

Knowledge Communication as a Postmodern Phenomenon

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Since several years we are concerned with discussions about the characteristics of the times of changes we are living in. The changes - everybody can feel and observe it - are dramatic, radical and long-lasting. Some observers therefore call them "postmodern" (e.g. Lyotard, Bauman) in order to demonstrate the radicality of the changes. Other colleagues (e.g. Giddens, Beck) prefer to call the phenomenon "second modernity" or something similar. Here the term "postmodernism" is used to make the point that these changes are that radical that it seems to be more appropriate to think of them as the turn to a new era (which e.g. by Toulmin or Bauman has been compared to that from the middle ages to renaissance). Some features of this change on which I like to draw our attention today are

- the acceptance of paradoxa, discrepancies, contradictions which could not be solved in the sense of disposal of the contradictions
- the emergence of feelings of insecurity and uncertainty which draw our attention to the need to find new and appropriate means of reducing them
- the increase of complexity which which needs the development of new instruments of complexity reduction
- the discovery of self-referentiality as a feature which explains the dual character of some phenomena being at the same time origins of problems and means of problem management (e.g. technology).

One major domain in which these features play an important role is **knowledge**. The **paradox of knowledge** which today is my main concern is in brief:

- Scientific knowledge is decreasingly understandable, relevant and interesting for people in managing their everyday life and in understanding their worlds of complexities.
- Scientific knowledge is the most important factor that shapes everyday life in modern (western) societies

Based on this paradox, scientific knowledge as it is produced permanently by science factually does not care very much for the reduction of insecurity, uncertainty and complexity of the life of everyday people. On one hand scientific knowledge is responsible for the problem (e.g. increasing complexity), on the other hand it could become an important factor for everyday people to handle their everyday problems - if it is communicated in a respective way.

Before I deal with the communication problem, I like to have a closer look on some recent problems in the relation between modern science and everyday life in the present mixture of

modern and postmodern features of our societies.

1. From a common background to a self-reliant functional system

In the center of modernization several interrelated developments are as well based on the modern interpretation of science (Descartes) as well as they promoted science to become a common background of modernization. Just to cite some of them

- the detaching of religion as the basis of living and acting in everyday life by rationalization
- the development of socialization systems to transfer basic scientific knowledge to all people to become members of society
- the development of models of everyday rationalization which follow at least trivialized scientific models (e.g. economic man, money and capital business - as already shown by Simmel)
- the acceptance of the basic importance of occupations and professions (and related scientific education and training) as continuous pillars within the different phases of adult life.

Sociology of science has collected enough indicators that show that science (and in most cases I use it in the German sense, that means including social science and humanities) in this process changed from an individual activity into a separated functional partial system in society, it became an autonomous system of action like Niklas Luhmann pointed out some years ago. "Science" became comparable to all other kinds of systemic actions like the organization of hospitals or the management of navies or the else.

2. From a dominant mode of cognition to one beneath others

At least from Descartes on (or we go even back to Roger and Francis Bacon) the model of rational cognition (Erkenntnis) based on empirical investigation, positivism, consistency etc. was the dominant model of modern science - or the other way round: this model was the dominant model of cognition as such - all other modes of cognition and experience were accepted for very restricted areas (in particular as "subjective") and were accepted as secondary, less valuable modes.

Since some twenty years (Feyerabend) more and more people believe (since they have to believe in modern science as well - who is really convinced that atoms are existing?) that there are several modes of cognition which are different and differently to be applied in different areas but in principle are equivalent - perhaps not as undifferentiated as the "anything goes" but something like "anything goes if it works - science or not".

3. From one truth to a multiplicity of communicative games

Modern scientific cognition offered for a long time a model of absolute, unequivocal, uncontradictory truth and therefore security. This was to some extent the reaction of the renaissance on the second pyrrhonic crisis as which Bauman looks at renaissance.

Now we are faced with a Lyotard-world with many pluralistic competing communicative games in which science is only one sector of games not only competing with others but with itself as well. Within science we have to accept

- a growing amount of contradictions which are not solvable (like wave and corpuscle theory of light)
- a normality of competing and contradictory arguments of which each has undoubtedly been reached by the use of scientific methods (and they are looked at as true until they

have been falsified which very often is not possible or only in a restricted way) - a typical indicator of postmodern situations

- separations of approaches (two-world-theorem) and disciplines which contradict each other if they ever communicate on a comparable linguistic level.
- the fact that even individual scientists very often are waving to and fro (up to the wish of politicians to find "one-armed scientists").

Even those who are willing to believe in scientific knowledge have troubles to find something where only one truth is accepted by all (of course, in particular in recent discussions).

4. From solving everyday problems to abstract distance

Modern science has for a long term earned an enormous amount of merits in offering solutions for problems of everyday life, e.g. in agriculture, transport, medicine etc. Perhaps recent science to some extent continues that line (e.g. in medicine), but the public has very many problems to realize that:

- some of the recent amounts of scientific work are undoubtedly devoted to deal with solutions of problems which have been created by former scientific work
- the view of everyday life problems is very much biased by the systematic perspectives of market orientation
- science of today is for a lot of people very abstract, contradictory, very difficult to understand or somehow esoteric (insofar as only a fistful of people very often really understand it).

Luhman makes the point very clear: "Scientific knowledge always is the better knowledge in everyday life. Nevertheless, and this is a momentum of self-endangering of society by science, too, it hardly gains relevance. The density of perception for orientation in everyday situations offers science no space, perhaps only for technological artefacts, devices, medicines, materials having been developed on base of science." (p 654)

This indicates that individual and subjective everyday action today decreasingly relates itself to scientific knowledge, that science's relevance for everyday action is vanishing. On the other hand, the dependence of everyday life from science increases. Again some indicators:

5. From "life-worlds" to "abstract systems"

It is the argument of many authors that everyday life increasingly becomes dependent from science and technology. Giddens concentrates and enlarges the argument with his concept of "abstract systems" which increasingly disembed people out of their naive human world of self-conscious living (similar is Habermas' concept of rationalization of life-worlds). These abstract systems (like energy supply) are ubiquitous, opaque, organized and hardly to be influenced by the individual. They require (like science itself) belief and faith in them without understanding their principles of function.

6. From order to chaos

One of the features of modern science is the promise of order (by unequivocality, no contradictions, logics, classification etc.). In fact, former rather simple conditions of living with a lot of elements of surprise, randomness and interventions of other actors could very much require order, and therefore for several centuries ordering structures in everyday life very efficiently were supported or even realized by scientific ordering structures and therefore could be used even by everyday people. But these ordering structures themselves on the long run contributed to

an increase of complexity in living conditions (e.g. in the field of nutrition). This increase in complexity correlates with increasing feelings of multicausality of events and a resulting "chaos" (in the naive sense that nothing really could be structured simply and be traced forward into an estimation of future events).

These negative feelings can to some extent be reduced by science in several ways, e.g.

- combined applications of different approaches from classical modern science (e.g. several approaches in modern management theory)
- developments into something like a "new science" (Wersig 1993), being related with catchwords like qualitative research, female science, problem-driven science)
- In particular, chaos research and theory (and some related areas) demonstrate that science is on a good way to meet everyday life experiences much better than before - as everyday life experiences that "chaos" and "complexity" relate very much to everyday experiences (and perhaps these experiences - in a turn "grounded theory" already tried to make - can push scientific research a little bit further into real and not only mathematical chaos).

These new features of science - "soft" and "postmodern" and themselves object of prosecution by classical science - are less ordered but seem to could become extremely helpful for everyday life and could contribute to a relevance increase of science.

7. From certainty to uncertainty

One of the main aims of modernity from the beginning of the re-renaissance was security and certainty - security organized by and for the absolute sovereignty, certainty offered by modern science, based on the model of natural (cartesian) science. Social sciences and humanities resisted for some time and in fact remained for that time as candidates for uncertainty. Following WW II the positivistic model was more and more oppressed on them, using elements like probability and falsification in order to achieve at least some certainty.

In particular Beck and Giddens state a "return of uncertainty" because of a general change in societal problems from regulation to risk problems. The world becomes a contingent risk world in which problems better be avoided instead of having difficulties in solving them. In such a world people always have a lot of options what to do. In the very heart of the problems - to know what the actors really want to achieve or avoid - the self of the actors needs to decide. They have to decide which of several options they prefer to follow and they have to do this in a multifaceted situation with a multidimensional decision space in which every action has a multicausal background and could lead to a multiplicity of effects on different dimensions. In such situations a science that operates with multifunctional, multifaceted, multicausal conditions could be of extreme importance for everyday individuals as well as for all those who have to decide on cases for parts or the whole of society.

8. From progress to future as a design space

Modernity lived with the growing security that progress was at the side of modern civilizations. We now have lost this security and are facing a situation in which future not necessarily turns into progress but may become progress or regress or something very distinctive from both. It depends on one hand on chaotic processes but on the other hand - since chaos has a lot of ordering structures - depends on what we are doing, how we are shaping the windows into which the possible futures open. Future becomes a relatively open space of designs by humans - on all levels from individual up to societal action. We are forced to develop some kind of "utopian realism" as Giddens calls it. This requires science at least in two respects

- our utopian facilities - hopes, wishes, anxieties, dreams etc. - need an evaluation from the viewpoint of realization possibilities

- utopias need strategies for realization and these strategies have to deal with the existing complexities, constraints etc.

Let me resume this line of argument:

- Modern science has produced and is still producing knowledge that is of extreme importance for everyday life and society.
- This knowledge increasingly does not flow into the consciousness of the people mainly because it does not meet the necessities of postmodern everyday life.
- Within recent science there are very strong developments towards a renaissance of those traits of science that could lead to scientific knowledge that is more directly applicable for everyday life.
- These developments are only some within a very complex system of science and they are only in the beginning (if compared with more than three centuries of the dominant scientific system).
- To strengthen these developments on one hand and to increase their application within real life an intense communication between both areas is necessary.

At this point I like to give You (and perhaps even myself) two warnings: The concept of knowledge communication which bases itself on these assumptions is focussed at least under two aspects

- It is not scientific knowledge in toto I am speaking about but that scientific knowledge that is needed in everyday life: I still am convinced that every scientific knowledge could follow that definition if it is handled respectively (structured, expressed, organized, evaluated). But in addition I have the strong feeling that the reference point "everyday life" unavoidably would require to change in several areas scientific work in order to produce the knowledge that is needed .
- It is not communication of a strictly distributive modus that is required but a communication organization that allows strong feedbacks from everyday life into science.

We strongly feel that the communication space between science and everyday life/society in its present organization has a serious gap in respect to the problem outlined before. The main sectors are

- primary socialization, which has become rather inefficient for several reasons (in particular for adults)
- products and systems, which has become very abstract, opaque and that self-evident that nobody is forced to think about their knowledge implications
- "science journalism" with two different subsets
- informing the public about actual events in science (distributional, oriented at the markets)
- irritating science from the viewpoint of the public interests as they are expressed by the journalistic media.
- science public relations as one of the options of communicative games within science (oriented at the interests of the science institutions which are many devoted to classical, modern science)
- science popularization which is mainly an issue of some (older) scientists which resume research and try to meet the public and its entertainment revenues. Their perspective in most cases is their view on science (and not the view of the people on their everyday life).

What seems to be needed is a **new organized effort to mediate scientific knowledge to human beings** (and vice versa human views of problems into science) in order to

- avoid, manage or solve problems
- understand their social, technological, natural environments
- understand and develop their selves
- relate scientific knowledge to other modes of knowledge and cognition in order to enrich the cognitive spaces of the people
- permit scientific views within everyday reality.

I like to address this sector as "**knowledge communication**" - the organized communication of that knowledge that is behind, within, and around our constraints and options of everyday life - biological, technological, social, anthropological, ecological, economic, esthetic etc. It could be the communication of the connections, systems, ordering structures of knowledge in a way it is needed and would be used by the people (and therefore must be bidirectional at least insofar as feedbacks are organized). Knowledge communication has to communicate scientific knowledge but not as knowledge taken out of science but as knowledge to be applied for everyday life and for understanding the worlds and realities of the ordinary people (outside their special subject all scientists become ordinary people).

Who, what, how may be questions to be dealt with later on, some approaches already take place in the media but rather isolated and related mainly to actual subjects. Instead of going into details I like to draw Your attention to a more basic problem related to a second paradox: Knowledge communication is not only an offspring of the science paradox but has to be set into the context of the **communication paradox** which says:

- the information and communication technologies have enlarged the communicative possibilities of societies enormously. What we call the "information society" develops towards a completion of communication infrastructures, by which nearly all kinds of data types to nearly every place in the world could be sent, distributed, communicated. With the ubiquitous digital medium (indicated by the convergence of telephony, computers and broadcasting), multimedia, and increasing computer intelligence we have disposal about communication possibilities which are of extreme importance for knowledge communication. The need for knowledge communication appears at that moment we have the information and communication technologies at hand to fulfil that need (e.g. DVD, VR).
- But a closer look makes the other sides of the development visible
- During the last 150 years information and communication technologies have been to some extent responsible for the separation of science and everyday life: communication technologies increased the de-personalization of knowledge, observation technologies contributed to sufficient changes in the credibility of knowledge, presentation technologies contributed to fragmentation and information technologies to rationalization. The deficits in the relations between scientific knowledge and everyday life to some extent are caused by information and communication technologies. If knowledge communication aims at deficit reduction then it has to be - at least to some extent - **compensatory** against that influence of the information and communication technologies.
- the "information society" (Wersig 1996) as it is establishing on the basis of the technological infrastructures means at least a new and very large step in the direction of disconnecting the concept of communication from that of sense or meaning, in the direction of economizing and commercializing information and communication, in the direction of uncoupling communication and values like seriousness, responsibility, sharing values and lifes. Again knowledge communication could be seen as one of the

areas which could compensate for these reductions.

Let me introduce a simplification by stating that these developments could be understood as an increase in "medial communication" where factors of technology, distribution, organization, unification were not only dominant but contributed themselves to some of the problems so far discussed. This leads to the idea that compensation in communication could be sought in the direction of "submedial communication". What could "submedial communication" be? Just let me direct Your attention to some possible associations:

- **Toulmin** developed the argument that postmodernity (in particular in the field of science) has to go back to four features of the renaissance which were overruled by modern science: oral/personal against writing/publishing, specificities against generalities, localities against universalities, looking for temporal relations instead of looking for everlasting laws.
- Some elements of compensation could perhaps be derived from one of the leading philosophers of compensation, **Odo Marquard**, who points to the necessity of new ways of recognizing science by the people. This could be developed further into concepts of outreach of science into everyday life and inreach of people into science. Another factor would be that people should acquire knowledge by sensual activity of their own.
- Another philosopher of compensation, **Hermann Lübbe**, points on museums as a very important factor in compensation of losses in the turn to postmodernity. They, indeed, have a lot of respective experiences which could be used by knowledge communication and they themselves are science-near institutions which - if they develop some more communicative self-understanding - could become a competent partner of other actors in knowledge communication (Wersig 1997).

It seems to me that the turn to postmodernity could mean a turn to a new approach to "humanism", a kind of orientation that takes into respect that postmodernism is closely associated with the trend towards increased individualization. We are turning from looking at abstract structures (in science) and disperse audiences (in communication) into a time of looking at problems and conditions of individual humans.

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