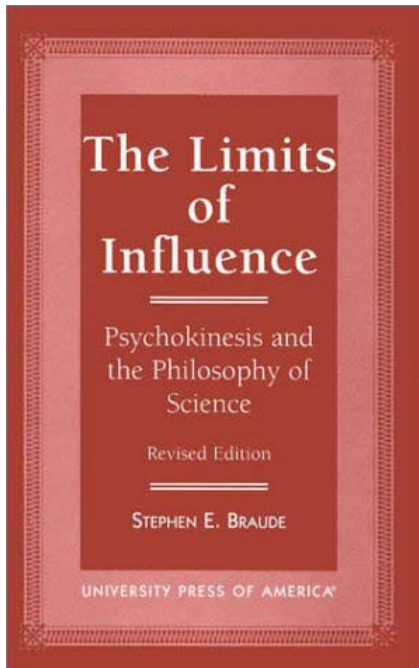


## BOOK EXCERPT



Stephen E. Braude

*The Limits of Influence:  
Psychokinesis and the Philosophy of Science* ↗

Paperback, 320 pages  
ISBN 0-7618-0624-5  
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## Chapter 5: Toward a Theory of PK

### 5.1 Introduction

In certain respects, the evidence for psychokinesis is similar to that in the case of an unsolved crime. We must determine whether it is reliable, and then decide which clues are important and what they point to. But that is no small task, considering the amount of material and the diversity of its sources and details. So it is no wonder that a central problem in assimilating the evidence is to determine what its underlying regularities are. After all, even the great physical mediums differed widely in their range and repertoire of phenomena and in their modus operandi. And poltergeist cases differ from these in numerous and possibly relevant respects. Hence, one major job for the theoretician is to determine what such differences indicate about the nature of PK, and whether the differences are linked by deeper regularities.

But as crucial as that task may be, theoreticians must first grapple with some matters of considerable generality and abstractness. Every scientific inquiry rests on an implicit and complex network of presuppositions, both metaphysical and methodological. These concern

such matters as the nature of observation (including, of course, the nature of the observer and the thing observed), the nature of properties, and whether different domains of phenomena require different modes of investigation. Hence, the roots of every scientific theory are *philosophical*, and these rarely receive the attention they deserve. No matter how imposing the superstructure of a scientific theory may be, it can only be as strong as its underlying assumptions. I have lamented, on other occasions, how scientists tend either purposely to ignore the conceptual foundations of their theories, or else display no awareness that they are implicitly philosophizing (sometimes quite badly) each time they theorize (see, e.g., Braude, 1979, 1981, 1982a, 1983). Likewise, parapsychologists have been either reluctant or ill-prepared to confront directly the deep philosophical issues underlying any theory of PK. Rather than belabor the point here, I will simply record my belief that this is one reason PK theory is in a sorry state and why the current crop of theories is, at best, premature.

In this chapter, then, I want to discuss very general constraints on our theorizing about PK and consider what form a PK theory should — or could — take. In fact, I want to address an issue that many parapsychologists assiduously avoid — namely, the extent to which a conventional scientific theory of PK is even *possible*. But before rushing headlong into the philosophical thicket, we must first examine some more thoroughly parapsychological issues, to which theoreticians likewise have given scant attention.

## 5.2 The Range of PK

A newcomer to parapsychology might reasonably expect theoreticians to have a more or less unified view of the proper scope of PK theory. But in fact, parapsychologists have displayed little agreement or clarity concerning the range of PK phenomena. Of course, one needn't know all the varieties of PK before developing a PK theory, any more than electromagnetic theory had to await an exhaustive inventory of electromagnetic phenomena. But in the case of PK, there remain serious doubts about what broad ranges of phenomena PK theory must cover.

Part of the problem is that it is unclear how “psychokinesis” should be defined, even provisionally (see Braude, 1979). Nevertheless, a reasonable and relatively undogmatic beginning might be the following. Let us define “PK” as “the causal influence of an organism on a region *r* of the physical world, without any known sort of physical interaction between the organism's body and *r*.”

This definition obviously leaves certain questions open. For example, because it does not specify that region *r* is *extra-somatic*, it seems to countenance the possibility that PK might operate on one's own body. Given our present state of ignorance, I consider this feature of the definition to be a virtue. Some have suggested that ordinary volition might be a form of PK in which an intention directly produces a bodily change. Similarly, psychosomatic ailments and self-healing through hypnosis might be classed as types of PK. For now, I think it would be hasty to rule out these possibilities by definition.

Another open question is: How pervasive and extensive might PK effects be? Although some parapsychologists entertain the possibility of PK effects on ordinary visible objects (e.g., in poltergeist and mediumistic cases), they balk at the possibility of *significantly* larger effects, such as airplane crashes, weather changes, floods, earthquakes, and personal PK vendettas or death-at-a-distance (the “evil eye”). But as I urged earlier, if we are willing to admit some PK into our

universe, then at our present level of understanding we must be open to the possibility of PK on a grand scale. One reason is the abstract point made several times already (especially in Chapters 1.3 and 4.4), concerning the arbitrariness of deciding in advance what the limits of PK are. Another is that a serious case can be made (a) for interpreting many instances of ostensible precognition as examples of PK by the precognizer, and (b) for thinking that the advantages of this interpretation outweigh those of its rivals — particularly the retrocausal interpretation (see Braude, 1982b, and Eisenbud, 1982a; also Chapter 6). But since precognitions often concern events on a very large scale, it again seems indefensible to rule out the possibility of PK operating on that scale. One's intuitions concerning the limits of the empirically possible count for nothing here. Of course, the *motivation* for denying the possibility may be powerful and very deep (see the penetrating discussions in Eisenbud, 1982a, 1992). But at best that would only explain the widespread resistance to PK on a grand scale; it does not excuse it.

Those who resist the possibility of PK on a grand scale usually marshal one or more arguments in defense of their position, and in Chapter 7 we will examine the so-called "super-psi" hypothesis (and those objections to it) in detail. For now, though, we need only make a few observations to which we will return in that chapter. First, it is only from the perspective of an overarching theory of psi and its role in nature that one decide what evidence for super psi would even look like. Consider: if psi exists at all, then presumably its occurrence is not restricted to those artificial situations (formal experiments, séances, etc.) in which we *set out* to look for it. In fact, the reason people have set out to produce psi on demand is that it appears to have occurred in real life situations. But there is no reason to think that spontaneous psi must be restricted to the relatively infrequent occasions on which it hits one over the head with its conspicuousness. If psi-in-life may take dramatic and unusual forms, then it is reasonable to think that it might also assume more modest or less arresting forms as well. In that respect, psi would be continuous with other organic functions whose manifestations range from the dramatic and conspicuous to the mundane and inconspicuous. For example, we are all able to remember things, but some can perform prodigious feats of memory. Similarly, in our day-to-day activities we all display some degree of muscular coordination, but only a few of us make great athletes, jugglers, or tightrope walkers.

But once we entertain seriously the possibility that psi (like memory and muscular coordination) plays a role in everyday life, we can understand why evidence for PK on a grand scale might not be obvious in the way evidence for table levitations or small object movements is. For one thing, it is reasonable to suppose that everyday PK might often (or typically) result in ordinary sorts of events — not flagrant object levitations, materializations, or other events that automatically call attention to themselves. And clearly, there needn't be any observable difference between (say) a normal heart attack or automobile accident and one produced by PK. The only relevant difference might be their distinct, unobservable causal histories. Furthermore, conspicuous manifestations of everyday psi might be contrary to our psychological welfare or interests. In fact, the smooth integration of super psi into day-to-day affairs might be *aided* by a lack of obviousness. For example, if my hostile thoughts cause another person to perish in a plane crash, then (in our culture at least)<sup>1</sup> it is in my psychological interest for it to

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<sup>1</sup> In cultures (e.g., so-called "primitive" societies) where psi or supernatural phenomena are widely considered available for everyday uses (e.g., hexing an enemy, helping one's crop or

seem as if I had nothing to do with it. Similarly, it is easier for apparently *unlucky* people to feel victimized by impersonal forces (or the universe at large) than to feel personally responsible for their accidents or disasters, or (even worse) the victim of others' malevolent thoughts. Therefore, if super PK occurs and has a role in everyday life, one would expect evidence for it (in our culture at least) to be anything but glaring. That is why depth-psychological or psychoanalytic studies of psi are especially provocative and promising. By probing beneath psi's more overt manifestations in the surface dramas of life, they attempt to integrate psi with the deepest human needs and motives.

But even if we ignore the possibility that PK effects are virtually unlimited in magnitude and accordingly restrict our attention just to the more widely recognized forms of PK, another nagging issue remains — namely, whether those forms of PK are nomologically continuous. For example, should we assume that PK influence on dice or RNGs results from processes fundamentally like those that produce object levitations, materializations, or D.D. Home accordion renditions? That is, should we regard all these forms of PK as manifestations of a single, and as yet mysterious, process? Or should we regard the superficial dissimilarities among the various PK phenomena as manifestations of deeper differences? Is it possible, in other words, that the classification of paranormal RNG or thermistor fluctuations with object levitations and materializations obscures deep differences in their underlying causal processes? Parapsychologists undoubtedly have hunches about which of these two general pictures of PK is closest to the truth. But research in the field is nowhere near the point where we can confidently choose one over the other. One would think, then, that theorizing about PK would reflect or acknowledge our ignorance concerning the possible unity of PK phenomena.

But in fact, a great deal of recent PK research and theory seems oblivious to that issue. For the last 25 years, most PK researchers have concerned themselves primarily with apparent PK effects on random processes (usually, only RNGs), without considering whether their work has any bearing on the most interesting phenomena reported in poltergeist and mediumistic cases. To be sure, some parapsychologists *do* attempt to extend their conclusions or theories about statistical forms of PK to non-experimental phenomena. But with few exceptions, they feel the need to account only for small-scale and relatively non-dramatic effects, such as slight movements of small visible objects (e.g., compass needles or cigarettes). Certainly, none of the recent experimentally-rooted and superficially high-powered theories currently in vogue (e.g., the various forms of the "Observational Theory" — see the discussions in Braude, 1979, 1988) even pretends to explain, say, the materializations of Home and Palladino or Home's accordion phenomena. As we will see below, there are good reasons for thinking that those theories are inappropriate to the phenomena from the start and could not be used to explain them even if their proponents had tried. But their proponents have not tried, which is all the more striking when one considers that the theories are allegedly theories of PK and that we simply do not know whether the different forms of PK represent nomologically distinct classes of phenomena.

Perhaps the most recent example of this theoretical trend is "Decision Augmentation Theory" (or DAT), formulated initially as an attempt to reinterpret the evidence for laboratory PK,

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love life), people will naturally be more on the lookout for the intrusion of psi into day-to-day affairs. They might also be better able to cope with the implications of the pervasive role of human agency (their own and that of others) in those affairs.

apparently retrocausally, as a form of precognitive ESP (see May, Utts, and Spottiswoode, 1995a, 1995b; May, Spottiswoode, Utts, and James, 1995). In a gesture uncharacteristic of the technical theoretical literature on PK, the authors actually mention a possible form of non-laboratory PK. They concede at one point that DAT would not account for human levitation (May, Utts, and Spottiswoode, 1995a, p. 200; 1995b, p. 458). But apparently they do not take the possibility of levitation and other forms of observable PK seriously, because only from that pinnacle of ignorance could one assert, "DAT leads to the idea that there may be only one underlying mechanism of all anomalous mental phenomena" [their proposed synonym for "psi" — see below], namely, a transfer of information from future to past (May, Utts, and Spottiswoode, 1995a, p. 198). (And see Chapter 6 for a discussion of difficulties with the concept of retrocausation.)

Under the circumstances, then, the rather widespread neglect of the most interesting physical phenomena strikes me as an inexcusable display of scientific myopia. For all we know at this stage, the motley array of phenomena labeled "PK" may be related in such a way that we cannot adequately understand one of them in isolation from the others. If so, PK phenomena would resemble (say) the various forms of humor or aggression. One cannot pretend to understand humor, much less propose a theory of humor, based on just one of its manifest forms — for example, slapstick. Nor can one pretend to understand aggression, much less propose a theory of aggression, based on just one of its obvious forms — for example, overt physical assaults. Similarly, it seems foolish and misguided to theorize about the nature and mechanics of PK while ignoring the achievements of Home and Palladino, or (on a grander scale) the potential relevance of people who claim to be able to change the weather, or those who are uncommonly lucky or unlucky.

Of course, the neglect of large-scale physical phenomena is due largely to the misconceptions about the evidence addressed in the first part of this book. But to some extent it has been aided by the recently fashionable professional jargon in parapsychology — in particular, the distinction between *micro*- and *macro*-PK. Parapsychologists use these categories as if they marked a distinction between genuinely different and apparently independent kinds of phenomena. Perhaps the distinction was not originally intended to be used in that way. But it seems to me that by now it has succeeded primarily in codifying the unjustified neglect of the phenomena considered examples of macro-PK, especially the dramatic sorts of phenomena discussed in Chapters 2 and 3. In fact, rather than contributing to conceptual clarification, it seems only to have produced more confusion. To see why, we must examine the distinction more closely.

But first, I should note that there is an even more recent movement within parapsychology to overhaul certain of the field's traditional and central categories. Some like to call ESP "anomalous cognition" (or AC) and PK "anomalous perturbation" (or AP). Advocates of these new terms also propose replacing the term "psi phenomena" with "anomalous mental phenomena." And less significantly (and perhaps less perniciously as well), what used to be considered a subset of PK phenomena, sometimes called "bio-PK" (i.e., PK on living things), many now call *DMILS* (for direct [or distant] mental influence on living systems). I find little to admire in these innovations, and in some respects I consider them merely to be the latest manifestation of parapsychologists' resistance to psi. For one thing, the new expressions are

arguably no more theoretically neutral, and are demonstrably less useful, than the terms they replace. And for another, even if the first three terms are not supposed to be exact *synonyms* for their more traditional counterparts, they are not even coextensive with those expressions — that is, they fail to pick out (or apply to) the same range of objects or events. So my take on these recent terminological developments is rather cynical. I believe that recourse to these new categories is either (a) a confused (if not mindless) instance of latching onto the latest theoretical trend in the hope of being theoretically up-to-date, (b) a cowardly (or at least absurdly futile) attempt to disguise the fact that one is engaged in parapsychological research, or else (c) a pretentious device for appearing more tough-minded and scientific than other parapsychologists. But quite apart from these issues, it is significant that the proposed new terminology still incorporates the micro/macro distinction. Thus, its proponents distinguish micro-AP from macro-AP (see, e.g., May, Utts, Spottiswoode, 1995a, p. 196; 1995b, p. 454).

So for present purposes we can safely ignore these recent additions to the parapsychological lexicon. What matters for now is that most parapsychologists consider “micro-PK” to refer to PK phenomena whose existence can be demonstrated only by statistical tests. The underlying idea is that RNGs, if left to themselves, will inevitably produce apparently nonrandom sequences, and dice will land with a face up independently of any PK influence. What inclines us to regard certain such sequences or events as evidence for PK is their statistical improbability. By contrast, no quantitative analysis is needed to conclude that an apparent table levitation or materialization is an ostensibly paranormal phenomenon. So the distinction between micro- and macro-PK seems in practice to be no more than a distinction between two methods of determining ostensible paranormality. But in that case, it would seem more appropriate to rename it the distinction between quantitatively and qualitatively anomalous PK.

However, there is more here than meets the eye. If the distinction is so straightforward, why use the terms “micro” and “macro”? Why, for example, should *dice* tests provide evidence of *micro*-PK? One can understand the use of “micro” in connection with tests in which PK appears to affect radioactive decay or thermal noise. But dice are observable objects, and it seems odd to call PK influence on dice *micro*-PK simply because statistical tests are needed to determine whether a PK effect occurred. After all, if a die levitated, the phenomenon would not be considered an instance of micro-PK.

Nevertheless, there may be a reason for this peculiar terminology. It may be a holdover from a more traditional use of the micro/macro distinction in PK research, one that reflects an underlying general view of how PK works. To the extent there is a received view within parapsychology on the nature of PK, it is that *every* observable PK effect is a causal consequence of *PK effects on systems too small to be observed by the naked eye*. Presumably, the original use of “micro-PK” was to refer to these unobservable events, so that they could be distinguished from PK effects on observable systems. But curiously, from that theoretical standpoint it would seem as if the term “macro-PK” had little or no utility. One would think that if micro- and macro-PK were distinct types of phenomena, then macro-PK would be the direct PK influence on macroscopic systems, bypassing the sorts of microscopic causal interactions ordinarily thought to be causally necessary for the macroscopic events in question. But PK on observable systems, unmediated by PK on the micro level, is precisely what the received view rejects.

So it seems that the present confused situation in PK theory has at least the following two outstanding features. First, parapsychologists tend to use the term “micro-PK” in two distinct ways. According to one, it refers to

- (a) PK phenomena detectable only by means of statistical tests.

According to the other, it refers to

- (b) PK effects on systems too small to be observed by the naked eye.

Second, considering the prevailing view that primitive PK effects occur only on the micro level, sense (b) of “micro-PK” has no corresponding contrast with “macro-PK.” On the received view of PK, it would be a mistake to treat RNG deviations or thermistor fluctuations — but not table levitations, spoon bending, or materializations — as evidence for micro-PK. According to the received view, *all* PK evidence is ultimately evidence for micro-PK. One might think that “macro-PK” should therefore refer simply to those cases of micro-PK that result in observable effects. But that still fails to secure a contrast between micro-and macro-PK. All *evidence* for micro-PK requires the production of an observable effect, whether it is an overt object movement or an observable manifestation of nonrandomness in an otherwise random (and possibly unobservable) process.

So when “micro-PK” is used in sense (a), the micro/macro distinction has a limited taxonomic value but no explanatory utility. And when it is used in sense (b), the distinction has at least possible explanatory value but no taxonomic utility.

But in fact, the explanatory value of the second sense of “micro-PK” is itself highly questionable. There are good reasons for doubting the prevailing view that all observable PK effects result from PK interactions on the level of the very small. Interestingly, the weakness of the received view is not where some might have expected — namely, in the assumption that PK phenomena are nomologically continuous. Although that assumption may be false, it is at least intelligible. I see no serious confusion in the claim that there is no major theoretical difference between the processes responsible for PK effects on (say) thermal noise or radioactive decay and those responsible for PK effects on observable systems. By contrast, it may be a deep mistake to suppose that observable PK phenomena can be explained in terms of underlying processes or mechanisms. To see why, we must consider some additional general goals of, and constraints on, our theorizing about PK.

### 5.3 Is PK Analyzable?

One elementary goal of a theory of PK is to explain certain causal connections between states of agents and resulting states of the physical world. But if the theory is to have any generality — that is, if it hopes to make systematic sense of particular instances of PK, then it must at least be able to state certain *regularities* or laws for PK. But what sort of regularity? The answer to this question is not as straightforward as it is with regard to the forms of ESP.

For example, in a typical instance of telepathy, there exists a non-fortuitous paranormal correlation or correspondence between the content of two mental states (e.g., both agent and percipient might think of Bugs Bunny). Similarly, in cases of clairvoyance there exists a correspondence between an agent’s mental state and some state of the physical world (e.g.,

between the thought of a house on fire and a house's actually being on fire). If a conventional explanation of these cases is possible at all, it must make sense of the fact that it is non-fortuitous that the correlations obtain between mental states of the relevant *type*, or between a mental and physical state of the relevant *type*. For instance, it must explain how a telepathic agent's thought of *a* (or that *a* is *F*) can be a causal condition of the percipient's thought of *a* (or that *a* is *F*). Even more generally, a conventional theory of ESP must explain how *any* kind of telepathic or clairvoyant content-correspondence is possible. (See Braude, 1979, for a detailed discussion of telepathic content-correspondence.)

(I am supposing, at least for now, that we might actually be able to explain the forms of ESP in these conventional ways. Another possibility, defended in Braude, 1979, and discussed below in connection with PK, is that the regularities of ESP, like those of cognitive or psychological processes generally, have no analysis or explanation in terms of underlying processes or mechanisms. But whether or not ESP is primitive in this respect, it is clear nevertheless that the aforementioned sorts of regularities comprise the data to be identified and integrated systematically into the rest of our knowledge.)

When we turn to PK, however, it is somewhat more difficult to pinpoint the relevant causal regularities. For in these cases it is debatable, to say the least, whether we are dealing with similarities in the *content* of two different states. Even if we concede that the cause of each PK event is an agent's *intention* (conscious or unconscious), we needn't maintain that the agent brings about a state of the physical world similar to a state conceived or somehow envisioned (consciously or unconsciously) beforehand.

Some cognitivists in philosophy and psychology favor a view of action according to which the results of action somehow resemble the intended situation modeled or represented beforehand in the agent's mind (or brain). But quite apart from philosophical objections to this approach to action theory, there are reasons for thinking that no such account of PK causal chains will apply generally to the evidence. For example, many (if not most) poltergeist incidents seem to be kinds of brute psychic flailing about, rather than cognitively elaborated plans (see Gauld and Cornell, 1979). Often, it seems as if poltergeist agents are simply releasing repressed feelings or pent-up hostilities when the phenomena occur. In these cases it may be reasonable to compare the agent's actions to those of an enraged, frightened, or otherwise overstimulated infant, adult, or animal who instinctively strikes out or behaves wildly and erratically. Object shatterings or sudden object movements may thus be nothing more than a paranormal analogue to uncontrolled behavior of other sorts. Furthermore, in many cases of physical mediumship, one may argue plausibly that the medium had no idea (conscious or unconscious) of what phenomena were to occur. In many seances it appears as if a wait-and-see attitude prevailed instead. Of course, one could argue that the medium's modeling activity or preconceived plan in these cases was simply unconscious. But that interpretation will be particularly compelling only to those already committed to the cognitivist approach.

Nevertheless, in some cases of mediumship (and in experimental cases of apparitions), the ostensible agent apparently either knew which phenomena were going to occur or at least consciously intended certain phenomena to occur. Even those unsympathetic to cognitive science might wonder whether these cases are ones in which the agent's mental state — that is, the conception of the intended or apparently foreseen state of affairs — causes a similar state of

the physical world. So let us suppose, to see where it leads, that the causal connections to be explained in cases of PK *are* analogous to those in cases of ESP. Then our job will be to account for non-fortuitous similarities between a PK effect and the mental state that causes it. If that approach helps us to get a grip on cases appearing to fit the cognitivist model, then perhaps it will help us with other cases as well.

So let us consider what we may dub the *copy theory* of PK. According to this view, the cause of a PK event is a state *S* of the agent — a mental state or brain state, depending on one's degree of commitment to physicalism. State *S* is (or is a constituent of) a desire or intention to produce a certain similar state *P* of the physical world, and the similarity between the two states will be explained with reference to their similar underlying structures. The explanatory strategy here is a staple of current cognitive psychology.

Consider two different actions, *A* and *B* (say, levitating a table and bending a spoon). How should one explain their occurrence in terms of internal causes? Because *A* and *B* will differ in many ways, the standard answer is that their internal causes, *a* and *b*, will differ in corresponding ways. More specifically, the standard approach posits intimate structural similarities — a kind of structural isomorphism — between the effect and its internal cause. Therefore, the copy theory of PK would maintain that the underlying differences between the intention to levitate a table and the intention to bend a spoon are analogous to the underlying differences between their resulting physical states of affairs. The agent's state *S*, then, will be similar or structurally isomorphic to resulting state *P*, and one of the causal conditions of *P* is that *S* has the structure it does. In other words, *P* is the kind of event it is because *S* is the (analogous) kind of event it is.

The reader may recognize that this theory of PK resembles what (in Braude, 1979) I called the *energy-transfer* (or *brain radio*) theory of telepathy.<sup>2</sup> Both assert the existence of, and attempt to analyze, *regularities* in the content or structure of two classes of states. In the case of telepathy, the regularities obtain between the mental states of agent and percipient. And according to the copy theory of PK they obtain between the agent's causally efficacious state *S* — let us call it a *P*-intention for short — and the resulting state *P* of the physical world. But the energy-transfer theory of telepathy, I argued, was deeply defective — in fact, fundamentally unintelligible. The same, it seems to me, must be true of the copy theory of PK. Both theories are vulnerable to crippling objections — in particular, (a) that similarity is not a static or inherent relation between things — hence, that it cannot be analyzed in structural or topological terms, and (b) that the function of a (mental or brain) state is not determined by its structure or by any antecedently specifiable set of properties.

Actually, the scope of these objections extends well beyond the copy theory of PK. In fact, they are corollaries of another objection, which (if correct) explains why no theory — parapsychological or otherwise — can hope to *analyze* regularities in the content or function of mental

<sup>2</sup> The copy theory is also strongly reminiscent of trace theories of memory, according to which different things in the world (the events or objects remembered) leave corresponding traces (representational states) in the agent. The major difference between the two theories, in fact, seems to be the location of mental states on the causal arrow. Memory theories posit causal connections resulting in mental states, whereas the copy theory posits connections beginning with mental states. For a discussion of the deep errors underlying trace theories, see Braude, 1979; Bursen, 1978; Heil, 1978; and Malcolm, 1977.

states. So let us examine in detail the defects of the copy theory. The points we consider will help us to determine the extent to which a conventional theory of PK is possible at all.

The copy theory posits a causal regularity between a *kind* of intention *S* in the agent and a corresponding *kind* of event *P* in the physical world. But clearly, in order to analyze both the causal relevance of *S* to *P* and the similarity or correspondence between them, proponents of the copy theory must first be able to specify conditions for being events of those kinds (i.e., the kinds *S* and *P*). As far as *P*-intentions are concerned, identity theorists and epiphenomenalists would presumably appeal to the structures of associated brain-state kinds, while dualists might be more content to list phenomenological features of the appropriate mental-state kinds. So if the copy theory cannot specify conditions for being an intention of kind *S* (say, the *P*-intention to levitate a table), it cannot analyze in terms of a constituent set of properties the causal regularities between kinds *S* and *P*, or the respect in which *P* copies its corresponding *P*-intention.

In fact, if *P*-intentions, or mental states generally, happen to be the sorts of things for which — as a matter of principle — no necessary and sufficient conditions are specifiable, then the copy theory is stymied from the beginning. For example, if in principle one cannot lay down necessary and sufficient conditions (physical or mental) for intending to levitate a table, then in principle one cannot analyze how mental states of that type are causally relevant or similar to some other type of state — in this case, a certain physical state of affairs. Nor can it analyze how intending to levitate a table differs from other *P*-intentions (say, intending to bend a spoon) or any other sort of mental state. In that case, obviously, the theory simply would not be viable. If one cannot characterize the difference between a *P*-intention to levitate a table and other sorts of *P*-intentions (or other sorts of mental states generally), then one cannot analyze why certain kinds of mental events (rather than others) are causally efficacious, and why a given kind of *P*-intention produces a certain kind of effect (rather than others).

Therefore, the copy theory presupposes that it is possible, at least in principle, to specify necessary and sufficient conditions for being a *P*-intention. But that is virtually the same embarrassingly unscientific presupposition that sabotaged the energy-transfer theory of telepathy. Both theories are committed to a blatant form of Platonism regarding the nature of mental states. Both require that thought or mental-state kinds have an essence, some property or set of properties without which a particular state would not be of that kind, and in virtue of which it is of that kind (rather than some other). Thus, two distinct thought-tokens will be of the same kind when they share the relevant property or set of properties. That is why it is imperative for the copy theory to be able to specify an essence for *P*-intentions. If it cannot designate conditions both necessary and sufficient for being (say) a *P*-intention to levitate a table, then it cannot explain why an intention of *that kind* produced the appropriate corresponding kind of effect. And in that case, it could not explain the causal relevance of intending the table to rise as opposed (say) to intending to bend a spoon, or just thinking about the weather.

So let us consider whether intention kinds or mental-state kinds generally have an essence, some property or set of properties both necessary and sufficient for being of that kind, something (say, in the case of traditional physicalistic theories) with which to correlate a certain specifiable set of physical or physiological properties. And for simplicity, let us overlook the fact that a person may properly be described as being in mental state *S* in virtue of

unconscious processes, or non-occurrent dispositional states, or solely in virtue of things the person is *doing* (rather than experiencing). Let us focus just on *conscious inner episodes* and consider whether conscious inner-episode kinds have an essence. After all, one would think that if a certain kind of mental state *S* has an essence, then we should (in principle, at least) be able to specify conditions for being a conscious inner episode of that kind. Even if we succeeded, of course, our account would not qualify as an analysis of the mental state *S*; we would only have characterized one of its subsets. Still, we would at least have cause for optimism if we could carry out the more modest task of stating conditions necessary and sufficient for being a conscious inner episode of the kind *S*.

But what if it turns out that virtually *any* conscious inner episode may be of the kind *S* — that is, if inner episodes of that kind need have nothing relevant in common except that when they occur they are taken or count as instances of that kind? In that case, I submit, we must grant that kind *S* has no essence. If in the appropriate circumstances any inner episode may be of kind *S*, then we cannot state general conditions in virtue of which some inner episodes (but not others) are of that kind, or in virtue of which an inner episode is of that kind (rather than another). For in that case, an inner episode will not be of the kind *S* in virtue of conditions intrinsic to it, or in virtue of some antecedently specifiable property or set of properties it must have to be of kind *S*. Instead, membership in that kind will depend on loose and context — idiosyncratic relationships between the inner episode and the ongoing background of events.

An example should help make this clear. In a moment I will consider intentional states of the sort the copy theory takes to be the cause of PK effects. But for now, let us suppose that I am thinking about Baltimore — that is, that my mental state may be described correctly as being of the kind *thoughts about Baltimore*. Now a moment's reflection should make it clear that people may properly be described as thinking about Baltimore *no matter what* their inner episodes happen to be. Even if we consider nothing but *images* in a person's mind, there is no reason to think that there is any limit as to what they may be. When thinking about Baltimore, I could have an image of a particular person (or any number of persons), a particular location, or even of a sound or smell. I could have an image of a scene recalled from personal experiences, photographs, or movies, or constructed from descriptions I had read in Mencken or Poe, or perhaps just the image of those words on the printed page, or as sung by the Baltimore Orioles, and so on. And clearly, these subsets of images likewise may assume virtually any form. The varieties of feelings, smells, sounds, events, or persons I associate with Baltimore (either habitually or in the context of a discussion or some other particular situation) can no more be specified in advance than can the details of my life. And when we recall that *anyone* can think about Baltimore, and do so in ways utterly idiosyncratic to the person's life and personality, the belief that one could state necessary and sufficient conditions merely for having mental images of Baltimore seems quite preposterous.

But if (given the appropriate surrounding history) any mental image may be of or about Baltimore, then clearly the image has that function in virtue of the way it is positioned against (or integrated into) a context, a shifting and contingent background of interests, purposes, etc. Its function is not, so to speak, built-in. I might properly be described as thinking about Baltimore when I have a mental image of a certain politician. But if I were to have that image in a different setting or context, or if someone else were to have that image, it might be correct to

describe it as being of something else — for example, dishonest men, ugly men, dynamic men, men who have gone to prison, short men, men in 3-piece suits, men with blue eyes, pug noses, or just men in general. And of course, depending on how the image in my mind gets integrated into a context, we might properly associate it with quite arcane kinds of thoughts. With that image before my mind, I might properly be described as thinking about (say) people who should never try to play a Schubert sonata, people incapable of savoring the subtleties of Strindberg, people I would like to see dropped into a tub of jello, people unlikely to win at Bowling for Dollars, people suited to host TV talk shows, objects softer than plywood but firmer than cotton, things that even a mother couldn't love, and so on. The image, then, is inherently *functionally ambiguous*, and the varieties of functions it may have is as limitless as the range of contexts into which it may fit or into which a person may enter.

The same points apply, *mutatis mutandis*, to physicalistic theories that correlate brain-state kinds with mental-state kinds. Using currently fashionable terminology, let us say that the brain states that allegedly are either identical with or causally responsible for thoughts about Baltimore are states that *represent* Baltimore. Now clearly, what those states represent is no more intrinsic to them than it is to the mental states (e.g., images) with which they are correlated. In neither case can one tell, from the state alone, what it represents or what it is of or about. If an image may represent virtually anything, depending on how it is positioned against a background, so may the brain state either identical with or causally responsible for it. (I develop these points in greater detail in Braude, 1979. And see pp. 177ff for a discussion of why Davidsonian *anomalous monism* offers no solution). Moreover, as I argue below, similar observations count against so-called “functionalist” theories that attempt to take surrounding context into account.

Here we arrive at a fundamental point concerning the nature of *representation* or *meaning*. Whenever a thing represents (or means) something, it does so in virtue of the way someone positions it against a background. Representation (or meaning) is never an inherent relation between objects or events; nor is it an inherent property of a thing's internal *structure*. Things must be *made* to represent; they do not represent on their own. That is why *anything can represent (or mean) anything*, given the appropriate surrounding history. For example, a city planner may place his ham sandwich on a restaurant table and say, “Let this be the new shopping center.” His assistant may then attach a strand of spaghetti to it, saying, “And this is the proposed access road.” A frustrated tennis player may reprimand himself by looking directly at his racquet and scolding it. A forensic scientist may point to a mutilated corpse and comment, “That's me after my first marriage.” An irate teacher may illustrate how he dealt with a student he despises by dramatically trampling a piece of chalk. A teenage girl may cradle a pillow lovingly in her arms, pretending it is the movie star she idolizes. To a fantasy-prone young boy, however, the pillow might represent a deadly virus he vanquishes while in the miniaturized form of “Interferon Man.”

Naturally, contexts in which a ham sandwich represents a shopping center, or in which a piece of chalk represents a despised student, are atypical in certain respects. Similarly, it is unusual for a mutilated corpse or the crushing of chalk to convey propositional information (or meaning) about a marriage and a student, respectively. But these examples are unusual only with regard to *what* the objects or situations represent (or mean), not with regard to *how*

representation (or meaning) comes about. The acquisition of representational (or semantic) properties in offbeat cases is no more context-dependent than it is in more familiar cases. But the latter are often so familiar that they foster the mistaken impression that representation (or meaning) in the ordinary cases reveals something that is inherent or built-in, and which merely gets *overridden* in less familiar contexts.

Moreover, it is important to remember that ham sandwiches, pillows, and corpses acquire representational (or semantic) properties in the same way as more familiar bearers of representational (or semantic) properties, such as words or images. Given the appropriate surrounding history, a word can mean or an image can represent anything. And again, we should not be seduced by the familiarity of certain contexts into thinking that certain representations (or meanings) are either inherent in the objects or more fundamental to the objects than others. The familiarity of the contexts reveals more about us, about our patterns of life, than about the objects themselves.

Now it is easy to see how the foregoing observations undermine the copy theory of PK. As is the case with any other kind of mental state, there is no antecedently specifiable set of properties in virtue of which an internal state is a *P*-intention. No matter what set of properties we choose, a state having those properties can fail to be a *P*-intention, and states that are *P*-intentions may not have those properties. But then, not only will we be unable to specify conditions for being the appropriate sort of internal cause, we will be unable to specify how a PK effect *copies* its corresponding *P*-intention. It does not matter whether we use the term “inherent” or its trendy obscurantist counterpart, “hardwired,” here. It is still just confused to claim that meaning or representation is the sort of function that could *ever* be built into an object, whether it be a familiar observable object, a hypothetical neurophysiological object, or a still more hypothetical element in a Fodor-like language of thought.

Consider, for example, the intention to levitate a table. Just as particular tokens of the kind *thoughts about Baltimore* need nothing in common with each other except that when they occur they are taken or count as thoughts about Baltimore, the same holds for intentions to levitate a table. First of all, intentions of that kind may, but needn't, involve mental imagery. The agent might merely feel a resolve to levitate a table. But even if we consider just the range of images an agent might employ, it is clear that they might be as diverse and idiosyncratic as thoughts about Baltimore. For instance, the agent might employ guided imagery when trying to levitate a table, and the images may be drawn from an idiosyncratic repertoire of symbols and associations, as well as from context-specific associations. To levitate a table, one agent might simply picture a table rising from the ground, whereas others might picture tiny strongmen pushing up the table's legs from beneath, or a magnet pulling the table, or a spirit form pulling by means of ectoplasmic threads. Furthermore, the images selected by the agent needn't involve tables at all. Some might imagine a crane pulling up on an unseen object below, or a rocket blasting off. Others might simply picture the words “table up,” or the heavenly choirs singing “table up.”

Moreover, the relationship between the alleged internal cause (e.g., an image or a brain state) and its function is not built-in. Although a certain mental or physical state may function in context *c* as an intention to levitate a table, in another context *c'* its function might be different — that is; the state might represent or mirror different external states of affairs. And of course,

there is no reason to assume that the internal properties of the object or state must change from  $c$  to  $c'$ . Analogously, the same pillow can represent a movie star on one occasion and a virus on another without undergoing a structural transformation. Therefore (again), no matter what properties the copy theory proposes as criteria for being a  $P$ -intention, a particular  $P$ -intention needn't have those properties, and things that have those properties needn't be  $P$ -intentions.

Furthermore, just as *representation* cannot be explained in terms of properties inherent in the representing object and the thing represented, the same will be true of the related concepts, *similarity* and *resemblance*. Two things are never similar solely in virtue of static relations between the two objects, or in virtue of properties inherent in them. They must *count* or *be taken* as similar relative to some context of inquiry and criteria of relevance. For example, the movements of an elephant are not inherently similar or dissimilar to those of a flea. They might count as similar in a situation where the size of the organism is not relevant, but dissimilar in a context where size is a major concern. An isosceles triangle might be considered similar to a right triangle when the size of the interior angles is not relevant, but dissimilar in other contexts. In still other situations (say, when a child is asked to distinguish geometrical figures generally from pictures of fruit), a triangle may count as similar to a circle or square (see Braude, 1979, 1983, for a more detailed discussion of similarity).

The application of this point to theories of PK should be clear. No PK effect will be similar, inherently, to the mental or physical state (or some component thereof) we take to be its cause. In the example above, a mental image of a rocket blasting off counts as similar to a table levitation because that image is used to help an agent levitate a table. But when used in a different context — say, where the PK agent slides a toy rocket across the floor — the image might be regarded as similar to something *other* than a rising table. Moreover, it is only in virtue of surrounding events, interests, etc., that we determine which features of the two similar things are relevant. For example, in the case of the image of the rocket we focus on certain of its features and ignore others, and our choice always depends on the way we position the image against (or integrate it into) a background or surrounding history. In the context of an object levitation, the upward movement of the rocket might be relevant. But it might be irrelevant when the agent uses guided imagery to sabotage a stationary vehicle at Cape Canaveral. So once again, a PK theory will be unable to specify properties in virtue of which a PK effect  $P$  will be similar to its corresponding  $P$ -intention. No matter what properties the theory proposes, a given cause and effect may be regarded as similar without them, and even things that have all those properties needn't be taken as similar.

We see, then, that a theory of PK (or action theory of any kind) cannot simply correlate effects (actions) with *states of a person* (mental or physical). And it does not matter what the relevant "hardware" of the agent is taken to be — for example, whether the states are sets of phenomenological, biochemical, or neurological properties. All such states, as we have seen, are functionally ambiguous; their functions can be disambiguated only relative to a way of placing them against a background. Now I have been assuming that the copy theory would want to treat  $P$ -intentions in this way — that is, either as mental states (described phenomenologically) or as physiological correlates of those states. And in so doing I have merely been acknowledging what is still the dominant approach among scientists theorizing about action (paranormal as well as

normal). In philosophy, however, old-fashioned dualist, identity, and epiphenomenalist theories have fallen out of favor; so-called “functionalist” theories are more in vogue. Therefore, some might suggest that because a mental image (or brain state) represents (or means) what it does in virtue of a way of positioning it in a surrounding context, what is needed is an analysis of that larger functional context, or perhaps an analysis of the causal history common to all instances of the appropriate kind of *P*-intention (or mental-state kind generally). But it turns out that functionalist theories do not avoid the difficulties that sabotaged earlier mechanistic theories. Those problems are simply pushed back a stage. Indeed, anyone who thinks that functionalism is a promising theoretical alternative seems merely to have missed the point.

We have noted two important related features of mental states. First, an inner episode (mental or physical) is — or is correlated with — a certain kind of mental state, not in virtue of its topological features (or any inherent features), but in virtue of the way it is integrated into a context. Second, we cannot specify a set of necessary and sufficient conditions for a state of a person to be a certain kind of mental (or associated brain) state, because given the appropriate surrounding history, virtually any state of a person can be of that kind. Therefore, no matter what properties we specify for being a mental state of a certain kind, a particular token of that kind needn't have those properties, and states that have those properties needn't be of that kind.

But analogous objections apply to the functionalist method of identifying mental- or brain-state kinds relative to a context. Suppose we attempt to specify some set *F* of functional or causal criteria for being a token of a certain mental-state kind *M*. The first point to observe is that, no matter how exhaustive or general we try to make set *F*, there is no end to the situations in which a person's mental state can properly be said to be of the kind *M*. The observations made earlier concerning thoughts about Baltimore still apply. Virtually anyone can think about Baltimore, and in ways idiosyncratic to the person's history. In fact, the range of possible exemplifications of the kind *thoughts about Baltimore* is as open-ended and antecedently unspecifiable as the details of a person's history, or more generally, of human history itself. So it is absurd to think: that there must be some antecedently specifiable set of functional properties for the kind *thoughts about Baltimore*, or for any mental-state kind. Moreover, no matter what set *F* of functional properties we specify, some episode meeting those criteria may fail to be of the appropriate kind. Relative to an even wider context (e.g., a set of countervailing circumstances) or a different perspective (e.g., a set of needs, interests, or purposes), we might classify the episode as a different kind of state. Once again, therefore, no matter what functional or causal properties we specify for being a mental state of a certain kind, a particular token of that kind needn't have those properties, and tokens that have the properties needn't be of that kind.

Approaching the matter from a somewhat different angle, we can see that the outer (extrinsic) states to which the functionalist appeals are every bit as functionally ambiguous as the inner episodes they are supposed to disambiguate. For example, we might identify a bit of behavior with respect to its structure (e.g., an organized array of physical movements). But taken by itself, the structure is nothing. As was the case with inner episodes, an outer episode's being of a certain behavioral kind is not fixed by properties intrinsic to it. Because it can function in an endless number of ways, a series of movements counts as something (a certain *kind* of behavior) only relative to a wider context (e.g., further behavior) and a perspective or a positioning of the

movements within the context. That is why a slap in the face may (in one context) be an act of hostility and (in another context) be an act of affection or concern. There is no point at which we can specify some set of extrinsic properties or states that is inherently functionally unambiguous, or that is intrinsically of the kind it is. A bit of behavior is of a certain kind only relative to a wider context (say, further behavior) and a perspective from which they are integrated. That wider behavior, in turn, is of a certain kind only relative to a still wider context and a more global perspective, which at some point will include the background assumptions undergirding all discourse and relative to which we conduct our rather loose, everyday disambiguations and classifications. Usually, we don't think about these global, background contextual constraints while making our day-to-day discriminations. In fact, discourse would quickly grind to a halt if we always had to check our utterances against the totality of our background assumptions. Nevertheless, a bit of behavior is of a certain kind only relative to much wider contexts and ways of looking at things — indeed, to an entire perspective on life.

The functionalist's problem, then, is twofold. First, no realistically feasible theory can specify a set of functional properties broad enough to disambiguate a certain inner episode (mental or physical). But more seriously, no set of properties, however grand, could possibly do the job. No matter how functionalists try to disambiguate the extrinsic states to which they appeal (say, with reference to a wider context, or by linking outer states to the inner states that produce them), they fall victim to a vicious regress of disambiguation. At no point can they stop the regress by specifying a set of conditions (inner, outer, or some combination) whose function is rigidly determined by its inherent properties or *structure*. No structure of any kind determines its function. Nothing can function in one and only one way (see Braude, 1979, pp. 168ft, for a more extended treatment of this point).

The prospects are bleak, then, for any theory attempting to analyze the causal connections between (on the one hand) kinds of PK effects and (on the other) intentions, desires, etc. to produce those kinds of effects. In fact, it appears that an entire theoretical tradition in parapsychology is deeply misguided. As a rule, parapsychologists have tended to analyze psi phenomena along lines familiar to the physical and biological sciences. They assume that observable psi phenomena have unobservable underlying structures and that the former are thoroughly analyzable in terms of the latter. Just as we analyze heat (for example) as molecular motion or explain the heritability of physiological features in terms of genetic processes, parapsychologists have tried to analyze ESP and PK in terms of lower-level sorts of phenomena.

Perhaps the main reason for this widespread procedure is that most parapsychologists adopt a confused principle that has vitiated a great deal of research in the behavioral sciences. They assume that organic phenomena generally (including psychological states and behavior) are analyzable in ways appropriate to (most) purely impersonal, mechanical, or non-organic phenomena. But behind this methodological assumption — or at least connected with it — is a deeper assumption about the nature of explanation and analysis that I believe to be false, and which certainly deserves to be brought clearly into the open.

#### 5.4 The Small-is-Beautiful Assumption

Most scientists assume (either tacitly or explicitly) that there are no unanalyzable facts or phenomena (e.g., lawlike regularities) on the observable or macroscopic level. They tend to

embrace two broad mechanistic assumptions: (a) that observable phenomena generally have underlying structures, and (b) that it is possible (at least in principle) to analyze every observable phenomenon in terms of its subsidiary processes or mechanisms. Of course, scientists concede that *some* facts or phenomena are “basic” or unanalyzable. They admit, in other words, that explanations in terms of lower-level processes cannot continue indefinitely. They would say that at the point where vertical explanation (explanation by analysis) stops, we will have reached phenomena neither identical with nor causally explicable in terms of still lower-level processes. At this point we arrive at scientific ground level, where the phenomena are *ultimate* or *primitive* in the sense that we can no longer profitably ask of them *how* they occur. The universe simply works in those ways, and no constitutive processes explain why. So wherever explanation by analysis finally stops, wherever these fundamental phenomena occur, it will always be on the level of the very small – for example, at the neurological, biochemical, atomic, or subatomic level, and never closer to the surface, at the observable level. For convenience, let us call this the *small-is-beautiful assumption*. But although it is *only* an assumption, and although anti-mechanists have deployed powerful arguments against it, scientists often treat it as if it were an empirically established fact.

One way to expose the defects of the small-is-beautiful assumption is to see how it fails for particular sorts of phenomena – for example, cognitive or intentional processes, including instances of human behavior and large-scale social or behavioral regularities (such as the laws of economics). One could argue (as I did above, and as many others have done) that attempts to analyze such processes or regularities in terms of lower-level constitutive processes or mechanisms presuppose one or more deeply unacceptable theses – for example, the Platonic or essentialist view that mental or psychological kinds can be specified by some set of necessary and sufficient conditions, the view that a brain state (or some other kind of state) can be functionally unambiguous, or else the view that a brain state (or some other kind of state) can be intrinsically isomorphic to the state of affairs it represents or produces (see, e.g., Braude, 1979; Bursen, 1978; Goldberg, 1982; Heil, 1978, 1979, 1981, 1983; and Malcolm, 1977, 1980).

In addition, however, one could draw attention to some less-heralded peculiarities of the small-is-beautiful assumption. The points I will now make are perhaps not fatal to that assumption, as are the more specific antimechanistic arguments. The latter actually furnish counter-examples, whereas the considerations below merely illustrate more clearly just what sort of assumption we are dealing with, and in the process they help rob it of its surface plausibility.<sup>3</sup>

First of all, we should note that the small-is-beautiful assumption is one form of the view that nature has a preferred (or inherently fundamental) level of description, a level at which we can identify absolutely primitive phenomena and their basic properties. And of course, that assumption likewise may take different forms. Some (probably the majority of its supporters) hold that the preferred level is the province of physics, either in its present or in some perfected future form. But no matter what, precisely, the fundamental level of description is taken to be, the small-is-beautiful assumption asserts that statements true of observable

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<sup>3</sup> For additional sorts of comments along these lines, see J. Fodor, 1975, pp. 9-26, and 1981. Interestingly, however, Fodor doesn't see that his own cognitive science program commits many of the standard mechanist errors. For more on this general topic, see Goldberg, 1982; Heil, 1981.

phenomena are inherently superficial, and that only statements true of the microcosm can be statements about primitive phenomena. Therefore, partisans of the small-is-beautiful assumption are committed to the view that nature has a preferred inventory of objects, events, qualities, and relations. We may not know right now what that inventory is, but (they would say) we nevertheless know certain general things about it. We know that the primitive items on the list will inhabit the microcosm, and therefore we know that nature's primitive properties and relations will be of the sort exemplified by those kinds of things.

But that position is bizarre. It is clearly false to say that there is a context-independent preferred descriptive scheme or way of talking about nature, an inherently or absolutely preferred (or final) inventory of events, objects, qualities, or relations. For one thing, nature may be given any number of different parsings, spanning a continuum running from the finegrained to the coarse-grained. It may be characterized on different levels of description, each of which countenances certain things — but not others — as objects, and certain descriptive categories (i.e., predicate and relational expressions) — but not others — as appropriate to those objects. But more important, no one of those parsings or sets of categories is inherently more fundamental than any other. Some may be more appropriate or useful in the context of a guiding set of interests or purposes. But none is justifiable (much less correct) apart from any contextual guidelines.

To see what is wrong with the idea that nature has a context-independent preferred parsing, consider the question: How many things are in this room? The important fact to observe here is that the question has no single correct (or inherently best) answer. Before we can answer it, we need some idea of what is to count as a *thing*. In different contexts, different sorts of objects or entities may legitimately count as things. Independently of a set of interests or needs in which certain descriptions of the room (but not others) count as appropriate, the question simply has no answer. To a group of atomic physicists, it might be appropriate to consider atoms or their constituents to be things, in which case the number of things in the room would be enormous. But to interior decorators, household movers, or insurance agents, it might be more appropriate to parse the room into observable objects, in which case there would be far fewer things in the room.

Furthermore, by parsing nature a certain way into things or objects, we limit the range of predicate and relational expressions at our disposal. Household movers might use such terms as “bulky,” “fragile,” and “hard to carry downstairs,” and interior decorators might use the terms, “rustic,” “garish,” “casual,” and “matches the color of your eyes.” But these terms do not apply to atoms or their constituents. Similarly, physicists will assign to their things a range of properties that cannot be ascribed appropriately to objects in the macrocosm — for example, *ground state*, *nuclear density*, *antistrangeness*. Therefore, just as the question “How many things are in this room?” had no single correct answer, the same will be true of “What properties and relations are exemplified in this room?” Since a set of descriptive categories applies only to an appropriate range of objects, we cannot say what the properties are without at least tacitly accepting a certain parsing of the room into things. But (as we have seen) a division of nature into units or objects is never intrinsically correct, or applicable independently of a set of interests and purposes relative to which certain parsings (but not others) count as appropriate. Thus, our inventories of objects, properties, and relations are all perspective-relative and

interdependent. Neither properties nor their objects are items in a perspective-free warehouse of ontological furniture.

The same points apply to *states of affairs* or *events* rather than objects. Bits of history may be parsed — legitimately — in an endless number of ways. And it does not matter whether we are concerned with so-called *objective* events or states of affairs, or a person's subjective states or inner episodes. For example, we might ask: How many events composed World War II (or Sam's memory of his first date)? Once again (and obviously), there is no single or preferred answer to the question. Either event, World War II or Sam's memory, may be subjected to numerous different fine-grained or coarse-grained parsings. In fact, the decision to treat World War II (say) as an event capable of further division already represents a decision to parse human history in one way rather than many others.

Furthermore, our parsing of World War II into smaller event-units circumscribes the range of descriptive categories applicable to those units. (Alternately, one could say that our choice of categories presupposes a range of parsings to which the categories apply.) If we divide World War II into battles or campaigns, we can apply such terms as "decisive," "cunning," "victorious," and "tragic." However, if we are dealing instead with events on the scale of small muscle movements of individual soldiers, or events no longer than a few microseconds, we will need to employ different sets of descriptive categories.

It may be helpful to think of levels of description as *conceptual grids*<sup>4</sup> that we impose on reality. Different grids will parse reality differently and thereby permit us to map different sorts of connections or regularities. Some grids, to be sure, may exhibit lawlike relations to others. For example, a grid through which we identify audible sounds will be nomologically related to one that parses reality into waveforms, sound-pressure levels, and attack and decay (envelope) characteristics. But some grids countenance or reveal objects, properties, and relations that have few (if any) connections to alternative grids. For example, that kind of incommensurability seems to obtain between the diagnostic grids used in traditional Chinese medicine and that used by Western physicians (see e.g., Connelly, 1994, and Klate, 1980).

We see, then, that we can identify objects and phenomena only with respect to a descriptive scheme or level of description, a set of categories that parses reality in a certain way and thereby takes certain relations (but not others) to exist in the universe — namely, the sort that can obtain between those elements. But in that case it would be surprising, indeed, if descriptive categories dealing with the microcosm were the only ones incapable of further analysis. Once we concede that nature may be characterized at different levels of description, we would *expect* many of those levels to countenance unique sets of phenomena or regularities — that is, things in nature that are neither reducible to, derivable from, nor capable of being mapped without residue onto, another level of description. For example, it would not be surprising if on the level(s) at which we identify psychological states, there are regularities or phenomena not analyzable at a lower level. (Of course, to judge by the arguments raised above concerning the copy theory, this seems demonstrably to be the case.) In any event, apart from all the specific arguments designed to demonstrate the irreducibility of the mental to the physical, one cannot simply *assume* that psychological descriptions must be further analyzable

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<sup>4</sup> I owe this useful image to Bruce Goldberg.

(e.g., in biochemical or neurological terms, or in the language of physics). It would be more plausible to assume, from the start, that there exists a plurality of irreducible descriptive schemes, each appropriate to a different domain of discourse or range of phenomena. But then we must concede that causal regularities among observable phenomena may not, after all, be further describable or analyzable on a level of description dealing with smaller-scale phenomena. (I remind the reader of the additional relevant points raised in Chapter 1.3, concerning the nature of abstraction and the corresponding limitations of the physical sciences. It should be clear that those comments simply approach the same topic from a different direction.)

Moreover, since our choice of descriptive schemes can be justified only with respect to a guiding set of interests or purposes, the view that nature has a preferred level of description presupposes that some such set of interests or purposes — some *perspective*, in other words — is inherently more fundamental, or more concerned with basic questions, than the rest. But that claim is simply incredible. For example, although the shifting perspectives of a theoretical physicist and an interior decorator might overlap or be related to each other in various ways, they might also be irrelevant to or nomologically independent of one another. To be sure, when an interior decorator explains the resilience of certain materials or colors in terms of manufacturing techniques, that explanation will be true *in virtue of* underlying truths about the chemical and atomic properties of matter. In that case, therefore, the perspective of the physicist might properly be said to undergird that of the interior decorator. But in other cases, one would look in vain for any hierarchical relationship between the perspectives of the physicist and interior decorator. No deeper physical explanation will explain why a pattern is *busy* or *garish*, or a decor *elegant*, *casual*, *contemporary*, *cold*, *daring*, or *unimaginative*. In some contexts, then, the physicist and interior decorator are interested in distinct and nomologically independent aspects of the world, each appropriate to a certain range of goals and interests. But then neither group has a monopoly on the basic questions. To suppose that the physicist's questions are inherently deeper or more fundamental is simply to be taken in by a kind of professional chauvinism. *Qua* physicist, we focus on a certain range of objects and questions; *qua* interior decorator, our needs and interests change, and different and possibly independent entities, questions, and regularities command our attention. Similarly, and perhaps more pertinently, there is no reason to assume that the concerns, goals, and interests of the physicist must be either similar or related to, or deeper than, those of the behavioral scientist or of people caught up in everyday matters of psychological survival.

In any case, since one can marshal strong arguments in support of the view that intentional or cognitive processes are not analyzable in terms of subsidiary processes or mechanisms, and since PK certainly seems to be such a phenomenon, let us consider how we might deal theoretically with PK, if we assume it to be unanalyzable as well.

## 5.5 Taking PK as Primitive

Let us assume, then — if only to see where it leads — that PK is not analyzable in terms of subsidiary processes or mechanisms. Far from obliterating all prospects of a PK theory, it seems to me that the assumption opens two main theoretical avenues.

(1) On the one hand, we might hold that although acts of PK do not *reduce* to some set of underlying phenomena, they are *mediated* by subsidiary processes or mechanisms. In other words, we might claim that lower-level processes contribute causally to the occurrence of an observable PK event *P*, but that no set of such processes is either identical to *P* or causally necessary and sufficient for its occurrence. We could put this briefly by saying that the production of *P* is *non-mechanistic*. From this point of view, we would expect certain small-scale physical or physiological conditions to be PK-conducive or even necessary for the exercise of PK, without there being a set of physical or physiological conditions both necessary and sufficient for the production of a given kind of observable PK effect. Analogously, I might need a functioning brain in order to think about my brother (contrary to what spiritualists and Cartesian dualists maintain), even if no set of brain processes is identical to or necessary and sufficient for having a thought of that kind.

As the foregoing discussion of the copy theory made clear, that is the respect in which I consider cognitive or intentional processes generally to be unanalyzable. Of course, that discussion focused on the presumed causes of PK *effects* — that is, the agent's intention, desire, etc. But mental states are not the only kinds of events that resist mechanistic analysis; certain PK effects — that is, physical states — appear to do so as well. That fact may easily be overlooked by those who dismiss the more interesting poltergeist and mediumistic phenomena. But consider the *gracefulness* of a D.D. Home accordion rendition, the *affection* in the touch of a materialized hand, or the *playfulness* or *hostility* of some poltergeist antics. These characteristics of the phenomena cannot be analyzed solely in terms of some antecedently specifiable set of properties inherent in all their instances. In part, at least, they can be understood only with respect to the way the phenomena are integrated into local as well as global (e.g., societal and cultural) contexts. For example, certain properties of a handshake may be affectionate in one setting but hostile or menacing in another. (Similarly, a father's loving kiss may be topologically indistinguishable from a syndicate hit man's kiss of death.) Furthermore, there are no properties common to all affectionate handshakes, or affectionate acts generally. Even a punch in the mouth, or knocking someone unconscious, can be affectionate in some situations. (Recall the old movie lines: "I had to do it; it was for your own good," "I can't let you go up in a rig like that," or "Thanks, I needed that.")

Even table levitations may display context-sensitive characteristics. Richet, a seasoned and keen observer of the phenomena, once remarked,

...the table answers as if it was alive; the emotions of the subconscious are faithfully translated by the kind of movements made by the inert object. This lifeless table seems to have a mind; it hesitates, it shows irritation; it affirms energetically; or it sways solemnly. No one who has witnessed such seances can imagine how well diverse sentiments can be expressed by the frequency or the forcefulness, the slow, hesitating, vigorous, or gentle movements. It is an actual language and always interesting... (Richet, 1923/1975, pp. 401–402)<sup>5</sup>

In any case, if PK phenomena are fundamental and unanalyzable in the sense outlined above, then scientists will be able to analyze only those aspects of the PK process that *can* be described

<sup>5</sup> Similar observations were made in connection with the "Philip" experiments. See Owen, 1975; Owen and Sparrow, 1974, 1977.

mechanistically. That may not take us very far, just as an analysis of the processes underlying the production of vocal sounds or hand movements in writing ultimately tells us very little about communication (see the remarks on telepathy in Braude, 1979). But at least there would be processes to study.

(2) But observable PK may be unanalyzable in a more interesting and radical way. There might be no *process* to PK, at least in a familiar sense of “process.” That is, there might be no set of lower-level events intervening between the PK effect and the state of mind causing it, almost as if a phenomenon could be produced instantaneously by waving a magic wand. One reason for taking this suggestion seriously has to do with abstract issues concerning the nature of causal connections, and I will address those shortly. Another is that certain mediumistic and poltergeist phenomena render the option more plausible than it would seem had our attention been limited to formal experiments (e.g., RNG tests). The currently fashionable (and in many ways justifiable) practice of generating PK targets by means of radioactive decay, electronic noise, or other relatively simple random processes makes it seem (and *only* seem) as if PK always works initially on the micro level, and therefore that macroscopic effects are outcomes of a resulting “chain reaction.” But a somewhat different picture emerges from non-experimental cases — for example, apports and some cases of ostensible materializations, in which complex and well-formed objects appear (and sometimes disappear and reappear) apparently instantly.

If this more radical approach to PK has any merit, it could turn a great deal of current theorizing on its head. We might then want seriously to consider the possibility that phenomena classified as examples of micro-PK (in sense (b) above) are really instances of direct, unmediated interactions between organisms and observable objects of states of affairs. For example, we would be more open to the suggestion that spoon bending (say) is a phenomenon in which macroscopic deformation of the spoon produces a corresponding microstructural change, rather than a process in which a change in the spoon's microstructure produces a corresponding macroscopic change. Similarly, we would be prepared to consider the possibility that changes on the quantum level are by-products of PK effects on the observable level, rather than the reverse. Or, more modestly, we might say simply that a macro-PK effect *is* (the same as) a corresponding micro-PK effect, identified relative to a different level of description. But whichever option we choose, the point to remember is that we are not forced to treat macroscopic changes as causal outcomes of earlier micro-PK effects.

Quite understandably, many will resist this suggestion, and the source of their concern is not difficult to fathom. They would protest that if we take PK to be primitive and unanalyzable, then all PK phenomena involve a mysterious connection between a mental state and a resulting physical state. Even diehard physicalists would concede that they all involve a mysterious physical→physical connection over an apparent spatial gap. So in one form or another, a certain question seems to cry out for an answer — roughly, “How do we bridge the gap between the intention and the effect?”

But is it clear that this question must have an answer? Apparently, the question presupposes that cause and effect must be spatiotemporally contiguous — that is, that all causal connections are explicable (at least ultimately) according to something like a billiard-ball model of causality. But that position is contentious, to say the least. For example, some have argued that the phenomena of memory demonstrate that cause and effect are frequently noncontiguous, and

that the positing of memory traces (in order to close the gap) simply promulgates various incoherent or otherwise indefensible philosophical positions (see Braude, 1979; Bursen, 1978; Heil, 1978; and Malcolm, 1977). Others have simply observed that there is not just one correct account or acceptable or fundamental concept of causality, and that causal explanations may properly assume different forms in different contexts (see, e.g., Collingwood, 1948/1966, and Scriven, 1975).

Recently, physicists have been fond of making a similar observation. They note that quantum physics has had to replace old-fashioned mechanical billiard-ball causality with statistical or probabilistic causal laws. Most PK-theoreticians, in fact, are either physicists or people deeply influenced by recent developments in physics. And they embrace quite happily the possibility of at least a spatial gap between a PK effect and the mental state causing it. Curiously, however, they find the gap acceptable only so long as the PK effects are quantum-level phenomena. The fundamental sort of PK effect, they argue, is that of a mental state collapsing the state vector (see, e.g., Mattuck, 1982; Mattuck and Walker, 1979; Schmidt, 1984; and Walker, 1975, 1984). On their view, PK interactions between an organism's state of mind and observable states of affairs cannot be primitive occurrences — that is, connections unmediated by lower-level processes. They apparently feel that we can take some of the mystery out of PK by analyzing observable PK phenomena in terms of fundamental PK events at the quantum level.

But this strikes me as a clear example of blind adherence to the small-is-beautiful assumption. For one thing, insofar as both sorts of interaction posit a causal link running from the mental to the physical, neither is less mysterious than the other. In fact, partisans of this approach seem to be impaled on the horns of a dilemma (see Beloff, 1980, and Thakur, 1979). Either they must reduce states of consciousness to physical states and then construe the causal efficacy of mental states as merely a form of purely physical causation, or they must admit that collapse of the state vector by consciousness is a form of mental→physical causation. The first horn of the dilemma, outright reduction of the mental to the physical, is implausible for several reasons, including those outlined earlier in this chapter. Besides, Mattock and Walker make a point of rejecting the reductionist platform and claim explicitly that consciousness is nonphysical. That leaves the second horn of the dilemma. But that option retains the principal mystery which the retreat to quantum physics was intended to avoid. The causal link between the mental and the physical remains, and presumably the physicist must concede that this particular mental→physical link is one that resists further analysis. *How* it is that consciousness directly brings about collapse of the state vector is a question without an answer. It is simply the way the universe works. But that form of mental→physical causation is every bit as mysterious as any other direct link from a mental state to a physical state of affairs.

So the popular quantum physical approach offers no further insight into the causal link between consciousness and the physical world. It merely restricts attention to one of the mind's possible stages of operation: the quantum level. But once we allow *some* mental→physical gap to be primitive, it needn't be confined to anyone level exclusively. In other words, once we grant (a) that it is possible for primitive or unanalyzable facts about organisms to be facts about observable phenomena, and (b) that there may be unanalyzable causal interactions between states of mind and the physical world, we are simply no longer constrained to locate those fundamental interactions on the quantum level.

Nevertheless, some parapsychologists have a certain intuition about the difference between the micro- and macro-level, which apparently disposes them to look to the former — but not the latter — for fundamental PK interactions. They think that because of quantum-level indeterminacy, there is “room” on the micro-level for an otherwise mysterious mental → physical “push.” The macro-world, however, they take to be a deterministic function of those indeterministic micro-phenomena; therefore, it has no room in it for mental → physical pushing.

But not only is this intuition highly controversial, it also fails to support the alleged primacy of the micro-level. For one thing, many physicists maintain that neither the macro- nor the micro-world is fully deterministic. They argue that quantum physics shows that nature generally follows only probabilistic laws. Heisenberg’s uncertainty relations, they would say, still apply to the macro-world, although the measurement problem does not arise there in an acute form. So if fundamental PK interactions occur only in an indeterministic domain, then from this respectable alternative point of view, they can occur on the macro-level.

Furthermore, we have no reason to assume that PK phenomena must respect our distinction between observable and unobservable. After all, the distinctions between macroscopic and microscopic, and observable and unobservable, are not sharp; they are merely matters of degree. In fact, they do little more than allow us to systematize phenomena in terms of the limitations of our sense organs. But, to put it somewhat colloquially, those limitations are something we are stuck with. Nature could care less about them. It is completely implausible to suppose that nature’s laws must make a sharp distinction where mere humans are forced to make an unsharp distinction — that is, that nature inherently divides into ontologically distinct or nomologically independent domains of phenomena corresponding to the domains marked off by our perceptual limitations. So perhaps fundamental PK interactions can occur *anywhere* on the observable/unobservable continuum. Perhaps PK is a phenomenon that involves primitive interactions between organisms and physical systems generally, whether observable or unobservable.

## 5.6 Conclusion

I suggest, then, that the quest for a unified micro-analysis of PK phenomena is misguided. It is misguided in the same way as attempts to frame mechanistic theories for more ordinary sorts of intentional processes (e.g., aggression, compassion, or communication). They all presuppose a deeply mistaken view of the nature of intentional states, or mental states generally. No matter how scientific they might appear when dressed up in some appropriately imposing technical vocabulary, underneath they remain only bad philosophy.

I reassert, however, that the futility of these projects should not prevent scientists from studying whatever processes mediate *certain forms* of the phenomena. But the study of PK, like the study of most interesting human capacities or regularities, belongs primarily to the realm of the behavioral-science analogue of the biological naturalist (Eisenbud is probably the only modern theoretician who comes close). There is plenty of room in parapsychology for someone to classify phenomena and map regularities — that is, to offer modes of description that systematize the domain in question. But there is no need, and apparently no possibility, of explaining the phenomena or regularities by means of underlying processes or mechanisms. For

that reason, I submit that no science modeled after physics or chemistry can offer much of interest to parapsychology.

To some, these remarks will undoubtedly seem like an admission of failure, an assertion that there can be no scientific study of PK — hence, a plea to abandon the quest for understanding the phenomenon. But that would be a serious misconstrual of my position. And it would probably rest on an indefensibly limited conception of what a science is, and what *understanding* and *explanation* are. For one thing, stopping the search for vertical explanation at the level of behavior (or observable phenomena) is no more unscientific (or prescientific), nor more of a failure in understanding, than taking phenomena at the quantum level to be primitive and unanalyzable. In fact, it would be a *victory* of understanding to figure out where analysis ends in a given domain. That is why sensible folk do not try to analyze the laws of economics (say) in terms of lower-level processes, much less the laws of physics (see also J. Fodor, 1975, pp. 9–26, and 1981). Besides, we needn't abandon all hope of explanation once we identify ground-level phenomena; only vertical explanation (explanation by analysis) will grind to a halt. But that still leaves forms of horizontal explanation (e.g., explanation by analogy) and covering-law explanation, as options. Therefore, other forms of explanation should remain viable and may still prove profitable.

Moreover, parapsychological theoreticians should resist the tendency, manifested by thinkers in all disciplines, to begin theorizing with what appear to be the “simple” cases, to treat these as closest to a theoretical ideal, and then to regard the more complex cases as their degenerate forms. Although there is good reason to adopt this method in certain disciplines, it is as inappropriate to the behavioral sciences as the easy reliance on mechanistic explanation, and for similar reasons.

The procedure to which I refer should be familiar to most readers. For example, in the philosophy of language one sees it in attempts to treat simple sentences like “the cat is on the mat” as paradigmatic, and then with the aid of models developed from these initial cases, to analyze sentences that seem less clear-cut on the surface (for a more enlightened approach, see Goldberg, 1982). In parapsychology, it appears in attempts to base theories of psi on results of formal tests (e.g., card-guessing, thermistor or RNG fluctuations). But these theoretical programs strike me as almost completely wrongheaded. Superficially simple laboratory examples of ESP and PK — like the truncated behavior elicited in psychology experiments — are presumably far from basic or close to an ideal. In fact, their apparent simplicity is a kind of artificiality resulting from a deficiency: The cases seem simple because they abstract out what is really important. For example, the crucial relationships between psi functioning and a person's needs and interests are never as clear or as potent in the lab as they can be in real life situations. Similarly, experimental psi offers little or no indication of the richness, flexibility, or refinement of psi functioning. So I suggest that parapsychologists adopt a strategy that is appropriate to every behavioral science. I suggest they consider cases of experimental psi to be degenerate instances of real-life psi, and that they take the latter to be theoretically paradigmatic. Experimental psi draws on contrived and limited needs and interests of the agent, and it forces psi to manifest itself in artificial and exceedingly restricted forms. These cases of strait-jacketed psi functioning are no more close to a theoretical ideal than laboratory examples of humor, sensuality, compassion, etc.

Moreover, quite apart from abstract arguments (of the sort given earlier) showing the futility of building behavioral or intentional theories from the bottom up, it seems as if the major attempts thus far have been conspicuous failures — enough so to suggest that history is offering a lesson to be learned. But relatively few seem to have noticed. The philosophical theories of language, perception, knowledge, and action that adopt the approach have been notoriously inadequate, as have been similarly structured scientific theories (e.g., memory-trace, learning, and generative linguistic theories, and cognitive or computational psychological theories generally). In fact, the latter are merely variants of the former, couched in a trendy and limited technical vocabulary. What history shows, I believe, is that in any discipline for which human beings and their activities provide the data, starting with “simple” cases tends to lead to simplistic and procrustean theoretical constructs into which the more interesting and illuminating cases never fit.

If the study of PK is to make any progress, it must reflect the fact that there is more than one way of being scientific — that is, of systematizing and generating predictions about a domain of phenomena. Regrettably, however, parapsychologists — like many scientists — display a slavish adherence to the methods and goals of physics and chemistry, as if those sciences achieved a preferred form of understanding or offered a preferred form of explanation. Researchers remain blind to points made more than two thousand years ago by Aristotle: that there are different — and equally legitimate — forms of explanation and understanding, and that different domains require different methodologies. It is this blindness (among other things) that leads many to embrace the small-is-beautiful assumption.

I suggest, then, that the lack of progress in PK theory is an inevitable consequence of (a) the misguided application of the analytic and quantitative methods of physics and chemistry to a domain where those methods lose nearly all their utility, and (b) taking as paradigmatic the small-scale and thoroughly non-intimidating (and relatively uninteresting) phenomena occurring in the lab. The major, currently fashionable theoretical approaches in parapsychology all suffer from at least one of these defects. The various forms of the observational theory (see e.g., Schmidt, 1975, 1976, 1978, 1982, 1984; Houtkooper, et al., 1980; Mattuck and Walker, 1979; Millar, 1978; Walker, 1975, 1984), and the more recent decision augmentation theory (May, Utts, and Spottiswoode, 1995a, 1995b; May, Spottiswoode, Utts, and James, 1995) fail on both counts. So does the systems-theoretical approach of Kornwachs and von Lucadou (Kornwachs and von Lucadou, 1979; von Lucadou and Kornwachs, 1980), although in a somewhat different way. And although Stanford’s *conformance behavior* theory (Stanford, 1978) suffers primarily from the second defect, it is still flawed in a way related to the first. To its credit, it takes seriously the pivotal role of needs and interests in psi interactions. But like behaviorist theories generally, it is couched in a pseudo-precise, narrow, and coarse-grained terminology in an apparent effort to emulate the “tough-minded” theories of physics and chemistry. Therefore, in addition to their fatal lack of scope, the leading theories all attempt to apply crisp theoretical constructs to a domain whose most interesting, and probably deepest, features are neither precisely nor quantitatively describable.

In my view, significant contributions to our understanding of PK will come only from those who have mastered more than the experimental data, and who can think in terms broad enough to systematize a wide range (if not the totality) of evidence for paranormal physical phenomena.

Furthermore, they must be able to relate the phenomena to matters that no precise terminology or formal system can represent or capture — namely, the nuances and dynamics of organic behavior. In fact, the true trailblazers of PK (or psi) theory will probably be masters, not just of the data, but also of human psychology and the subtleties of life. They will have to explain the role of psi *outside* the situations in which parapsychologists try to harness it for the purposes of investigation. Experiments are designed merely to elicit contrived and artificially conspicuous manifestations of capacities that undoubtedly continue to operate when the experimenters are no longer looking. Quite probably, then, experimental psi is no more than the tip of the iceberg. In fact, as I mentioned earlier, it might well be characteristic of psi to function in ways that do not command one's attention. The crucial issue about PK (or psi), therefore, is not *how* the phenomena occur. Indeed, as we have seen, that question may not have an answer, and certainly not one taking the form of a *micro-analysis*. Rather, the central issue seems to be *why* the phenomena occur, both in general and in specific kinds of situations. What we need, I suggest, are fewer technicians and more parapsychological naturalists, people with an eye for regularities and connections and a gift for qualitative analysis, researchers whose keen perceptions and descriptive powers will help reveal illuminating patterns and relationships in the data. And once researchers transcend their physics envy, abandon the small-is-beautiful assumption, and realize how little is to be learned by seeking physical or physiological correlates to the observable regularities, that project will lose its apparent air of superficiality.