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## The Influence of Persons Other Than the Experimenter on the Subject's Scores in Psi Experiments

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**ABSTRACT:** In another paper the author reviews the literature of experimental parapsychology showing that experimenters and data collectors (who serve as surrogate experimenters) may influence the direction of the subject's psi scores and also may determine whether or not significant results are obtained. The present paper surveys the literature indicating that persons taking part in experiments other than the experimenter or subject may also affect the psi test results. The influence of observers, randomizers, checkers, and agents is discussed. This influence is usually indirect, but sometimes it may be direct, i.e., psi-determined. It is suggested that the potential influence on psi test results of participants other than the subject should be taken into account in designing experiments, and that a holistic, field approach to the testing situation be adopted.

### INTRODUCTION

Although traditionally it has been assumed that it is the subject's ESP or PK that is being measured in psi testing, there are some indications that various other persons taking part in an experiment on the experimenter's side of the fence, as it were, are influencing the subject's scores. These persons may determine whether the subject will score positively, negatively, or at chance.

I have reviewed elsewhere (White, in press) the ways in which experimenters and data collectors (who serve as surrogate experimenters) may influence psi scoring. I also tried to show how the experimenter's attitude, motivation, personality, mannerisms, and method of handling the subjects may not only influence the direction of scoring, but may also determine whether or not significant results will occur in any given testing situation.

The present paper will review results indicating that persons playing a role in an experiment other than that of the experimenter or subject may also influence psi scores. It is hoped that this review, taken together with the one mentioned above, will shed some light on who is actually the effective agent in a given ESP or PK test. It could be the person who both designs and administers the test; it could be the senior investigator who conceives the idea of the experiment, even if he does not interact with the subjects at any time; it could be the data collector who is conscripted to administer the test. It also could be the person who prepares the targets, the person who physically checks the results, or even the person who analyzes the results and writes a report of them. Nash (1975) has pointed out that although

the subject's responses may be affected by several participants in the experiment, in many cases an experimental effect is principally associated with one participant. However, because of the difficulty indicated by these questions of determining the role played by the participant, and because the subject's responses have in different experiments been shown to be affected by the experimenter, by the agent, by the marker and even by other subjects in the experiment, it may be preferable to call the action of the effective individual the dominant participant effect. The situation indicated by this phrase is one in which one or more of the participants in an experiment, whether serving as experimenter, agent, subject, marker or in some other capacity, appears to control the distribution of hits and misses in the subject's responses (p. 57).

However, the possibility of a "dominant participant effect" other than that exercised by the subject has not received much attention in the literature, although over a decade ago Jule Eisenbud (1963) pointed out in his inimitable style that parapsychologists were conducting experiments as if

on the curious assumption that the subjects in them will not use the very faculties they are being tested for (and over which, presumably, they have as little control as they have over the weather) until they step across the threshold of the laboratory and hear the starting gong, and that then they will use these faculties only within the confines of their designated roles in the particular design employed. The possibility that these subjects may use what latent psi faculties they may conceivably possess to wander around picking up, from the minds of the investigators or other sources, not only stray hints and clues as to the acknowledged plan of the experiment but possibly, also, secret "instructions" (to which, indeed, they can conceivably react positively or negatively without a soul being the wiser), or that they may take to peeking around corners into the nature and purpose of the very controls laid out to entrap their unwitting answers (and which would, of course, be of little value in these circumstances) is for some reason discounted. (It is like not bothering about the fact that the keys to a cell full of confirmed pickpockets happen to be lying within easy reach, simply because the prisoners are expected to realize that *legally-by court order*-they are supposed to remain in custody.)

By the same token it seems implicitly to be taken for granted that experimenters (or "independent" judges or checkers or raters, for their part) will not, for whatever obscure reason, use any psi faculties *they* may have to muddy the field. In the conventional experimental report, in any case, the possible effect on valid inference of having these unregistered undercover agents around is glossed over in a triumph of "There's no one here but us checkers" double-think. Everyone behaves, in short, as if there were some sort of gentlemen's agreement committing subjects, experimenters, judges and other participating personnel to stick faithfully to their assigned roles in the experiment as scripted and to neither take any notice of nor infringe upon what any of the others may be doing (p. 258).

In the following sections an attempt will be made to catch some participants playing roles or exerting influences that were not scripted for them.

## THE INFLUENCE OF OBSERVERS ON PSI TEST RESULTS

It has long been noticed that the presence of strangers as observers, especially hostile ones, can inhibit psi test results (Bender, 1937; Dessoir, 1886; Gurney, Myers, and Podmore, 1886; Guthrie, 1884; Lodge, 1884; Sidgwick, 1924). In his initial monograph on ESP, Rhine (1934) provided a table which showed the extent to which visitors inhibited the clairvoyance test results of the highscoring subject, Hubert Pearce. This was done to check on the observation "that when someone dropped in to watch Pearce work the scores at once dropped down. We began to take down evidence, sometimes inviting a visitor for the purpose, sometimes availing ourselves of a casual caller. We recorded the time of entrance and exit on 7 visitors, one being present twice. They all produced a drop in Pearce's scoring" (p. 75).

In PK tests with E. P. Gibson and his wife, L. H. Gibson, as subjects (Gibson, Gibson, and Rhine, 1943), it was noticed that the deviation from chance in L.H.G.'s scores was more than twice as high when she worked alone than when she was observed, while E.P.G. scored higher when his work was witnessed than when it was not, although this difference was not significant. It should be pointed out, though, that the witness in this case was not a stranger or an uninvolved observer, but L.H.G., his wife and fellow subject.

In an account (Pratt and Forwald, 1958) of Forwald's confirmatory PK placement work in the United States where the aim of the research was for Forwald to obtain significant results under witnessed conditions, every effort was made to minimize the inhibitory effect of the observer, but nonetheless the introduction of a witness seemed to upset the PK scores. Forwald felt that the presence of the observer distracted his attention from the test and to overcome this suggested that the observer also serve as a subject. Several people tried this role, but it was found that Forwald could return to his significantly positive scoring level with only one of these "subjects" who also served as an independent observer and recorder.

Thouless (1972) has summarized the role of a witness or observer in parapsychological research, saying that

the introduction of a new person to the experimental session is likely to lead to a reduction or total disappearance of positive scoring, but ... this is not a permanent effect since the percipient may become adapted to the presence of a new witness after a period of time. I know of no later systematic research on this effect, but it is constantly the experience of parapsychological experimenters that an observer who comes to look on has the disappointing experience of seeing no success. It may, therefore, be regarded as a finding that has had sufficient confirmation by common experience if not by systematic research. These early experiments also suggest that if the disappointed observer stays quietly looking on until the percipient has become adapted to his presence, the inhibition set up by his coming is likely to disappear and any former level of success to reappear in his presence. It is a common opinion amongst experimenters that such inhibition is particularly likely to occur if the observer is hostile to the experiment or to the percipient. There seems to be no certainty as to whether this hostility must be overtly expressed to be effective, or whether a concealed hostility also inhibits the phenomena (p. 114).

However, although usually the presence of observers has been associated with a decline in scoring level, this is not always the case. For example, Rao (1966) has reported using observers successfully in a number of experiments (see Rao, 1963, 1964a, 1964b), noting that "a more lively and congenial atmosphere for successful testing could be created by bringing more individuals into the testing situation" (p.

99). However, he goes on to make it clear that these persons did not serve simply as observers, but could better be described as supplementary data collectors. He stipulates further that "one must be careful that these observers are not, in the first place, mere observers but are active participants in the sense that they have a task to perform; and, in the second place, that they do not distract the subject either by extraneous and irrelevant talk or by peculiar mannerisms. Also, the observers must share the enthusiasm of the experimenter about the experiment. Any general disinterestedness on the part of anyone present in the test situation may spell total failure of the test even with good subjects" (p. 99).

A facilitating influence by an interested observer was noted in the work at the Duke Parapsychology Laboratory with Pope Hill, a high-scoring subject discovered in informal tests by William Russell. Russell and Hill went to the laboratory where Hill was tested by J. B. Rhine under formal conditions (Russell and Rhine, 1942). Even though Russell was kept ignorant of Hill's scores, apparently his presence stimulated Hill. The authors report that when Russell left the room, Hill's scores dropped.

It would appear from this sampling of quotations on the role of observers in psi experiments that their influence can be both positive and negative. Strangers, especially skeptical ones, tend to inhibit psi test scores, at least for a period of time, while friends or persons in other supportive roles integral to the experiment may facilitate scoring. The parsimonious interpretation of the manner in which the observers affected the scoring level in the examples given here would be by some psychological means. However, there are some experiments, for example, those of Schmeidler (1958, 1961a, 1961b), which suggest that an observer's effect on ESP and PK test results can be psi mediated. In line with this, Schmidt (1975b) has recently proposed a model of the PK test situation using random number generators in which "the outcome of a PK test does not only depend on the overt PK subject but also on all the observers who look, no matter how much later, at the results, provided these observers can exert some PK effect" (p. 215). He further suggests that it is conceivable that "the randomly distributed PIC effects of a very large number of observers who are present during the test or study the test result later, can cancel out any PIC success the subject would have in the absence of such observers" (p. 217).

Finally, it should be kept in mind that anything that can be said about the role of the observer in influencing psi test results would hold as well for that "observer" *par excellence*, the experimenter!

In keeping with this, it seems appropriate to close this section with a quotation from a recent piece in *Nature* by Hasted, Bohm, Bastin, and O'Regan (1975) which provides an excellent description of the attitude observers must have if they are not to inhibit psi (in this instance, PK, since their observations grew out of work with Uri Geller). They say:

We have come to realize that in this domain the experimental situation is different in certain crucial ways from that which has been common in scientific experimentation. This is because the phenomena under investigation have to be produced from the minds of one or more of those who participate. Relationships among the participants therefore play a much more essential role than is usual in traditional scientific fields ... we have ... to be sensitive and observant, and not to react with a preconceived pattern of toughmindedness that will interfere with our perception, and that may destroy the very possibility of the phenomena that we wish to study ....

One of the first things that reveals itself as one observes is that psychokinetic phenomena cannot in general be produced unless all who participate are in a relaxed state. A state of tension, fear, hostility, on the part of any of those present generally communicates itself to the whole group. The entire process goes most easily when all those present actively want things to work well ... (p. 470).

The authors, who are physicists, go on to make the following surprising remarks:

Many of the conditions described above are also required for fruitful research in the natural sciences. Thus, if any of those who participate in a physical experiment are tense and hostile, and do not really want the experiment to work, the chances of success are greatly diminished. Likewise, the aesthetic appeal of the experimental set-up often helps to maintain interest and enthusiasm, whereas an attitude that consistently tends to damp these latter is evidently detrimental to the whole enterprise. In the study of psychokinetic phenomena, such conditions are clearly much more important than in the natural sciences, because the person who produces these phenomena is not an instrument or a machine. Any attempt to treat him as such will almost certainly lead to failure. Rather... he must be considered to be one of the group, actively cooperating in the experiment, and not a "subject" whose behavior is to be observed "from the outside" in as cold and impersonal manner as possible (p. 470).

### THE RANDOMIZER EFFECT

Although it is easy to understand how the manner in which an experimenter handles the subjects may influence PK or ESP test results, or to see how the presence of a strange observer unrelated to an experiment may inhibit results, there are some puzzling data indicating that the person who prepares the targets (the randomizer) can affect results *even if the subject does not know who the randomizer is and has no contact with him or her*. West and Fisk (1953) did an ESP experiment by mail using 20 subjects who were sent 32 sealed packs of 12 clock cards, four packs at a time. Sixteen of the packs were randomized and made up by Fisk and 16 by West. All packs were mailed by Fisk and returned to him, and the subjects did not know about West's participation in the experiment. The overall results were significant ( $P < .01$ ), but only Fisk's were independently significant ( $P < .001$ ), while West's were nonsignificant and thus diminished the overall significance of the experiment. Any discrimination between the targets of the two experimenters or randomizers would have had to be psi-mediated since the subjects were not aware that West had any part in the experiment.

These experimenters (Fisk and West, 1958) tried a variation of the same thing in a PK experiment conducted by mail with a high-scoring subject, Dr. B. This subject's testing had been interrupted by illness and the purpose of the experiment was to see if she could still score in dice-throwing tests in which the identity of the target faces was unknown to her, and also to see what effect changing the target preparer might have. As far as the subject was concerned, Fisk was the only experimenter involved. In fact, however, Fisk and West acted alternately in displaying the target faces and each was ignorant of the targets used by the other. Dr. B. returned all her scoresheets to Fisk, who checked her results on his targets and then passed them on to West so he could check his half. In reporting the results the authors say that "in the first periods Dr. B. started well with positive deviations with both experimenters. With G.W.F. she continued with small but positive scores with an upward spurt in the last period. With D.J.W. the final score was almost exactly in accord with mean chance

expectation. With G.W.F. the total showed a positive result of more or less borderline significance" (p. 281). They continue, "The difference between scores on G.W.F.'s and D.J.W.'s targets reaches ... a 95 per cent probability that it is real" (pp. 281-282).

More recently what appears to be an instance of a randomizer effect was reported by Price (1973). His main experimental objectives were to compare the results of "controlled" versus "uncontrolled" imagers in guessing erotic and nonerotic symbols. In a pilot study he prepared his own targets, but in the follow-up study he prepared only the erotic symbols while "a female undergraduate student enrolled in the author's experimental parapsychology course ... prepared the nonerotic series. It was originally hoped that the confounding of agents with target types would magnify any differential effect due to target type, although agent and target effects might not be separable. This, it turns out, was a very serendipitous design, for from it emerged the single most striking finding of the study, which seemed to be related to the mood of the nonerotic agent" (p. 307). (It should be pointed out that although Price uses the term "agent," this is not quite accurate. The test was one for clairvoyance, and the student assistant did not concentrate on the targets during the test but simply randomized them beforehand.) The mean ESP scores of the "controlled" versus the "uncontrolled" imagers did not differ significantly, but there were differential position effects. However, an extreme shift in the mood of the undergraduate student who prepared the nonerotic targets was associated with a highly significant result: "Mood interacted to a highly significant degree with target type ( $P < .003$ ). A state of negative affect, egocentricity, and hyperdistractibility (negative mood) was associated with the highest rate of scoring in the experiment when the targets called were the nonerotic targets prepared by the assistant. This produced a highly significant target differential effect for the negative mood state ( $P < .001$ ), as well as a significant mood differential effect for the nonerotic targets ( $P < .01$ )" (p. 298).

Of her mood the randomizer wrote, "My mood while filling in the last targets differed considerably from my previous mood. Today I am *sick* with a cold and body aches. In addition I am scheduled to lecture [to] social psych. 251 tomorrow so I am more *nervous*. I also just received my first [job] rejection so I am *sad, disappointed, and angry*. My mood can best be described as *diffuse - inability to concentrate on the task*. (Italics hers.) My mood on previous occasions when filling in the targets was not as anxious. I attended more to the task and less to personal problems or concerns" (p. 308).

It is of interest that the randomizer probably was not known to any of the subjects and was not present during the actual experiment. She did not assist with the scoring, which was carried out blind by Price himself. Thus it would seem we have here another psi-mediated randomizer effect.

In two extensions of the first Osis and Turner (1968) distance experiment, Osis, Turner, and Carlson (1971) had one person (T) (the one in the third experiment was not the same as in the second) display targets which he had randomized and prepared in different cities around the world: New York, Paris, New Delhi, and Sydney. A total of 57 subjects took part in the second experiment and 70 in the third. The T person, or randomizer, recorded his moods during each session. Although he remained with the targets during the testing period, he did not look at them as a clairvoyance test was used. The authors report that "there was a strong influence of T's mood in both experiments .... The Relaxation scale was particularly important.... Freedom from Anxiety appeared to be the second strongest mood component; Elation and Vitality being slightly, but noticeably related to ESP. Although T's mood strongly influenced the clairvoyant activity of Ss, the interaction (degree of overlap) between his moods and theirs was not important" (p. 270).

## PSI TEST RESULTS RELATED TO THE CHECKER

There is some evidence which indicates that the person who checks the results of an ESP or PK test may influence those results. In fact, the experiments of Fisk and West, described above under the randomizer effect, may be examples of a checker effect, since each experimenter checked the subject's record against his own targets.

In an experiment designed to find out if clairvoyant precognition occurs, Schmeidler (1964a) tested 75 subjects who each made 150 calls for targets to be selected and scored by computer. Although the subjects did not know it, 50 of the targets were to be shown to them later together with their calls ("subject sees" condition), 50 were to be seen by the experimenter but not by the subjects ("experimenter sees" condition), and 50 were never to be printed out, so that no one would ever know what they were. (During the session the experimenter did not know which calls would be placed in which category.) The scores obtained in the three conditions were correlated and a highly significant negative correlation [ $r = .409$ ,  $P = .0005$ ] was obtained "between scores which the subject saw and those which only the experimenter (and the experimenter's assistants) saw, that is, there was a marked tendency for subjects who scored high on one of [these] conditions to score low on the other condition" (Schmeidler, 1964b, pp. 19-20). Concerning this difference Schmeidler observes that "this correlation implied that the subjects had been responding to the difference that did not yet exist but would be produced by the letters I was about to write [to subjects, enclosing lists of their targets and responses in the "subject sees" condition]" (p. 24).

At first glance these results do not appear to be relevant to the role of the checker since in all three conditions it was not a person who noted the correspondences between targets and calls-but a computer! However, the act of checking scores by humans is a two-step process. Not only is the physical act of comparing targets with calls involved, but also the subjective realization that a correspondence does or does not exist. In this experiment, humans were involved with this latter aspect of the checking process part of the time, and it is precisely this aspect that seems to be related to the significant correlation obtained. Unfortunately the reports do not specify exactly which persons saw the targets, but in more than one place it is noted that the experimenter and some assistants were involved. To the extent that Schmeidler, the experimenter, was the only one involved, it could be said that the effect noted was not a checker effect, but an experimenter effect. However, she was taking the role of the checker when she observed the target-call correspondences, and it was this observation that seemed to influence the results. As Schmeidler (1964b) puts it, "Subjects responded precognitively not only to target content but also to the way in which the targets were going to be treated" (pp. 25-26). The "treatment" here referred to is the matter of whether or not the targets would be observed, and if so, by whom. Only the runs in which the targets were observed yielded the significant correlation, which indicates that the scoring direction varied according to whether the experimenter and her assistants were the only ones to observe them, or whether not only the experimenter and her assistants but also the subjects themselves viewed them.

Feather conducted two pilot precognition experiments and a confirmatory study was carried out by Brier, all three deliberately designed to investigate a possible "checker effect" (Feather and Brier, 1968). The subjects were told by the experimenter that he or she would check half the runs (to be determined randomly) while someone else (left vague to the subjects, but known to the experimenter) would check the

remainder. Subjects were asked to indicate which runs they felt the experimenter would check. In all cases only the data checked by the experimenter reached significance. There was a significant difference between runs subjects thought the experimenter would check (positive) and runs they thought someone else would check (negative). The fact that this differential effect was found only in the data of the experimenter, and not in those of the other checker, suggests that it is not only the subject's conscious idea of who he thinks is checking the data that affects his scoring, but also that some influence is exercised by the person who actually does check them. In their discussion, the authors point to some interesting theoretical problems arising from their findings:

Since the significance occurs only on those runs which the experimenter checked, it appears that the person who actually checks the test is having some effect upon the scores of the test he is checking. This contradicts the notion that once the tests are alphabetized and an entry point into the tables is obtained by random means, the scores are determined and that from that point on nothing can affect them. After the entry point is obtained, it seems, there is still one factor at least which may affect the score—the checker.... If this ... is true, the checker in the present may have an effect upon calls which the subject made in the past" (pp. 173-174).

The possibility of what would be the ultimate experimenter or dominant participant effect was raised by Thouless (1974) in a review of *The Challenge of Chance* by Hardy, Harvie, and Koestler (1973). Thouless discusses significant comparisons of two sets of random digits described by Harvie (Hardy et al., 1973). Harvie matched 24,800 random digits generated by computers or derived from a random number table with the same number of digits taken from different random number tables and obtained not only a highly significant overall negative deviation, but also suggestive evidence of decline effects. Thouless proposed that a study be made of all random cross-checks run to date:

Such a study would include the numerous controls in ESP experiments in which comparisons have been made between unrelated ESP packs. Such comparisons have been carried out, for example, by Rhine, Warner, Martin, and Soal. These confirm the expectations of orthodox probability theory and are in striking contrast with the results obtained by Spencer Brown and Harvie. Perhaps what such a survey would reveal is that when a comparison is made between two random series with the expectation that they *will* conform to orthodox probability theory, this expectation is confirmed, but that when the comparison is made with the expectation that the results *will* deviate from probability theory, then they do deviate. If this should prove to be the case, what would be indicated would be some form of psi rather than a defect in the theory of randomness (p. 426).

Further confirmation of the possibility of this unusual effect has been offered recently by Honorton (1975) in his presidential address to the Parapsychological Association. He reports that John Stump examined the control data used by Honorton, Ramsey, and Cabibbo (1975) in their study on experimenter effects. Honorton describes Stump's findings as follows:

In this study, there were two samples of "control random checks." These were run by me, manually depressing the random generator response buttons and attempting *not* to exert a psi influence on the instrument. Sample A was collected before the experimental data, and Sample B was collected after the



experimental data. Taken separately, each sample provided good randomness. What John Stump found, however, was that looking at the difference between the two samples, there is a significant difference for each of the four analyses. Since this was a two-choice generator, we looked for sequence effects: how many times did "red" follow "red"; how many times did "red" follow "green"; "green" follow "green"; "green" follow "red"? In each of these four cases, a nonsignificant positive or negative deviation in Sample A was followed by a nonsignificant deviation in the opposite direction in Sample B. The overall results of this was associated with a probability of  $10^{-5}$ . Now the experimental hypothesis was confirmed at the .001 level.

John Stump went a step further. He used this post hoc analysis as a pilot study. His confirmation consisted of going back to an earlier study which I had reported with Malcolm Bessent as subject (Honorton, 1971). Again there were pre- and post-experimental random checks; and again the randomness was good within each sample, but with deviations in opposite directions, so that the difference was again significant ( $P = .002$ ) (pp. 35-36).

Such observations, if confirmed, would substantiate what Helmut Schmidt (1974) wrote in an exciting paper on the role of the experimenter in science from what has been learned in physics combined with new data from parapsychology. He refers to the controversy in physics over whether or not the principles of quantum mechanics may be applied to macroscopic systems. If the answer is affirmative "then, even in the macroscopic world, physical processes need not have the character of absolute reality unless there is an observer" (p. 268). Adding the possible implications of quantum mechanics to those of parapsychology, he points out that this view of the relativity of the Newtonian world of time and space leads "to a rather unconventional interpretation of physical events, but it would not be in disagreement with the available experimental evidence. Consider, as an example, an experiment where a die is shaken under a cup and then, still covered by the cup, placed on the table. From the new viewpoint it would appear then that the decision about which side falls on top is not made at the time when the die comes to rest but rather at the moment when the experimenter lifts the cup and looks at the die" (pp. 268-269).

This dizzying possibility is the same one raised by Schmeidler (1964a, 1964b) and Feather and Brier (1968) in their precognition experiments, and it would help to explain the otherwise incomprehensible suggestion of Thouless regarding random number tables. Even after the entry point in the random number table has been obtained, the observer (checker) may still influence the results. It is because of data like these that Schmidt (1974) is led to say that he "considers it well possible that parapsychology might help to decide some questions that, in the present state of physics, are purely theoretical issues" (p. 269). One cannot help but add at this point that by Schmidt's having raised this possibility, my quoting it, your reading or re-reading it, possibly considering it, and perhaps even relating it to others, or posing the question in connection with your own research, may result in an influx of new data similar to the resurgence of claims of PK ability in macroscopic systems in recent years (Cox, 1974; Eisenbud, 1967; Pratt and Keil, 1973; and especially the *Symposium: Psychokinesis on stable systems*, 1974).

## THE ROLE OF THE AGENT IN GESP EXPERIMENTS

The last participant in psi experiments to be considered is the agent. An agent is the person in a telepathy or GESP experiment who looks at the target and may try to transmit it mentally to the subject(s). Although sometimes the agent is another

subject, most of the time he is the experimenter, data collector, or someone recruited specifically for the experiment by the experimenter. A review of what is known about the role of the agent may shed some light on the role of the "dominant participant," particularly that of the experimenter, for, as Schmeidler (1969) has pointed out, "We should take it, I think, that in a clairvoyance or precognition experiment, the relation between experimenter and subject has the same influence that the relation between agent and percipient has in telepathy or GESP" (p. 22).

### *Observations on the Role of the Agent*

In the early ESP experiments, usually called experiments in thought-transference, the agent was considered to play a role equal to or even more important than that of the percipient (Dessoir, 1886; Guthrie, 1884; Schmoll, 1887; Schmoll and Mabire, 1888; Thaw, 1892). As no less an authority than the astute Walter Franklin Prince (1932), in a review of the experiments listed above and many others, baldly stated it: "As Gurney pointed out, the evidence at length indicated it an error to suppose that the transmission is brought about by the particular agency of the receiver; that he is able, as it were, to look into the minds of others and to 'read' their thoughts. We now know that it is the other way about; that the chances of success in experiments along this line are best when the person whose thought, mental image, or emotion is to be transmitted concentrates upon the subject selected, and the receiver becomes mentally passive. Indeed, the term 'mental telegraphy' . . . would express what seem to be the facts better, since it implies something propelled rather than educed" (1932, p. 87).

Moreover, the early experimenters generally felt that there were two parts to the agent's role. According to Schmoll (1887): "The agents gazed uninterruptedly at the object, and concentrated their whole will on the desire to make a mental impression on the percipient" (p. 325). And as Thaw (1892) put it:

We have not noticed that the condition or the general visualizing power of the agent has much direct effect on results, except, of course, that fatigue after too prolonged a sitting will interfere with active exertions. An hour is about the limit; the only important function of the agent being that he should use his mind and his senses to the utmost capacity and at the same time try to impress the percipient with the idea. The latter seems to be as necessary as the former effort on the part of the agent (pp. 429-30).

In spite of these expressed convictions as to the importance of the agent's role, there have been surprisingly few empirical attempts to determine whether in fact this role is as significant as it had seemed. And Rhine (1945) and others have cogently argued that it is the percipient, not the agent, who is all-important. But it is clear that the early investigators seemed to be almost unanimous in their insistence on the agent's importance.

Warcollier (1938), on the other hand, reported that "a large number of experiments have convinced us that the agent is not always very important, but that his action is not entirely negligible" (p. 81). He also observed that "the best agents are, according to our experience, the best percipients" (p. 275).

Rhine's (1934) early observations on the role of the agent were in line with Warcollier's. He wrote: "The facts seem strongly to suggest that agents not only differ at their end of the function but also that it may be ESP ability that makes a good agent" (p. 100). Nevertheless, he felt that the percipient's role was the more important

one because, as he points out, "a good agent (as measured by his own general ESP record) cannot succeed in transferring thought to a 'percipient' who (as shown by the general evidence of the tests) has shown no ESP capacity or cannot go beyond the ability level shown. In a word, the percipient seems to be the more limiting factor but is in turn limited by agents who are poor in ESP capacity" (p. 103). No one, and last of all Rhine, would take such statements as facts, but as he said when he wrote them, these were good problems for research. What is surprising is that in the four decades that have passed since these observations were made very few attempts to study agent/percipient relations have been carried out.

It has also been observed that the effectiveness of a given agent is not always uniform. Guthrie (1884), in the initial report of his experiments, wrote: "As regards the condition of the agent, I may say that although I have been very successful myself in giving impressions to each of the 'subjects' without the presence of any other person, still, under precisely similar conditions, when I have not felt equal to the required effort of concentration, I have been unable to repeat the success" (p. 28). However, in his second report (1885) he noted: "Personally, I find I am not equal to my former self in my power to give off impressions, and if I exert myself to do so I experience unpleasant effects in the head and nervous system. I therefore seldom join in the active experiments, but leave the thinking for the most part to others" (p. 425).

In more recent times, Van de Castle (1970) made some observations on his role as experimenter/agent while testing Curia Indians in 1969 and 1970. He recorded his mood, attitude, and the general testing conditions during the experiments and before the results were checked. He made predictions about the results usually based on his role as agent, but in most cases the subjects scored in the direction opposite to what he had predicted. He writes:

For the first group tested in 1969, I predicted that the scores on the second run would be higher than those on the first run because I felt I achieved better concentration during the second run. However, there were 30 more hits obtained on the first run than on the second, and the difference in mean scoring level between the two runs was significant at the OS level. During the second testing session in 1969 I made the prediction that the overall scores would be above chance because I felt that I had excellent concentration for that session. The 23 hits below chance expectation obtained for that session were significant at the .02 level. There was a basketball game going on during the third testing session and I noted that my concentration was poor. The scoring level for that session produced a deviation of 6 hits above chance expectation. During the sixth session I recorded that one of my sons was hiccupping during the second run and that this distraction interfered with my concentration. A total of 31 more hits [was] obtained on the second run than on the first, and this difference in scoring was significant at the .01 level.

When the results mentioned above were combined, a very interesting pattern emerged. For the 71 runs on which I had recorded that my concentration was very good, a deviation of 46 hits below chance expectation was obtained which was significant at the .007 level. For the 83 runs in which I had noted that I was distracted to a minor degree, a deviation of 44 hits above chance expectation was obtained which was significant at the .02 level. The CR of the difference between these two sets of conditions was 3.65, a value significant at the .0004 level (pp. 114-115).

In the second year of testing, the results based on his predictions were less striking

and did not reach statistical significance. Nonetheless, they exhibited the same contrary pattern as they had the year before. Van de Castle (1970) summarizes his observations on his role as an agent during the two years of experimentation as follows:

These findings suggest that better results are obtained when 1, serving as agent, do not become too intensely preoccupied with the target stimulus and when some components of my attention are shifted toward awareness of peripheral activities. The state of relaxed attentiveness was much more effective than making a fierce effort to fuse with the card and trying to force a vivid image of the stimulus onto the forefront of consciousness (p. 115).

In a recent report of GESP testing with free materials as targets and employing the ganzfeld technique for regulating perceptual input, Honorton and Harper (1974) observed "that it is difficult to construe our results in terms of active agent telepathy. In four of the seven examples given [in the experimental report], target-relevant content emerged in the pre-sending period before the agent saw the target. Although some Ss 'seemed to know' when the agent was beginning the sending period ... there tended to be very little target-related content during the sending periods" (p. 165).

Obviously, with all of the above conflicting observations, which are doubtless only a sprinkling of the hundreds that probably could be found in the literature if one had the time to ferret them out, we actually know very little about the role of the agent-or even if he has a role to begin with. This is a topic that cries out for experimentation. The few published studies specifically bearing on the role of the agent will be reviewed in the following sections.

#### *Differences in ESP Test Results Related to Different Agents*

In his early monograph Rhine (1934) noted: "One point of fact... is that most subjects do better with certain agents than with others. For example, Zirkle did very well at once with Miss Ownbey, his fiancée. But he had been tried earlier by another friend, also an assistant in this work, with a very much smaller positive deviation from chance average" (p. 100).

MacFarland (1938) conducted one of the first experiments demonstrating an experimenter effect in parapsychology. In this experiment he compared GESP and clairvoyance runs. In the case of the GESP runs, the experimenter effect can also be viewed as an agent effect. The cards were looked at, in the case of the GESP runs, or handled, in the case of the clairvoyance runs, by two experimenters, J.M., who in previous testing had obtained significantly positive results, and D.H., who in the previous work had obtained insignificant results (MacFarland and George, 1937). The GESP scores in the later experiment were higher than the clairvoyance results for both experimenters, but in both instances were significantly positive for J.M.'s targets and insignificant on D.H.'s targets. However, in the GESP tests when both experimenters were looking at the same symbol, the average score was considerably higher (7.02) than the total average of each experimenter (6.28 for J.M. and 5.14 for D.H.).

Soal and Bateman (1954) used a number of different agents in their work with the high-scoring subjects, Basil Shackleton and Gloria Stewart. Using a CR of 3 as a criterion of significance, they report that Mrs. Stewart was successful with 50% of her agents while Shackleton succeeded with 27%, or three out of eight. Moreover, a particular effect was associated with the chief agent in 1936, Mr. J. Al. Shackleton was

able to score equally well on forward and backward displacement in the same runs when J. Al. was the agent. Other agents were used for awhile and this double displacement was absent, but when J. A]. was again used as the agent, the simultaneous double displacement effect reappeared. In addition, as Pratt (1944) has reported, "*When the rate of guessing was approximately doubled, the successes with agent J. AL occurred with the (+2) and the (-2) trials, skipping right over both the (+) and (-1) trials!*" (p. 13).

Discrimination between agents also occurred in the work with Mrs. Stewart when they used agents working together or in opposition (Soal and Bateman, 1950). As they describe it:

In one set of tests she obtained significantly high scores when there was only one sender. When another sender was placed in opposition (that is, when the procedure was planned so that he was always singling out a different symbol from the one being indicated by the first sender) the subject continued to get high scores with the original sender and made only "chance" scores with the sender in opposition. In another series two or three senders worked part of the time in conjunction (that is, they all thought of the same symbol on each trial) and part of the time in opposition. The results indicate that Mrs. Stewart subconsciously chooses one of the senders in the opposition trials and continues to respond to that sender exclusively during the conjunction trials. There seems to be no evidence that senders in conjunction give better scores than one sender alone (p. 168).

In still another variation, Soal and Bateman (1954) tried a "splitagent" series with Mrs. Stewart. They used two agents with whom she had been successful and of the two pieces of information about the target needed to get a hit, one agent knew one piece and the other agent the other piece. With Kearney and Morgan as the agent combination she got highly significant results but failed with Kearney and Hales. On the other hand, excellent results were obtained with Hales-Rozelaar and Hales-Bateman. One session indicated that for the agent-pair situation to work Mrs. Stewart had to be consciously aware of the two agents.

Ullman and Krippner (1970) report that the most striking finding of the first telepathic dream study made at the Maimonides Dream Laboratory was the difference in scoring on the targets looked at by the two agents, one a male and one a female. They report that a "clear difference between the two As was indicated. When the judges' ranks and ratings based on Ss' dreams (in combination with the associations to those dreams) were examined, the male A's Ss demonstrated significantly more favorable correspondences than did those Ss paired with the female A" (p. 70).

Further comment on this male agent, Sol Feldstein, is made in *Dream Telepathy* (Ullman and Krippner, with Vaughan, 1973). Pointing out that "whatever it took to excel at 'transmitting,' Feldstein seemed to have it," they provide a brief profile of their star agent as follows:

It would be premature at this stage to attempt to identify any particular psychological traits as being directly conducive to being a good telepathic agent. But it should be noted that Sol Feldstein had a lively interest in psychological theory and in psychotherapeutic practice. Considering himself somewhat of an iconoclast in psychology, Feldstein vehemently rejected therapies based on tranquilizers and other somatic approaches. Later he devoted himself full-time to doctoral study in psychology (p. 107).

Finally, although not an experiment demonstrating a difference in results of two or more agents, a recent experiment by Smith, Tremmel, and Honorton (1975) would appear to be tangentially relevant, at least, to the role of the agent. They did a GESP experiment in which there was a difference in scoring level according to the degree of exposure the agent had to the target. Twenty subject-agent teams completed 40 target sessions (one binary target per session), two sessions per subject-agent pair. Two conditions were compared: in Condition A, the experimenter presented the target to the agent tachistoscopically while in Condition B, he presented the target to the agent for a period of 10 minutes. In both conditions, both agent and subject were prepared for ganzfeld stimulation. The overall results were significantly positive ( $P = .015$ , one-tailed), but this was primarily due to the Condition A sessions, in which the target was only briefly exposed to the agents.

### *Tests with Agent-Perceptant Pairs Within an Existing Relationship*

It is a commonplace observation that two people who are emotionally close seem to be effortlessly aware of each other's thoughts much of the time. Whether this is simply due to a large common bank of experiences and associations, to knowing from experience how a person will act in a given situation, or possibly due at times to spontaneous ESP, is not known. Certainly several surveys of spontaneous psi experiences have revealed that the largest number of cases reported occur between relatives and friends as opposed to acquaintances and strangers (Green, 1960; L. E. Rhine, 1964; Sannwald, 1963.) An already existing relationship of natural rapport is an obviously fruitful vein to investigate in mining for information on agent-perceptant relationships.

Kubis and Rourke (1937) investigated six sets of twins in the hope that "spontaneous telepathic perception might occur between them when both of a pair called ESP cards simultaneously" (p. 163). The twins, who were in separate rooms, were asked to call the ESP cards being looked at by the experimenter; their calls were compared with these cards and also with the corresponding calls of the other twin. They were not told that this latter check would be made. The hoped-for telepathic effect between the twins was not demonstrated, but two of them had independently significant positive results on the target cards.

Stuart (1946) used a free-response GESP test in two series of experiments. The subjects in the first series were college psychology students who were conscripted to take the test. Their results were insignificant. In the second series the subjects visited the laboratory voluntarily and were interested in being tested. Stuart found that when agent and subject were closely related (twins, married couples, and engaged couples), they obtained significantly positive results. However, when the agent-subject pairs were not related, they obtained significantly negative results.

Interested in the role of the teacher as agent, Van Busschbach (1955) tested primary and secondary school pupils in Holland for GESP using teachers, strangers, and fellow pupils as agents. Only when the teacher was the agent were the positive scores significant, and the scores with the teacher as agent were also significantly higher than when the other two agents were sending the targets. These results were mainly due to the primary school students. The secondary school students scored near chance regardless of agent.

Another classroom study of the teacher as agent was conducted by Anderson and White (1958). A GESP test was given to 51 high school students as subjects with two of their teachers (X and Y) serving as dual agents. The teachers were in a separate

room and looked at two different decks of cards while the students recorded their calls as if for one deck. After the ESP test, the students were asked to name which of all their teachers they liked best and three others they preferred. It was found that "when teacher X was on the 'best liked' or I preferred' list, the students' ESP scores were above chance, and when this teacher was not on either list, the scores were below chance. This relationship between attitude and ESP scoring level for teacher X was significant. For teacher Y, it was not, though the relationship did hold true to a significant degree when the results with both teachers were combined" (p. 20).

Rice and Townsend (1962) tested four pairs of subjects who were close (married or engaged couples) and four pairs who had little or no acquaintance with each other. Each member of each pair served as agent in half the runs and as subject in the other half. The related pairs all scored above chance and the total was significant ( $P = .000022$ ), while all the unrelated pairs scored below chance, with the total again significant ( $P = .00007$ ). The difference between the two groups was highly significant ( $P < .0001$ ). It was observed "that in this experiment, the longer the couple had been related, the higher the score achieved" (p. 216).

White and Angstadt (1963) conducted a GESP test with two high school classes in which each class had elected a favored student as its agent. The agents from both classes looked at two different target orders while the students in each class tried to score higher on their own classmate's targets than on those looked at by the agent selected by the other class. They were able to do so to a significant extent, not only scoring above chance on their own agent's targets but below chance on the targets looked at by the other agent as well ( $P = .0008$ ).

Duane and Behrendt (1965) attempted to elicit alpha rhythms in one of a pair of identical twins at the same time that these rhythms were evoked by normal means in the other. Out of a total of 15 pairs of twins who were tested, the effect was found in two. The successful twins were familiar with scientific procedure and remained serene during the test while the authors say that apprehension and anxiety regarding the testing procedures was clearly evident in the case of the 13 pairs that showed no effects.

Nash and Buzby (1965) used a DT clairvoyance test with 11 pairs of identical twins and 14 pairs of fraternal twins. Each member of a twin pair was tested at the same session which consisted of six runs. The average age of the twins was seven (ranging from five to 13). In the first half of each session, the twins' mother sat with the target cards. The twins were separated by a screen so that they could not see each other although their mother could see them. During the last six runs of the session, the twins alternated the roles of serving as subject and sitting with the target decks. Each member of a twin pair therefore completed six runs. It was noted that identical and fraternal twins scored in opposite directions when the mother stayed with the targets and also when the twins alternated their roles, but these differences did not reach significance. However, when the identical and fraternal twins were subdivided on the basis of whether their deviations had been in the same or in a different direction from their twin's, it was found that 10 of the identical twin pairs scored in the same direction as opposed to one pair that did not, while only five fraternal twin pairs scored in the same direction and seven did not. This result is significant ( $P = .019$ , one-tailed).

The authors further report that "intraclass correlations were determined between the session scores of the two members of each pair of twins. The correlation for the 11 pairs of identical twins was  $+ .664$  which, by Fisher's method of z transformation, has

a  $P < .01$ . For the 14 pairs of fraternal twins, it was  $-.382$  [which is not significant] .... The difference between the correlations for the identical twins and for all the fraternal twins has a  $P < 10^{-4}$  as determined by Fisher's method of z transformation" (p. 54). The authors interpret these results as "consistent with the hypothesis that variations in ESP have a genetic basis" (p. 54).

Barron and Mordkoff (1968) tried to find evidence of ESP in nine pairs of identical twins by assessing physiological responses and free associations to a motion picture of known arousal value and to TAT cards, but found no significant instances of coincidences. In retrospect they state that the testing situation was such that it would inhibit rather than encourage ESP.

Using subjects with close relationships is not sufficient to insure results along the lines found by Stuart and by Rice and Townsend, as evidenced by Beloff's "sweethearts experiment" (1969). In searching for promising subjects to try out the recently built Edinburgh Electronic ESP-tester, he used 20 boy-girl couples who were newly married, engaged, or "going steady" as agent-subject pairs. As a control, on half the trials, unknown to the subject, no agent was used. Moreover, the subject's own photograph was used as the target on some trials as opposed to a stranger's photograph on others in the hope that the former would elicit more positive scores. However, all of the results were disappointingly at chance.

Finally, France and Hogan (1973) administered 25 GESP runs to 10 sets of siblings, nine sets of identical twins, and seven sets of fraternal twins. The similarity in calls as well as in hits was treated by a one-way analysis of variance. The authors report that "like responses between siblings, identical and fraternal twins resulted in a significant F of 6.32 ( $P < .05$ ,  $F .95 = 3.42$ ,  $df = 2/23$ ). Follow-up testing using the Scheffé method indicated the means for identical twin sets and sibling sets were significantly greater than the mean of fraternal twin sets" (p. 708). The treatment of like-hits, however, was not significant. The authors conclude that although their results plus those of Nash and Buzby (1965) make the possibility that ESP has a genetic basis more tenable, "such a relationship has not been proven, and the most that can be stated is that there now appears to be a trend developing toward such a conclusion" (pp. 709-710).

The results reported in this section are uneven and sometimes contradictory. It does appear, however, that significant scoring is more likely between friends, relatives, and lovers than with acquaintances and strangers. Although most of the work with twins is disappointing on the surface, it should be pointed out that no one has yet used a GESP testing situation in which twins served alternately as subject and agent. If tests under these conditions were to yield significance, then it would be appropriate to try to understand what psychological and physiological variables are associated with this type of successful scoring.

#### *Attempts to Manipulate Agent-Perceptant Relations and Psi Test Results*

In this section some experiments will be described in which subjects' attitudes toward one another were artificially manipulated, or other elements, such as psychological tests, were introduced into the testing situation in order to predict ESP performance.

Casper (1952) had 10 male and 10 female college students rate each other on a scale ranging from the one most liked to the one least liked, and then paired them up with a member of the opposite sex least liked and the one most liked. The 20 students were



selected because they were campus leaders or generally liked and known on campus. Although the students were all previously acquainted, no attempt was made to choose pairs who were close friends or lovers. Each subject-agent pair did two GESP runs and two clairvoyance runs. The overall results of the experiment were significant, most of this significance being due to the GESP runs, "in which it was found that the highest scores were associated with the least liked senders and the lowest scores with the best liked senders" (p. 213). This result was the opposite of what the experimenter had expected. The GESP runs were independently significant, but the clairvoyance runs were not.

Perhaps the feelings of "liking" and "disliking" elicited by the rating method used in Casper's experiment were more impersonal and artificial than would have been the case if natural pairs of liked and disliked students had been selected. Since the significance of the total experiment was mainly due to the GESP runs, the agents did make a difference, but it is difficult to see why it was in the opposite direction from that expected.

Schmeidler (1958) used Rorschach responses to divide subjects who were strangers into two groups of agent-percipient pairs on the basis of whether their Rorschachs indicated that they seemed to welcome contact with each other in the experimental situation or whether they showed signs of withdrawal or hostility. It was predicted that subjects in the first group would produce GESP scores above chance expectation, those in the second group at or below chance expectation. Although subjects were led to believe that all of the eight runs they carried out were of the GESP type, four were actually clairvoyant; during two of the latter, the agent was told to wish (without knowing the target) for the percipient to succeed, and on two for him to fail. Schmeidler found that "subjects for whom high GESP scores were predicted scored suggestively higher than chance expectation at GESP and significantly higher when GESP and clairvoyance-type runs are combined. Subjects for whom low GESP scores were predicted scored significantly lower than chance expectation at GESP and suggestively lower when GESP and clairvoyance-type runs are combined" (p. 55).

In this experiment the predictions regarding ESP scoring based on Rorschach responses were made after the subjects had met, interacted, and decided who would act as agent-percipient pairs, but before the ESP results were scored. In a second experiment (Schmeidler, 1960) 47 agent-percipient pairs were assigned on the basis of Rorschach protocols and did not have any contact with each other until after the ESP test had been completed. Under these conditions, insignificant results were obtained.

In a third experiment (Schmeidler, 1961b), the subjects met and listened together to the GESP test instructions. As in the second experiment, the experimenter made the agent-percipient pairings on the basis of the Rorschach responses. The subjects were allowed to meet each other before the ESP test. The findings of this experiment were in line with those of the first. When the results of the first and third experiments were pooled, there was a mean difference ( $P = .001$ ) and a negative correlation ( $P = .01$ ) between the GESP condition (when the agent tried to "send" the target) and the clairvoyant condition in which the agent did not know the target but wished that the subject would fail to guess it. Thus the experimenter was able to predict to a significant extent those agent-percipient pairs likely to succeed in achieving the experimental objectives. Other aspects of the results of this series are more directly relevant to the question of psi-mediated experimenter influence, and will be discussed from that angle in a later paper (White, in preparation).

**Maurice Marsh (1959), in partial fulfillment of his Ph.D. degree at Rhodes University, conducted a long-distance drawing GESP experiment with 371 subjects. One purpose of this experiment was to test the effectiveness of providing the subjects with material to link them with the distant agent. The overall results were significantly positive, as were a number of additional analyses, but for the purposes of the present paper only the linkage aspect is relevant. In a review of Marsh's 450-page dissertation, G. W. Fisk (1960) describes the experiment as follows:**

**The subjects were divided into two groups approximately equal in age, sex, etc. After the first week the two groups were told they would not have the same agent but would each have a different one.... They were never told there was only one agent and that one group was being used merely as a control.**

**Both groups were given precisely similar instructions but whereas the Experimental Group was given correct linkage material that given to the Control Group was incorrect. No linkage material was provided for the first five-day section in order that this section might provide an indication of the normal scoring level of the two groups when no linkage was operating and whether the selection method had succeeded in equating the two groups in terms of ESP ability (p. 224).**

**In the second section, which was the first linkage section, five different colored squares were pasted on the drawing sheets of both agent and subjects-a different color for each of the five days of that section. The Control Group was given the wrong colors. In the third section, a small square from a handkerchief belonging to the agent was given to each subject to hold when making his or her drawings. The squares given the Control Group were from a handkerchief of someone totally unconnected with the experiment. In the fourth section, as described by Fisk, "the Experimental Group subjects were given an actual photograph of their agent taken in his room in Cape Town, sitting next to the exposure box into which he put the [target] drawings each day. In addition they were told some of his personality test results (the same tests as the subjects had undergone) and also supplied with a friendly letter written by the agent telling them some of his intimate personal history. The Control Group [was] given material quantitatively and qualitatively equal ... but the photograph was of a man unconnected with the experiment and the personality tests results were fictitious. . . " (p. 225). In the final section the colored square approach was again used by the agent and the subjects were given the results of their personality tests and asked to compare them with the results of the agent's tests.**

**The results indicated no difference between the Experimental and Control Groups when linkage was not used. The use of the colored squares did not increase the scores of either group, but there was "a highly significant and fairly consistent decrease in the hits scored by the Experimental Group on the Control targets" (p. 234). This decrease was not evident in the scores of the control subjects. The use of the agent's photograph and a description of his personality resulted in significantly improved scoring rates in the Experimental Group which was not present in the Control. The use of the handkerchief squares "produced two significant increases but neither so consistent nor significant as in the case of the photograph" (p. 234). No increase was evident in the Controls in this section.**

**The significant improvement in scoring on the part of the Experimental Group upon the introduction of the personal linkage material is relevant to the question of what makes for effective agency in psi testing. Although Marsh used a GESP testing situation, Osis, Turner, and Carlson (1971) have shown that linkage can facilitate**

clairvoyance testing as well. It is possible that the personal links were effective not in a physical way but in the sense that they brought the percipients psychologically and emotionally closer to the agent, thus calling forth a psi response. Or, as Schmeidler (1961a) has described it, "the function of the agent, then, might be to make some targets more interesting and thus more accessible than they would otherwise be" (p. 93).

## DISCUSSION

I have tried to show here and elsewhere (White, in press) that the subject alone is not solely responsible for the score he or she gets on an ESP or PK test. Observers, randomizers, checkers, agents-to say nothing of experimenters and data collectors-may affect both the direction and magnitude of scoring. It appears that sometimes this influence is indirect and sometimes it is direct, i.e., psi-mediated. Some of the work reviewed in this paper, e.g., Fisk and West (1958), West and Fisk (1953), Osis, Turner, and Carlson (1971), and Schmeidler (1964a, 1964b), together with a number of additional experiments reviewed elsewhere (White, in press; White, in preparation), provide evidence that psi-mediated experimenter or other participant effects do occur. The potential influence of persons other than the subject should be taken into account in designing ESP and PK tests to see if we can catch them red-handed, as it were, instead of merely noting their tracks after the fact when little can be done to increase our understanding of how they came to be there.

Since anyone participating in a psi experiment can get in on the final act, it follows that the subject never works in isolation, even if he is alone in a sound-attenuated, light-proof chamber. And how could he be isolated if psi is a reality? We shall have to view our experimental set-ups as if psi actually could occur there. Of course the subject must be isolated to rule out all sensory cues, but that does not remove him from the influence of the experimenter, the randomizer, the checker, or anyone else involved one way or another in the experiment. (In this regard, Helmut Schmidt, 1975a, p. 304, goes me one better in suggesting that not only must all the personnel participating in a psi experiment be taken into account, but possibly even the reader of the final research report as well!) Recently J. B. Rhine (1975) has referred to this circumstance as the problem of psi indeterminacy. He says he became aware of it from the recent anpsi studies, in which it is not possible to determine whether significant results are due to the psi of the animal subjects or to the experimenter's own psi ability. He points out:

Certain steps were taken, of course, to meet the difficulty. The experimenter would usually introduce certain physical conditions aimed at discriminating between himself and the animal as the possible contributor of the psi results; however, each new step that was made to try to bar the experimenter's influence was met with the fact that it was well known that psi could not thus be physically excluded. If, let us say, the experimenter went to another room in order to isolate himself, it had to be conceded that the intervening wall and distance could not safely be assumed to block the psi process. Or if he shifted the timing of his presence in the laboratory, leaving the experiment to someone else who did not know the experimental problem and design, this also had to be considered inadequate because (since there is strong evidence of precognition) a time gap, like the one of distance, did not necessarily prevent psi exchange. So the baffling problem remained the problem of finding a method of discriminating conclusively between the psi ability of the man and that of the animal, or more generally, between the experimenter and the subject (human or animal) (p. 45).

Rhine goes on to point out that even automated tests do not eliminate the problem, since even machines are not impervious to PK influence.

However, Rhine feels that ways can be worked out to distinguish which experimental participants-subjects, experimenter, or other are responsible for the results of an experiment. He suggests that certain psychologically determined signs, such as position effects, consistent missing, response bias, etc., should provide clues as to who is responsible for what in the psi testing situation:

The basic idea, then, in dealing with the physical indeterminacy of psi is to design into each experiment the psychological controls that are known to differentiate the results desired. For this, as is now evident, it is necessary to go beyond mere physical control of targets, personnel, or other conditions. Since the principle being tested is nonphysical, it can be experimentally controlled only through psychological factors and conditions. The success of such control is best evidenced by the identifying signs of psi that have been discovered incidentally over the years of experimental testing and analysis.

It is true, we do not yet know much about the signs of psi-their number, range of variation, and the like-important though they are as indicators of that ability. As must be evident, we are only now beginning to recognize the peculiar psychological oddities of the psi function. But the more we learn about them in the future, the easier it should be to design definitive test procedures. As it is now, no discernible limits to the range of subjective methods of exploring psi have been found (p. 53).

I question whether even the psychological earmarks and signs of psi Rhine mentions can be pinned down to any one participant in a test. There are no physical barriers to psi. Why should there be psychological ones? Although the arrangement of the record page may tailor the position effects that will occur, the fact that only the subject is physically confronted with that record page in responding to the hidden targets parapsychically does not insure that the psi that will be displayed is solely that of the subject. I do not see how psychological or any other types of barriers to psi can be erected. I suggest that we abandon our attempts to restrict and isolate and do the opposite instead: expand and integrate. In this way, we might come across some new clues that our customary methods could not reveal.

Perhaps the fact that any one, or even all, of the persons participating in an ESP or PIC experiment may influence the results, not just the subject, is an indication that no individual acting in a psi experiment should be considered separately. Instead, perhaps the totality of each experimental situation should be studied as an *entity*, as a composite "individual" in itself.

Another indication that this may be the case is that there have been several hints in the experimental literature that we are dealing with a holistic phenomenon. For example, Pratt (1974) has suggested that "the manner in which the test is conducted as well as the results themselves seem to force us to entertain the view that the subject is not actually calling the individual targets but is responding instead to the run (or sequence of targets) as a *whole* .... Judged by what the data show, the calling is *not* a series of separate efforts to identify individual targets as they are presented. It is, rather, a process of mental associations made within certain constraints as defined by the assigned task and oriented toward the sequence of targets" (p. 149).

Pratt is suggesting, in other words, that the "trial" is actually the entire run. Nash

(1975) carries this a step further and suggests that "the subject's response may be determined not only by the run but by the whole experiment of which it is a part" (p. 58). Elsewhere Nash (1974) proposes that "an experiment, particularly a group experiment, appears to be an entity having an autonomy that determines the psi characteristics it expresses. The experimental autonomy, which is contributed to by the experimenter, the agent, the marker and the subjects, regulates and determines the individual subject's psi expression" (p. 342).

If this is the case, then perhaps we had better start thinking of the participants in a psi experiment as likely to behave more as bees in a hive than as autonomous individuals.

Gardner Murphy (1945) has described the holistic nature of the ESP testing situation as a "field" or "interindividual reality." He says, "From this point of view a subject and an experimenter [and, one could add, an observer, a randomizer, a checker, an agent] in a telepathy experiment represent phases of an organic whole both at the ordinary normal level of interaction and also, more profoundly, at the deeper level at which the paranormal processes occur. If there be two or three subjects taking part simultaneously or successively, they constitute a larger unit, polarized to some degree perhaps by the experimenter. What Warcollier [1938, pp. 77-92, 241-251] has called 'contagion' between percipients and what Mrs. Rhine [1937] found in groups of competing children in an ESP game situation, may well be aspects of a sort of deep-level psychic interaction which gives results when no single percipient can make an independently significant score" (p. 198).

Also relevant to the holistic, "field theory" approach to the psi test situation is A. A. Foster's diametric ESP hypothesis. Foster (1940) asked whether ESP was circumferential or diametric. If the former, then it would have to proceed step by step, gathering bits of information, and finally putting them all together to infer the answer. But if it were diametric, then ESP would have no need to depend on any intervening steps, but could proceed directly to the answer. Foster thought existing data tended to favor the diametric hypothesis and proposed some ways in which it could be tested further, but to my knowledge no one else has worked on the question. However, if we assume for argument's sake that ESP is diametric, then it would easily be able to respond in one instant not only to the run or the record sheet or the session but to the experiment as a whole and to everyone taking part in it. It would appear that this was the sort of thing that happened in Schmeidler's precognition/clairvoyance work (1964a, 1964b) described earlier, in which the subjects behaved in the beginning of the experiment as if they knew what would happen at the end.

Price (1973), in trying to account for the unusual psi effects associated with his randomizer, has argued eloquently on behalf of the holistic view I am proposing. He urged us to stop conceiving of persons as independent and discrete and to view them instead within the context of "a universal, transpersonal *structure* from which psi derives both its existence and its meaning. Thus, it is the metaprocesses or the structure of a situation which should attract our theoretical and research attention rather than the processes in themselves" (P. 319).

If I understand him correctly, Gardner Murphy has been urging much the same thing for decades. For example, in 1949 he pleaded for a particular way of viewing the psi testing situation which never, so far as I know, has been put into practice. It is well worth quoting at length:

I will suggest that [a] ... clue to the paranormal lies beyond the realm of needs and barriers, indeed that it does not lie inside of human personality at all, whether in its generic or in its individualized aspects. I believe, on the contrary, that it is strictly interpersonal; that it lies in the relations between persons and not in the persons as such. If it be objected immediately that it must be personal if it is to be interpersonal, then let me plead that there is all the difference in the world between our stretching the conception of the personal to the breakingpoint and on the other hand, our burning all our individualistic bridges behind us, and saying that the world of interpersonal phenomena is a world which must be faced on its own terms; pursued in its own right; its laws made clear and recognized to be essentially different from those laws which apply to individuals. I would plead for the direct empirical study of the laws of the interpersonal; the functions of an interpersonal field. I suggest that it is not within the individual psychic structure, but within certain specific relations between the psychic structure of one individual and the psychic structure of another that our clue lies; or if you like, that the phenomena are, so to speak, transpersonal, just as they are, indeed, trans-spatial and trans-temporal (pp. 11-12).

Although at this point I do not have any designs for experiments or testable hypotheses involving this holistic, transpersonal, field approach, I hope this review of experiments and ideas will encourage others to come up with some. It will be difficult to do go because clearly from this standpoint the experiment and the experimenter are part of the same gestalt. Even to conceive of an experiment as a matter of wholes rather than parts does violation to our customary ways of linear thinking. Yet every now and then we catch a glimpse of a kind of lawfulness in this topsy-turvy world of parapsychology, only it isn't the lawfulness we expected. If I were writing a novel about the psi test situation rather than a paper in a scientific journal, I would be tempted to entitle it: "It's All Done with Mirrors." Somehow we are getting what we ask for, and that's not necessarily what we consciously want. We are more than we are ordinarily aware of being, and it is the whole person that is involved in psi research when results are forthcoming.

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