that happens those holons no longer have, as Heisenberg put it, a "tendency to exist," but actually exist, which means they can enter (psychic) energy transactions and causal chains. Mental Realism is not, as Storm suggests in his conclusion, "borrowing terms from physics out of hand, when he [Chandler] might have invented his own terms in order to maintain the seemingly idealistic theory that is suggested in the name Mental Realism (a theory that refers back constantly to a Cosmic Mind, and regards the universe as comprised of mind, not matter)." On the contrary, I have, for example, proposed the term, "Primordial Field" for the primordial structure of cosmic thought and argued that all fields, from those that provide the structure of human thought to those of elementary particles, are *downward derivations* from the Primordial Field, which I have elsewhere termed the Cosmogenic ("world-creating") Field. Each of the many levels of the Primordial Field, therefore, has certain parallels at the other levels. Very few neologisms are necessary when we change from a "material" world to a mental one. All we have to remember is that energy in the latter becomes intelligent psychic energy instead of stupid "stuff."

One of Storm's principal difficulties is that he does not grasp the difference between idealism and Mental Realism, which he calls a "*seemingly* idealistic theory." Danah Zohar says with respect to idealism,

> But in any form, idealism doesn't sit well with our commonsense intuitions about the world of experience, and it is ill suited to the pursuit of objective science—to wit, the new subjectivism arising from popular quantum physics. It is a theory that satisfies few people who want to understand the relationship between *real minds and real bodies.* (Zohar, 1990, p. 96, emphasis added)

Today's common sense, it has been said, is yesterday's philosophy and that saying has never been truer than it is in respect to our habit of thinking in archaic materialist terms. It is this bad habit which is revealed in Zohar's reference to "real minds and real bodies." If our bodies are intelligent energy processes (which they are as part of the cosmic thought process), does that imply they are less real than stupid energy processes? Energy is still energy, still objective in relation to our experience, still measurable. One must be very careful in considering the idea of a thought universe not to confuse objective categories with experiential ones. If by "real bodies" we mean *visible, tangible, audible, smellable and tastable* bodies that feel pain and pleasure, depression and elation, then we need to remind ourselves that visibility, tangibility and all the rest belong to the phenomenal world, the *world of consciousness*, not to the objective world. Our bodies are real, objective, physical thought processes of Mind and our conscious experience is also real, as distinct from illusory, to the extent that it reflects those objective processes.

This comment, however, probably does not do complete justice to Zohar's complaint. What she is really concerned about is what happens to the "robustness" of the universe when it is conceived as a thought process? Can the awesome fusion forces of the Sun be just *thought?* Can the atomic explosions which destroyed Hiroshima and Nagasaki, the volcanic eruptions that buried Pompeii and tore apart Krakatoa, or the Yucatan asteroid impact that extinguished the dinosaurs, or the earthquakes which, through the millennia, have killed so many millions of humans and animals be attributed to *thought processes?* Even though "matter," that solid, massy, impenetrable stuff of speculative philosophy, has gone the way of phlogiston and the ether, what about *energy* which has apparently replaced matter as the "substrate" of the physical world? It simply perpetuates the old error. As physicist Paul Davies points out,

> You cannot see or touch energy, yet the word is now so much part of daily conversation that *people think of energy as a tangible entity with an existence of its own.* In reality, energy is merely part of a set of mathematical relationships that connect together observations of mechanical processes in a simple way. (Davies & Brown, 1995, p. 26, emphasis added)

We have already discussed the way fundamental physics treats energy but that does not completely explain the distinction between idealism and Mental Realism. The fundamental difference between Mental Realism and any form of idealism, subjective or objective, can be summed up in one word: *WILL*. Cosmic Mind not only *thinks* the world in generative

equations but *chooses*, i.e., selects and wills which solutions to those equations will be instantiated in the manifest noumenal universe. In Mental Realism the psychic energy of Cosmic Mind's will replaces the materialist anachronism of "energy as a tangible entity with an existence of its own." There is no dualism involved. Cosmic Mind's universe is its own thought process, not a separate kind of reality on which its thought is imposed. Mental Realism is an ontological monism although it is simultaneously a *modal* dualism. One mode is *thought, including intentionality and choice;* the other mode is *consciousness.*

Mental Realism was, in fact, propounded originally as a solution to the dilemma posed by the dualistic legacy of the Cartesian Dualism. Cosmic Mind thinks the universe and is conscious of its own thought. Where is the dualism in that? From my statement that every physical process is a wave/particle phenomenon which participates in a holarchy of information field levels that are downward derivations from the Primordial Field of Mind's universal thought process, Storm gets the "feeling that talk of waves and particles leans more towards a Materialist discourse rather than an Idealist discourse." I have no idea why he gets that "feeling." In the first place Mental Realism, as explained, is not idealism but more importantly, it does not change physics at all. Physics is not wedded to any ontology. The advantage of Mental Realism is that it holds the objective processes of the universe to be rooted in intelligence rather than mindlessness. Thus its universe is not one whit more "ill suited to the pursuit of objective science" as Zohar complains of subjective idealism. Mental Realism simply explains why it is so hospitable to that pursuit. If, as Jeans said, "the Great Architect seems to be a mathematician," then scientists can be assured they are discoursing mind to Mind in the great mathematical dialogue of science, rather than mind to mindlessness.

There are a couple of additional points about Mental Realism to note before proceeding to the relationship of individual minds to Cosmic Mind. In the first place, Cosmic Mind as Mental Realism conceives it is not an engineer working off a celestial blueprint or a predetermined plan but an *inventor.* Mental Realism conceives of physical laws, including the laws of probability, as *routines* subject to variability by Cosmic Mind. Fundamental constants are also conceived as variable and in recent physics variations have been proposed for even such canonical constants as the speed of light and the rest mass of the electron. We should expect that long term stability of these fundamental routines would be necessary over long phases of cosmological evolvement but not that they are eternally invariable. The possibility has been suggested by cosmologists that for all we know this may be the zillionth attempt to "jump start" a universe and several cosmological speculations suggest that we may simply be in the lucky

position of drawing a place in one of the attempts that managed to make it as far as intelligent observers while the rest crashed too soon. Likewise, the "many universes" theory of Everett assumes that each time a quantum transposition is collapsed, the universe branches. Both of these theories, in my opinion, notoriously lack parsimony and effectively amount to no explanation at all. Mental Realism's Cosmic Mind is a much more parsimonious solution. Stephen Hawking asked, "Is the unified theory so compelling that it brings about its own existence? Or does it need a creator, and, if so, *does he have any other effect on the universe?*" (Hawking, 1990, p. 174, emphasis added) To the last question, Mental Realism answers, "Yes." It should be remembered that the "many universes" theory of Everett is one among many efforts to avoid the infinite regress of quantum transpositions that arise *because and only because* no observer transcending the universe is admissible in the *materialist ontology*. Mental Realism provides that missing observer but it goes a step further. It is not *observation* that "collapses the wave function" but Cosmic Mind's *volition.*

When Storm says, "As for Cosmic Mind, Chandler might well have called it God and be done with it (he even makes that equation on page 267)," I disagree. On page 267 I was quoting the Sufi mystic, Hafiz, with respect to the question of free will. After Hafiz's word, "God's," I inserted "Cosmic Mind's" parenthetically simply to indicate that what Hafiz said about free will in his theological context was applicable as well in my philosophical context. The concept of Cosmic Mind is not a religious notion *per se*, but the fact that it entails purpose, design, etc., tends to excite severe theophobic reactions among some scientists and scientistic philosophers. In my view, merely arguing that the universe is an intelligent psychic energy process is not enough to warrant calling Cosmic Mind "God." The latter involves an ascription of supreme worth, one that evokes thankfulness and worship (root: Old English *weorthscipe*, i.e., worth-ship). Perhaps Cosmic Mind is loving, caring and worthy of reverence but it is logically conceivable, as more than one thinker has suggested, that all that intelligent creativity is nothing but a sadistic or at best feckless game of monstrous proportions. There is, however, more to Storm's offhanded comment than whether or not Cosmic Mind's character makes it worthy of Godship. He follows it up with the following:

> From his explanation of PK, I gather Chandler implies that divine intervention, God working through the faith of humans, is also possible. After all, if humans do not have free will at the individual level to change the physical laws and laws of probability . . . then Cosmic Mind must be responsible for PK (it's no wonder that Chandler asks why on page 368). Chandler has thus replaced one

> mystery with another, and makes no attempt to explain it. His theory is based on a statement of faith which renders the theory not only largely philosophical (and therefore ultimately non-empirical and impossible to validate at its core), but also does not explain why the universe should be regarded as intelligent and sentient and ordered in the first place. For many, there is just as much evidence that chaos (i.e., entropy) is the dominant principle in this universe, and it is anyone's guess where that leaves intelligence and sentience as nebulous forces that exist throughout the universe. If psi only works "in the kind of psychic universe that mental realism postulates" (p. 266), Chandler's theory must therefore remain ill-founded.

Now that paragraph is a real Gordian knot, especially from someone who calls *my* writing style "dense" (while graciously explaining that he uses that term to mean "intricate"). *Of course* Mental Realism is a philosophy, i.e., a *metaphysics,* and, like all metaphysical views, it is impossible to validate (or falsify) empirically. The function of philosophy in general is to examine, critique and recast fundamental assumptions and the ultimate test of a metaphysic is whether intelligent, rational, well-informed and open-minded people, some of whom are scientists, find that it makes *more sense* (that's about as precise as you can get) of the world in which they find themselves than its alternatives. Such people forego the luxury of arbitrarily excluding from consideration any segment of human experience that purports to be significant. My world, for example, includes the noetic validity of the ultimate mystic vision and Mental Realism therefore *must* take that into account—which it does. My world also includes the reality of *some* paranormal phenomena, so Mental Realism *must* take those into account—which it does. Now, not having Alexander's sword, let us see if we can untangle the rest of Storm's Gordian knot.

The Mental Realist Conception of Us

To keep things simpler, since Storm started using the "G" word, let us assume that, *with the reservations I mentioned above,* God and Cosmic Mind are equivalent. In the first place, I have never claimed that the *universe* is intelligent or sentient. Cosmic Mind is both. In the second place, I don't know who argues that "chaos (i.e., entropy)" is the "dominant principle" in this universe. Even entropy is ordered statistically by the Second Law and higher levels of order are "dissipative systems" that feed on entropic energy. The meaning of the clause . . .

> . . . and it is anyone's guess where that leaves intelligence and sentience as nebulous forces that exist throughout the universe. If psi only works 'in the kind of psychic universe that mental realism postulates' (p. 266), Chandler's theory must therefore remain ill-founded . . .

. . .is completely opaque to me. Water can certainly be said to be the dominant chemical compound on Earth's surface and bacteria the dominant amount of biomass but civilisation is built by humans, not microbes, and on land, not water. It has been more than adequately demonstrated that psi phenomena are inexplicable in a universe conceived in materialist terms, but in my judgment it is explicable in one conceptualised in psychic terms.

What can Storm's reference to "divine intervention" and "God working through the faith of humans" possibly mean in a world that is wholly a thought process of God? At best it must simply mean that God's intention at some point requires varying a previously established routine for some period of time. In cosmological terms this might entail altering the speed of light or the rest mass of the electron for an eon or two, both of which have, in fact, been proposed by physicists. In human terms it might simply mean short-term skewing the laws of probability to affect the output of a REG. "Divine intervention" implies that the universe is different from God, but for Mental Realism it *is* God insofar as it is his mental activity and nothing else.

With this in mind, I also have to point out that "God working through the faith of humans" is also meaningless for a Mental Realist. Faith is a concept relative to a certain theistic dualism. Mental Realism is *monistic*, so faith has no more relevance to it than individual free will. This is made perfectly clear in *PSI*:

> Although Mental Realism grants the existence of individual cerebral processing systems (brains), it does not support the existence of "mini-minds" independent of Cosmic Mind. Therefore: Since there are no mini-minds independent of Cosmic Mind, the idea of attributing free will to them is meaningless. In the mental realist worldview all choices, from the quantum level to that of the human mind, are the decisions of Cosmic Mind alone. Our free will is Cosmic Mind's free will. (Chandler, 2001b, pp. 61-62)

For what it is worth, in that passage I also revealed my own theological position. My contention, however, is that no theology is *implied by* or *deducible from* Mental Realism but is one among several "stances" one can

take toward it. In the Mental Realist view we are the latest budding tips of Cosmic Mind's thought process on this planet, perhaps even in the entire universe and the Cosmic "I" that sees through our "I's" is the primordial consciousness of Cosmic Mind. Our stance toward that situation, however, depends on what we judge to be Cosmic Mind's *motives* for it. Storm remarks, "After all, if humans do not have the free will at the individual level to change the physical laws and laws of probability (see p. 344), then Cosmic Mind must be responsible for PK (it's no wonder that Chandler asks why on page 368)." Again, I have to say, *of course* Cosmic Mind is responsible for PK but its will *is* our will. The section on PK entitled "Why PK?" could have been asked in respect of any psi phenomena. As that section makes clear, it is a speculative question about why Cosmic Mind is inserting these fragmentary anomalies into its human-level perspective at this time in human evolution.

Among the other things about which Storm is confused, is:

> . . . why it is necessary to propose a wave when the brain model we currently have is, at the very least, more parsimonious than Chandler's model. That is, why do we need a wave when it is known that complexes of neurons suffice in themselves to hold memories?

Superior parsimony is certainly a desirable characteristic of any model *provided* the model incorporates adequate explanations of the relevant phenomena. Although Storm normally cites his sources, he does not cite one that supports the adequacy of "the brain model we currently have" or even where this model is to be found. Who has established "that complexes of neurons suffice *in themselves* to hold memories"? My view is that the brain is not a thinker or a computer or a memory storer but primarily a *resonator* or *scanner*. The brain, with respect to cognition, and the whole human being with respect to all its functional levels, I describe as a *complex conjugate of determinate and indeterminate states*, a description that applies to the entire universal holopresent. There is nothing arcane about that description. It simply means that we consist of *psychic energy components* that are relatively enduring and stable, like our bones, our brains and our global cognitive structures (memories) along with other components that are open-ended, unanswered questions, equations seeking solutions or attractors seeking stable states, depending on the vocabulary you prefer. Mental realism's *universal holopresent* is somewhat similar to Pierce's definition of the past as "the sum of accomplished facts" or Whitehead's "consequent nature of God," although Mental Realism does not share the rest of Whitehead's ontology. The holopresent consists of every choice in the

universe that has been made as well as all open possibilities that remain to be decided.[2] Storm's claim that "Chandler needs to set up his memory model so that he can then lead us to his theory of what psi is and how it works" seems to imply my theory of memory is a *deus ex machina* when, in fact, it has always been a cornerstone of Mental Realism. The memory model was presented in *The Mind Paradigm* and it is my view that it underlies telepathy, so naturally I would "set it up" first for those who were not previously familiar with it. I further employed it in dealing with certain aspects of the savant syndrome in *The Android Myth.*

Storm's next allegation is that:

> It's chicken-and-egg stuff in one sense, but Chandler is saying that Cosmic Mind came first, and the patterns or configurations of our cognitive functions are derived from that pre-existing Mind. It appears to this reviewer, however, that the reverse might also be true. Perhaps mind grows as it goes along, filling the universe with mind stuff (perhaps this mind stuff is, or becomes, universal consciousness?). Perhaps mind evolves just as species change from one form to another. In an earlier chapter, Chandler already refuted this idea, and argued that such an idea suggests that life and intelligence were the result of "blind chance and natural selection" (p. 34)—something he finds distasteful. His only defense is that physics has shown us the way—the existence of pre-existing waves/particles in the universe allows him to go where he goes with his theory of Cosmic Mind.

To adopt Storm's terminology these are *scrambled egg* comments. First, one cannot argue with "perhaps-ism" or "might-also-be-true-ism." If these suggestions of Storm's are to be taken seriously, they need to be specific about their *modi operandi*. Second, I do not find "blind chance and natural selection" distasteful. I find them utterly ridiculous when raised to the level of architectonic principles as do Monod, Dawkins and Dennett amongst other thinkers. Third, it is not at all clear to me against what "the existence of *pre-existing* wave/particles," which I don't recall maintaining in the first place, is a defense.

Finally, Storm says:

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[2] The "present" of "holopresent" is to be understood as being from Cosmic Mind's viewpoint. It is not related to scientific concepts of time, either quantal or relativistic.

> However, the way the theory comes down, the naïve reader would be forced to think that any one can do psi (all one needs is the volition), but this is simply not the case (cf. personality-ESP research, and belief-ESP research), and Chandler ignores this research. Thus, a most obvious problem with the theory is largely overlooked—that of necessary conditions. The one-page account given of Braud's (1975, not cited in Chandler, pp. 328-329) psi-conducive states can hardly be called a reasonable consideration of these conditions.

I don't know how the theory "came down" that way but it doesn't reflect anything I wrote and it doesn't represent my views. It amazes me that amid all the insightful comments Storm makes he could come up with one that is so "off the wall." There are many references in the book to "necessary conditions" for ESC.[3] I suggest, for example, that Storm re-read pages 155-162. I admit that my concern was more how psi works *when it works*, about which so little has been written, and less under what conditions it works, about which so much has been written, but nothing in the book justifies concluding that I think "anyone can do psi" and everything in it indicates exactly the opposite.

In conclusion, I would simply like to recall J. B. Rhine's observation of six decades ago:

> *I am more inclined to expect the final explanation to come from a fundamental readjustment of our view of mind and its relation to the world of the senses.* (Rhine, 1937, p. 130)

It is precisely that fundamental readjustment of our view of mind and its relation to the world of the senses that *The Mind Paradigm* and *PSI* have proposed. As I said in the last sentence of *PSI:* "While I do not claim this book is 'the final explanation,' it is my hope that it will help point parapsychology toward one" (p. 369). It is still my hope.

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[3] "ESC" is an acronym for "extrasensory cognition", which, in my opinion, better characterises paranormal phenomena than "ESP" (extrasensory *perception*). Storm himself points out that others share this opinion, specifically mentioning Michael Thalbourne (1982) who defines ESP as "paranormal cognition" (p. 27).

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