NONVERBAL COMMUNICATION AND ESP

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In this paper I will describe the methodological and epistemological history of the study of human communication in general and nonverbal communication in particular. This will be important to psi research, I believe, because the limitations of our earlier approach to the study of human communication eliminated much of the total spectrum of human interpersonal phenomena, including ESP. More recent approaches to the study of human communication, particularly nonverbal communication, show promise of including ESP and other psi phenomena in their scientific domain.

That part of the scientific world concerned with human behavior and particularly human relations is changing rapidly. We are moving away from our attachments to our own preconceptions about how humans work and are moving toward a more unbiased study of how nature works.

First, then, I will describe the older view of human communication and the limitations this imposed on our research domain. Then I will show how research in ESP in particular and psi phenomena in general has suffered from this limited research view. Then I will describe another research stance—one that has evolved particularly in nonverbal communication research—which enables us to embrace all natural phenomena. And lastly I will consider the implications of this new view of man and of research. Accepting the existence of psi phenomena will inevitably imply accepting a radical, wholistic shift in our view of almost everything.

In the beginning the study of communication was the study of messages. There were individuals who created or originated messages. There was some form of encoding messages, usually into language. There was the transmission of messages by speech or some medium such as newspapers, movies, television. Eventually the message was received by someone who decoded (derived meaning from) the message. And, lastly, the message had some effect on the receivers. Not surprisingly, this paradigm was the same as that used by the industry

which designed the technology for the wire or wireless transmission of information. Information was organized energy. Claude Shannon, a scientist at Bell Labs, and Warren Weaver, a social scientist, collaborated to produce a document[1] which described the fundamental paradigm for both technological and human communication. This has also been the basic paradigm for ESP research.

There are two beliefs underlying this approach to the study of communication. First is the overwhelming importance of language as the basic encoding form of messages. Language is our most valued capacity which distinguishes us from all other forms of life. The ability to speak, read and write has enabled us to create a vast civilization with a history. We evaluate each other on the basis of our language proficiency. We are pleased when our children speak early and we hope they will learn to read as early as possible. Reading scores of students are the single most important popular success index of a school. Our personalities and much of our status as humans seem to be derived from our language—our message generating—proficiency. We are scarcely distinguishable from our language messages.

With this popular and even scientific view of language messages, it is not surprising that there has been enormous popular and scientific rejection of any communication system without an observable transmission system—ESP. In the prevailing scheme of human affairs, this would be cheating at least and potentially dangerous and manipulative at worst.

The second assumption or belief inherent in the communication paradigm I have described is that each person is an individual related to each other individual primarily through his messages. Animals affect each other solely through actions, but humans speak or write to each other. There has been, admittedly, some ambivalence here. The pen is mightier than the sword on one hand. But actions speak louder than words on the other. In either event we believe that we do things to each other by means of our messages. Messages are causes which have effects. Communication study simply borrowed the Newtonian paradigm. If there were those who wanted to look outside the constraints of this Newtonian cause-effect paradigm, they were simply out of luck because they had neither a methodology nor an acceptable logic to work with. Science cannot be blamed for refusing to accept a piece of the human puzzle when there is no way to fit the piece into the existing scheme of puzzle-solving. Only the non-scientist can accept an idea through illogical belief or faith.

The multi-disciplinary interest in human relations sprouted the

sub-discipline called communication. And that sub-discipline, in turn, eventually sprouted a sub-sub-discipline called nonverbal communication. This began a search for new methodologies, since we were now foraging for knowledge of human affairs without the security and direction of our belief in the predominant language base of messages. We still clung to the cause-effect paradigm, however, and we began to look for nonverbal messages and their effects. We tried to hang on to our familiar methodologies by talking of nonverbal language and of breaking the nonverbal code. But the most formidable problem to arise was that of trying to extract meaning (messages must have meaning) from nonverbal behavior. The meaning of messages was seen as the essential effector in communication process. Korzybski had already pointed out that human relations were confused to the extent that the language meanings which sender and receiver perceived in a message were not identical.

Perhaps the first significant breakthrough in the study of nonverbal communication came when Ray Birdwhistell, working with Margaret Mead, Gregory Bateson and others, offered the concept and methodology of kinesics,[2] the systematic study of body motion, facial expression and gesture. Birdwhistell did not look for meaning in nonverbal messages, nor did he separate verbal from nonverbal communication. Communication, he said, was a process that had a structure which could be found only by examining both or all participants in the communication process as a single unit. Communication was now a matter of dynamic relationships rather than cause-effect events. At last communication research had begun to escape the confines of the Newtonian cause-effect paradigm and language was no longer the predominant mode of information transmission or exchange. At first, Birdwhistell was regarded by many in the communication research enterprise as a curious or fascinating, but not entirely scientific, innovator. He had begun to work in terms of a new paradigm. Atlhough he did not personally reject ESP and other human sensitivities that were still outside a strict scientific domain, his research interests remained confined, to my knowledge, to the human expression and management of information that was bounded by genetic inheritance on one hand and learning on the other.

Birdwhistell and his associates, by opening the door to a new paradigm for the study of human communication, gave his students and followers (of which I was one) new scientific territory to explore. In my view, the inevitable trajectory of this research direction is toward a full understanding of the human's capacities, which will include those phenomena which we have been calling psi.

I will, later in this paper, discuss more fully the dimensions of the newer paradigm in nonverbal communication research and some of the data that have emerged and something of the strategies for handling those data. But first I want to point out that there is still a great division in the study of nonverbal communication. Most workers still adhere to a focus on messages and, essentially, a cause-effect view of the world. It has been difficult for many to understand that the human, individually or collectively, is not the ultimate concern of our scientific curiosity, but that the human exists in a matrix of relationships, in some larger-than-human whole, which is becoming available for study if, at the moment, only inferentially.

ESP research has, unfortunately, suffered the consequences of the earlier inappropriate research paradigm. The central focus, in both ESP research and in communication research, has been the message which is seen as transmitted between a sender and a receiver. The consequence, both for ESP research and communication research, has been that, instead of studying "how nature works," we were preoccupied with the futile effort to prove that "how man thinks that nature works" was correct. J. B. Rhine spent much of his life trying to prove (or disprove) the existence or reality of the ESP process. But, looking back, he actually demonstrated that the prevailing conception of this communication form was incorrect.

I want, now, to describe and discuss the research paradigm that is emerging in nonverbal communication and which, I predict, will enable us to embrace ESP as a communication form. One way to begin this would be to trace the evolution of the ideas involved, citing the persons who contributed significant pieces. But for the present purposes I will, first, cite a number of data-observations which, when set alongside each other, have simply required new research formulations. Then, since these new formulations imply a shift in what we call reality, I will describe the stance again in terms of the nature of that reality.

Daniel Stern, a research psychiatrist studying mother-infant interaction, found that when, during play, the infant locked into eye-contact with his mother, his amount and rate of movement (arousal state) increased and that when this arousal approached (apparent) overload, the infant winced and looked away and his arousal state decreased until the procedure was repeated. Stern says, "The goal of play activity is the mutual regulation of stimulation so as to maintain an optimal level of arousal which is affectively positive."[3]

I cite this to illustrate that a simple act has significance on multiple levels of analysis or understanding. The mother and infant are

"playing." On another level they are reinforcing mother-child bonding. And on still another they are mutually regulating their individual and joint arousal. A cause-effect explanation would be trivial. Neither, at the bio-social level, is doing anything to the other. The process is shared. No information, in the usual sense, is being transmitted or exchanged, but some form of heightened energy is shared. The process involves communication, but there are no messages.

If a person is wired to a galvanic skin response biofeedback machine which measures skin conductivity (which is a function of arousal or anxiety), his arousal will almost invariably increase when he makes eye-contact with another person. Similarly, almost anyone can experience an increase in his own arousal if he deliberately prolongs eye contact with another person. We do not understand why eye contact works this way (nor do we understand why it sometimes does not). But in our new research paradigm we do not ask "why" questions, we ask only how it works. Again we have a communication involvement without messages and without anyone doing anything to another. We are required by these eye-contact data to recognize that, underlying our popular cause-effect interpretations, there are determined biological processes at work. We can impose our message and our cause-effect interpretations on one level of explanation, but this is scientifically trivial until we recognize how nature is working at deeper levels.

I have a piece of film in which a woman is seen to cross her legs and a man nearby is seen to shift his gaze to her legs. It was not staged. My classes almost invariably report that the man looks because the woman crossed her legs. They impose a cause-effect explanation on the events and, simultaneously, imply a time sequencing. But when the film is viewed frame-by-frame it is apparent that the single frame (i.e. 1/16 second) on which the leg begins to cross is the same frame in which the man's head begins to turn to look at it. Anyone who has looked carefully (i.e., frame-by-frame on film) at human interaction recognizes that the actual organization of interpersonal events often does not conform to our popular conception of human relations.

In my own research[4] I have found that people carry out tasks at rates of movement that are appropriate to the task, but that when two or more people are in communication, talking or just being together, their onsets of body movement and the motor onsets of the intercostal muscles producing speech syllables fall on a shared rhythm train. The rhythm train is always, basically, a 10 cycles-per-second rhythm and the interactants are phase locked. A syllable never follows the preceding syllable until a minimum .2 second has elapsed, but the onset of the

second syllable may follow the onset of the preceding one at intervals of .2, .3, .4 second or other beats of the underlying 10 cycles-per-second train. One simply cannot have a comfortable conversation or interaction with another without sharing this underlying rhythm. The details of this research may be found elsewhere, but the implication from this and other research is that all humans (and higher mammals) have an underlying biological capacity to "get it together." By using psychophysiological instruments, one can demonstrate that synchrony between or among people moves them toward what they perceive as comfortable involvements or states and that the absence of this synchrony or rhythm-sharing is sensed as uncomfortable.

There is a cultural group in South America who have a practice that demonstrates one unexpected way this rhythm-sharing phenomenon can work. The Yanomamo are called by their ethnographer The Fierce People.[5] It is their cultural style to behave arrogantly, aggressively, threateningly. When they come together to talk, even on some ceremonious occasions, they are expected to display their fierceness, but avoid conflict. Many careful tape recordings have been made of this group and from these it is possible to hear what, impressionistically, sounds like an aggressive screaming match. But when the talk is carefully measured, it is found that each speaker begins his burst of shouting precisely one tenth of a second after the other's speech onset. They shout about three syllables in a burst or set and then start over.[6] The result is a fast moving speech dance that is incredibly accurately timed. This precision of interpersonal synchrony precludes anger or bad feeling, in my judgement and, indeed, the ethnographer reports that this kind of talk is likely to emerge whenever a conversation begins to get overheated.

Another example: Manfred Clynes, who has developed the science of sentics,[7] has discovered that humans around the world have a capacity to express a certain finite range of emotions precisely and nonverbally. Clynes asks his subjects to rest a finger on a piano-key-like apparatus and to express anger, joy, love or other emotions by pressing the key. He can measure the time and space dimensions of the pressure accurately and has found that people around the world express the same emotions in the same way. He believes from this and other research concerning brain function, that humans have identical "essentic shapes" genetically programmed in their brains and that this universal repertoire of feeling or emotion, unless it is contaminated by some interference, enables all humans to express their feelings (states) with great precision and to perceive the expressions of others with equal precision. While Clynes has studied finger-pressure expressions

for convenience and replicability, he assumes that these specific time-space configurations are expressed and perceived in human touching, music, art, architecture, etc. Again, our folk notion of the uniqueness of each individual is subject to the qualification that there is an underlying universality and that the communication of emotion takes place through biologically determined processes that are well below the threshold of easy awareness.

The five examples of nonverbal communication and research—and the verbal example from the Yanomamo—are but a small sample of current communication research using a paradigm that is radically different from the older one.

The first significant difference in the paradigms can be understood as a matter of levels of organization—of communication, of behavior and of the entire cosmos. Only some levels are available to human perception, research, or even human comprehension. In the Stern research on mothers and infants there is one level on which we perceive play. Play is commonly and non-scientifically defined as simply some activity which is fun. It has no deep purpose beyond enjoyment. At this level we are dealing only with commonly shared descriptions which have no definitions. Much of our daily lives is lived and perceived according to such invented and preferred folk logic that has only minimal relationship to the way nature works. Now we have begun to study human events and relationships in terms of another logic. Stern can talk about play on one level while discovering an underlying natural process ("the mutual regulation of stimulation . . .") on another level.

The same event, examined on two levels, may even seem contradictory. The Yanomamo shout obscenities on one level, but carry this out in a way that ensures peace and cooperation on another. When we study ESP or other psi phenomena in terms of our folk conceptions of communication, we simply cannot understand the process. But as we penetrate deep enough into the natural workings of information sharing, which is a prerequisite for survival, we will recognize that it is not ESP or other psi phenomena which are rare or incredible, it is our own preference for an untenable mythology about the human relationship to his larger natural contexts that had been the problem.

Karl Pribram, who has spoken at these meetings, points out that the only natural reality is vibration or frequencies. The external world reaches us through vibration or frequency—light, sound, heat, and other forms that we have only begun to recognize. Our human brain receives vibrations or impulses from its neural receptors and translates

these into the material reality we then believe we perceive. Reality in the form we recognize is constructed in our heads with time and space dimensions which have no counterparts in the primary reality of frequency or vibration. And in this model ESP becomes easy to understand. All the available energy or information is out there all the time without our limitation of time and space and he who can, by circumstances we only dimly recognize, escape or bypass the interfering education of his brain can share the information.

We have, for reasons that I am not inclined to explore, believed that human relations are carried out by communication which is the transmission of isolatable messages from one person to another. But we cannot disprove an opposite view: that all human relations and human-environment relations proceed by some ESP process and are, immediately after the fact, reported to our awareness in a form that allows us to infer that our acts were individually purposive. There are quite respectable scientists who suggest that all human purposive thought is after the fact of our behavior, not before it, and that our thinking is simply a kind of news report of what has already happened.

I submit that we are free to choose which view to take. The view that we think about and "cause" our own behavior, has severe limitations—one of which is that we cannot resolve the matter of ESP in that popular paradigm. The second view bypasses our human preconceptions and opens up the natural world for investigation.

Hominidization, that point in human evolution where we locate the beginning of conscious thinking, enabled us to live in a theater of our own design. Because, perhaps, we are a recently evolved species, our life-theater simply isn't good enough for our continued survival. We have believed and carried on much of our scientific research within the frame of our arbitrarily constructed reality. We have studied our own theater and how it works. And we have mistaken that for natural reality.

As Gregory Bateson has written: "Insofar as we are a mental process, to that same extent we must expect the natural world to show similar characteristics of mentality."[8]

When we have transformed ourselves such that we can understand the natural workings of ESP, we will then automatically share its possibilities.

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DISCUSSION

NASH: Dr. Byers, would you consider movements through a school of fish or through a flock of birds nonverbal communication? And if so, would you consider it to be non-causal? And then my second question is, do you think one-sixteenth of a second frame is sufficiently long to establish that the woman's leg did not move before the man's eyes?

BYERS: Well, in order to answer your first question, I will have to rephrase it to: am I willing to ascribe the label of nonverbal communication to this or that—and anyone can put any labels he likes. I don't like them. I'm interested in finding out how behavior is organized within one person or within a group, including schools of fish. We can go to ninety-six frames a second rather than a sixteenth. What the data show on the film is that within a sixteenth of a second, they're together. Beyond that, I can't say. We don't believe that within a sixteenth of a second would represent response time.

MORRIS: When I was at U.C. Santa Barbara, a fellow in the music department, Stephan Krayk, talked about the practicing procedure that he and the other three members of his string quartet used. They would spend a certain amount of time practicing face to face on a new piece, and then would do their final rehearsals by each going to a separate corner of the room, facing away from the others and then playing. They would consider themselves ready for their performance when they could conduct their business totally removing cues from each other in that way. And since you said you'd been a musician yourself, I wonder if you find additional parallels of this sort of sharing of communication in terms of shared musical performance either just privately or on stage.

BYERS: Yes. I believe that there are a great many activities that we call sport or art or one thing or another which, at the appropriate level, are actually exercises in synchronization. I don't understand why they did that particular thing in that way; maybe it had some value. But I would consider perhaps the highest form of communication the string quartet or the jazz improvization group who follow the same beat very closely, although each in terms of his own personality may bend it this way and that, but never lose it. Then we have that form of human group interaction which is saying to everybody, "I am closely in tune with the group and being entirely my own individual self at the same time." That's very difficult to carry out in real life, so that we go to jazz concerts, we play music, we sing in choirs, we walk down the street together, we sit in classes, we sit in meetings like this with one or another form of visible synchronization, which reminds us where we are and who we are in relation to each other, even though we pretend that we're paying attention to the content.

RUDERFER: In your talk, you mention communication where there was a lag of exactly 0.1 seconds, by which I presume it was distributed around a mean of 0.1 seconds, and this is the case of the two men shouting at each other. This 0.1 seconds is a very interesting number because it represents the refractory period of a neuron very closely. If we use that as a model, a particular number of neurons which are turned on as an expression of an emotion, which, of course, would be changing all the time—this would indicate that the end of the first person's momentary emotion within that 0.1 second, was picked up by the other person, which allows the model of some form of communication between the brains of the two. I mean, direct communication between the neurons of the two if these numbers are correct and accurate. So that indicates that perhaps your model of nonverbal communication is just that—a form of unobservable communication between the neurons and brains.

BYERS: I think careful research on this shows some variation, first of all, since there's nothing so mechanical in humans and it would come out at a fraction that had a decimal point with a lot of numbers. But I believe, although we haven't the empirical evidence yet (it shouldn't be difficult to get), what we're talking about is the alpha rate. I have a film of Eskimos doing nothing but standing around and what movements they do make are all falling on a rhythm train. In this case, one tenth of a second would be very fast to move, so the visible train is about four-tenths. This is also a standard military march rate; it's also an even octave of heart rate at rest. I believe there is a lot of human activity, that this is not just a communication phenomena and that it does as you say,

represent neurological activity. People become mutually entrained and if you like to think of it as neurons linked, I think of it as being an artifact of our culture—that we think of humans as individuals and I prefer the Asian model in which the fingers of a hand are individual and yet they're part of one thing. That the human species and probably other life is part of one whole and that from time to time we invoke that whole, and at other times we stress the individuality of the parts. I don't disagree with you. I think that's a reasonable interpretation.

RUDERFER: The only reason I brought it up is because if that interpretation also fits the facts, then you have two possible interpretations, and the second one is exactly what is required for ESP communication. It differs, it seems to me, from what you said before—that you didn't believe it was essentially an ESP mode of communication.

BYERS: This is partly a matter of language. You see, while I'm not addressing ESP directly, I'm presenting evidence that covers ESP, and what I intended to say is I'm not inclined to do the labeling. That here's the evidence, here's what we're doing, and this is so close that I think it's the same thing, but I don't want to carve it out and say, "Ah, ha—this is ESP." That's just the observable relationship.

BARKER: I'm not entirely sure that I understand exactly what you're saying, so if you'll forgive me, I'll ask it as a question and check up with you. What I understand you're saying is that people can get it together in the presence of a very wide range of sensory cues which have biological indices which are measureable. Presumably, if I understand you correctly, the same kind of thing is happening in the absence of any kind of sensory cues when what we call ESP occurs. Is that correct? Is that what you're saying?

BYERS: Well, yes, but I would amend that slightly. I don't really believe that we have yet had the wisdom to look at all the phenomena that are involved in human relations. I mean, neither Dan Stern nor I have any explanation whatever of why eye contact produces what it does. I can easily demonstrate that in almost all instances when two people make eye contact, their arousal state as measured by GSR goes up. I have no idea what's happening. That is, I believe there are processes involved in the wave kinds of things that may very well be in there. There has been work done on biological effects of small ions and types of electrical activity beyound those which we understand at the moment, even though we have instruments that will measure the contrasts.

BARKER: Are you suggesting that there is some kind of psychobiological phase lock which occurs between two individuals in the absence of sensory cuing, that occurs simultaneously with ESP?

BYERS: Well, yes. But what I intended to say there too is I don't think we know what the full range of sensory cuing is. We only know that which we have been able to say we see and label. One of the reasons I don't like the expression ESP is that it implies extrasensory. Now I don't believe the world is carved up into sensory and extrasensory. It's only *we* who are carving it up that way, but we can't see that with our current lenses in technology. I think when we get on the other side of that, we'll drop the "para" in paranormal, the "E" of ESP and understand how the show works. It's our inability to see this, and it's our, in a sense, inappropriate, unnatural way of carving up the world that has given rise to these strange labels like "normal," "paranormal," "ESP," and "SP," and it's all part of one show. We have gotten muddled in the process of trying to figure it out.

STORM: I have two questions and they're both asking for counsel and advice. One is, why have we gotten muddled? While I have some ideas myself, I'd like to know what you think. And the other is, I've read off and on about entrainment and I've never been impressed with the idea until now. I want to know what can I do in my daily life and what can I do as a teacher in particular so that I can capitalize on this entrainment process?

BYERS: Well, I give my classes lists of exercises to achieve just that. First of all, to become aware that rhythms exist, that they exist between people. To sense just by the experience of watching whether they feel good or bad internally about their relations to rhythms, so that they become sensitive to them. I would maintain that the teachers of small children should be assessed and hired on the basis of their capacity to adapt to the range of rhythms of other people, rather than knowledge of curriculum materials. And I would consider that our biggest problem in the area at the moment is devising ways of becoming clearer about how we sensitize people to their rhythms. How do we devise exercises which will make them more aware. Because that's what human relations at this lower level is all about. We're just beginning to look at groups and beginning to look at film which can be slowed down and seen at a slower speed. It will, indeed, also help to meditate.

STORM: I smell a little threat of control as of *1984* as we become more and more adept at managing entrainment. Do you?

BYERS: No. That's not unfamiliar to me. I worried about that at one time. You see, I do recognize that Hitler used entrainment to great success in his enterprise in marching. So did the peace marchers in Washington. There's no content involved. This is a human mechanism. If our consciousness is such that we want to control and do each other in, sure, this is a tool. Same as a knife, you can use if for good or harm. But I believe that as we become more aware of that, at the same time we will be less inclined to use it destructively, although there are always those who do. On the plane yesterday, I read two things in *Brain/Mind Bulletin*. One in which Willis Harman, a social policy analyst at Stanford Research Institute, said science is a cultural artifact, a partial look at partial reality. The other one was in a book called *Cognitive Psychology and Information Processing: An Introduction*, by Roy and Janet Lachman and Earl Butterfield. A quote from that is, "Joseph Weitzenbaum has recently gone so far as to conclude that all scientific claims, even those based directly on mathematics and formal logic, are fundamentally acts of persuasion. This conclusion may sit badly with some of our colleagues. However, it is consistent with some well thought out views of the scientific enterprise. We cannot but agree with the conclusion."

ULLMAN: I think a good many parapsychologists are just as uncomfortable with the terminology as you are. They don't like words like "paranormal," and even "parapsychology," and come up with neutral terms for something we don't yet understand. Of course, the investigators in the Soviet Union, no longer able to sweep the data under an idealogical rug, advocate what I think is a very wise course. Let's look at all our disciplines in terms of the existing mysteries and see how psi fits in. Perhaps from a historical point of view, parapsychologists at first had to say we're different, but the time has come to say we're no different and move on from there. The other comment was that when you spoke about being in tune with a group and being yourself at the same time, you were really giving a definition of healing, psychotherapy, and emotional growth.

IRWIN: Given some participants in a standard extrasensory testing situation, what type of indices would you envisage being used to test your interpretation?

BYERS: Well, I'm not inclined to take people into a lab—poke, prod, or do other kinds of experimental things with them. I've run into too much research in which one has made observations of the naturally occurring phenomena that the psychologist has taken into the lab and said, "Ah, ha, it doesn't work." One of the best examples of that is the

tenth of a second cycle that's the basic underlying rhythm; most behavior cannot occur within tenths of a second. This has been taken into the lab and they have come up with seven cycles per second as more common—so that some writers have said, there is a variation between seven and ten. What I have found is that when people are in communication, the invariable observable rhythm that can be derived from film is based on an underlying one, two, four-tenths of a second—the octave relationships there. But when people *perform*, such as radio announcers, newscasters, that does not show one-tenth of a second. What happens when you go into the lab and ask people to do something in what amounts to a non-natural situation, you get results which are almost guaranteed to confuse the natural observations.

IRWIN: Can you imagine a natural situation occurring in which such a test could be made?

BYERS: Film any dyadic or group interaction and start looking at onsets of movement.

IRWIN: I was talking in terms of testing your interpretation of ESP.

BYERS: Oh, I haven't considered it in terms of ESP. My concern has only been how the behavior is organized and finding that in communication, sharing is a better concept than exchange of messages. I extrapolate that to ESP and suggest that what we're doing is sharing, not information, but as Monte Ullman suggested earlier, feeling states.