ROUND TABLE DISCUSSION

BYERS: I would like to ask Harvey Irwin to tell us briefly what has happened in the study of ESP among aborigines. I remember years ago encountering some people who were embarking on that and didn't want to talk about it.

IRWIN: Original work on ESP and aborigines was done by the Roses, who were eminent anthropologists in Australia. As far as I know, they did little other than suggest that certain aboriginal individuals have ESP ability. Today the aboriginal people are becoming so westernized that it would be difficult to locate aborigines in an uncontaminated tribal situation if you wanted to look at cultural aspects of ESP in aborigines. As far as I know there are no parapsychologists engaged in any work of that nature.

STORM: Since he brought up memory, I'll address this question to Harvey Irwin. If you have a memory, then you must also have a memory access mechanism. Is there any way at all that we could determine whether the physical brain is the locus of memory or is nothing more than the access mechanism? What experiments might we do to determine that?

IRWIN: My specialty is not in the neuropsychological mechanisms of memory.

STORM: When you asked Monte the question it was as though you thought that something about the brain should be memory.

IRWIN: No, I simply suggested that there was neurological evidence that memories were somehow represented in a neural substrate. This is not to say that in order to get access to memory you do not need to go through something we would call mind. That is quite possible. In my own model I do not pursue the distinction between brain and mind. I deliberately leave the issue open. Thus, while the human information processing system does model the mind, there are acknowledged neurophysiological correlates of processes at certain levels of the system.

BONNEAU: There was a reference made to holograms. Some of the recent work done in certain areas of brain and mind research suggests that possibly information is stored in the mind or in some facsimile of the mind in a hologram structure. In my own views of holograms, they appear to contain time in frozen motion. I wonder how that might relate to some of the psi phenomena we deal with, that have no reference to time as we know it. Psi does seem to have a point of reference, as yet undefined, contained in a hologram structure, and there are a number of points that seem to rotate around that aspect. Does anybody have any ideas on that?

BYERS: I understand the no-space aspect in the hologram very easily. I asked Karl Pribram once how he accounted for time, and he said, which I do not completely understand, that it comes out as amplitude. Maybe that has to be explained further. However, in terms of the storage capacity, there is another interesting point which hasn't come up in this meeting, which intrigues me.

As you know, if you take the physical film hologram, you cut it into any number of pieces and the total information is there, but as the pieces become smaller, the resolution of the image decreases. It was George Leonard's point of view in his book *The Silent Pulse*, that the fuzziness of a psi phenomenon of one sort or another resulted from its being a rather small piece that was available. Although all the image was there, it was not in sufficient resolution.

BONNEAU: In a sense, we keep looking down a very narrow shaft when we go to view psi. We just have a very tiny portion instead of a broad picture or a hologram image.

BYERS: Yes, and also you talk about the entire information being stored in the mind—the mind being a slippery word here. I think the more reasonable explanation here is that it's stored in the entire body or being, in terms of what Pribram has called slow potentials, not localized. Lashley, at the end of his life, trying to find where memory was stored, humorously said that his research seemed to demonstrate that there was no such thing, because no amount of experimental work on the brain itself succeeded in eliminating a piece of memory.

RUDERFER: When you're talking about a hologram, you're looking at something in a frequency domain, and this is an inverse of the time domain mathematically. They're both inversely related, so one may equivalently look at a phenomenon in the frequency or time domain. Which one you want to choose is a matter of convenience. We normally work in the time domain because everything happens to us

sequentially. Now, if we want to work in a frequency domain, we normally do that in a case where, instead of a sequential type of operation, you get a parallel type of operation, and that's more suited for the frequency type of domain. For example, in a hologram, the radiation that passes through a single point goes out in all directions and with all frequencies. It's the same way for every other point you get, all the radiation fanning out from that particular point, so from every point you get some radiation at a particular part of the image. That's why any small part of the image contains all of the information that's in the picture, although with a lower resolution. So really there's no basic difference between a holographic view of the universe and a sequential time view. The frequency viewpoint implies a large number of energy carriers and this fits in with the neutrino sea as an information transmitting medium.

RUDOLPH: I'd also like to comment on the question of the holographic model. A hologram really is a record of a Fourier transform, which is a mathematical transform of whatever coordinates you're looking at. In the case of a hologram it's a transformation of spatial coordinates. In electrical communication engineering, it's the transform of time into frequenices. These are just labels. Mathematically there's no reason why one can't take a Fourier transform of four-dimensional space-time. If you could do that and record that somehow, then at any particular point in the transform domain you would have things from all space and time.

ANGOFF: Our thanks to all of you, participants and observers, for your contributions to this conference. Ladies and gentlemen, this Twenty-Eighth Annual International Conference of the Parapsychology Foundation is adjourned.