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# LIMITATION AND POSSIBILITIES OF COMMUNICATION

## New Pathways in the Foundation of "Cybernetic Thinking"

by Rudolf Kaehr and Eberhard von Goldammer

The question of unexploited human (brain) resources and their role in the development in the future leads inevitably to two basic questions:

- 1) What unnecessary barriers hinder the development of these resources?
- 2) Behind which unopened doors are to be found these possible new resources?

The development of productive forces has led to a situation in which it is no longer permissible to collectively gather social, scientific and technological actualities or data into a single unified or unifying context. The idea of a "*summum bonum*", – whatever form this concept may want to assume – has forfeited its synthesizing power.

It is necessary to develop a way of thinking for the future which does not simply replace as the basic premise unity with diversity but which rather deals with a more fundamental interplay supporting and relating both these factors operatively and textually.

The opening of new resources in thinking depends substantially upon whether the transition – a paradigm change – can be achieved from the restrictive Gödel-McCulloch-Pitts era (the "mathematizing power of Homo-Sapiens" E. Post) to a post-Gödelian epoch of scriptualizing and the methods of symbolising.

The American second-order cybernetics points in particular to the necessity of such a shift: "The logic of our western industrial corporate society (with limited liability) is unidirectional, deductive, competitive and hierarchical, and the keystones of its paradigm are the claim of objectivity and the theory of types, which exclude in principle the autonomy of paradox and of the individual. In the scientific revolution that we know create and experience, however, we perceive a shift from causal unidirectional to mutualistic systemic thinking, from a preoccupation with the properties of the observed to the study of the properties of the observer". (Heinz von Foerster)

In order to open up and research the range of possibilities, a concept of the "possible" must be worked out which is freed from being bound to the present-tense as is the conceptualisation and methodology of today. The range of the "possible" remains restricted to the "present" when the possible is understood only in terms of the criteria of "what is", "what not yet is", and "what in the future will be". The compulsion to determine the "possible" and the "future" from the present arises from the now predominant way of understanding time. As is well known, the concept of time has on the whole been eliminated from the natural sciences and has only recently been reintroduced in the work of Prigogine; and in humanities time is a non-operative concept.

That which cannot be grasped or expressed from the fundament of logo-centric scientific thinking is an operative time-structuring in which linearity and tabularity, the fields of ruptures, emanation and evolution are communicated as complementary communication structures. Time as a complex system of emanation and evolution is not thought of or conceived as "present" but from the *différence*, *différance* (J. Derrida), i.e., the discontextuality of the contextures "past" and "future" whereby time is freed from the concept of being (G. Günther)

A further self-incapacitation of thinking occurs not only through the prohibition of basal self-references in formal systems, but also through the presupposition, the *a priori* of "Potential Realisability" (Markov) forming the basis of all operative systems. An additional hinderance

results from its idealistic concept of infinity which absorbs considerable brainware energy and wastes communication possibilities.

Future problems of communication will not alone be mastered through new media because these problems are now pushing their way to the surfaces between the paradigms themselves both in scientific discourse as well as in social realities. In particular the communication between the natural sciences and humanities has not yet been developed. The problem is one of an "Ecology of Mind" which must be solved by this communication, i.e., through the development of a position in which the reason for the differences between the two is recognized and the communication barriers are de-constructed.

The so-called "New Logic of Information and Communication" belongs to the old paradigm of logocentrism if it is performed as a field of the "New Rethorics" (Perlman), the "Dialogik" (Lorenzen), or the "Dialectical Logic" (Apostel, Arruda), because their aim is the unification of the proponents and the oponents under the *summum bonum* of rationality and truth. This "new logic of information" is not polylogic but still remains monologic.

Transformation of Man-Machine Communication: The purely instrumental understanding of technology which predominates today both in engineering and in the humanities is insufficient. A new understanding of the man-machine symbiosis as a heterarchical interplay between mechanism and creativity needs to be developed and practiced in connection with the development of new architectures in computer technologies. These will be developed prospectively; experience and possible training methods will be discussed.

Conference Abstract for "Challenge of the Future"

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