

FORMS OF PRESENTATION:

A Forgotten Aspect of Social Science Epistemology\*

by Johan Galtung

Goals, Processes and Indicators  
of Development Project, Institut  
universitaire d'études du développement,  
Geneva.

## 1. Introduction

There seem to be two ways of approaching the problem of forms of presentation of science in general and the social sciences in particular: one of them shallow, one of them somewhat deeper.

The shallow approach would take as a point of departure a postulated need for a broader diffusion of scientific findings. It is assumed that they have to reach "the people", that as they usually are presented they touch only a narrow circle of people already trained the same way, reinforcing their particular ways of looking at the world. The pressure in this direction usually comes from three different corners of society: from the researchers themselves who want to reach more people, possibly in order to convince them of how correct their "scientific" perspective on the world is; from people who have a feeling that they are missing out on something and would like to be up to date, informed; and from middlemen who position themselves between the researchers and people in general, viewing themselves as translators of a difficult idiom, believing that they have one leg in either camp, fully capable of understanding the scientific discourse and at the same time knowing what people need to know and how they can best get to know it.

However laudable many aspects of this approach would be, there are certain rather serious shortcomings. First, one senses a power motive: a small group in the elite in contemporary societies, scientists in general and social scientists in particular, who want to imprint on the minds of the population at large their world views - with theorems and theories, with implicit value judgements and cosmologies. In short, one senses manipulation behind it. And from people in general there is also a clear power motive, certainly not to be scoffed at: this is not a bad way of making researchers accountable for what they say and what they do, forcing them to talk intelligibly so that at least parts of what they think they have to communicate can be judged by non-colleagues. And finally: the middlemen have a clear power interest: like all interpreters

in particular and middlemen in general they can control communication channels and possibly also make some money out of the process.

About all of this there is nothing new, nor anything abnormal - this is what social and human life is about: conflict and cooperation, harmony and disharmony. The point we make is only that there is a politics of forms of presentation, and nothing is gained by being blind to it. It all changes colour politically (but still remains at the shallow level) the moment the form of presentation is not merely seen in the context of intelligibility, but in the context of feedback, participation. In other words, as a two-way channel of communication rather than a more efficient one-way channel being able to reach into the deeper recesses and corners of societies and the minds and hearts of men and women, young and old everywhere. Both of these are terribly important aspects of the story of forms of presentation: increased intelligibility, increased feedback and accountability; both must be taken into account.

But it is not the whole story. There is a deeper level to forms of presentation. This would take as a point of departure not the social distribution of the communicative act, from a small group communicating with itself via that group communicating to many more people to the point that people start communicating to scientists directly. - And beyond this : to the point where everybody communicates with everybody about scientific findings, whether this is a goal or not. The next level, and that is the deeper approach, would look at the form of communication (possibly a better expression than "form of presentation") and its relation to the content that is communicated - presumably (social) science findings. In short, it is not only a question of relation between sender and receiver, but between communication and that which is attempted communicated, between symbol and symbolized, between sign and that which the sign represents. Having said this we can now abandon the distinction between the "shallow" and a "deep" level since - put this way - they are two sides of the same coin. There is only the problem

that to many people the popularization aspect dominates so much - because it is so easy to grasp - that the other aspect is lost sight of. The shallowness also enters at another point: the step from popularization to vulgarization is but a short one, particularly when the middlemen assume that they understand fully the research findings; people in general believe what they get from the middlemen is the same as what is available at the source; and the researchers do not care about the entire process and/or are unable to communicate with the communicators so as to exercise an influence on it, and become to enamored with popular acclaim.

In semiotics <sup>(1)</sup> a distinction is often made between the semantic, syntactic and pragmatic aspects of what is here referred to as communication. What above is referred to as the shallow aspect would be in the pragmatic category: it becomes a question of social consequences of communication. And what is referred to as the deeper aspect would be in the semantic category: a question of translation. That means there is still the syntactic aspect to discuss: the structure per se of the language of communication. In order to explore that let us make use of a concrete example as an introduction to the more general problem.

## 2. The problem of form and content: an example

To discuss this problem an example is indispensable, and I have chosen the example of a possible dramatic presentation of imperialistic relations. The content, consequently, is what one might call the structure and process of imperialism and the form is that of drama (theatre) as usually conceived of. In discussing this I am leaving aside two obvious aspects of some importance: first, in order to talk about imperialism at all I have to use an other form, that of a written language, in casu English. And second, when discussing theatre I am certainly making it more conventional than it is in order to make the points clear.

In the theory of imperialism<sup>(2)</sup> the structure of exchange plays an important role. In a simple two countries, two classes model there would be a Centre country exploiting a Periphery country, and the key axis in this exploitation process would be between the centre of the Centre and the centre of the Periphery - the ruling elites in the metropolitan country as they are linked together with the comprador bourgeoisie or ruling elites in general of the satellite country. The working class in the metropolitan country, the periphery of the Centre, shares with the upper classes of those countries the spoils of exploitation, which essentially is aiming at extracting a maximum of surplus, even supersurplus for the case of superexploitation<sup>(3)</sup> from a periphery of the Periphery which is not even able to reproduce itself, but either starve or have to rely on the informal sector of the economy. The proletariat in the Centre is the more or less unwitting participant in the exploitation of the proletariat of the Periphery. Thus, there are four parties to the relationship in this simplified model, and the content or meaning of the word "structural" is that these relations are not tied to specific countries nor are they necessarily intended, they just simply are. And they are, with a certain tenacity: there are support structures or supportive parts of the structure that are called into action once the structure is threatened: military intervention, military coup d'état etc.. In addition, it is built into the structure how parties that could be dangerous, if they entered into a coalition, are kept so much apart that the likelihood is very low that they ever will, and that very few are able to see how the total structure operates precisely because it is so world-encompassing, so abstract, so impersonal. Analysis is indispensable.

Contrast this with the classical theory of a drama. I assume for the present purpose that theory to have two pillars. First, it is recognized that human life is replete with problems and conflicts, but in the form of the drama these are presented at the intra-personal and inter-personal levels. After all, there

are such things as "actors" in a drama, hence not strange if the social perspective conveyed by a drama is "actor-oriented".<sup>(4)</sup> Drama is a language, the verbal and non-verbal behaviour of the actors are the signs, they are put together on the stage which has some similarity to the page, and as a language it can express certain things better than other things. It is excellent at expressing the characters, problems and conflicts within and between persons. It may be less good at expressing social structures, social processes; the stuff "nomothetic" (generalizing) science is made of.<sup>(5)</sup>

The second aspect of drama as a form of communication is the classical greek formula: unity of time, unity of space, unity of action. Translated into other terms: continuity in time (not too big jumps), possibly also linearity (moving from past via present into future, not mixing these elements too much although some retrospection might be possible); contiguity in space (not jumping too much around in the world - or if this is done at least mark the jump by a new scene, a new act); unity in action meaning a theme, a red thread around which to spin the web of the drama. Evidently modern movie-making makes a travesty of all this and is generally acclaimed as a great advance in dramatic presentation exactly by permitting jumps in time and space in all possible directions, sudden, colossal, reversible or not; weaving together all kinds of scenes in a way that will often tend to make avant-garde movies hard to follow for the non-initiated, just as classical drama may be hard to follow for those less interested in - or untrained in - putting that many problems and conflicts, with such a depth, inside and between persons.

However, what is being discussed here is conventional drama and it is quite clear what the problem is: the form of presentation does not necessarily correspond to the content. Hence there will be the temptation of the author to try to personalize the issue, which means bringing the four categories sketched above together in a particular setting. In a recent drama about imperialism in Africa performed in London<sup>(5)</sup> this was to some extent done: the centre in the Centre travelled to Africa and

had a confrontation with the centre of the Periphery (an African president very much cooperating with the transnational corporations of the North and with the beautiful definition of the somewhat limited freedom of press in his country: "there is a relatively free press, meaning a press managed by my relatives")<sup>(6)</sup>. I am not saying Tom Stoppard's play was unsuccessful, but the personalization of imperialism plays up to exactly the way it is presented in the press: as a problem of particular actors, focussing on the structure-invariant aspects of actors rather on the actor-invariant aspects of the structures<sup>(7)</sup> (a shorthand for saying the following: focussing on the way certain people are in most settings, rather than the way the settings are more or less regardless of who are put into the various positions).

What can one do about this? In four quite different places of the world - the executive room in a presidential office, be that of a powerful state or corporation; in a trade-union meeting in an industrial town in that same country; in the lavish house of local technocracy (bureaucratic, corporate, academic) in a dependent country; out in the misery and squalour of itinerant labour given only the choice between starvation and accepting work on the conditions offered by State and capital - the drama of imperialism unfolds itself. They are kept apart in space, but not in time: there is synchronicity, simultaneity because things are happening all over in these four nodes of the structure at the same time. They are more like parallel tracks (compare the excellent book by the Chilean author Manuel Rojas Punto de Rieles - a good German translation would probably be Gleisende)<sup>(8)</sup>. To divide this by sequential by scenes and acts would be to do injustice to reality. Hence another suggestion would be a rotating stage divided into four quadrants, showing 90° at the time, having the stage rotate so that an illusion of simultaneity can be obtained. To link the quadrants together one might have some actors in some cases that go from one to the other (as messengers, on mission, or whatever);

or one might take recourse to the old (medieval?) idea of having a person on the side of the stage who makes comments, trying to explain what is going on without being pedagogical, pedantic, like a museum guide - perhaps actually participating in the play, sometimes interacting with the actors, sometimes with the public - as a clown, visible or invisible to the actors in the four quadrants.

This is said here only to indicate how it is not obvious that the language of the theatre has built into it that which is needed to express the content it is supposed to communicate; nor is it obvious that it cannot be made to express it through some simple changes. And these are only ideas in the mind of a person very much an amateur (myself); from masters and professionals considerably better things could be expected.\* Let it only be said at this point that just as it should not be expected that a social scientist is conversant with a language of drama, nor should it be expected that a dramatist even of the highest quality, is conversant with social science. The stage is set, in other words, for dialogue, for interaction, cooperation where the dramatist would partly be social scientist and the social scientist would contribute to writing drama and to acting. In other words, a partial breakdown of the borderlines of artificial, even dangerous professionalism!

So far I have used this example only to illustrate one side of the coin: the problem of translation of a relatively complex form of understanding into a language not necessarily developed for that purpose. In other words, I have taken an image of imperialism as something given, as something constant, and ask the question: what will have to be done with theatre as a language in order to become sufficiently isomorphic to render a suitable translation? Let me now turn the problem around and look at it from the other side. Imagine that we take a form of presentation, a language, a system of communication - a ballet,

---

\* The idea was actually realized by the Open University, BBC, spring 1981 - with Jeremy Cooper as producer.



a drama, music in the broadest sense of this word, cartoons, anything. Let us assume that we simply accept it, we take it as a given, a constant. And then we ask the question: given this system of communication, what kind of understanding can we arrive at? Why is it that out of all possible languages only a handful are used to express and communicate so-called scientific forms of understanding - spoken and written natural languages, and added to them some degrees of artificiality such as technical terms, technical jargon in general, on a continuum leading to the many computer languages, the languages of logic in general, mathematics in particular and so on? What does this sampling of languages as valid forms of presentation imply? Why are ballet, drama, painting, cartoons etc. excluded a priori? What impact would it have on our ideas about science if these were the languages chosen rather than those mentioned? And to those who would object that this would mean that the form would direct the content the answer would obviously be that this is already happening: verbal languages on a scale from the natural to the artificial will all have their biases and it would be fool-hardy to assert that these biases do not make an imprint on the content.

Some of the power implications of this biased sampling of forms of communication of scientifically valid knowledge are obvious. They are tied to the concept of literacy, meaning familiarity with a limited range of forms of communication labeled "verbal". Even with the range mentioned above there is a humanistic, belles lettres bias: a person who knows how to handle letters but not numbers is literate, the opposite person not. One who knows mime, ballet, non-verbal acting, painting, sculpturing, and plays some instruments would still be an illiterate if unable to read and write. With narrowly defined literacy as a conditio sine qua non for a non-marginalized life, science in general and its form of presentation in particular become a form of power<sup>(9)</sup>, favoring the literate<sup>(9)</sup>. But beyond this pragmatic problem lurks the semantic one: could it be that we lose in content because of our bias in the choice of form of communication?

3. The problem of form and content: towards a more general theory

Science is about reality, social science about social reality. Of realities there are two kinds, the empirical and the potential - that which is, and that which may be. In saying that there is something that may be that not yet is, we are not saying that anything may be in the sense of may become, may come into being. Rather, there is an inner circle of empirical reality surrounded by a circle of potential reality and outside of all of that is irreality. But none of the border lines is fixed, they are all movable, unlimited. The latter applies particularly to the outer bond of irreality, for what would there be outside irreality? <sup>(10)</sup>

However, science goes further than asking what, a description of empirical and potential reality. Science also asks why. That little word has so many ramifications, but in all of them there seems to be a notion of level. There is something that is apparent, and something that is behind - efforts to answer the question why is like lifting veils, uncovering levels beyond (or beneath) levels, showing the interrelations between the levels. These levels do not have to belong to reality. They may be part of irreality and reality is as if it were due to what happens at these levels of constructs. Generally it is considered better science if at least some kind of empirical reality can be attributed to the constructs, to the theoretical level. Metaphorical talk, eg. seeing ego-formation as the result of a fight between id and superego, gains in scientific status if something empirical corresponding to that "fight" can be demonstrated.

If this is what the content is about, what requirements does one have to put on the forms of presentation? One point that comes up immediately would be the following: there is no reason to assume that what is a good form of presentation for the what part of science is also a good form of presentation for the why part, and vice versa. One example may illustrate this.

Take one of the most immediate form of empirical reality: the nature surrounding us, and disregard everything but the topographical aspects; simple, physical geography. We are capable, with words, of giving a description. A map, however, seems to be a far better form of presentation, and even better than map would be a plastic model. The reason why it is better has something to do with isomorphism: there is a good correspondence between the map and terrain. In a verbal description there will be words and strings of words that correspond to points and regions in the terrain (such as mountains, rivers, lakes, villages, towns and cities); but the way these are stringed together on the printed page or in a talk carries a very poor isomorphism with the terrain. Of course, one may have a convention saying that "I now describe everything from North to South 10 km, then turn one kilometer East, then proceed from South to North 10 km, then turn one kilometer East, and so on". In doing this an important point about verbal description can be made: verbal description is essentially one-dimensional, stretched out in time (spoken time, listening time, writing time, reading time); space is two-dimensional but can be reduced to one-dimensional through the approach mentioned. In that way isomorphism can be obtained, only that space is no longer space - it has become a line, one-dimensional space.

The map is superior to verbal presentation because it is two-dimensional like the space (as seen from high above) it is supposed to represent; it can be improved even further through the plastic model. To overcome some of this one will find in most scientific presentations pictures, diagrams, charts - some of them efforts to bring two-dimensionality into the one-dimensional stream of words. That this is important would be appreciated by one who tries to go from A to B using a verbal description like that referred to rather than a map (what he would do, of course, would be to try to overcome the reductionism by reconstituting the map from the one-dimensional string of words). What is in space at any time is synchronic; verbal presentations are (essentially) diachronic. For that reason the verbal presentation is better for

history than for geography; that which happened afterwards can be found later in the verbal presentation, be it oral or written. But what if history is about not only one point in space but several points? Usually, this is "solved" by having one part or chapter referring to the history of X and another part or chapter referring to the history of Y. But if they are together in one book this means that synchronicity is essentially treated the same way as diachronicity: the history of India, the history of China come after the history of the West even if that "after" means something different (degree of importance, direction of net influence as seen by the author, etc.) than afterwards within one part, which would be a purely diachronic after. Better would be the historical chart, with one dimension used for space and another for time; for instance as is done in The Unfolding Past by Oxford University Press with Britain, West Europe, Central Europe, East Europe, West Asia, East-Asia, Africa, America, Oceania vertically and time horizontally. There is of course a hidden message in the ordering of the past of the world (not necessarily in terms of what is higher and what is lower, but in terms of what is nearer to the publishing house), but the chart has the great advantage that both diachronicity and synchronicity can be enjoyed simultaneously. Again, what is shown is the superiority of the non-verbal over the verbal in some cases.

Let us then make our geography less topographical only. Let us introduce process: the workings of the sun, the wind and the water, the cycles of the day, the month and the year (of the earth, the moon and the sun) erosion, delta-formation and so on. Again, we arrive at the same result: verbal presentations are good for processes, not so good for the static and synchronic. But to capture the simultaneity of many processes happening at different points is more problematic. One way out would be to make a model: a plastic map with water running here and there, air blowing, temperature changing and so on. As geography is vast and these processes are usually long-term processes it would have to be scaled

down, for instance with 1 mm in the model corresponding to 1 km in reality and with 1 second or 1 minute in the model corresponding to 1 day in reality . That way we could get as faithful a representation of empirical reality as we are able to or willing to, based on two principles - simplification (which means a certain amount of abstraction) and miniaturization (in both space and time).

But at this point we run into another problem. The problem with this representation is not that it is not isomorphic with empirical reality; the problem is that it is too isomorphic. In fact, we could just as well have watched nature itself, only that it is more convenient to do it the way it is done in a hydrological laboratory where a river is simulated with regard to erosion, changing river-bed, silting and so on, without being exposed to the hazards of nature, inside a warm, isolated building, and on a scale that makes it possible to comprehend the totality more easily. But if that was all, so what? We would have a presentation of what is but not of what may be; and we would not have come anywhere closer to the problem of why. We would also assume that in order to make a transition from a focus on empirical reality only to potential reality it is necessary to pass through the why-aspect of science.<sup>(13)</sup> Of course, even extrapolation from a geographical process model as mentioned, ending up with erosion, heavy delta-formation and much silting presupposes an assumption beyond a simple observation of what is: the assumption that the process will continue in an essentially monotone way But this is still the what level.

How, then, is why-ness represented? In the effort to get at this in Western thought there seems always to be some element of linearity. The two basic forms are the causal relation and the deductive relation. Why do we have Y? One answer would be because there is a cause, X. Another answer would be because Y follows as a conclusion from certain premises (as for instance in a syllogism). In both cases it is possible to make use of a verbal presentation precisely because that presentation unfolds in time: one may present the cause first, and then the effect as something that follows

with necessity from the cause; one may present the premises first and then the conclusion as something that follows with logical necessity from premises (Gedankennotwendigkeit). Of course, the geographical model may be more suggestive of such relations and implications than watching complex natural reality itself, precisely because of simplification and miniaturization (although simplification of course is done in such a way as to suggest exactly such relations). However, a suggestion is not the same as an answer to the question why. Can such an answer be given at all except by means of words? In general terms certainly yes, but if it is tied to causal and deductive reasoning it is doubted whether any kind of unmediated understanding can be given, except through the mediation of words. (14)

Leaving this aside, however, let us turn to another aspect. There are non-Western approaches to the question why, less tied to the linearity of causal and deductive reasoning. We are thinking of what C.G.Jung refers to as synchronicity,<sup>(15)</sup> the belongingness of something to the same "family of things", same "scheme of things". What is the relation between my hands and my feet? It is not a causal relation, nor a deductive implication, nor is it simply a question of shared what-ness. The four belong to the same "family of things", me. There is a "me" which is more than the sum (or more correctly expressed, set) of all the parts into which I can be subdivided, by a murderer or a butcher. The relationship between that me and the part has some why-ness to it. This answer is of a different kind than the Western one, but then nobody said that the West has a monopoly on such answers. To see something as a part or manifestation of a totality would require a perception/conception at the same time of that totality and of the parts/manifestations. If this is to be expressed by words the linearity of the verbal sequence would seem to force upon us a kind of back and forth movement, a va-y-vien, and we would talk metaphorically about a "movement" from the whole to the parts and back to the whole again. It may not be fully appreciated how much of this is due to the presentation

structure and forced upon us by the way words are strung together. At this point it is hardly by coincidence that Chinese (and some other languages) can be written up in non-linear ways,<sup>(16)</sup> for instance, in a circular fashion where one can start reading at any point (like a rosary), like a cross-word that ideally could be read horizontally and vertically in both directions and additionally along some diagonals, and so on. But even the Chinese would probably have difficulties getting this richness into oral presentations !

In other words, from the circumstance that some types of answers to the question why are compatible with the diachronic nature of verbal presentation it should not follow that all answers should be of such a kind. Put differently: the structure of the verbal medium should not serve as a major constraint on our epistemological assumptions. And that leads to the question: what would be the best form of presentation for a more synchronic understanding of why what is? A division of forms of presentation into predominantly synchronic (such as paintings, sculpture) and predominantly diachronic (such as music, ballet, theatre) is indispensable here. And it is immediately appreciated how the most famous pieces of sculpture and painting seem to have this particular character. There is usually a central element somewhere which is the major focus of attention; the rest is a context.<sup>(17)</sup> What is art about it lies in the way in which the context elucidates what is in focus, gives it sense, meaning, depth - and perhaps also vice versa. In principle, the same should apply to sculpture only that here there may be less of a context available, unless we include the environment!

One is reminded in this connection of differences between Western and Japanese board meetings for companies: the Western meetings with a linear agenda, stretched out in time and couched in words; the Japanese meetings with everything to be considered plastered around the walls and everybody having as a task trying to grasp all of it simultaneously. The Western approach would build up through a number of premises towards a conclusion as the climax

and then relax on a plateau below that climax called "any other matter" - the Japanese approach would try to dig into the totality at all points and then gradually build up the totality so as to see what is presented as problems from a very holistic perspective. Not so many words are produced and consumed in the Japanese setting as in the Western one (quite a lot of tea though), but the relations of people to each other during the meeting may itself be a form of presentation, and a reflection of the totality one tries to come to grips with. It is certainly not obvious that the Japanese approach is less intersubjective because it is less verbal - it may actually be more intersubjective as witnessed by the higher level of consensus in thought and action usually arrived at. Words communicate, but they may split just as well as unite.<sup>(18)</sup>

The building up to a climax through time, relaxing on a lower level plateau afterwards is certainly also found in other Western forms of presentation. Both music and drama tend to present elements in the beginning, themes that are then woven together towards a climax not too far away from the end - but not as the very end itself. In other words, both music and drama should in principle be isomorphic with some approaches to the why-ness aspect of science. This is of course more easily seen for drama than for music as drama after all has a heavily verbal element in it!

To illustrate, take the example of the preceding section. The idea is to present imperialism, and one approach to the problem of synchronicity in spite of working in a diachronic medium was mentioned: the rotating (and increasingly quickly so!) stage. This could give a very good description of what happens, even to the point of being a model not too different from the geographical process model indicated above. But it would not reveal sufficiently the why-ness aspect. If that has to do with unveiling reality, going from the apparent to the less apparent, then one could imagine a set of curtains for each quadrant of the stage gradually being lifted so that as the drama



unfolds the deeper lying realities are brought out in all quadrants. In doing so it may well be that the deeper lying reality of one quadrant would be located in an other quadrant - easy to portray as actors could relate to each other across quadrants. There may also be a common, root explanation of it all, conveniently located at the centre of the stage after all curtains have been lifted and the total stage is visible ! What that key reality is is no secret to Marxists, but others might perhaps look for deeper answers or at least for other answers?

We have taken as a point of departure the idea that there should be some kind of correspondence, some level of isomorphism between form and content. We have also tried to indicate that the content, science, has so many aspects to it that there is no simple, single answer to what the structure of the content is. Further, we have tried to indicate that the usual verbal forms of presentation (talks, articles, books) have built into them certain assumptions that do not necessarily correspond to the content they are supposed to mirror. Hence, there is a problem, and to that problem there does not seem to be any simple answer either. There is no such answer as saying that verbal presentations are inadequate, form of presentation X is the only adequate one ! Rather, it looks as if science is an extremely complex phenomenon from this point of view and that the answers to the problem of adequate forms of presentation is a mix rather than any single, simple answer. Thus, verbal presentations are good for causal and deductive reasoning, not so good for synchronicity.

In saying so, a conclusion has already been arrived at much beyond the shallow level of discussion as defined in the first section. A multi-language form of presentation is certainly not only a question of translation from one natural or artificial language into the other "language" in the narrow sense. It is a question of also translating into other forms of presentation, as indicated above. Taken seriously, if the scientist wants to control the validity of the translation himself he would have to

be not only polyglot but also rather poly-form. Such scientists do not exist today, which does not mean that they could not be brought into being through a more adequate understanding of these phenomena. This goes beyond reaching more people through a wider range of forms of presentation, because the problems discussed touch on the very epistemological foundation of the whole scientific enterprise. It becomes a question of seeing how the form of presentation biases, even steers, the content of science rather than vice versa.

#### 4. The problem of form and content: the pragmatic dimension

In the preceding sections we have looked at semantics, to what extent the form is adequate for the content. Here we shall look at another aspect: to what extent the form is adequate not as an idiom in which the content may be couched, but as a social phenomenon, even as an important part of any social system. In other words, it is a question of evaluating a form of presentation in terms of what it contributes to that system, and this will here be done within the general context of human and social development.<sup>(19)</sup> More particularly, 10 aspects, 4 of them relating more precisely to human development and 6 more to social development will be mentioned, and some reflexions about forms of presentation will be given.<sup>(20)</sup> These ten aspects have also been made use of in many other contexts, they constitute a basis for a GPID (Goals, Processes and Indicators of Development Project) World Model,<sup>(21)</sup> so the present exercise is a two-way process. It is not only an evaluation of forms of presentation, it is also a way of trying to test, to explore further, to deepen those ten aspects by putting them to use in a way usually not taken into consideration when development is discussed. To test them against such important developmental components as food, health and energy is commonplace: to test them against the form or even mode of presentation of science in general and social science in particular is, however, of almost equal importance.

Human development is seen in terms of a rock-bottom basis of four classes of needs that will have to be satisfied one way or the other, otherwise the social process will be a travesty of human development. The four classes are referred to as survival needs (negation: violence), welfare needs (negation: misery), identity needs (negation: alienation) and freedom needs (negation: repression). Violence, misery, alienation and repression are then seen as different forms of human and social pathologies (there are other forms, see below). To get out of those pathologies is not the same as development but it constitutes a good basis for development.

It is easily seen what forms of presentation has to do with the last two of these classes of needs, the more non-material types of needs, those that relate to identity and freedom. Identity, that is a question of closeness. Translated into our problematique it means that science is presented in an idiom with which one can identify, meaning not only one's own language (without Fremdwörter ), but also other forms of presentation that are close, for instance cartoons, puzzles, games and so on. And the interpretation of freedom needs, in this context, would be in terms of having a choice between forms of presentation, and consciousness and autonomy in connexion with that choice. <sup>(22)</sup> Freedom points towards pluralism, variety - it does not limit the form of presentation to one form only, but calls for diversity.

But what is the meaning of the more material needs, the needs for survival, for welfare? Do they enter at all in connection with such a lofty enterprise as science? Of course they do. Science has to do with what is but also with what may be; there is a dimension of change implicit in science. But change can be for the better or for the worse, including materially speaking. It may lead to the production of goods, but also to the production of bads; to the production of services, but also to the production of dis-services. And the form of presentation should be such that these

implications are fully comprehended by people in general, also including the scientists. One may object that this is not the question only of the idiom in which presentation takes place, but of some kind of pragmatic completeness. This is by no means unknown in science. There has always been the idea of exploring the implications of a theory in all kinds of directions, as far as deduction can carry one, testing the implications for empirical tenability. What is said here is very similar to that, only it is a question of evaluating those consequences. Will they conduce to violence? Will they conduce to misery? In short, what are the policy implications, what is the politics of theory X, Y, Z? There is absolutely no a priori reason why this should be less part of the scientific endeavour than the usual inductive/deductive exercises up and down the theoretical pyramids. <sup>(23)</sup>

One may also cut into the problem of human development in a slightly different way, from the angle of human health. For convenience we humans may be seen as divided into three (aspects rather than parts): body, mind and spirit. <sup>(24)</sup> A form of presentation should not be conducive to the degeneration of any one of these, but if possible strengthen them. Violence and misery get at the human body, and lack of identity and freedom at the human mind and the human spirit - without in any way pretending that these are clearcut categories. Rather they are parts of each other and parts of wholes not clearly understood with small and big causal arrows in all possible directions. But they all lead to one question: science for what, for whom, why - and the forms of presentation should give clear answers to this.

Turning from this to social development the picture becomes more complex. Social development is seen as that which is conducive to human development, and is here conveniently divided into six areas: production and distribution, structure and institution, nature and culture. Again, it is relatively clearly seen what forms of presentation have to do with nature and culture. Some forms of presentation require lots of non-renewable resources,

including the transformation of energy; some others do not. The predilection for the printed word means in practice the gradual end to forests on our planet;<sup>(25)</sup> more reliance on the spoken word, including the ancient form of the walking libraries (monks, sages, wise men and women in general) seem to require relatively little of either.<sup>(26)</sup> The calory consumption of a speaker seems to be very low relative to the calory consumption of a peasant working with pick and shovel. To this it may be retorted that the problem is not the sending side of the form of presentation but the receiving side, particularly if one wants what has been expressed stored, and not only stored in a handful of copies in public libraries or something similar, but in one thousand, in one million homes with private libraries of books, tape recordings of speeches, video-tapes of theatre performances etc.<sup>(27)</sup> Thinking along these lines might lead to information systems as currently propagated by transnational corporations as beneficial from an ecological point of view: there is a central storage point with terminals in any homes (and other places), there is a free choice not only of content, but also of the form of presentation provided one has as terminal a TV set on the receiving end at home.<sup>(28)</sup> Whether the total nature budget of this works out positively or negatively relative to other forms of presentation is another matter.

With regards to culture the problematique is also relatively obvious: it becomes a question of finding an idiom compatible with the deeper aspects of cultures, the cosmologies. An example of this has been given above: there is a compatibility between the linearity of Western thought and the verbalism of Western presentation just as there is a compatibility between holism and synchronicity in many forms of non-Western thought and non-linear, non-verbal forms of understanding/presentation. At a less deep level this is also a question of drawing on myths, metaphors and expressions, including slogans in the local culture. It is only through artificial languages including mathematics that scientists liberate themselves from such cultural anchoring points, and it is

an open question whether that "liberation" does not signal the entry into a relatively barren prison.<sup>(29)</sup>

The meaning of structures and institutions in this connection is also relatively clear. Just as social development has something to do with strengthening ecological balances in nature and building on endogenous culture, development also has to do with the creation of structures, through participation of self-reliance at the local, national and regional levels. A major goal is to prevent that development is at the expense of others today or in the future (synchronic and diachronic solidarity). A form of presentation should be participatory. It should not build a structure with strong dividing walls between producers and consumers of science, with the producers conditioning the minds of the consumers, marginalizing them out of the temple of science, fragmenting them away from each other and so on. Ideally science should be some kind of joint enterprise. There should be forms of presentation such that not only are the findings intelligible; there can also be a feedback, people can react to them, maybe modifying them, changing them. As a very minimum the form of presentation should be such that the scientist is accountable.<sup>(30)</sup> There should be ample discussion time after each lecture, the possibility of a write-in after each article and each book - an invitation to dialogue at the end, tear-out pages, addresses supplied, etc. . And the same applies to what traditionally is referred to as arts: a good theatre play could be one where the spectators participate, enter the stage, act out their views - a good exhibition may be one where spectators become participants, given the tools to respond to what an artist has initiated.

But the dimension of participation has a carrying power beyond this point. It is not only a question of reactive participation but of creative participation. Ultimately this means acquisition of the means of scientific production, including the means of presenting scientific findings. The difference between a model as described in section 2 and a game is a good

illustration here. The model makes out of people spectators, they are subjects, reality is an object presented in simplified and miniaturized form, an object for reflexion. In a game people are at the same time subject and object, they are acting out realities, as in such games as Monopoly and Class Struggle.<sup>(31)</sup> In the conventional distinction between person-person, person-computer and computer-computer games there is a gradual reduction of the human element, from interaction via action to observerism.<sup>(32)</sup> What is argued here is to keep the interactive element as much as possible, as that is the key to participation. Through a truly participatory game reality is not only experienced, it becomes existential like in everyday life, and the beauty of the game is that it becomes possible to act out social realities otherwise inaccessible - such as decision-making in connection with development, war and peace. Incidentally, there is no reason why such games should only model or portray social reality. There should also be games reflecting the relationship between sun, wind and water; soil and topographical shapes, reflecting how one bears on the other and on the third, and so on. Maybe that could lead to more empathy with nature!

Another key word in connection with the structural aspect is self-reliance.<sup>(33)</sup> What this means is a form of presentation that does not depend on inputs from the outside, but is autonomous, in one's own hands. As a norm this should not be taken in too absolutist manner. It militates against diffusion of scientific ideas, influence and exchange among idioms and so on; it could tend to make science something too homespun. But it also militates against excessive universalism, a type of universalism that in practice only means the dominance of one culture, one structure, one part of the world over the rest of the world, setting up defense mechanisms against this type of invasion. For that reason all kinds of movements emphasizing how other languages than Indo-European languages can be carriers of science are important, particularly if they go beyond showing that they can do "equally well" the kinds of things in the European languages do well, but more particularly that they can do other things - as in the example contrasting

Chinese with Indo-European languages above. And this applies equally well to non-linguistic forms of presentation: their value as self-contained, self-reliant forms of presentation even for intricate scientific discourse should be articulated.

This is closely related to the distribution aspect of social development. Ideally speaking the form of presentation should not favour one group in the population at the expense of others. And yet there is no doubt that the typical scientific form of discourse uses a language of the middle-aged rather than of the very young and the very old, of males rather than of females, and certainly of the university educated rather than of those who have not had access to tertiary education. In short, it is a language of the international MAMU (middle-aged male with university education) tribe.<sup>(34)</sup> Both children, women and non-intellectuals will tend towards more emotive language, less linear, less expressive of causal and deductive reasoning, more geared towards holistic understanding, intuition. If, in addition to this, class in general, racial and ethnical belongingness, urban vs. rural settings, not to mention the whole world system with all its social dimensions are taken into consideration, it becomes rather clear how biased the conventional forms of presentation are.

This has a bearing on the last aspect of social development: production. We have mentioned above the significance of forms of presentation so clear that people can, at least to some extent, evaluate whether the policy implication of this or that scientific finding is more in the direction of production of goods or bads, services or disservices. One might be more specific: one could say that the primary task of science is to produce the type of knowledge conducive to the satisfaction of human needs, at least indirectly. The second priority would be the type of knowledge that may not lead to this type of satisfaction directly, but at least does not counteract it. Since the MAMUs in contemporary society are usually by and large better off it



may not be in their interest to choose forms of presentation that make the inadequacy of their science along such dimensions transparent. No emperor with no clothes on enjoys this being pointed out. But there is an underlying assumption for such demands to emerge, by no means universally valid in space and time : that people in general really demand of science that it gears itself more to the production for the satisfaction of basic needs. Or, at least, and that would be entirely in line with the type of thinking about development propounded here: that people would like to participate in the definition of their own needs! Their definition may not necessarily be the same as that of the "experts" - including the type of definition implicit in what has been said in this paper.

This concludes the exercise by bringing in the tenth dimension: institutions. In a sense it can be summarized in one sentence: deinstitutionalization of science, demystification, less separation of science from the rest of society. The edifice of science will of course continue for a considerable time to come, so a more moderate expression of what has just been said would be to argue in favour of highly porous walls in that edifice, with considerable osmosis between inside and outside.<sup>(35)</sup>

##### 5. Postscript: on the status of scientific language

Many readers should and would at this point have come to the conclusion that the present paper must be an exercise in hypocrisy: there is a message about the form in which research should be communicated, but the form chosen to communicate that message seems to be in contradiction with the message itself. This is simply a regular research article, some parts of it not necessarily the most easily accessible of its kind. It is not only verbal but also to a large extent linear. In short, it is within the conventional tradition. Should that be permitted,

should an article of that form not be seen as a weed rather than as a flower in the garden of forms of presentation?

That whole question if based on a fundamental misunderstanding of the content of this article which is not in favour of eradicating conventional scientific discourse from the face of this earth, but of seeing it as one among several, if possible many, even very many, forms of presentation, in plural. Any form of presentation is also a form of production, it is a tool of creativity. And that touches on the third semiotic aspect: that of syntax. A form has its own built-in rules as have paintings, ballet, music, drama; these rules once sufficiently internalized have a certain carrying power, they help us, they make reality opaque in certain directions but highly transparent in others because they make the users of that form of production blind in certain directions and visionary in others. For that reason the argument is certainly not against conventional scientific discourse but against seeing that as the only form of presentation for science in general and social science in particular.

This point should be made strongly as a counter to the repressive, anti-intellectual forces that may also be found among intellectuals, particularly when they are exposed to disciplines or subjects of which they are ignorant, and do not well know how to handle their own ignorance.<sup>(36)</sup> They have a right to demand other forms of presentation out of which popularization (verbalization with simple words, more couched in the form of daily discourse) is one. Whether popularization is possible without vulgarization depends on the subject matter. It may certainly be argued that if no vulgarization, meaning reduction in the depth and width of scientific insight is involved, then the popular version should immediately be substituted for the "academic" version - nothing is added by clinging to the matter. But if this is the case it may be a sign that one is dealing with bad science instead of good science: one characteristic of the latter being precisely that terms and theorems (not quite the same as words and sentences!) have a carrying power beyond the most immediate interpretation. They call to attention other parts of the

scientific edifice, towers, basements - - -. This is of course also true of popular discourse: precisely because it is imprecise the range of connotations may be very rich and suggestive. But within the syntax of scientific discourse it is more clear what is being called upon as a context for what one is discussing or focusing on. There is virtue to both, hence one should make use of both.

Any demand on a researcher that everything he says should be understandable to the common man is precisely the same as demanding of an artist that everything he produces should be meaningful to the common man. With a rule such as that both scientists and artists would be deprived of their major tools and raison d'être. But the rule can be changed to read: a scientist should also try, as much as possible to explain what he is getting at in some other language, more accessible to people in general and an artist should do the same, not necessarily in a verbal language. In other words, they should make themselves accountable, not isolate themselves in social enclaves with tribal languages only comprehensible to the initiated. Just as important as it is for scientists and artists to defend their own languages and tools and develop them even further, possibly into more advanced levels of incomprehensibility, it is for both of them to make themselves accountable by having at their disposal alternative, additional, complementary forms of presentation.

And that is the conclusion of this exercise. It is a plea for the enrichment of forms of presentation as a part of de-institutionalization, demystification of science, not a plea for qualitative deterioration of science. Just to the contrary. The plea has as an underpinning the intuition, indicated above, that a richer range of forms of presentation will also enrich science and possibly even shake some of its foundations, given the complacency with which a very limited range of verbal forms of presentation have been accepted as the form of presentation.

N O T E S

\* The present paper was prepared for the subproject meeting (of the Goals, Processes and Indicators of Development Project) on Forms of Presentation, in Geneva 6-8 June 1980; the Appendix for the meeting February 1979 - it may serve as an introduction to the problematique.

[1] The science of signs. Charles Morris, in his classical paper for the Encyclopedia of Unified Science, divides it into semantics (what the sign stands for, the coding), syntax (the rules for combining the signs) and pragmatics (the consequences of using that particular sign language). The definitions represent my simplified, pragmatic, understanding of Morris.

[2] See Johan Galtung, "'A Structural Theory of Imperialism' Ten Years Later", Journal of International Studies, 1981, with references to much past and current work on imperialism.

[3] Both Andre Gunder Frank and Samir Amin have been pursuing this important concept, as well as Fröbel, Heinrichs, Kreye in Die neue internationale Arbeitsteilung, Rowohlt, Hamburg, n.p., 197

[4] For an elaboration of the distinction actor vs structure oriented analysis, see Johan Galtung, "Two perspectives on society", ch.2.1 in The True Worlds, The Free Press, New York, 1980, pp. 41-44.

[5] The drama was Tom Stoppard's

[6] In the theory of imperialism as conceived of in "A Structural Theory of Imperialism" (written in 1970) there are four positions in the structure of imperialism: a Center country (region) and a Periphery country (region), and in each of them a center group (class) and a periphery group (class). In economic imperialism this would be the international capitalists in the center, the working class in the industrialized countries (the world labor aristocracy, in other words), the national bourgeoisie in a Third world country and its proletariat, to a large extent living in the villages, or oscillating between town and village.

[7] See Johan Galtung, "Is the Legal Perspective Structure-Blind?", in Akkerman, van Krieken and Pannenberg, eds., Declarations on Principles: a Quest for Universal Peace, Sijthoff, Leyden, 1977, pp. 297-309.

[8] Suggested by Susy Heintz.

[9] This is a basic theme in the excellent book by Francisco Gutierrez, El Lenguaje Total, Editorial Humanitas, Buenos Aires, 1974.

[10] Chemistry is a good example of the importance of thinking in terms of potential reality: the artificial, synthetic compounds. This is a key theme in "Empiricism, Criticism, Constructivism: Three Aspects of Scientific Activity", chapter 2 in Methodology and Ideology, Ejlers, Copenhagen, 1977, pp. 41-71; also see "In Defense of Epistemological Eclecticism", GPIID Papers, Geneva, 1980.

[11] The version referred to was printed in

[12] This is what people love looking at in technical museums, etc.; the dynamism being well worth some coins that are the price asked for the transition from static to dynamic modes of presentation.

[13] A conceptualization that goes beyond the empirical is needed. But that conceptualization should give some answer to a rather basic question: out of all possible combinations why are only these, and not those, empirically present? And that is already a theory.

[14] I am indebted to Mircea Malita for thoughts along these lines.

[15] For instance, in his famous preface to I Cheng.

[16] See Nakamura, Hajime, The Ways of Thinking of Eastern Peoples, The East-West Center Press, Honolulu,

[17] Imagine da Vinci's Mona Lisa as a photo to think of the tricks the photographer **would** have had to make use of to produce the same diffuseness for the background.

[18] This is a key point in Johan Galtung, "Culture, Structure and Intellectual Styles: An Essay Comparing Saxonic, Teutonic, Gallic and Nipponic Approaches", Social Sciences Information, 1981, pp. where a key point is that theories divide whereas data may unite - meaning that theories divide people into schools whereas data may constitute **at least** a basis for discussion.

[19] This does not mean any denigration of a purely scientific context of science for science's own sake, only that a context of human and social development should also be considered.

[20] This is one point of departure for the Goals, Processes and Indicators of Development Project.

[21] See Johan Galtung, "Towards a GPIID Model: Some Basic Considerations", GPIID Papers, 1980.

[22] I am indebted to Mihailo Marković for thoughts along these lines. For a general development of needs theory, see Johan Galtung, "The Basic Needs Approach" in Lederer, Katrin et al., eds., Human Needs, A Contribution to the Current Debate, Hahn, Königstein, 1980.

[23] See the article referred to in footnote 10 above.

[24] See E.F. Schumacher's most important book, A Guide for the Perplexed, Jonathan Cape, London, 1977, pp. 24ff.

[25] How many trees was it for one Sunday edition of the New York Times - - -. The number is less significant than the awareness.

[26] A good example is the big character wall poster, the dazi bao, **leading to** group rather than individual **reading** (and note-taking).

[27] It is not only that privatization costs in economic terms; the social costs of privatizing the "consumption" of culture are much more important, playing up to the general pattern of privatization in the Bourgeois Way of Life - as described in many GPIID papers.

[28] Of course, many more gadgets are needed; but it all somehow seems to be destined to end up on a TV screen. What does that mean, this incredible reduction of forms of presentation to one form only, some brightness and color contrasts on a screen?

[29] For a discussion of scientific language see Solomon Marcus, "Semiotics of Scientific Languages", Revue Roumaine de Linguistique, 1979, pp. 323-34. A basic problem with scientific languages is that the high level of precision is bought at the price of a low level of connotative richness that may give associations, sometimes fruitless, sometimes fruitful.

[30] For an excellent discussion of the whole problem of accountability in development practice, see IFDA Dossier No. 17,

[31] The authors of the latter may have thought more of the difference in content between the capitalist character of the former and the socialist/marxist character of the latter than of the similarities: the competitiveness built into both games, the zero-sum concept of winner/loser, etc.

[32] It is like the old Soviet joke of the three stages of love: between man and woman, man and tractor, and tractor and tractor; the last stage presumably with man and woman as observers.

[33] See Galtung, O'Brien, Preiswerk, Self-Reliance, Bougle-d'Ouverture, London, 1980, for an exploration of this approach to development theory and practice.

[34] Which, of course, are those who in general occupy the key positions in bureaucracies, corporations and intelligentsia.

[35] This is some of the argument in "Generalized Methodology for Social Research"; chapter 9 in Methodology and Ideology, Ejlert, Copenhagen, 1977. In Paul Feyerabend's Against Method, Outline of an Anarchistic Theory of Knowledge, Verso, London, 1980 similar thinking is expressed dramatically: "--it follows that the separation of state and church must be supplemented by the separation of state and science, that most recent, most aggressive, and most dogmatic religious institution. Such a separation may be our only chance to achieve a humanity we are capable of, but have never fully realized" (p. 15).

[36] To request of every article or every book that it should be self-explanatory is to sentence oneself to a life in great intellectual tranquility, with no need to stretch one's understanding, to fight to grasp new concepts and ideas. In short, a rather retrogressive view. But this is quite different from requesting that researchers should also try to communicate in a simpler version, as long as there is no illusion on either side that the two versions are equivalent [if they are the simpler one should, of course, be preferred. As Marcus says (op.cit., p. 324): "The best notation is no notation .. fall-back on symbolism only when it is really necessary", referring to Paul Halmos, "How to Write Mathematics", L'Enseignement Mathématique, 16, pp. 123-152.