Patterns for humanizing the information sciences include recognizing essential "humanness," taking a holistic approach to the subject field, and being aware of the epistemological nature of how people communicate and relate to others and themselves. The complete inclusion of the human factor in information theory researches can only amplify the field. (CH)
SOME CRITERIA FOR HUMANIZING

By

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Some Criteria for Humanizing

Introduction and Focuses

It is particularly appropriate that we should be dealing at this time with the subject of "humanizing". In the accumulating enormous range of information and deeper understanding of many other cultures than our own, we can see how a society's attitude toward a human being has changed. As the metamorphoses of our ways of knowing throughout our cultural history begin to take shape, we need a way to see through the maze of information, to find broad outlines and unifications. A good deal has already been written in this direction. It is hoped that the following considerations may move this trend forward in an area of great concern to all of us, wherever we may be living on this earth and - it must now be added - in the farther reaches of space.

"What is implied in the title 'humanizing the information sciences'," we may ask. Let us explore some differences between "human" and "non-human". Human has been contrasted with machine-like, mechanical, devoid of feelings. Human may also be contrasted with animalistic, a perjorative term when referring to a person. Or, human may be differentiated from some mythical superhuman being, with implications of inferiority. Thus, we say, "He is only human if some one makes a mistake or loses control of his feelings, is involved in some misdemeanor, or acts irresponsibly. The growth of studies of our "human potentials" is giving us a new feeling about ourselves.
Articles are being written on "humanizing work" in the sense of giving the worker a feeling of dignity on his job, providing a chance for using his imagination, getting away from dull mechanical routine.

"Humanizing" is different from "anthropomorphizing" when referring to a machine, or a computer, for instance. Those who work with computers know their present limitations, besides their great help. As John C. Eccles said, "... the computer does not recognize unexpected messages ..." 1

Would cultivating an appreciation for artistic works influence a person toward behaving more "humanly"? Many believe so, or did believe so until they became disillusioned from events in World War II. It is well known that the Nazis spend evenings listening to Mozart and Beethoven and the very next morning committed horrible brutalities in the concentration camps a few miles away.

In his paper on "Communications and Information Theory" Dr. Dan McLachlan, Jr. gives us a clue to the relation of "human-ness" to the theory, when he writes:

Meaning, value, want and need are not to be discussed here because they have not been investigated to any extent such as has been done on information theory or communication in general. These words are rarely found in books of science, and it is unfortunate that they have not been because these are such human words [italics mine] and the future decency of our human race depends so much on our understanding of them. Such expressions as "moral values" or "cultural values" are difficult to handle. Such terms as "in want" or "in dire need" have a pretty diffuse line of distinction. 2

While any terms we use - no matter which - involve some cultural assumptions and problems of ferreting them out, are there some ways of speaking about "humanizing" that do not get us into as much of a quagmire as some others? If at every
moment of investigating, the person who is observing becomes an integral part of the observation, it is not possible to get away from some kind of values, or from the assumptions hidden in the very terms and categories that are used to talk about the research.

**Some Criteria as Guides**

The following considerations are suggested as guides in our context for investigating:

1. The kind of behavior we classify as uniquely human.
2. The holistic character of the premises, based on the principle of the organism-as-a-whole-in-an-environment.
3. The terminology used for investigating, and its applicability to the functioning of the human nervous system.
4. It would deal explicitly with processes of evaluating.
5. The "circularity of human knowledge" would be recognized.
6. Process and change would be taken into account.
7. An epistemological awareness would be included.

This list is quite obviously partial; it does not include a large range of other factors. It is from the point of view of methods of evaluating. Some formulations of general semantics, and of others, will be drawn upon here.

**What do we call "human"?**

In differentiating human from non-human, a terminology of what a person does, a functional approach, is used in general semantics. Man's ability to use symbols (verbal, non-verbal, numerical, musical, etc.) to relate himself through them, to speak about them, to manipulate them, to create new symbols indefinitely, to "bind time" through generations by means of them, beyond any activities of other forms of life, places him
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in a different dimension of living.

In consequence, through our scientific formulations, our artistic forms, our mythologies and religions, etc., we try to cope with and understand our universe and our relationship to it. We humans may be called a "symbol-using class of life", and the powerful effect of a symbol has been both well known and deeply felt. "... as long as we remain humans ... the rulers of symbols will rule us, and no amount of revolution will ever change this", Korzybski wrote. To realize this, however, he saw as our hope for the future, as this leads us to scientific researches in the field of symbolism and semantic reactions and we will demand that our rulers should be enlightened and carefully selected.

Writing about symbolism in a context of mythology and religion, Joseph Campbell quotes from the late Father Thomas Merton's article on "Symbolism: Communication or Communion?":

The true symbol does not merely point to something else. It contains in itself a structure which awakens our consciousness to a new awareness of the inner meaning of life and of reality itself. A true symbol takes us to the center of the circle, not to another point on the circumference. It is by symbolism that man enters affectively and consciously into contact with his own deepest self, with other men, and with God. ... 'God is dead' ... means, in fact, that symbols are dead. 4

Holistic Orientations

The holistic outlooks which were emerging at the beginning of this century have now penetrated deeply into many areas. The formulation of "organism-as-a-whole" turned out to be insufficient, as it did not take into account the environment. Neither was a "physical" environment sufficient to consider: we are now seen to be individual concentrations of energy connected in countless ways by a great web of mostly unseen
influences and relationships. Our neuro-linguistic and neuro-
semantic environments are recognized as environments growing
more complex and interlocked day by day.

Although agreement might easily be given to such a holistic
point of view now, it seems that this is in fact extremely
difficult to put into practice. Most of us have reached
adulthood compartmentalized to some degree. Many techniques
are being developed to get to know the assumptions we live
by, to contact our feelings, to allow them to come to words
and/or actions, to let messages "reach" us, to learn to act
"as-a-whole" and "in-an-environment" which we shut out large
areas of from our awareness.

The use of hyphens in writing helps us to emphasize the
many connections. The use of etc., and the awareness in us
of etc. as an orientation, keeps us conscious that many more
factors enter in. We stay ready to look for more.

Keeping the channels in us open for receiving information,
letting its impact be felt and responded to appropriately for
the occasion, would be of central concern for humanizing.
Do we know when we are turning off some one, and how we do it?
Do we know when and how we do this with ourselves? What
conditions lead to messages being prevented from getting
through, or to getting distorted? These are some of the vital
problems of this conference.

As our awareness increases in many areas - our premises,
our choice of words, our style of writing and of speaking,
our gestures and actions, our unseen muscular responses, our
physiological reactions and brain waves, our fantasies and
dreams ... etc. - we begin to see how they fit together. One
criterion for talking about the relationships would be whether the language we use can be effectively applied to the structure of what is being studied.

Language similar in structure to the structure of the Human Nervous System

On neurological levels and from a functional point of view, what the nervous system does is abstracting, which includes summarizing and integrating on hierarchical orders. An approach in terms of "orders of abstracting" has certain advantages. "Abstracting" is sometimes interpreted as referring to an "intellectual" process, to an act of separating oneself from an ongoing experience. It is not considered so here, but viewed rather as a general characteristic of all protoplasm, which reaches its highest complexity in human beings.

If we use the word in a large sense, we could say that plants "abstract" certain chemicals from the air and soil for their nourishment and growth. Animals abstract on many more and different levels, but their ability stops somewhere. Just where it stops in certain animals, or how much it can be developed, is the subject of various investigations. A man is able to abstract on higher levels of complexity, not only chemically, perceptually, etc., but symbolically, indefinitely.

The process of abstracting is not likened here to climbing up and down a ladder, but as a circular process, continually grounded in what is going on. The notion of the "circularity of human knowledge" helps to convey the cyclic nature of neural activity as we remain connected with what we are selecting from, and projecting onto.

The work of Adelbert Ames and many others in perception points to the intimate connections between our assumptions and
what we "see", involving our expectations, feelings, wishes, needs, what we have learned to look for, etc. Actions resulting from identifications here may or may not be disastrous - perhaps a wrong diagnosis of a doctor. To order our experiences by speaking of "orders of abstractions" enables us to talk about it in terms of "lower" (sensel data, organismic reactions) or "higher" (verbal, generalizing, inferential) orders, and thus to give a unity to the process, rather than an elementalistic separation.

Making very high-order generalizations, hypothesizing, making up "maps" unrelated to any known territory (stories, fantasies, etc.) are a valuable part of being human. Our awareness of these, not identifying, gives us the freedom and flexibility to change them.

We are confronted with such questions as: At what point does information become mis-information? To what degree are we aware of our omissions or additions to information we get? Are there circumstances under which deliberate omissions, "slantings", etc., may be justified? When may withholding information be regarded as an act of kindness, or a criminal offense?

Processes of evaluating

To be able to be in tune with the flow of living events we need to give up our talking, to get beyond our usual frames of reference, to try to get in touch on deeper "silent" levels. We are learning the value of making contact without judgment, for deeper involvement, and know that being able to incessant stop our/judging requires practice. Of particular importance
for this is the practice of learning to become silent on non-verbal levels.

In what is called the "natural order of evaluation", the process level of ever-changing happenings, inferential and unseen, is more important than the first-order abstraction that we have constructed from it (what we perceive being a construct subject to distortion). The level of "sense data", the macroscopic object we "see", would be more important than the name or description we give it. The descriptive level would be more important, closer to the "facts", than a higher order generalization, and this, in turn would be more important than still higher-order inferences. In a hierarchy concerned with being close to what is going on, this would be a way to establish a criterion. In research, however, our inferences or reliability or hunches if checked may be of the highest importance, leading to valuable discoveries. The "natural order of evaluation" is a way of stating the importance of the processes. For instance, if we would see something we would call a "mushroom", and we would eat it on the basis of what we called it and what it looked like, the important thing would be what happens to us on chemical, etc., levels inside us.

The circularity of human knowledge

This formulation of general semantics involves the awareness of the hypothetical character of our knowledge. About this Korzybski wrote:

The world behaves as if its mechanisms were such as our highest abstractions lead us to believe, and we will continue to invent theories with their appropriate terminologies to account for the intrinsic mechanisms of the world we live in, ourselves included. We read into nature our own latest highest abstractions, thus completing the inherent circularity of human knowledge, without which our understanding of nature is impossible. 5
Circularity is related to what is called "self-reflexiveness", one of the premises in general semantics stated as: "A map is self-reflexive." If we were to make a map of the room we are in, we would be included in the map. In other words, the map-maker is in the map. This implies the realization that every observation represents a relation between the observer and the observed, the observer is part of the situation. It brings home to us the extent to which our attitudes, wishes, images about ourselves, etc., enter into everything we do. For instance, how we feel our relationship to another member of a group influences how we speak to him (feelings which may or may not be conscious). Or how we perceive that he perceives us. Getting a feeling of multiordinality, or awareness on different orders, helps one to flexibly change from one to another, not to shun paradoxes but to try to experience them, to test them. If we are more fully "awake" throughout our organism, without separating "feelings" and "intellect", we should be able to include different levels within our attention.

This can work positively or negatively, as for instance, in thinking about thinking, or fear of fear, or in the build-up of all kinds of complexities such as R. D. Laing wrote in Knots:

Jack sees that
Jill does not know
Jack does not know what
Jill thinks
Jack knows... 6

Processes and change

We may ask whether "future shock" is necessary. "Being present" demands flexibility. Non-clinging attitudes can be fostered through the language we use. Choice of terms is one
possibility, and the use of hyphens and quotation marks. Especially, the use of the devices of indexing and dating (a temporal index) in writing or just "thinking" help to make the words more specific for the changing, moving world. This especially applies to nouns. For example: Information Theory\textsuperscript{1963} is different from Information Theory\textsuperscript{1973}, United Nations\textsuperscript{1965} is different from United Nations\textsuperscript{1975}, brain wave\textsubscript{8 am} is different from brain wave\textsubscript{8 pm} in a given individual.

An epistemological point of view

Another way of setting up criteria for humanizing is through an epistemic analysis, or the general system of knowing special to a particular culture at a particular time. Such an analysis can be applied to how we communicate, and the awarenesses it brings of how we are relating ourselves to other people and to our world.

Korzybski had, in 1933, distinguished three periods of human development as characterized by their standards of evaluation: the pre-human and primitive period, the infantile or aristotelian, and the adult, or non-aristotelian, or scientific, period. He based his new system, which he called the first non-aristotelian system, on the outlooks formulated by Whitehead, Einstein, Keyser, Russell, Child, and others working in different fields at the beginning of this century. These outlooks were condensed into a methodology which could be applied and taught.

In 1940 the French scientist-philosopher Gaston Bachelard wrote of the evolution of scientific systems in the western world, and devised what he called an epistemological profile.
Bachelard postulated that the metamorphosis of man's thinking about himself and the world goes through five phases in the following order: 1) Réalisme naïf, 2) Empiricism clair et positiviste, 3) Rationalisme classique de la mécanique rationelle, 4) Rationalisme complet (relativité), 5) Rationalisme discursif.

This hierarchy was modified and somewhat regrouped by Dr. J. Samuel Bois when he introduced it to American audiences in the early 1950's. Bois used different labels and classified five stages of human thinking: 1) Primitive realism or sensing stage, characterized by unquestioned identification. Experience is classified in terms of subjective values, unchecked ("The water is hot, because I feel it hot."). 2) Empiricism or classifying stage. Observation becomes systematic, and happenings are classified according to elements, we look for the cause of the problem. 3) Classical Science or Relating Stage. This is characterized by relational and multi-dimensional thinking. We do not seek a single cause, but look for how factors interact. 4) Modern Science or Postulating Stage. Here we have passed from classical science to relativistic science, from the system of Newton to that of Einstein. 5) Advancing Science or Unifying Stage (now called the Participating Stage). Bois' 1970 detailed discussion of these five stages is given in his book, Breeds of Man. About the fifth stage, Bois writes there (page 113), "In expanding my own theory of that stage-5 experience... I see it as a form of transknowing, for which one may prepare oneself by the practice of a special skill. This skill evolves into an art, the art of participating consciously with WIGO (what is going on)."

This epistemological profile can be used as a tool, a
way of classifying, for analyzing a theory, or the key terms in an individual's vocabulary, or his usual mode of reacting, the words he uses in speaking, his style, etc. The psychologist Dr. Rachel Lauer has applied it to the way people express themselves in groups, how they sense the problem, what type of solution is looked for, what steps they would take, how they speak to each other, typical questions of the various stages, etc.

Relevant to the emergence in our culture today of stages 4 and 5 is a recent thought-provoking article entitled "Organismic Concepts in the Unification of Rhetoric and Communication" by Dennis R. Smith and Lawrence Kearney. The notion of organism these authors base their discussion on is that of Alfred North Whitehead in Process and Reality (New York: Macmillan, 1929). This general organismic outlook does away with the old categories of "objective" and "subjective", "observer" and "observed", etc., divisions which have been discarded in science for over fifty years, but not as yet, according to the authors, in their discipline. The development of empathy as an investigative tool in science, and of the simultaneous "immersion-detachment" required in empathy, would lead the scientist closer to art. Following an organismic point of view, the artist would at certain stages become scientist.

Many more implications of an "organismic" point of view are given, tending, as I see it, in a movement toward the unifying or participating stage. The "orientalization" that has been going on in literature, in science, in some psychologies, etc., as described in that article, raises some important questions of the relationships of some oriental ways of viewing the world with the "participating" stage.
In this context of Information Theory, we may learn from the method used by one teacher in Japan for what it tells us of attitudes toward communicating. Mrs. Mitsuko Saito-Fukunaga, a former student of Irving Lee at Northwestern University and now teaching at International Christian University in Tokyo, wrote in "Learning to Communicate" of how she is using the Dogen methodology of Zen, without the religious implications, for the teaching of listening skill. The particular technique involves exercise in a certain way of Zen painting called hoshu no tama, a circle with the top suggestive of flames. She writes:

Communication in Zen means to be one with the other. An awareness of 'one-ness' develops from emptying oneself and accepting the other. This is perhaps easier said than done. Zen trainees spend years at it...

Eventually, after much training,

The student feels that he can be one with anything. If he saw a cricket, he could become one with it. He thoroughly enjoys the little creature, no matter how insignificant it may appear to others. The cricket 'is everything' - the whole world - at that particular moment. In Zen this means to communicate with the cricket. Such power derives from awareness of one's real self, the formless self. One who has achieved this may sense communication with any and all things. He becomes acute to the marvelous world he lives in, and all things come alive...

Everything is interrelated; nothing exists in isolation.

To get "out of oneself", to "empty oneself" of preconceptions, pre-judgments, etc., to "accept the other", this is what is needed for empathy, for feeling one's way into the other, for letting the other person, object, etc. be, while feeling one's own strength, where oneself and the other are inseparably related in the whole.

This is not "identification" as the term is used in general semantics. It is not a situation where "A" evaluates
"B" as "the same as" or "identical with". The term "immersion-detachment" may be a better way to describe it, where both "A" and "B" are included in a state of higher-order awareness, in an inseparable relationship. It is related to our human ability to be aware on a number of levels in an integrated, deeper, "totally-present" way. It is a way of being "more fully human", and it manifests itself in each act of communication in whatever circumstance, in the way we move and the way we look at something, the way we listen and the way we respond.

In this conference there will be many ways of talking about communicating with different frames of reference. With the feeling that the "map is not the territory" it will be useful to try to come to the silent levels of happenings that are being talked about. And yet, here we see another paradoxical situation. We have become predisposed to perceive and experience in terms of the language habits we have learned. On one level "the word is not what it represents", and on another level it is a part of the total situation. An awareness of both these possibilities seems to give the greatest flexibility. In attempting to get beyond the words, perhaps a new formulation on a higher level will emerge in our common task.

The human being already is included in information theory in one sense - in the sense that "the person" is a part of every theory. In this conference we have the opportunity to illuminate the human role and the methods of evaluating in giving and receiving information in the intricate communicative networks still to be explored.
REFERENCES


