COGNITIVE CONSTRAINTS AND ESP PERFORMANCE: ON TESTING SOME IMPLICATIONS OF A MODEL

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The conformance model of psi (Stanford, 1978) is already fostering some systematic research. Such studies include work by William Braud (1980) and some of my own (1979). A part of the work done to date has concerned the implications of that model for ESP performance. It is not my intention here to review that research. I wish, instead, to consider some of the detailed implications of the model for the conditions under which ESP can occur and I especially want to consider how those implications might be better studied.

The conformance model views psi as somehow organizing loose, disorganized or random processes such that their outcomes accord with the dispositions of someone or some organism which has an interest in or concern about those outcomes. The model proposes that systems which exhibit such "random" processes to a high degree are potentially more subject to psi influence than those which do not. A system in this sense is a broad term and could include a tremendous range of circumstances, such as falling dice, an operative electronic or radioactivity-based random event generator (REG) or an active, information-processing brain. Many classes of events could be influenced by psi, provided they involve elements of randomness or chance.

Traditionally, when psi events have occurred in ourselves or other organisms, we have tended to label them "ESP." When they have occurred with respect to events outside the organism, we have usually called them "PK"—though there are exceptions to these generalizations. From the perspective of conformance, both ESP and PK events are really the same kind of event occurring in different circumstances.

In the case of ESP the conformance presumably occurs in a functioning brain or nervous system. The conformance model predicts that psi influence upon brain function can occur to the degree that the specific brain functions needed for the encoding of the psi-mediated information are free of prior constraints and the brain is functioning in such a mode that

it is capable of elaborating those processes needed for such encoding. (The discussion here will focus upon the issue of freedom from prior constraints.) Under this model, constraints in other systems than those needed to encode the psi-mediated information are irrelevant to the occurrence of psi except as they, in one way or another, influence the degree of constraint present in those needed for such encoding. The above implications of the conformance model for the ESP situation represent simply the application to that situation of the general premise that systems which exhibit "random" processes to a higher degree are more subject to conformance.

Those who have been researching the implications of this model for ESP performance have sought to manipulate the environmental setting of the subject in ways such that prior constraints are more or less likely to develop or be maintained. The aim has been to see if ESP performance covaries with such manipulations. Braud (1980) has used tones patterned relatively randomly or in more ordered fashion in an attempt to condition mental function in similar directions for the purpose of ESP testing. I proposed (1979) that the random noise used as the auditory stimulation in Ganzfeld-ESP studies may have particular efficacy because of a depatterning effect upon cognitive processes, an effect which I supposed might not be had with other types of auditory stimulation. In other words, perhaps it was fortuitous that we have used essentially random noise (white or pink noise) as the auditory stimulation in Ganzfeld, for such noise might play a special role in destructuring, depatterning or breaking up constraints which might otherwise prevent the encoding of target-relevant information. Or it might prevent the formation of such constraints in the first place. That, at any rate, was the hypothesis and the results of a related study provided ESP data which were in accord with predictions from that hypothesis (Stanford, 1979). I have also studied the usefulness of surprise stimulation to disrupt ongoing, connected cognitive processes and thus, possibly, to enhance ESP performance (1979).

The work in such areas which William Braud and I have done is certainly useful and has produced some results that are generally in line with predictions from this model. Nonetheless, our investigations to date have not, in my opinion, been sufficiently incisive to provide an opportunity for the strongest support or possible refutation of these ideas. This is because none of this research, as I see it, has provided sufficiently clear evidence that the experimental manipulations intended to reduce internal constraints in fact did that.

This is not to suggest that either of us has been naive in this connection. We are both aware of the importance of manipulation checks and we both used such checks in our studies. What I am suggesting now is that

our checks had some definite deficiencies. We had subjects answer questions, afterward, about possible cognitive and other consequences of the experimental conditions. These were the intended "manipulation checks." (Such checks, incidentally, usually include efforts to ascertain both that the intended factor was manipulated in the appropriate direction and that extraneous factors which might have contaminated the study were not inadvertently manipulated at the same time.) Among the most important questions we asked were those about how interconnected were the thought processes during the session. Such questions are intended to reflect the degree of cognitive constraint which was present. These and similar questions which have been asked would seem to require some very heavy-duty introspection, as well as some careful reflection upon those introspections. Furthermore, they ask for retrospective introspection about events which, at the time they were experienced, subjects were unaware they would be asked to recall and reflect upon.

It seems very doubtful that subjects are generally capable of answering such questions with anything approaching precision or reliability. Some have, in fact, expressed to me exactly such misgivings. When subjects are asked to do such things, these same difficulties and uncertainties may make their answers particularly subject to influence by the demand characteristics of the situation. In other words, when subjects are uncertain of how to answer questions, their answers are perhaps more likely to be predicated upon how they think they should answer. Additionally, such measures may have considerable error variance because of individual differences in subjects' abilities at understanding and responding accurately to such questions. In short, the use of such questions as manipulation checks may have serious problems of validity and reliability. (This is not to reject entirely the introspective method with untrained subjects, but only to note its serious limitations for questions of the special type needed for work on cognitive constraints. For some kinds of questions, such as how long a session seemed, answers may be very meaningful.)

Are better methods available for studying how our experimental manipulations influence cognitive constraints? Some such methods are available and some might be developed. None are as easy as administering a quick questionnaire!

Before considering such methods, it is useful to think in some detail about the nature of cognitive constraints. The kinds of cognitive constraints include, though they are not exhausted by, sequential, contextual and rational constraints. (These three categories are not necessarily or always exclusive; rational considerations can sometimes play a role in the development of sequential and contextual constraints. Other interactions can also occur.)

Sequential constraints involve linkages or dependencies between subsequent cognitive elements such that the relationship between succeeding elements is determinate rather than random. When a limited number of elements is involved, as with forced-choice ESP tasks, these dependencies are often quite evident and manifest repeatedly. (For example, a person may tend to follow a "circle" call by calling "cross" or may tend to avoid calling the same symbol immediately after it has been called.) Sequential constraints are also evident in free-response tests, though they may be less obvious or easy to demonstrate. Contextual constraints influence, for example, the complex images we develop in a free-response setting. It is unlikely that a subject will see a Saguaro cactus growing amidst a mountainside scene with spruce trees or see an ice skater on a pond in the midst of palm trees and sunshine. Rational constraints are clearly evident in both free-response and forced-choice ESP tasks. In the free-response setting, rational constraints may bias a subject's thoughts in favor of the kinds of ESP target pictures which have been publicized in connection with such studies and they may create other types of biases with respect to what is "probable" and, therefore, thinkable. In forced-choice tasks they may cause the subject carefully to control the number of each kind of target that is called, for the subject knows they have equal intrinsic probability.

If we are interested in developing measures of the cognitive consequences of the stimulus situation in which the subject takes an ESP test, certain considerations must be kept in mind. First, the very act of trying to measure the cognitive consequences of a given setting may interfere with what is happening, so we should develop measures which are minimally intrusive. Second, if we consider that ESP might occur in any ESP task, then any measurement of the cognitive consequences of nonpsi stimulation (e.g., the traditional Ganzfeld setting) may be contaminated by subjects' response to the ESP target(s). For this reason, it may often be advisable to study the cognitive consequences of a stimulus situation without introducing an ESP task. The best approach may, in many instances, be to study those consequences in a psychological setting which is as similar as possible to the standard ESP-test use of the nonpsi stimulation, but without the presence of ESP targets. Sometimes this may mean that the task is presented to the subject as an actual ESP test, whereas there are no targets or it may mean that it is openly presented as a mock ESP task. In other cases, easy study of the cognitive consequences of the nonpsi stimulus setting may require the use of a task which is in no way presented as an ESP task—and, of course, which has no ESP targets—but which has psychological characteristics that would allow results to be generalized to the ESP test situation. (The last two of these three approaches are the

ones I favor, for they do not involve deception of subjects. Below are discussed examples of the latter two approaches.) A fourth alternative is to present a bona fide ESP task (e.g., forced-choice method) and to have actual ESP targets on only half the trials; the other trials would be used for measuring cognitive constraints independent of the influence of ESP targets. In that way, subjects would not be deceived when they are told that they are taking an ESP test.

Sequential constraints may be very easy to study, especially when they can be studied using a limited array of response possibilities, as in a forced-choice task. In such circumstances we can use standard statistical measures to assess the degree to which sequential dependencies are present; our statistics will do this by comparing call sequences with a purely random model. This is appropriate conceptually, for the conformance model compares the ideal psi-responsive system to a random event generator. Random events are free, theoretically, of sequential constraints.

In the Psychology Laboratory at St. John's University we are studying a number of approaches to assessing the degree to which noise-based stimulation, in the Ganzfeld context, may have particular value in reducing cognitive constraints.

Our initial approach, but one which we are still in the process of refining, is to see the degree to which noise-based stimulation during Ganzfeld can disrupt calling patterns when subjects call ESP targets made up of the five vowel letters (a, e, i, o and u). It is difficult to call a random sequence of these letters because of their highly overlearned character as a sequence. In such work the measure of cognitive constraints must be taken on trials for which no ESP target exists. The question is whether subjects' call sequences deviate less from randomness with noise-based stimulation than with silence or with a control auditory stimulus, such as a pure tone, which is equally as pleasant as the noise-based stimulus. In such a study we can examine several kinds of sequential dependencies—vowel-sequence dependencies, avoidance of doubles and other dependencies—to see their possible contrast under the various kinds of auditory stimulation. We can directly test the idea that noise-based Ganzfeld stimulation has particular value in freeing persons from cognitive constraints. We may also examine less highly constraining target arrays, such as the standard ESP-test symbols, for the effects of noise-based versus other auditory stimulation.

We are also planning two types of studies involving word association during Ganzfeld. In a study of discrete word association, that is, when the subject gives a one-word response to each stimulus word, we will examine the effects upon that association of noise-based and pure-tone auditory stimulation. So that persons do not anticipate when a stimulus

word is coming, such words will be given at random intervals. We will examine the degree of inter-subject convergence (or divergence) of response to the stimulus words under the two experimental conditions. We will look at response latencies, both in terms of mean and standard deviation, the latter being a within-subject measure. To learn whether response type is influenced by experimental treatment, we will determine the relative frequencies of the various kinds of responses which are traditionally scored for word association, such as superordinate, function, predication and others. We will, in short, thoroughly examine whether cognitive processes change as a function of the type of auditory stimulation provided in Ganzfeld. We will also ask subjects, after the initial word association, to try to reproduce the response given earlier to each stimulus word. We will then examine reproduction-based measures which may reflect the degree of association which existed between the stimulus and the original response (see, e.g., Cramer, 1968).

Additionally, we will be doing work with the method of continuous association. In continuous association the subject is given a single word and is asked to use that word simply as a point of departure for a chain of responses. This method will be used, like the method of discrete association, to assess the effects upon cognitive processes of the type of auditory stimulation used during Ganzfeld. This method has the special advantage that only one stimulus, a single word, need be introduced during Ganzfeld. This approximates rather closely the circumstances of free-response ESP testing; at the same time, it allows straightforward, objective scoring of a number of response parameters. As with discrete association, a number of construct-relevant measures can be developed which will tell us how Ganzfeld auditory stimulation influences cognitive processes, including cognitive constraints. Such methods can show us whether associations are freed up, perhaps diversified, by noised-based stimulation. We need such studies if we are to understand the seeming efficacy of Ganzfeld stimulation for the production of ESP.

Analogous work can be done with any of the altered-states procedures which we use in parapsychology. Sargent (1978) was the first parapsychologist to study my suggestion (1975) that altered-states procedures, such as hypnosis, may, at least in part, facilitate ESP through reducing cognitive constraints. I will not review Sargent's findings here, though they were encouraging. The important point is that great masses of hypnosis-ESP data presumably exist. Someone should look for the kinds of effects in such data as are proposed in the conformance model to facilitate ESP performance. Records of responses in such studies are what are needed.

We may also wish to develop methods for assessing other types of

constraints, such as contextual ones, in the imagery of subjects in free-response situations. This may not be easy, but I should think it would be possible.

There are other useful leads which we might follow up that are related to the cognitive context of ESP events. A number of us have heard from specially talented ESP subjects that some of the best information which comes forth in their "readings"—the most accurate, precise and startling information—is information which they cannot spontaneously recall after the session. Malcolm Bessent, an ESP subject who was studied repeatedly at the Maimonides laboratory, once told me that he tends to forget the content of his very best hits. He reported to me that, in giving readings for various persons, he would often be surprised afterwards when the target person told him of very precise, accurate statements he had made during the reading, but which he had not recalled. Perhaps the difficulty in remembering—assuming that this observation has some psi-related validity—derives from the psi-mediated information being so unrelated to any ongoing associative or semantic context that it was not embedded in any associative matrix which might have aided its recall. I am contemplating—and I hope others might, also—an examination of Ganzfeld protocols to see if information which does not fit in with the ongoing cognitive processes or constraints, information which is out of context, might be information more likely to be psi mediated. Subjects themselves might be the best judge of this, for upon hearing their protocols, they may immediately have a feeling for what is surprising, what "sticks out" of its context (or sequence) or what they did not realize they had said. This, of course, must be done before they see the array of target and control pictures.

Finally, we need to develop psychophysiological methods to aid in assessing the degree to which the introduction of momentary sensory stimulation causes a cognitive "lock-on" and subsequent reaction or does not do so. (I do not refer to whether or not the subject responds to the stimulation; I will assume that happens.) Extended physiological reaction to momentary, nontraumatic sensory stimulation may indicate cognitive lock-on and computation with respect to that stimulation. Such a methodology might be used to provide an index of the tendency to develop cognitive constraints in the first place. It could, conceivably, be very useful to the interests under consideration here.

If we are to examine, modify and, ultimately, improve our models for psi-conducive states we must, in short, develop and use more incisive ways of assessing the cognitive consequences of our manipulations. Though cognitive-constraint factors probably account for only a part of the variance of ESP scores in altered-states settings, such work can show us what

degree of importance they actually have in a given setting. The first step is to develop the methods for assessing the cognitive consequences of our manipulations; the second is to study how measures derived from them actually relate to ESP performance.

To test contemporary psi models and theories we may have to make both methodological and substantive contributions to the cognitive psychology of internal states. Naturally, such contributions to psychology will have value in their own right, whatever their relevance to psi research.

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DISCUSSION

DUNNE: You mentioned the use of random noise to create a more labile environment. I wonder whether a situation comprising random noise might have an opposite effect, that the natural tendency of human consciousness might be to try to organize randomness. A situation that is exceptionally random might actually enhance the tendency to try to organize these random elements into some sort of pattern. With that in mind, putting your percipient or subject into a constrained or organized situation where he doesn't have to do too much thinking might have the effect of loosening up and making his perception somewhat more open.

STANFORD: You have two points there. With regard to the first one, about the possibility that random stimulation may cause some persons to become more constrained in their thinking, this may, in part, depend upon personality factors. But I also suspect that it would depend on the degree to which this so-called random stimulation evokes specific cognitions that have to be analyzed semantically. If you threw a group of pictures in random order upon a screen, I think that people would start to try to figure out a pattern. I think that's one of the advantages of this auditory stimulation. It doesn't have a great deal for anybody to lock on to. It is,

of course, an empirical question whether that, in fact, actually reduces the kind of cognitive constraints that we're interested in and that's one of the things that we're going to try to find out. Since it has not been tested, the model could be wrong as it applies to this situation. But your point is that, depending on what kind of things you throw at people, they may or may not react in the way that we might hope that they would. With regard to the latter suggestion, I think that it's certainly well worth looking into. Indeed, the uniform visual field of Ganzfeld may be an example of a highly structured field that encourages freedom from constraints in visual imagery.

DUNNE: One other thing that I'd like to comment on is your reference to Malcolm Bessent and some other experimental experiences, where some of the best hits are actually out of context in relation to some of your earlier statements about contextual constraints.

There have been some studies (for instance, a Bruner and Postman experiment with playing cards) where subjects are told to expect something unusual, thereby making them more alert or more aware of the possibility of out-of-context information. We've been using this for some time now in our remote perception experiments, where we've asked our percipients not to exclude anything from their free response descriptions even though it may appear to be out of context. And I think just a simple suggestion like that at the beginning of an experiment sometimes can resolve that problem. We've seen a lot of remarkable experiences, such as somebody describing a knight in full armor on a Paris street corner, which seemed totally out of context. Yet, it turned out that there was a statue of a knight in armor there.

STANFORD: I certainly do give my subject and the judges due warning about that kind of thing. Sometimes, we also find that psi-mediated information almost flits through consciousness momentarily and it may be important to make people aware that the significance of something may have nothing to do with its duration.

Sometimes, we almost get the impression that, despite certain types of constraints, psi is strong enough to force its way out. The concept of signal detection theory in modern psychophysics helps to take care of that and shows us that we ought to get a lower false alarm rate in that type of setting. It gets into response bias work, which I used to do quite a bit of. I'm not doing much now, because it is in fact true that that isn't an hypothesis, it's just a mathematical artifact of psi occurring. But it is interesting because we need to be aware of this when we look at the data of our psi experiments.

MORRIS: That is very similar to what Bob Van de Castle has described when he attempted to be his own judge in some of the Maimonides dream

studies. His favorite example was a dream in which he was lecturing in front of a classroom. Suddenly his lecture was interrupted by Santa Claus and the reindeer coming in through the back, galloping down the aisles across the stage and exiting stage left. He never heard from them again and went back to the lecture. He knew to ignore the lecture which was really the dominant theme of the dream. Santa and his reindeer were what was important. It was almost as though he felt that as a dream researcher he could accomplish two things at once—do the routine dream work that he wanted to do as a dreamer and also briefly stop off and do the psi task too.

Just before I left California I ran across a fellow named Howard Thrasher who said that he had found that the best psychics were the people who, as he put it, ". . . found it very easy to get the crazies." He said, "These are people who are relatively disorganized. Nevertheless, they lead very productive lives, but their thought processes are basically pretty disjointed. You will never see them with a suit coat on or very neatly dressed, yet they're never really sloppy either." And he said that these people would just come out with disjointed imagery, which had really good material in it. He also said, "You will never hear about these people because they're too disorganized to teach classes, get students, write a book, be written about or go commercial. They're like an underground group. They're the ones who are the most accurate psychics." There was a lot of appeal to this notion that there is a subset of people who can do psi relatively easily and there are good reasons why we might just never hear of them.

It seems to me that much of the problem is that we have inadequate reportage of personal experience. This is the thrust in some research we hope to do up at Syracuse. We are hoping to be able to work with people who are being trained and overtrained in various methods of reporting their introspections, overtrained to such a point that we can demonstrate that reportage methods using an experiential keyboard such as Timothy Leary developed, no longer intrude upon their experience. It is just automatic, just like typing. We are hoping to be able to teach them something equivalent to a verbal shorthand so they can get the information out briefly. We want them overtrained in it so that they don't have to think about it. We will also use a digital graphics output while they are being monitored psychophysiologically all at the same time. It can be converted into something that eventually can constitute a language teachable to people at a variety of different age levels, which will do a better job for them. We might be able to derive measures of experiential ability eventually.

What do you feel about the relationship between experiential lability

and biological lability in the brain of the individual who is experiencing experiential lability? Would you, for instance, have any expectations as to whether lability in one system would be related at all to lability in the other system?

STANFORD: I think that to a large degree that is a question of a functional relationship. I think of the Maher and Schmeidler study in which they preoccupied one side of the brain, as it were, while they had the other one ostensibly doing the psi task. There may have been a kind of prevention of interference, where one side was kept busy so it couldn't monkey around with the business going on in the other side. Much depends on the functional relationship between the different parts of the brain. I still wonder if there is not something else here that we ought to look at. I know it isn't very popular to talk about alpha rhythms nowadays, but there have been three studies in the literature, and I know no contradictory ones, in which, instead of predicting ESP performance on the basis of alpha rhythms, on an individual subject basis and between subjects, the experimenters predicted alpha rhythms on the basis of ESP performance. As some psychophysiologists interpret it, the alpha rhythms really comprise an excitability cycle. This might mean that if the psi factor can "catch" a key neuron or group of neurons at the right phase of the cycle, any information thus imparted might have the chance to be amplified—when alpha is present it means the excitability of closely adjacent neurons is waxing and waning in phase. (That, at least, is one interpretation.) Perhaps we have a way here of actually amplifying information, so to speak, but that would be a kind of physiological analog of brain lability. I'm not putting that forward as a proposition or hypothesis, but I'm just curious. I think we may have dropped investigation of some of these ideas a little bit early, because they appeared to us very simplistic.

BRAUD: We have been speaking of cognitive constraints and you have been speaking almost exclusively about cognitive psi tasks. What are your thoughts about the influence of cognitive restraints upon non-cognitive psi tasks? The things that come to mind might be autonomic responses or PMIR kinds of responses. Would cognitive constraints be as relevant in those cases? And, secondly, does it make sense to speak of constraints?

STANFORD: Yes, I think it does. There are brain systems that elaborate patterns of physiological response and it is quite possible that, under certain conditions, the brain is more or less ready to move the level of autonomic activation one way or another fairly easily with a little urging. The problem is how to measure that. I certainly don't think you measure it by finding out how intrinsically active it may be, though. But we shouldn't confuse activity per se with lability, as I am sure you will agree. I have focused on cognitive constraints because so much of our work

recently has been done in the context of hypnosis, relaxation or Ganzfeld where we have been asking persons to develop images or cognitions related to pictorial targets.

BRAUDE: I have always been a little puzzled about this fundamental idea about conformance behavior, that somehow psi organizes disorganized random processes in a way that makes their outcomes accord with the dispositions of the organism in question. I just wonder why you want to insist on that sort of agreement or appropriateness of the result. It seems to me that psi-missing might be an example of cases where the results don't accord with the superficial intentions of the agent. We might even, just as a matter of principle, want to allow for the possibility that psi operates in a way analogous to a situation where I try to hit someone and miss, but hit the person next to him. I remember reading a case about a British soldier in the first World War who was captured by the Germans. His parents were concerned about him, but they didn't know that he had been killed. At one point, an apparition of him appeared on the steps to his parents' house, but his parents were away at the time. The person who saw the apparition was the next-door neighbor, someone who didn't know the person. It was only later discovered that that was an apparition of the son. It seems that was another type of inappropriateness of the result.

STANFORD: This model certainly allows psi-missing to occur. There have been some interpreters of the model who did not understand that when I wrote about it I was dealing with the very basic aspect of it. Once a conformance effect occurs, let's say in the brain, there is nothing to prevent that information from being misconstrued. We know there is such a thing as a consistent psi-missing effect, where people systematically confuse one geometrical symbol with another, one card with another. This is well demonstrated. I have found some evidence in a recent study of my own that when the information that would have to be primed by psi is low on the associate hierarchy, so to speak, the results are more likely to be translated into psi-missing. There is not less ESP. There is more psi-missing. All of that makes sense from a purely cognitive standpoint without saying anything at all about ESP or psi.

Then there is, of course, the possibility of motivated psi missing and we know that that can happen, because there are, again, relevant studies in laboratories. You can move the deviation either way to some degree. As far as the apparition case is concerned, well we just don't know how that ought to be interpreted, because we don't know enough about the state of mind of the person seeing the apparition. But there are things that we need to keep our eyes on. In dealing with any kind of theory I think we always need to be aware that out there somewhere there may

be circumstances which may eventually culminate in modifications of the model.

BRAUDE: Is ordinary volition an example for you of conformist behavior? I will to raise my arm and my arm goes up. Is that conformance behavior?

STANFORD: I haven't attempted to address that question in the model, but the model does imply that some events that go on in normal cognition would be conformance behavior. I'd rather not use the word psi-mediated in this context. Traditional psi-mediated events are simply a sub-category of conformance. I would think that some of the creative process may involve conformance behavior. About raising the arm at will—I don't know. I'm not saying it doesn't happen through conformance, but I don't propose that, either; it might be. I don't feel very comfortable talking about that kind of application of the model; maybe I'm too much of a physiological reductionist.

BRAUDE: If you are going to allow for at least some volitional processes to count as conformance behavior, then you might not want to insist that conformance behavior always involves the ordering of some inherently random system, because it is not clear to me that such systems are necessarily acted on in cases of volition. In fact, perhaps, in some interesting way, I'm randomizing *non*-random systems.

STANFORD: If you have powerful other constraints operating when you try to use some volition, you have a great deal of trouble doing it. To use a very crude example, if you have somebody under electro-convulsive therapy, it is going to be very hard for him to move his arm in any organized way.

BRAUDE: That's certainly one kind of constraint, but I take it when you talk about disorganized or random processes, you mean something different from that. Is that right?

STANFORD: Different from what?

BRAUDE: Just the presence of external constraints on a system. I thought you were talking about an inherent property of the system in question.

STANFORD: Whatever the system, it would have to have the freedom for the psi effect to appear. Where the constraints come from is largely irrelevant.

HONORTON: You are talking about out-of-context mentations carrying the information in sometimes dramatic ways. I've seen this many times myself. Things just pop in out of context. I recall a session where the subject was completely off the target, except for one short statement, "I see a bull fight," in the middle of the transcript. That was it. And it was a bull fight.

I think there is another aspect to this, which might be in some ways more convenient, which I would like to have your reaction to. That's to look at out-of-context aspects of targets. I have observed on quite a number of occasions with the Maimonides slides, which many people don't like because they have such inconsistent, incongruous combinations of things, very strong hits on the incongruous aspects.

STANFORD: Is this in a telepathic experiment or just in a clairvoyant one?

HONORTON: In either the telepathic or precognitive mode. What I am suggesting is that there are enough sets of the Maimonides slides around that subsets could be made up. You could have one subset that would contain a lot of incongruously juxtaposed things and another that would not. Then you could see 1) whether you get more hits on the incongruous targets and 2) whether you get more out-of-context, disjointed mentation responses irrespective of similarity to the target.

STANFORD: That's a very interesting proposal for what I think Gaither Pratt called a kind of holistic hypothesis about the way we respond to things by psi. I think we need more attempts to study that. I have found indications in a couple of studies that we do respond holistically to information, to some degree, despite all the talk about fragmentation. That is, to some degree we may respond holistically.

HONORTON: I'd like to give just one example of how this sometimes is pulled together by a subject in a very creative way. One of our targets shows a woman who is about sixty. Behind her is a house. In front of her is a platter of fish and up above in the sky is a mouth with a set of teeth. The subject very specifically mentioned a mouth and teeth and fish and put this all together with an association to the movie "Jaws." A request for clarification concerns your statement about setting up a mock ESP test to get psi out of the picture, somehow, and I'm really very curious as to how you go about doing that.

STANFORD: I'm just referring here to the possibility that the cognitive function may be modified by the psi process as we ask people to respond to specific target information. In a Ganzfeld setting, we could just tell subjects that we want them to free-associate. Or you can tell them, that you want to see if their cognitive processes will be influenced by ESP-derived information. It might have some scientific advantages to have subjects think it's a psi task, because we may be able to see the kind of cognition that goes on in an actual ESP test. There are other problems with that, but you could do a mock test by not having any actual targets. Another possibility is to have ESP targets some of the time but nothing

in particular for them to respond to at other times. You would have blank trials and you would have target trials.

JAHN: At one point in your talk, Rex, you mentioned something to the effect that psi-mediated information tends just to flick through the perception of the subject. Bob continued this theme in his remarks referring to the necessity for a subject to keep moving in some fashion and I just heard Chuck say something again about the fleeting nature of the insights acquired here. I'd like to raise the possibility that psychic phenomena are *inherently* transient—that there is something very fundamental to the time derivatives in these processes. Putting it another way, is it conceivable that there is some restoring force, some blocking mechanism that comes into play to interfere with direct psi-mediation, but that we can fake it out, as it were, if we continue to move fast enough in our strategy?

STANFORD: I would not be surprised if there is an intrinsic functional relationship. I suspect that if, somehow or other, we can bring individuals to the point where there is the kind of moment-to-moment processing of information that is said to be an objective in Zen meditation, then we may really get somewhere. It seems to me that that's the ability to attend to information without locking onto it and computing on the basis of it. We do not know the intrinsic parameters of psi information. It may, indeed, be a very short-term thing. I don't think we know enough about that to really speculate at this stage, but if we can develop ways of establishing and measuring this kind of responsiveness to information without locking onto it, I think we may be way out ahead in terms of assessing psi conducive states, whatever the underlying nature of the psi may be.

JAHN: Again, I think there are interesting analogies in the domain of physical theory. There is a wide body of physical experience and corresponding theory that functions only in the unsteady domain. For example, much of the electromagnetic phenomena occurs only in unsteady form: the induction effects, the wave propagation effect, the ignition and switching transients, etc. I wonder if one clue that we might explore here is the possibility that psychic phenomena are inherently "AC" and we ought to be dealing with AC strategies, both for modeling and experimentation. If you stand with a picket fence between you and the target you wish to see, you don't see much of it. But if you run past the fence, you can obtain a much more complete view. So it may not be necessary to deal only with psychic "flashes"; if a strategy could be found to oscillate the psychic attention or the target, to retain the time derivatives in the process, much higher strength and fidelity effects might be achieved.

STANFORD: The idea is worth following up if we can find the way to proceed. I must say that I am terribly impressed with specific instances

of how almost a whole picture can flash momentarily in fractions of a second. I wonder if we are talking about something working within the limits of certain rapid-transient physiological parameters inside your head. I just think we need much more sophisticated research.

TAETZSCH: It seems to me that we can learn a lot about the design of psi experiments from the process of psychic development training, which is based on the use of the feedback mechanism. I attended some psychic development classes given by Ms. Mary Tallmadge in East Orange, N.J. and basically we tried to get imagery. We sat there, meditated and then by the other individuals telling us what was correct and what was not correct, we gradually learned which imagery was meaningful to us. For example, I saw a group of about 50 toasters in a row. This is an unusual event. It happened to be a direct hit. The person had just made about 50 toasted cheese sandwiches for a party at noontime.

I had another interesting experience during one of Chuck Honorton's experiments in Princeton, N.J. I saw a black toilet seat. In fact I saw a number of black toilet seats. I've never seen one in my life, but I saw them there. It happened to be very relevant. The target picture was a cluster of stars, the Milky Way, surrounded by the black sky. But the point is, if I had seen a white toilet seat, so what? This would not have been an unusual event for me.

The point I am trying to make is that unusual imagery represented valid psychic information for me, but still another person would have a different way of assessing what is psychic and what is not for him. So I think that we have to be careful in the design of the experiments, as you mentioned, presenting this random noise as a possible way of increasing the psi effect for one person. It might work for one, but for someone else a pattern would be better. I think we should try to make the experiments as flexible as we can and ask the subject what works for him and try, to the extent that we can, to modify the experiment within the construct of what we are doing. I think this is where computers can play a big role in giving us flexibility in target presentation so that we can try to tailor the experiment to the needs of the specific individual we are dealing with.

STANFORD: With regard to the idea that different individuals may react differently to procedures, we all know that this often happens and we sometimes have assumed too much uniformity in people's response to situations. This is one of the reasons it is very important actually to assess the consequences of cognitive manipulation, because if we do, we may be able to remove a lot of the error variance from our experiments; error variance lowers, of course, not only the significance but the replicability rate.