11 · INDIVIDUAL, GROUP, AND CULTURE: A Review of the Theory of Human Communication

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SCIENTIFIC theory traditionally distinguishes between that which is assumed to exist in reality and that which is actually perceived by a human observer. The difference in the picture between assumed reality and perceived reality is explained as being due to the peculiarities and limitations of the human observer. In the study of human communication, it is difficult if not impossible to distinguish between assumed and perceived reality. As psychiatrists and social scientists we are, by definition, interested to inquire into the ways an observer perceives the world rather than how this world really is, because the only method we possess to infer the existence of the real world is to compare one observer's views with the views of other observers. Discrepancies in these views then permit us to make some inferences about the psychological processes of the observers, and by combining the various observations to gain a picture of what one might call assumed reality. Whether this assumed reality is a true picture of what really happens, nobody is in a position to decide.

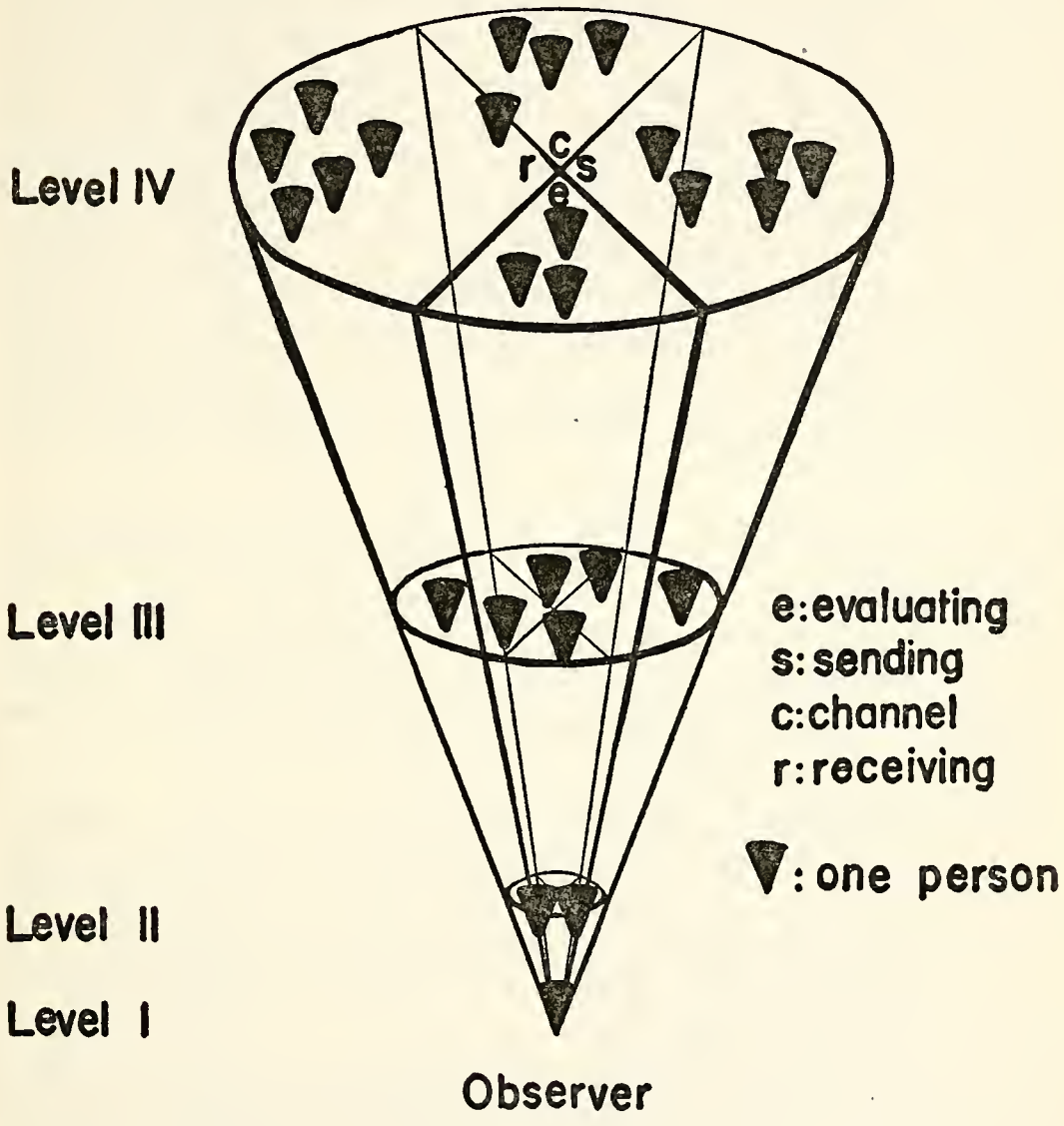
None the less, the assumption of "reality" is usually helpful. The closest approximation to what the physicist calls "reality" can be obtained, in the field of communication, by assuming that a superhuman observer looks at human communication

from a position outside of the social systems which he studies, so that he, as an observer, is unlikely to influence the phenomena he is going to observe. The picture which he might obtain from such a vantage point is sketched in Figure 4 and described in detail in Table D. In constructing such an outline, the assumption is made that a human observer can focus upon various aspects of communication, with various magnifications, while the limitations and characteristics of his perceptual apparatus remain the same. The analogy that can be referred to at this point is the field of vision seen when looking through a microscope. Depending upon the magnification used, the structure of the objects studied in the field will appear in smaller or greater detail, and as magnification increases, the area of the field must decrease. Similarly the human observer, when looking at communication, can have only one focus at any one time. Depending upon whether he focuses upon small or large entities, he will see the various functions in greater or smaller detail. It follows that the processes of receiving, evaluating, and transmitting can be observed at the intrapersonal, interpersonal, group, and cultural levels of organization. In Figure 4, the various processes of communication have been represented by sectors of a cone. At the intrapersonal level, the focus of the observer is limited by the self, and the various functions of communication are found within the self. At the interpersonal level the perceptual field is occupied by two people, at the group level by many people, and at the cultural level by many groups. Concomitantly, in each of these fields, the importance of the single individual diminishes, and at the higher levels one person becomes only a small element in the system of communication.

The focus of the human observer is not fixed; rather it has to be viewed as a fluctuating or oscillating phenomenon in which quick glances are taken rapidly at various levels and at various functions. Communication is an extremely dynamic phenomenon with a rapid rate of change of levels and of functions, which range from evaluation to transmission and conduction.

Matters are relatively simple if we assume the existence of an observer looking from outside at our human communication

THE LEVELS OF COMMUNICATION



systems. Matters become more complicated if we introduce a human observer who himself is an integral part of the system. For psychiatric purposes, the observer can be assumed to operate at the interpersonal level, and hence we shall discuss matters of communication as pertaining to an observer who operates

at this level. In other words, the observer, who in this case happens to be the psychiatrist, explores the examinee's communication system at the interpersonal level and makes inferences as to the events which take place at the intrapersonal level. In addition, still operating interpersonally, he may make inferences at other levels and may even communicate these to the patient, interpreting to him, for example, the culture in which he lives. But regardless of whether the scientist chooses to observe communication at the interpersonal or at the group level, he must at all times determine his position as observer. This involves not only a clarification of the levels at which he operates but also an identification of the functions which he possesses within the system of communication which he is in the process of studying. The identification of the observer's position we shall term the social situation or the context of communication.

I. The Social Situation or the Context in Which Communication Occurs

Each person has his own views regarding the label of a social situation (see p. 398 in ref. 149). Agreement and discrepancies in the interpretation of the situation depend upon the following processes:

A. "Perception of the other's perception," or the establishment of a unit of communication (see pp. 203, 208, 280).

B. The position of each participant and his function as observing reporter (see pp. 24, 197, 199; also p. 110 in ref. 147; p. 189 in ref. 180).

C. Identification of the rules pertaining to a social situation (see p. 28; also p. 401 in ref. 149).

D. Identification of the roles in a social situation (see p. 27; also p. 405 in ref. 149).

II. *The Networks of Communication*

All types of network (p. 29) are coexistent, but the relevance of one of these is determined by the participant's pur-

TABLE D

The Specification of Networks at the Four Levels of Communication

LEVELS	ORIGIN OF MESSAGE	SENDER	CHANNELS	RECEIVER	DESTINATION OF MESSAGE
I. Intrapersonal "within one"	Sensory end organ or Communication center.		Neural, humoral pathways and contiguous pathways.	Communication center or the effector organs.	
II. Interpersonal "one to one"	Communication center of person sending message.	Effector organ of sending person.	Sound, light, heat, odor, vibrations traveling across space on the one hand, chemical or mechanical contact with material or person on the other hand.	Sensory end organs of receiving person.	Communication center of person receiving message.
III. A. Group "One to many" (centrifugal messages)	Communication center of group: head man or committee.	Person specializing in being a mouthpiece or executive for the communication center.	Multiplication of message through press, radio, loudspeaker system, movies, circulars, etc.	Persons engaged in receiving and interpreting incoming messages for the group—readers, listeners, theater spectators, critics.	Many persons who are members of a group. Identity of persons is unspecified by name; they are known by role. Group is specified.
B. Group "Many to one" (centripetal messages)	Many persons who are members of a group. Identity of persons is unspecified by name; they are known by role. Group is specified.	Spokesman who expresses the voice of the people, the family, or other small groups at the periphery.	Mail, word of mouth, or other instrumental actions of people.	Professional specialists who engage in receiving messages: news analysts, intelligence service, government agencies. Condensation and abstraction of incoming messages.	Communication center of group—executive, committee, or head man.
IV. A. Cultural "Space binding" messages of "many to many"	Many groups unspecified by name, known by role, which express moral, aesthetic, or religious views—e.g., the clergy, children.	Groups specializing in the formulation of standards of living: legislators.	Script, written and unwritten regulations and laws. Customs transmitted by personal contact often implicit in action. Persons become channel.	Groups engaging in the reception and interpretation of cultural messages such as judges, lawyers, scientists, ministers.	Many groups composed of living people, unspecified by name, known by role.
B. Cultural "Time binding" messages of "many to many"	Many unspecified groups the members of which are older than the receivers or already dead.	The voice of the past, frequently a mythological or historical figure.	Script, material culture such as objects, architectural structures, etc., and personal contact from generation to generation often implicit in action.	Group specializing in the reception and interpretation of the messages of the past—archaeologists, historians, clergy.	Many unspecified groups the members of which are younger than the originators of the message.

poses. The observer will focus upon the participant's exchange of messages, and the extent of the network used will determine at which level the observer will have to analyze the events (see p. 7 in ref. 151). The choice of the network also determines the metacommunicative processes (p. 203)—that is, the explicit or implicit instructions of the participants to each other and to the observer as to the way the messages ought to be interpreted.

A. *The intrapersonal network* is characterized by the fact that:

—The self-observer (see p. 199) is always totally participant.

—Both the place of origin and the destination of messages are located within the sphere of one organism (see p. 38); and the correction of errors is therefore difficult, if not impossible (see p. 199).

—The system of codification used can never be examined (see p. 200).

Within the intrapersonal network (see p. 29) three distinct groups of functions can be distinguished:

1. *Reception* includes both proprioception and exteroception. Proprioception gives information about the state of the organism; in popular language these data, if consciously perceived, are referred to as feelings or sensations. In proprioception the end organs are predominantly internal and react to chemical and mechanical stimuli (see p. 30; also p. 22 in ref. 150); in exteroception the end organs are located on or near the surface of the body, and give information about relations between the self and the environment (see p. 197; also p. 23 in ref. 150). The exteroceptive end organs react to wave phenomena, such as light and sound, in addition to other mechanical and chemical stimuli.

2. *Transmission* includes both propriotransmission and exterotransmission (see p. 30). In propriotransmission, nervous impulses travel on the efferent path-

ways to the smooth muscles, and chemical impulses travel along humoral pathways for purposes of regulation of the organism. In exterotransmission the contraction of the striped muscles is used for action upon the outside world, including communication with other individuals (see p. 203).

3. The *central functions* include coordination, interpretation, and storage of information (see pp. 169, 183).

Information received through proprioception or propriotransmission is complementary to information acquired through exteroception or exterotransmission (see pp. 22–23 in ref. 150). The complementary relation between proprioception and exteroception is such that complete information could only be obtained by a combination of these two functions. Such total combination seems, however, to be impossible, and in its functioning the organism seems to specialize at certain moments in one or the other mode of experience, with resulting failure to act upon data which might have been derived from the other mode: pain may preclude external perceptiveness, and exposure to violent external events may preclude awareness of pain or fatigue.

B. *The interpersonal network* is characterized by the fact that:

—The potentialities for receiving, transmitting, and evaluating messages are equally divided and therefore the system consists of potentially equivalent parts, the participating individuals. The directional flow of messages characteristic of the neural network is therefore absent. Both the place of origin and the destination of messages is known to the senders and the recipients; therefore correction of information is possible.

—The person engaged in observation of others must of necessity be partially participating, partially observing. When observing, a bigger Gestalt is con-

sidered; when participating, the Gestalt is narrowed in accordance with the individual's purposes. Both participation and observation are parts of experience and therefore means of collecting information. The two types of information so gained complement each other, but the complementation is never complete (see p. 203; also p. 98 in ref. 120; p. 393 in ref. 149). At any one moment the individual must specialize in one or the other of the modes of experience and must therefore fail to collect the information which might have been gathered by the other mode.

From this complementary relation and from the fact that the gathering of complete information is impossible, it follows that the human individual can never perceive himself perfectly in relation to others. There is always a discrepancy between his more proprioceptive view of himself and that knowledge of himself which he gets through his own exteroceptors, or from the observations of others (see pp. 394–396 in ref. 149). Similarly he cannot entertain at the same moment both a proprioceptive picture of himself and a picture of himself as defined by his status or social situation (see p. 408 in ref. 149).

C. The *group network* is characterized by the fact that:

—The potentialities for receiving and transmitting are unequally divided among the persons. This restriction or specialization of function is characteristic of all organization and has the effect of re-establishing in some degree the directional flow of messages. It also unites the individuals into a larger unit capable of carrying out the three great functions of reception, transmission, and coordination.

—Typically, in larger organized groups only the source or only the destination of many messages is distinct and known to the participants; the unknown part is related to the fact that individuals may either act as source and destination, or as channels which merely

relay the message to the other individuals. The correction of messages is therefore delayed and frequently is possible only by short-cutting the traditionally established pathways (see p. 39).

Essentially two types of messages can be distinguished:

1. Communication of "one person to many" constitutes primarily a one-way flow of messages from the center to the periphery. Reply to this flow is delayed, if it occurs at all. The "one" person is more actively engaged in transmission, while the "many" are more concerned with receiving (see p. 38).

2. Communication of "many persons to one" is primarily a one-way flow of messages towards a center. Progressive abstraction of messages is necessary because of the limited capacity of the receiver. The "one" person is more engaged in receiving, while the "many" tend to engage in active transmission (see p. 39).

From what has been said about complementarity, it follows that the completeness of information obtained by any given individual in an organized group decreases with every increase in complexity and differentiation of the system. In the organized groups each individual is assigned specialized functions, either as observer or as transmitter or as coordinator, and this specialization implies impoverished perception. It is conspicuous also that where two groups are in contact, the information upon which the members of each group base their pictures of their own and of the other group is inflexible, stereotyped, and projective (see p. 402 in ref. 149).

D. *The cultural network.* In addition to intrapersonal, interpersonal, and organized group networks, which are variously perceived as such by the individuals, there is a host of instances in which the individual is unable to recognize the source and destination of messages, and therefore does not recognize that these messages travel

in a network structure. For lack of a better word we describe this unperceived system as the cultural network, since many of the premises of every culture are carried in this way (see p. 41).

It is characteristic of this network that messages are transmitted from many persons to many. The sources and destination of messages are, however, unknown; the potentialities for receiving and transmitting are unascribed; and the correction of information is therefore impossible (see p. 40).

When participating in a cultural network, people are in many cases unaware of being the receivers or senders of messages. Rather the message seems to be an unstated description of their way of living. They attribute to it no human origin, but they themselves transmit the message to others by living in accordance with its content, which they may regard as "human nature" (see p. 41).

Examples of messages which are commonly carried by such an unperceived network are:

—Messages about language, and linguistic systems (see p. 43).

—Ethical premises (see p. 42; p. 108 in ref. 147).

—Theories of man's relation to the universe and to his fellow man (see p. 42).

In addition to being implicit in the daily life and material culture of the individual, such messages may be carried also by such vehicles as:

—The printed word (see ref. 73; ref. 117): historical and mythological documents and monuments (see p. 43; also p. 108 in ref. 147).

E. *Short circuits in larger networks:* In addition to the well-established channels along which the flow of messages runs, it is common to find short cuts which reduce the time of transmission and diminish the number of intermediary stations. In the case of the large superpersonal networks, interpersonal links are introduced which personalize the mass communication (e.g., the personal

emissaries of government). In intrapersonal or interpersonal networks, the function of the short circuit is to convey alarm signals (see p. 39) which maintain the cohesion of that particular network by giving warning of its threatened dissolution, often with good effect (e.g., anxiety) (see p. 37).

III. *Technical Characteristics of Communication*

The technical description of communication includes statements about the communication machinery, the methods of codifying data, the effect of these data upon the behavior of the system, and a general theory of the nature of information (see pp. 168–211).

A. *Statements about codification.* In all communication occurring in networks of different orders, it is necessary to describe the transformation (codification) whereby data about events and objects of various kinds come to be represented by other events (the message) in the network. The present state of knowledge is totally inadequate to permit any precise statement as to the technical nature of internal codification. It has, however, been suggested that the brain is preponderantly digital in its functioning and that this digital functioning is elaborated to permit the mental handling of Gestalten.

1. At the intrapersonal level: To describe codification is to specify the relation between the neural, chemical, and other signals and the internal or external events to which they refer (see pp. 168–211, 199).
2. At the interpersonal level, the description of codification will define the symbolization processes of language together with the more tenuous symbolisms present in nonverbal communication (see p. 201).
3. At the group level, in addition to the verbal and nonverbal processes, present at the interpersonal level, we meet with new types of symbolization not ordinarily regarded as such. The patterns of the organiza-

tion of the group leave traces in the participating individuals. However, inasmuch as these individuals do not act as stations of origin or destination of messages, but often as channels only, codification at this level requires intactness in the organization as a whole. The group in action possesses the information, not the individual (see p. 39).

4. At the cultural level, the codification is again entirely different. At the intrapersonal and interpersonal levels, codification is characteristically atomistic: separable and isolable events, such as the neural impulse or the word symbol, stand for separable events in the outside world. At the group level, there is apparently no such atomism; and the organization of the group is evidence of codification. At the cultural level the organization is beyond the reach of observation of the individual, who implicitly carries the cultural message in his actions of everyday life. Being an infinitesimal part of the network, the individual's function as communication channel is overshadowed by the importance of intrapersonal and interpersonal events (see pp. 40, 44, 221, 225).

B. *Quantitative statements about the functioning network.* These include statements about:

1. *Capacity of receivers,* transmitters, and channels; the actual load of the circuits (overload, jamming, underload) (see p. 106 in ref. 155).

2. *Threshold Problems:* The definition of conditions which must be met for one relay to affect another. Description of changes in such conditions (e.g., due to age, past events, and the impact of hormones, toxins, and other physiological agents) (see p. 259 in ref. 107).

3. *Time characteristics of the relays:* Refractory period, latency, summation characteristics, and the like. These features are relevant at all levels, whether the relays

are neurons or human individuals (see p. 74 in ref. 180).

4. *Statements about upkeep, metabolism, and replacement of parts of the system:* The organizational continuity of the various systems is maintained, but the constituent parts are usually subject to constant replacement. It is therefore necessary to describe the processes by which new parts are assimilated into the organization of the system. This is achieved by study of the organism's energy exchanges, its exploitation of negative entropy in the environment for the maintenance of its own internal negative entropy or organization. Where the constituent parts of the system are human individuals, it is also necessary to examine the processes of exchange of information between persons. Experience of such interaction, being organized, determines in itself the future organization (see ref. 153; p. 20 in ref. 181).

5. *Statements about the stability and adaptability of the system:* These include statements about the variables by which the steady state is defined and a description of the limits of internal change beyond which the system is unable to correct deviations. These two aspects together define the conditions under which irreversible change must occur. Living within these limits can be regarded as the broad purpose of any system (see ref. 37; p. 116 in ref. 147).

C. *The informational state of the system.* At any given moment in the life of a system a large number of its characteristics are determined by previous events. While these learned characteristics are already subsumed in the total description of the network, it is convenient also to regard these features as an aggregate of information. In such special description previous events are referred to as "experience" and the effects of such experience are assumed to be codified messages or signs. It is also pos-

sible that many characteristics of the system, determined by genetics rather than by environment, can also conveniently be regarded as information.

For the observer, and even for the self-observer, data about the informational state of an organism can only be obtained by observing its self-corrective activities (see p. 201).

The informational state of larger networks such as the organized group is exceedingly difficult to estimate. However, it is possible to regard the changes in the social network which result from group experience—for example, war—as a kind of information. The seat of this information is not in the individual alone, nor is it contained in stored records, but rather it is found in the changed topology of the social pathways of communication, whereby the group as a whole is enabled to react in a modified way when faced with a repetition of the experience (see p. 181 in ref. 180).

D. *Knowledge and its effect.* Every message is to be regarded as a statement about the past, but every such statement within a self-corrective system necessarily has implications for the future and especially for future action on the part of the recipient. Every message is both indicative and imperative. From the observer's standpoint the indicative characteristics of a message are amplified by study of the system from which it emanates, while its imperative effectiveness is determined by the character of the system upon which it impinges (see p. 179; also p. 96 in ref. 155).

IV. *Interaction and Self-Correction*

The study of interaction is concerned with the effect of communication upon the behavior of the two or more interacting entities. This study therefore always involves making statements at two, if not more, levels of abstraction: there must be statements about the participating entities, and there must also be statements about that larger entity which is

brought into being by the fact of interaction. Even in the relationship between a person and a thing, interaction occurs: the person is self-corrective as a result of his observations of the effect which his actions seem to have upon the thing (see ref. 134). Similarly, authoritarian relationships (when one or more participants are treated as "things") can never be fully described as one-way communication. Only when information regarding the effects of action returns to affect the system is self-correction possible.

It follows from this that interaction sequences always and necessarily contain an element of unpredictability for the participants. At a given instant the individual does not yet have the information which he will have later when the effect of his action becomes observable. Any predictions which he may make about his own later actions must therefore contain an element of guesswork. If he is rigidly bound by his own guesses to the extent, for example, of ignoring the later information, the larger system of which he is only a part will be rigid and incapable of self-correction.

The study of interaction thus becomes a study of the success or failure of ongoing self-correction. It is concerned with the ability of an entity to predict events and also with the entity's ability to modify its action when these predictions are shown to be in error (see p. 263; also p. 97 in ref. 155; p. 113 in ref. 180; ref. 160).

A. *Interaction at various levels.* Interaction can be viewed as a result of a synthesis of the following functions: First, we have the capacity and extent of the network. Second, we have the conceivable topology of the network—that is, the way in which the aggregate of alternatives can be arranged. Third, we deal with the problems of predictability—that is, the information which a part possesses about the other part and about the whole system.

At the intrapersonal level, the capacity and the extent of the network are more or less known to a scientific observer, who may be the participant himself. At this level the possibilities of rearrangement are limited, and there-

fore the organism can somewhat predict its own reactions. At the interpersonal level, the capacity and extent of the network are still within assessable range. But because the topology of the interpersonal system is undefined, it is difficult if not impossible to predict future events within the realm of the system.

At the group level the extent of the network may be large, but inasmuch as there is a specialization of the functions of the interacting individuals, the behavior of the group as a whole becomes more predictable than the behavior of non-organized aggregates. It is, however, necessary to add that one effect of defining the function of the participating individuals is that the individuals themselves become less able to perceive the characteristics of the total group from within.

At the cultural level, the temporal and spatial limits of the network are not perceptible to the participants, who also are incapable of perceiving its topology. Therefore, for the participants, predictability is minimal and excessively difficult for the scientific observer.

At all levels, the degree of self-correction is a function of the entity's ability to predict (see ref. 134).

B. *Information and action.* In discussing information and the exchanges of information, it is necessary to insist upon a dual relationship between information and action. At one level it is true that goal-directed behavior is corrected by processes of feedback. At another level, it is necessary to recognize that action liberates codified information which is unavailable until the action is in full progress. This relation between practice and learning obtains not only at the intrapersonal level, but also at all other levels.

Destructive interaction, in which individuals move either towards self-destruction or towards breaking down the system in which they participate, may be due to several factors. First, such action may result from incomplete information about the self, the other per-

sons, or the system. Second, there are the discrepancies in the evaluation of goals and instrumental actions; for example, a self-maximizing tendency (see p. 183) may lead to destruction of some larger system which was instrumental and necessary to the existence of the self. In special cases, the self-destruction of the smaller entity is instrumental to the survival of the larger system. The purpose of any action can, as of today, be discussed only after delineating the system to whose maintenance the action contributes. For such delineation an observer is necessary. The problems of purpose in cosmic and biological systems beyond the scope of our observation and comprehension cannot be meaningfully discussed.