ARE PARAPSYCHOLOGISTS PARADIGMLESS IN PSILAND?

REX G. STANFORD

It has frequently been alleged that parapsychology, now almost one hundred years old, lacks any basic theory and is characterized by "dust-bowl empiricism." It is sometimes also said that we are at a preparadigmatic stage of our development, in Thomas Kuhn's sense of the term "paradigm."

Recently, however, things have begun to change in this regard, and we have found ourselves with models and theories (e.g., Schmidt, 1975b; Stanford, 1974a, 1974b) which, though they be at a relatively low level, are generating research and helping us to feel that something meaningful can be shaped out of the empirical dust which we find all around us. Perhaps most important, the workers in parapsychology now seem more willing and ready to conceptualize their findings.

Ironically, the very attempts to conceptualize these findings are making it evident that despite the apparent dry empiricism of parapsychology, our thinking and therefore our research have been very strongly guided by and, indeed, constrained by certain *preconceptions* about the nature of psi phenomena, preconceptions which have almost always remained just that, for they have very rarely been conceptually or empirically questioned. It is my intention in this paper to show that such preconceptions have existed and have strongly influenced the directions taken by research. It is also hoped that the specific nature of these preconceptions can be made clear and that we can begin to examine whether they should remain as our guiding precepts.

Parapsychology, as the name itself implies, has operated under a *psychobiological* model or paradigm (perhaps, in almost a Kuhnian sense of the latter word) for much of its existence. For the most part, it continues to do so, although troublesome questions are now being asked from some quarters, especially by the considerable number of physicists who have recently become interested in psi

phenomena and who are not always terribly happy to say that what they are doing is "para*psychology*." Let me explain why I think the term "psychobiological" appropriately describes our traditional assumptions.

First, consider the events called "extrasensory perception" or "ESP." It would seem that ESP has been assumed to be some particular form of sensitivity on the part of the organism which has appeared during the course of evolution and which may either be developing during the course of that evolution or may be gradually disappearing in its prominence as a survival mechanism. Such a view naturally puts an emphasis upon ESP as basically an information-receiving capacity and would seem to imply that in some sense either a specialized receptor or the brain and nervous system must have the capacity to receive and process such information. (The channel or specific means for the transfer of such information need not be specified in such a model and typically has not been specified.) In such a view, extrasensory information is used like any other (i.e., sensory) information in guiding the activities of the organism. When applied to the problem of PK, such a view assumes that extrasensory information is used, albeit unconsciously, to guide the application of the unexplained PK force to the target system and thus to control the outcome. In other words, there is conceived to exist a feedback-control loop for the application of PK to the target system, the feedback being made possible by "unconscious" ESP. Thus, the psychobiological model of psi functions as a cybernetic model when applied to the PK situation.

Such a view of psi function has been largely responsible for the actual guidance of parapsychological research. Its impact is evident in the problems discussed by parapsychologists, by the emphases in the research, and in the actual terminology of the field. All too often one gets the impression that this model is simply accepted without conceptual or empirical question as the appropriate one, though there exist a few notable exceptions in the history of parapsychology.

This psychobiological perspective has led to much discussion of such problems as: How is psi ability spread throughout the phylogenetic scale? Is psi being fostered, reduced, or eliminated by the processes governing evolution? The question of whether or not it is really doing *any* of these things, but may be something more basic than an evolved ability to handle information present in the environment, seems very rarely considered.

Similarly, though no parapsychologist would claim that an ESP organ has been found, the question still receives discussion even

though there is not a shred of evidence to support the claim that such a specialized organ exists. Evidence for such an organ would certainly constitute excellent support for a psychobiological model. The current surge of interest in the possibility that extrasensory function inheres primarily in the right hemisphere of the brain (in right-handed persons) may in part be based upon a felt need to localize the function of ESP within the organism. This need may derive from implicit acceptance of the psychobiological model.

It is probably from implicit acceptance of such a model that we so readily use terms like "ESP ability" in much the same sense that we use terms like "intellectual ability," "musical ability," etc. Perhaps even more germane, we use terms like "sensitive" in reference to a person. This seems to imply that our ESP tests measure basic extrasensory "sensitivity," which, obviously, they do not. In fact, we do not know what it means to speak of psi sensitivity. We do know what this means in the case of vision or hearing, for we know of an organ which responds to a certain form of energy. We can systematically vary the parameters of that form of energy and can measure resultant changes in response—thus, for instance, we measure auditory sensitivity.

In a related vein, we often use expressions such as "extrasensory response to the target stimulus," terminology clearly borrowed from sensory and behavioristic psychology. This is in spite of the fact that there is no evidence that the analogue implied in such language is a valid one. In what sense does the extrasensory "target object" act as a "stimulus" and thus "stimulate" the subject?

The *Journal of Parapsychology* regularly defines psi (in its glossary) as "a general term to identify a person's *extrasensorimotor* [my emphasis] communication with the environment." In J. B. Rhine's writing he has considered psi as a nonphysical energy which has two "sides" or functions, one (ESP) a perceptive or receptive one, the other (PK) a responsive, active one which performs work on the environment. Thus ESP and PK are nonphysical analogues of sensory perception and motor action, respectively. One may be inclined to ask, "Is there any other way to think of them?" Yes, there is, but it has rarely occurred to parapsychological researchers to do so. Later one such possibility will be considered.

The basic terms of our field reflect this strong psychobiological model. The term "parapsychology" itself we have already noted reflects this bias; "extrasensory perception" means "perception without the aid of the senses"; "clairvoyance" literally means "clear seeing"; "precognition" means "knowledge beforehand"; "telepathy" literally

means "feeling at a distance," or, colloquially, "reading a mind"; and "psychokinesis" literally means "motion produced by the mind" or, colloquially, "mind over matter." Thus, some of the terms simply treat "ESP" as analogous to sensory response or to other cognitive functions known to psychologists. The concept of "psychokinesis" clearly suggests the active influence of a "mind," whatever that may be, on matter, and the term "psychokinesis" itself suggests the influence is upon the motion of matter, a rather manipulative concept.

The purpose of the present discussion is not to question the usefulness of such terms, but to point out that they seem to reflect a psychobiological model. This is perfectly understandable, given the history of this field, but, as we shall see below, some of the implications of such terms may be misleading or at least should not be taken for granted. It is important to make explicit what is usually implicit, to question any implicit assumptions, and to ask whether other formulations are at least equally reasonable.

Let us briefly consider in a bit more detail the typical psychobiological view of psychokinesis. That approach considers that the organism involved (the "subject," for instance) in a PK effect is the *cause* of the effect and this concept of cause is not really different from the sense in which a person is said to cause an automobile to turn left when he turns the steering wheel in that direction. This analogue is appropriate because many, and possibly the great majority, of parapsychologists accept the cybernetic view of PK discussed earlier, according to which the PK influence is guided by implicit extrasensory monitoring of the target system.

J. B. Rhine long ago proposed such extrasensory guidance for PK, and I adopted this proposal as a working hypothesis in a recent theoretical paper (Stanford, 1974b). Now I have some second thoughts about the matter. The reasons for these doubts will be given later. Here it is sufficient to note that despite this cybernetic assumption about PK function, PK subjects have not reported any awareness of guiding the PK operation (e.g., guiding the fall of dice or the operation of an electronic random event generator) through extrasensory monitoring. If extrasensory monitoring is the guiding force behind PK, it must be wholly unconscious in character. It must also operate with considerable facility, given that subjects often have no idea of what form of device controls the desired outcome in such tests and given that the device is often complex and beyond the normal comprehension of the subject. Permitting the assumption of extrasensory, cybernetic feedback-loop guidance for psychokinesis requires that we think of "ESP" as something very

different from what we are taught about it by our traditional cognitive-perceptual, psychobiological model of extrasensory function.

An excellent example of how the psychobiological model is influencing contemporary psi research is the concept of "remote viewing" invoked by Targ and Puthoff in their studies of extrasensory response to distant targets. The same kind of thinking has deeply influenced much of the research on OBE's, in which the governing idea is a perceptual one. Such thinking is reminiscent of that which seems to underlie the term "extrasensory perception."

Parapsychological researchers and commentators have often tended to interpret anything less than a full-blown perceptual-cognitive ESP experience as a degraded form of ESP in which the psi-mediated information is somehow blocked from fully reaching consciousness. The assumption would seem to be that ESP is perceptual in its basic character and that it somehow struggles for expression in just that form, often, however, finding obstacles to expression in its "true" form. Louisa Rhine's writing on spontaneous cases provides a good example of such a position. Although such a position seems increasingly doubtful on the basis of experimental evidence, the psychobiological model forces us to think of extrasensory function as, if not basically perceptual, at least basically cognitive in function.

All parapsychologists will readily admit that not all ESP takes a perception-like form, for they are well aware that much ESP takes a nonperceptual cognitive form, such as "hunches" and the use of automatisms for the expression of psi-mediated information. In the latter case, although it would be inappropriate to speak of a "conscious cognition," the function is certainly cognitive in the sense that such cases do allow at least a partial reconstruction of the information "at the other end of the line," just as do the cases of perception-like ESP (e.g., a vivid dream of a distant event, a veridical "vision," a veridical auditory hallucination, etc.) and "hunches." This, however, is still not the whole story.

We have both anecdotal and experimental examples of events for which we would wish to use the term "ESP," but which do not really share this cognitive characteristic. (For an early review of such evidence, see Stanford, 1974a; for a more recent review, see Stanford, 1977.) In such instances what happens is that a response is made possible by psi which is instrumental in allowing the person to encounter a favorable event or to avoid an unfavorable one, yet there is nothing in such cases which suggests an actual perception or cognition of the event to which one is responding.

Such cases are thus termed nonperceptual, noncognitive examples of *psi-mediated instrumental response* (PMIR). As a concrete example, in some of the experimental work on nonperceptual-noncognitive PMIR subjects have shown a decreased reaction time in responding to a particular word on a word-association test when, unknown to them, their doing this increased their probability of experiencing a favorable event. Thus, subjects were simply responding in an unself-conscious, appropriate way to contingencies in their environment.

The net result of considerable work along these lines has been to suggest that what we find in *all* extrasensory response is, in very general terms, behavioral, imaginal, mnemonic, or other organismic activity which is *appropriate* in the context of events relevant to the concerns, dispositions, or needs of the organism, but which is happening out of the range of its sensory contact. Such response may take the perception-like or cognitive form only when the circumstances make this appropriate (e.g., the need consciously to experience the target object, as in many ESP experiments; or, in everyday life, in circumstances when only the development of a conscious idea about the target circumstances will have maximal adaptational value, as in preparing the person for a tragic loss of a friend). The circumstances under which the appropriate response (PMIR) might take the conscious, cognitive-perceptual form, as opposed to some other, are discussed at greater length in the paper describing the PMIR theory applied to extrasensory function (Stanford, 1974a).

Even if we adopt the terminology and concepts of the PMIR model, we are still within a psychobiological paradigm, at least as the PMIR model has been enunciated in published form (Stanford, 1974a; Stanford, 1974b). The model was developed from the perspective of the psychologist and/or the biologist. This has been true of almost everything done in parapsychology, empirically or conceptually. Some writers have even implicitly deprived physicists of the opportunity of saying anything about these phenomena by labeling them "non-physical." Such has been the extent of the influence of psychobiological and dualistic thinking within this field.

Dualistic and psychobiological perspectives have, in fact, been a pretty happily married couple in most parapsychological quarters. This has led to a double dualism in much parapsychological thinking: mind-matter and living-nonliving dichotomies as basic principles. It is generally said, without any evidence, that psi is a function of living (as opposed to nonliving) systems, and one often gets the feeling that the basis of the distinction of living and nonliving is

that the former has associated with it some element of "consciousness" (whatever that may be) and thus of that magical ingredient, "psyche," "spirit," or "vital something-or-other." It seems as though that ingredient either magically emerges as a function of evolution or that it is from the start a separate principle which somehow gets united with matter to produce a living being. Apparently because of this strong psychobiologistic and, often, dualistic bias, the question seldom ever gets asked whether "dumb matter" is really so "dumb" after all. Might not some form of responsiveness or "intelligence" exist as part of the very nature of our world? The psychobiologistic bias within parapsychology makes us consider only the possibility that "consciousness" and "intelligence" are the products of, or at least only find expression as a result of, evolution and causes us to ignore the possibility that evolution itself may in part be a function of some very interesting "intelligent" qualities inherent in the nature of the world.

At the level of day-to-day research activity, psychobiological thinking has strongly influenced and circumscribed the types of studies undertaken. This is evident from the strongly psychologistic orientation of almost all the work done in experimental parapsychology, from the reasons given for interest in work with lower species, and from the paucity of studies which examine *basic* questions about psi processes (i.e., about underlying mechanisms or processes as distinguished from purely psychological or biological questions).

It may well be that the prevalence of the psychobiological paradigm, quite stringently adhered to by our small in-group of psychologically- and biologically-oriented psi researchers, has placed empirical and conceptual blinders upon us which have prevented our seeing the possibilities for conceptualizing our phenomena in alternative, more basic fashions and has caused us to ignore certain features of our own data which may call into question that very paradigm.

It is quite remarkable that something resembling a Kuhnian paradigm should exist in a developmentally young science which many claim is "preparadigmatic." Let us not forget, however, that while we are developmentally young, we are in fact quite an old science, having had formal existence now for almost a century. Furthermore, parapsychology has been generally and sometimes systematically ignored by other disciplines such that their inputs and perspectives have had little influence upon us. Until quite recently we have largely been communicating with ourselves. The result has been the development, in this isolation, of something

akin to a Kuhnian paradigm, and, true to form, this paradigm has seldom been questioned either empirically or conceptually by the active researchers in the field. We have too often seemed blind to alternative possibilities.

That we can at the moment begin to see some questioning of this psychobiological paradigm, some cracks in our conceptual walls, may be closely related to the fact that for the first time a large number of new scientists are actively becoming involved with this field, including more physical scientists than ever before. It may also be related to the fact that some systematic theorization is now being attempted by the very persons active in parapsychological research (e.g., Schmidt, 1975b; Stanford, 1974a, 1974b). Efforts at theorization require us to assess what we have learned and to consider how it may be understood. This can draw our attention to empirical generalizations which we have seldom sufficiently pondered, generalizations which pose serious questions for our previous implicit or explicit conceptualization. This seems to be what is happening. Permit me to record some of my own experience in this connection.

As noted earlier, when I prepared my paper on ESP as PMIR, I rejected the concept that ESP is intrinsically perceptual-cognitive and substituted the empirically more adequate notion that it is disposition-subserving. While I questioned a particular version of the psychobiological paradigm, I did not question the basic paradigm. The PMIR theory assumed that extrasensory information is obtained through some form of psi-scanning of the environment and that internal neuronal machinations process and integrate the extrasensory information such that PMIR is the ultimate result. It further assumed that extrasensory PMIR occurs through psi-mediated facilitation or release of otherwise ready or available appropriate response patterns in the brain (e.g., the release of memories or habits). The theory did not address itself to how the appropriate state of available brain activity is selected from among the various possibilities. Even though it was not reflected in that paper, I was at that time deeply interested in and concerned by this problem of selectivity.

Then I turned to applying the PMIR model to PK events (Stanford, 1974b). In the case of PK one had to invoke a form of implicit ESP to account for the application of the supposed PK force to the target system. It was precisely here that the psychobiological paradigm with its cybernetic implications became stretched almost to the breaking point. It seemed to require precise, moment-

to-moment extrasensory monitoring combined with skillful computer-like computation to allow precise, effective application of the PK force. Perhaps in the case of the die-face experiments it implied an intuitive knowledge of kinetics! In the case of modern, complex electronic or quantum-based random event generators, often running at fast speeds, the cybernetic model seemed, if anything, even more troublesome. It was a hard pill to swallow, but I did so, for years of training in the psychobiological paradigm allowed me, initially, to think of no other possibility. I was just thinking like a good psychologist! I made a few reverential bows before the conceptual image of the Ultimate Integrative Instrument, the Brain, and went about my theory-building business trusting in its Almighty Power.

Nonetheless, in the process of writing the PMIR-PK paper, I had considered a fairly broad range of findings in the PK area, and I privately began to have some serious misgivings about the adequacy of the psychobiological model. But at that time I still did not have fully in focus the extent of the evidence which could bring into question the psychobiological model.

It was months later, while I was completing a very extensive review of the experimental PK literature for the *Handbook of Parapsychology*, that the full extent of that evidence did come into focus. (The aforementioned volume is edited by Benjamin Wolman and is to be published, as I currently understand it, in 1977, by Van Nostrand.) It was evident that PK could operate effectively when the subject was sensorially unaware of the PK target; indeed, results seemed at least as good as when the subject did know the target. Furthermore, considerable data suggested that the efficiency of PK is not reduced by increases in the complexity of the target system, by changes in the speed of target generation, or even by radical and sensorially unknown, moment-to-moment changes in the physical nature of the target system or in what direction this system must be influenced in order to produce success.

The inescapable fact was that deductions from the cybernetic model of PK would have led to opposite predictions about the results of the kinds of manipulations discussed earlier. The necessity of gathering ESP information about PK targets should reduce PK efficiency, even if the *only* problem were integrating this information with the PK effort, which seems unlikely. Similarly, changes in target-system complexity, target generation speed, whether known to the subject or not, should reduce efficiency, but especially so in the case in which the subject has no warning of their occurrence. This should also hold for sensorially unknown, radical, moment-to-

moment changes in the nature of the physical target system or in the direction in which it must be influenced in order to produce success. Experimental evidence contradicted all these deductions from the traditional cybernetic model. True, it would not hurt to have more investigation of such findings and more efforts at replication. Nevertheless, what was so impressive here was that *all* the available evidence, evidence of diverse kinds, converged upon the conclusion that the cybernetic model had been falsified.

Many parapsychologists have eschewed theoretical thinking, except in terms of vague generalities which are not examined for their consequences in practice. Thus, even though experimental evidence contradicting the traditional paradigm has been mounting for decades, its theoretical ramifications have not been fully considered. In addition to the evidence from the PK work, there have been results from considerable ESP experimentation which lead toward the same conclusion. Foster, decades ago (1940), obtained ESP results for blind- and open-matching tests which were incompatible with the notion that ESP information, in the blind-matching situation, is separately gathered for key and target cards and then integrated, as would seem to be required by a psychobiological model. Numerous other ESP studies have shown that subjects' ignorance of many aspects of the target situation—including even the time at which targets were to be generated—did not deter success. Such studies seem generally to have had results as good as when subjects do have such information, even though studies have rarely been designed specifically to compare two or more such conditions.

Surely such evidence, derived from both PK and ESP work, provides at least a *prima facie* case for conceptually and empirically reopening the question of the appropriate underlying model for parapsychological research.

To be constructive, one must do more than critically examine past conceptualization. One must suggest new directions for our theorization and research. In a few moments I will outline my own preliminary efforts in this direction.

The awareness of the need to develop some new concepts to understand psi phenomena at the most basic level has been dawning on at least some researchers for some time now. For some time parapsychologists have discussed and wondered at a strange characteristic of psi processes, their "goal-oriented" character, as it is now termed. This term summarizes many of the findings discussed above. It refers to the fact that psi processes (both

ESP and PK) accomplish precisely what is needed in a given situation and do so in a way which seems uninfluenced by the complexities of the target situation or of the task *per se* (although performance may be influenced by subjects' perceptions of the "difficulty" of the task, if they know of the complexities). This goal-oriented character of psi, though still in need of refinement as a concept, must be given essentially a cornerstone status in any effort at building a theoretical edifice for psi phenomena. Helmut Schmidt, a leading PK researcher and psi theorist, has commented on this goal-oriented character by noting that experimental results like those summarized above suggest that "PK may not be properly understood in terms of some mechanism by which the mind interferes with the machine in some cleverly calculated way but that it may be more appropriate to see PK as a goal-oriented principle, one that aims successfully at a final event, no matter how intricate the intermediate steps" (Schmidt, 1974, p. 190).

To fully explore the extent to which such a principle controls psi operation, it is necessary to carefully eliminate contaminating psychological factors when one varies physical parameters in psi tasks. Thus, for instance, Schmidt has recently done many experiments in which subjects are blind as to the precise physical nature of the target system or how it is functioning. Many of Schmidt's contributions from such experiments are among the best evidence forcing a reconceptualization of PK processes and psi processes in general. Accordingly, Schmidt has recently developed his own theory of psi function (1975b). His theorization in some ways parallels my own, but differs on certain key points. (Compare Schmidt, 1975b, with my remarks below and with Stanford, 1977.) The differences of our theories can be resolved by future experimental research, for they make some divergent predictions. It is interesting that Schmidt, a theoretical physicist, should be doing a large part of the work which brings into question our traditional psychobiological paradigm. His recent work on time-displaced PK (Schmidt, 1975a, 1976) can be construed as further threatening our traditional paradigm, and I understand that it has caused considerable distress in certain parapsychological quarters.

What follows represents my own preliminary effort to reconceptualize psi phenomena. This effort is in need of much conceptual and empirical refinement. It is simply one possible starting point.

All psi phenomena are considered within this theoretical perspec-

tive as *conformance behavior*. Conformance behavior can, initially, best be understood in relation to the circumstances under which it occurs. For it to occur we need: (1) a *disposed system*, usually (at least in our past experimentation) an organism with a need, wish, or want of some kind; (2) *a source of incompletely determinate alternative states (or events)*, henceforth called for simplicity a random event generator (REG); and (3) circumstances such that outcomes from the REG control the probability that the disposed system will encounter an event favorable to its disposition. It is assumed that the world is built in such a way that under these circumstances the outcomes produced by the REG will be biased to favor the state(s) which will increase the probability of a disposition-favorable event. The name given the proposed phenomenon is *conformance behavior*. It describes the proposed order or biasing which will tend to develop out of randomness (or relative disorder) whenever the latter is contingently linked to the fate of a disposed (and therefore relatively highly ordered) system.

Since, according to this proposal, conformance behavior tends to occur in an REG with respect to the disposition of any system contingently linked to it, at some point in the development of this theory one or more rules will have to be specified as to how the final state of the REG will be determined with respect to all the disposed systems contingently linked to it. Presumably the final state will reflect a net resultant of the several state-related vectors or forces involved. The precise delineation of such a rule or rules must await further developments. With respect to a given disposed system, it is conceivable that the tendency toward conformance behavior in a contingently-linked REG will depend upon the magnitude of the disposition and the magnitude of the consequences, for that disposition, of a given alternative state which could be produced by that REG. Again, precise specification of these matters must await future developments.

It can immediately be seen how the theory of conformance behavior subsumes the events we have traditionally studied in the laboratory as PK. What may be less obvious is how it subsumes extrasensory events, so-called. If we consider, as seems very likely, that the nervous system or the brain, especially, is among other things a complex and sophisticated REG in the sense described above, then what we have traditionally termed "ESP" is precisely analogous to the outcome of a hidden-target PK experiment, i.e., one in which the REG is "willed" to encode hidden target material. (We have seen earlier that studies of the latter kind have been quite suc-

cessful.) The only difference in the case of "ESP" is that the REG which shows conformance behavior is the brain. It shows such behavior because the fulfillment of the organism's disposition is contingently linked to the outputs of the brain's REG-like processes.

In conformance behavior, whether the precise specification of the desired or favorable event exists in some sense in one's own head (as in traditional PK tasks in which the subject knows the target) or is hidden and unknown to the subject (as in hidden-target PK or an ESP task) is irrelevant *in principle*. What is conceived as the cause of the REG's doing the "right" thing is that a specific REG outcome will bring about the favorable event; its production will actually result in that favorable event because of the contingent linkage of the disposed system and the REG. This concept of contingent linkage resulting in conformance behavior is the crucial one. No biasing of the REG will occur in its absence, but if the contingent linkage is present, then any complexities of the target situation are irrelevant in the sense noted earlier.

Such a perspective has the important advantage of economy, and it unifies the facts we have gathered over decades of experimental research. It fits in neatly with the growing body of evidence that so-called ESP works by biasing the brain (REG) to select favorable states from among those it has available on the basis of its past experience and that when such favorable states are relatively unavailable there is less "ESP." It accords very nicely with the massive amount of work on internal states and ESP performance, since what such studies basically show is that whenever the mentation of the organism is preoccupied with goal-directed or logical thinking or whenever the organism is attending to irrelevent stimuli no ESP is evident. The theory of conformance behavior suggests this is analogous to removing the baffles from a dice-throwing or ball-rolling PK machine, such that the state of the system is a highly determinate or nonrandom one. Experimental PK results, in fact, suggest that when dice have little opportunity to bounce or when balls roll without considerable interruption in their pathway, there is little or no evidence of a PK effect. (For a review of this, see Stanford, 1977.) This conception of psi neatly handles the diverse forms of "extrasensory response," not by assuming that ESP strives for perceptual expression, but that conformance behavior automatically favors the generation of the specific kinds of thoughts, behavior, etc. which will produce a favorable event. Since only on special occasions (as described earlier) is a perception-like mental picture of a target circumstance a favorable event, perception-mimicking

ESP is only a special case of conformance behavior in neural processes. This conceptualization also has no trouble with the growing evidence for the possibility that lower organisms have psi ability, including PK ability. A lower organism is a disposed system, and with the abandonment of the cybernetic view of PK, there is no reason why conformance behavior cannot occur in a REG which is contingently linked to that organism's dispositions. PK effects, if they are conformance behavior, are not mediated through cybernetic loops involving the organism's nervous system, so the complexity of that nervous system is not itself a barrier to the occurrence of PK.

One effect of this conceptualization is that it becomes improper to think of a PK subject as the "source" or "cause" of the effect, in the usual sense of those words, though this is not to say that conformance behavior is acausal in the sense that Carl Jung used that term in connection with the concept of synchronicity. In a parapsychological context the "usual sense" of the words "cause" and "source" is psychobiologically and cybernetically based and implies that the organism is literally *doing something to* the REG. Such language is not meaningful in the conformance behavior context. Causation in this theoretical construction does not arise from something the subject does, but from the relationship between the subject's disposition and a REG, the contingent relationship.

Numerous testable deductions could be derived from the premises of the theory. There is no opportunity to discuss them at this time.

This conceptualization opens up some heretofore unexplored questions. For instance, what limits shall be put upon the term "disposed system" as used in the theory? Are effective disposed systems found only among living organisms, or can dispositions be found among nonliving systems which are involved in conformance behavior. The theory does not presently specify whether such dispositions exist among the less complex systems we call "nonliving," but it does encourage the exploration of this possibility. Indeed, it demands it, if we are to systematically explore the basic nature of psi processes. It similarly requires us to explore the possible role of organizational complexity (in the disposed system) in relation to the concept of conformance behavior. One wonders whether organizational complexity determines simply the number of effective dispositions which can be found, or whether it influences the possibility for or magnitude of conformance behavior. Thoughts such as these also open up questions about whether conformance behavior may actually play a role in the development and evolution of living systems.

One also cannot but wonder, if the concept of conformance be-

havior is valid, whether conformance behavior may play a role within our own brains in such matters as creative problem solving, memory retrieval, and perhaps even the control of internal states. Curiously, the very factors which seem to interfere with these purely internal operations are the ones which appear to interfere with psi function. This new conceptualization also strongly suggests that so-called active agent telepathy is possible under specific circumstances. In that case the REG is the brain of the other person.

This line of reasoning also calls for extensive research to delineate the generalizable characteristics of so-called "random event generators." Such research could tell us much about the fundamental nature of psi processes. It may be that in studying the characteristics of systems capable of conformance behavior (REGs) and of characteristics which make them more or less responsive in this respect, we will for the first time discover physical boundary conditions for psi function and physical lawfulness in its operation. The psychobiological model may have hindered the discovery of physical lawfulness in psi phenomena by focusing interest upon whether there could be found evidence of an energy by which psi information could be transmitted across space. The assumption was, of course, that since ESP is perceptual in character, we should be able to find some form of energy transmitted to some form of receptive mechanism, just as in the case of the known senses. Then, in the failure of such an effort, it was proclaimed that ESP was "nonphysical." The more reasonable thing to do would have been to abandon the psychobiological model!

Once we break out of the paradigm which has enclosed our thinking for so many years, the vistas of research are considerably broadened. So far we might be said only to have made short excursions along the shores of psiland. It may prove to be a bigger and more surprising place than we have generally dared to imagine.

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DISCUSSION

EDGE: I'm interested in your paper. I've written a second paper coming out of the one I'm going to give later, coming up with the theory that, I think, is fairly close to what you're saying now. I've had a problem, and I just want to see whether or not you think you have overcome it, in trying to specify what you call the disposed state in terms that themselves are not cybernetically based. That is, if one has a natural disposition to talk about dispositions in terms of one's normal psychological processes, and if we want to get away from the psychobiological model, it seems to me then that we'll have to try to define a state of disposition in some other way than what would be, I think, our normal disposition to do so. I think that perhaps you've gotten farther than I have on this problem.

STANFORD: I don't see it as a problem. Well, this may be somewhat of an oversimplification. One can partially operationalize what one means by disposition in a given situation in terms of the conduct of the system over time under specifiable circumstances, and that hasn't troubled me.

MATTUCK: I am very much interested in the model which you proposed, because it sounds like a qualitative version of the quantitative theory formulated by Evan Harris Walker, a physicist. You have the two basic ingredients which are present in Walker's theory. One is the existence of what you call a random number generator or some random states which the mind of the medium can choose from, and the other is what you call the disposed system, that is, the mind which desires to influence something. In terms of PK, this would be the desire to influence the external system, which is characterized in terms of random states. Now, in Walker's theory, the wish or disposal of the mind to influence this external system is described in terms of hidden variables. In other words, what the mind does is to adjust its hidden variables to express its wish and the hidden variables then select the appropriate random state which is available in the external system. Hence I think there is a one-to-one correspond-

ence between your two points and those in Walker's theory. However, there's one thing which I miss in your presentation and that is the concept of *information,* which is central to Walker's theory; i.e., the selection of random states via hidden variables involves transmission and processing of information. I was wondering if you care to comment on your feelings about information and what sort of role it will play in your theory.

STANFORD: In my paper, in discussing the concept of information, I wasn't referring to the very generalizable concept of information, but referring more to a psychological notion. Specifically, this model does not allow the concept of information transmission in the sense of transmission across space or anything of this sort. But it certainly is construable that this very preliminary concept deals with information in that I referred to changes in the ordering of a relatively unordered system in relationship to a relatively ordered system with the disposition, and if that is information, then that's what we're dealing with. But I don't see that as the crucial construct. Yes, I feel that one can call that information in an abstract kind of way. It seems to me that what is of central importance here is that this is a disposition subserving function and that we need to get away from the notion that ESP is a kind of information processing factor in any fundamental sense.

BELOFF: In view of your rejection of what you call your psychobiological model, I wonder if you could enlarge on how you conceive the ordinary processes of perception. By that, I mean, do you take some sort of epiphenomenal view of perception and simply attribute it to the natural workings of the brain, or do you allow for some kind of psi element in normal perception? In other words, is there something like the mind scanning the processes of the brain and somehow making sense of them and raising them into consciousness, a dualistic model of the mind/brain relationship. So much of what you've been saying accords very well with my views of ESP and PK, but I would like to know how you want to relate psi with normal cognitive processes.

STANFORD: I did state in the paper that we ought to consider the possibility that functions such as memory and creativity may involve some conformance behavior in the neurons connected with them. Indeed, I left out, because of lack of time, the statement that there are some rather curious parallels between the factors that block and facilitate such things as memory retrieval and creativity

which parallel some of the things we think we're learning about effective psychological states relating to PK performance. I am certainly very open to the possibility that psi factors may be involved in normal cognition and perhaps perception. How one is to interpret that is another question. Personally, I prefer to stay away from the dualistic interpretation—because I feel it gets us into some other kinds of problems and I would describe this as a non-dualistic interpretation of psi.

PENELHUM: You spoke once or twice about difficulties in the understanding of psychokinetic phenomena as causal processes. You seem to find this difficult. Can you explain again for me how it is that the model you're proposing avoids construing PK phenomena causally?

STANFORD: When I said in the paper that I wasn't applying causation to PK phenomena, I was specifically referring to a particular view of causation, namely, the notion of a kind of cybernetic guidance by means of which some calculated effort was applied to the system under a feedback loop guidance. That's one kind of causation. I consider that my own theory is, in a sense, a causal theory and would not identify it with the synchronistic view, which I think lacks the kind of explanatory value and testability that this kind of model should have.