EDITOR'S EPILOGUE

ROBERTO CAVANNA, PH.D.

Division of Biocommunication
National Institute of Communication
Mexico City, Mexico

> "The particular thing to learn is how to get to the crack between the worlds and how to enter the other world. There is a crack between the two worlds, the world of the diableros and the world of living men. There is a place where the two worlds overlap. The crack is there. It opens and closes like a door in the wind."[1]
>
> *Don Juan*

"To get there—the old Mexican sorcerer went on explaining to his Westerner apprentice—a man must exercise his will. He must, I should say, develop an indomitable desire for it, a single-minded dedication. But he must do it without the help of any power or any man."[1]

In my opinion, in these words lies the key for understanding the critical situation in which the researcher in parapsychology finds himself. He will have to take a definite position (for how Cartesian it may be) in front of some basic questions, lest his efforts to make scientific sense of psi phenomena be in vain.

The first major question is whether there "really" are two worlds, a mental and a physical world. This question bears on the cognitive value of subjective experiences. Very few people will deny the existence of a realm of subjective experiences, but many will challenge its "real" significance.

Here we have to make a distinction. One thing is to discuss the scientific validity of subjective observations, and another to question their very reality. Subjective reality does exist, albeit within the limits of its own definition. Epistemological problems as to the validation of internal experiences arise because of their intrinsic incommunicability. Furthermore, one of the characteristics of "altered" internal states (to which psi states presumably belong) is to be ineffable. This ineffability might be one manifestation of a loss of identity, due to the merging of the ego with deeper, normally unconscious personality functions.

The second question is concerned with this basic problem. All science is a product of conscious personality functions, even if the ways to logical constructions were often opened through ill-defined and less integrated unconscious processes. On the other hand, communication beyond the usual sensory modalities would involve by definition a new CNS encoding and decoding system, whose function may very well not impinge on awareness. In this case the problem would be to observe and validate such phenomena on a conscious level without grossly interfering with them.

A third important question, which becomes fundamental in psi experiments with animals, concerns motivation.

Psychoanalysts tell us not to worry. Even assuming that psi communication went on all the time at an unconscious level, we have very efficient filtering devices to protect our egos from "flooding" by external stimulation, be it physical or mental. If this is so, and we have reasons to believe it is, on what grounds would we expect a subject in a parapsychological experiment to surrender his automatic defenses in order to perceive a particular signal assumedly being "sent" to him? It is my impression that significant results can be obtained only if one succeeds in reproducing in the laboratory the strongly biased situation occurring in reported spontaneous cases. The experimental situation must contain sufficient motivation, according to the dynamics of the personalities involved and to their relationship. In the case of animal experiments, the subjects would have to be trained to pursue joint goals, to recognize the effects of psi transfer of information, even if only of an emotional nature, and to integrate this type of information in their behavioral responses.

Several other questions come to mind when one tries to conceptualize before engaging in psi experiments. I think it is important to systematize our own ignorance, so to speak, in order not to confuse theoretical questions, which have to be solved, even if only on a purely operational basis, *before* any attempt at experimenting, with practical

questions of method, which can and must be asked repeatedly in between series of experiments, to assist in collecting heuristically valid data.

During the conference several controversial points emerged, which represent potential sources of confusion and could give rise to methodological fallacies. I leave it to the reader to go back to the original discussions for a full appreciation of these points. I shall present here a few of them in a rapid survey.

1) Consensus as to the significance of a subjective phenomenon is a sufficient criterion for its objective validation.

The structuralistic approach, which has its merits in alleviating the growth pains of anthropology in its attempts to achieve scientific status, can be misleading in parapsychology. What has to be sought is *congruence* of basic conceptual assumptions with the existing scientific thought. This does not force one to comply with existing conceptual schemes, nor will it limit the experimental planning to an analogical derivation from existing concepts. It will accommodate any new, original conceptualizations, with the only condition that they be expressed in a logical language congruent with the scientific one.

2) Statistical significance is a necessary and sufficient criterion for the objective validation of a psi phenomenon.

This is a double fallacy. All information that a statistical device can corroborate must be already contained in its premises. Furthermore, a statistical criterion of significance does not contain any instrument of discrimination between true and false correlations. All it does is to show the degree of internal consistency between groups of data. This may assist in the development of further criteria within the experimental system but will never contain any implicit validation of the conceptualizations.

3) A "psi-field," part of a more general panpsychism, can be invoked to support conceptualizations in psi research.

Today's technologically specialized culture has brought about, by reaction, a revival of interest in world views encompassing both the physical as well as the mental realms of experience. The validity of subjective insight is rarely questioned, and very often far-reaching extrapolations are made, which amount to attempts at explaining one unknown with another.

It might very well be that direct communication between minds is but one expression of a more general capacity of confluence that all individuals have at some unconscious level of their personalities. But

neither this nor any other metaphysical belief can ever become part of a scientific theory. One can not interchange "mental" with "spiritual" realms, nor treat metaphysical concepts as rational ones. I do not mean that one particular metaphysical position might not lead to more meaningful theoretical formulations, but it would be naive and grossly misleading to expect the experiential world to bear out one or the other metaphysical position.

In parapsychology this problem is felt most acutely, as the phenomena under investigation undoubtedly belong to the mental realm, and their only manifestation in the physical world would be fleeting functional changes of state of the CNS. Actually the problem, not only of *para-* but of *meta-* and *ortho-*psychology as well, is to find objectively measurable correlates of mental activity in all its subtle nuances. In spite of the rapid technical progress of neurophysiology, our scalp electrodes are not much better than a few induction coils placed outside the enclosure of a computer. They will supply some sort of information about the activity going on inside, but can reveal almost nothing about the various internal circuits and their coherent interrelations. Psi states could be conceived of as microchanges of state in the CNS, presumably of very short duration and rather circumscribed topologically. As many other fleeting central alterations, they may hopefully trigger most lasting reactions, like images or feelings, and therefore be reflected in more easily detectable changes of the brain's electrical activity.

This brings us to a few questions of method, which emerged during the meetings, prompted by the interdisciplinary nature of the group. I shall discuss here only the more relevant statements, in the hope of shedding a little light on some controversial points.

1) Psi phenomena occur preferentially during "altered" states of consciousness.

I consider this a tautology. In order to experience psi one has to evade the array of "regular" states of consciousness which make one feel "present" in the physical world, and open up to a new dimension of awareness.

2) To different states of consciousness correspond definite and objectively reproducible electroneurophysiological parameters.

At the present state of the art we have very little information in this respect, but what there is strongly supports this view. Individuals can be trained to enter and remain in particular mental states by feeding back to them sensory information about their brains' electrical activity. The importance of these recent advances for psi investigation

lies in the fact that if one could achieve control (by feedback, hypnosis or psychopharmaca, or a combination of them) over those states of consciousness in which the ego functions are subdued, one would have a powerful preconditioning procedure presumably biased in favor of psi.

3) Strong psi phenomena must be obtained consistently in the laboratory before trying to study their conditioning parameters.

In order to achieve this desideratum one ought to positively bias the experimental conditions. This can best be done by trying to replicate the essential characteristics of spontaneous psi occurrences. These call for three conditions: a) existence of a transferential rapport between the subjects; b) meaningfulness of the message within the frame of the subjects' mutual emotional commitment; c) presence of an element of frustration in the subjects' attempts at communication. In experimental situations these conditions could be met, for instance, by using mother and child or monozygotic twins as subject pairs, and by selecting emotional targets requiring no intellectual elaboration and tailored to the specific dynamic situation of the subject pair. In order to increase the sensitivity of the experiments and the significance of possible positive results, the targets would have to be made as unlikely as possible and non-inferential. The problem of recording the phenomena with as little distortion as possible would still remain a major challenge. As it may be reasonably assumed that perceptual styles could influence the formal qualities of the psi message, interpretive criteria for the assessment of the results would have to be determined *in advance*, based on the dynamics of the personalities involved. For instance, the psi message could be transmitted and received as an image, or transmitted as a feeling and received as an image (or vice versa), or be symbolically transformed by unconscious processes at either end. It is obvious that a Freudian or other interpretation *a posteriori* of the feelings or images described by a "receiver" in a given experimental setting would be as unjustified as any other manipulation of data.

4) In an ideal experimental situation the psi phenomenon would be recorded by means of a correlated neurophysiological measurement, without any elaboration.

This may be a partial fallacy. One of the distinctive characteristics of a psi occurrence is its intrinsic *significance*, and at the present state of the art this may not be reflected in a simple variation of the brain's electrical activity. Much more complex recordings and computations may become necessary, which would take into account the highest integrative functions of the brain. Steps in this direction are being made with direct

current measurements, and in the near future more powerful tools may become available.

To summarize the technical problem, the phenomenology involved in psi communication could be viewed as a four-step process consisting of perception, discrimination, recognition and interpretation. In other words, the signal must first of all be emitted and received, which means that we ought to investigate what kind of perturbation of what type of field psi is, and what receptors and transducers organisms possess to detect such signals.

Secondly, the signal must be sorted out from a lot of noise affecting the same receptors. This would be relatively easy if the noise had no correlation with the signal, but becomes considerably more complicated when the noise and the signal are correlated (positively or negatively), which seems to me to be the case for psi phenomena.

Thirdly, the mentation carried by the signal must be somehow appreciated by means of some sort of comparative function of the brain, sensitive to significance.

Finally, the content of the message and its implications must be integrated in the existing personality patterns.

In short, psi research is not an easy task. As to its future, very little can be inferred from today's situation. Unless scientists reputable in their own disciplines (pertinent to psi investigation) will start to plan and carry out significant research in this field, bearing full responsibility for it, the perspective of parapsychology achieving scientific status is very dim. Astronomy would have progressed very slowly indeed as a science if its meetings had been regularly attended by astrologists at par with astronomers.

I would like to end with a practical suggestion. Established scientists in neighboring disciplines could guide in their laboratories the work of graduate students preparing an experimental thesis on an argument relevant to psi, using the accepted tools of "orthodox" disciplines. This might shorten our path to the ". . . place where the two worlds overlap."

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REFERENCES

1. Castaneda, C.: *The Teachings of Don Juan: A Yaqui Way of Knowledge* (University of California Press, Berkeley and Los Angeles, 1968).