

Imre Hronszky /BUTE/ :

## Remarks on the cognitive role of participation in risk assessment

### Outline

QRA and technical expertise, Is public participation only essential in evaluation and management of risky situations?

A short remark on considerations of Funtowicz and Ravetz

Frame reflection in qRA and the essential role of public participation

Epistemology of public participation, local, practical knowledge as instrumentally important and as interpretive knowledge, some preliminary remarks, Frank Fischer on the epistemological role of public participation

Lessons from the 'Wising up' study, trust-building through communication

Different approaches to risk and precaution in the EU and USA

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Approach of the EC to the problem of participation in risk research

-The precaution guideline

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I want to begin this presentation with a general problem setting:

In what type of society what type of cognitive hierarchy exist, what type of knowledge /cognitive activity/ will be accepted as supreme and what the consequences of this 'decision' will be in the practice of this society, especially on life of people?

Related to risks studies one can ask: Who make translations between science and society in issues of risk, especially who translates social issues into /scientifically/ researchable problems, who makes risk assessment /identification, analysis, and evaluation/, how is all this connected to riskmanagement?

Risk research has different parts. One can differently classify it. One usual way is to speak about risk description and risk evaluation. The first can be divided into risk identification and and risk analysis. Risk description and evaluation /together risk assessment/, risk communication and risk management studies are the main parts of risk studies. The usual way is that identification and analysis of risks is left to experts, who are expected to provide for a quantitative result, expressing the magnitude of risk. NB.: Many things of a risky situation are not expressed by the description of risks through the risk formula, such as what is called the psychological attitude toward risks, the problem of risky situations where the preconditions of utilising the risks formula are not given, or the qualitative manifoldness of risks.

I begin with some analysis of the so called risk quantitative risk equation, also called as technical risk formula. According to this risk is characterised by its magnitude. The magnitude of risk is equal to probability of the events multiplied by the magnitude of damage. The so called 'objectivity' of risk research is based on the reproducibility of risk measurement made according to this formula. It expresses some objectifiable issue. In technocratic analyses the measured risks are taken as objective and contrasted to their 'subjective mirroring' /comp. among others the 'amplification' problem. /To the amplification issue: death from BSE or from Christmas candles./ Small wonder that the emphasis in these type of analyses is mostly on the inadequacy of the 'subjective' risk perceptions.

I want to make some remarks in the following directions. First, there is a manifoldness of perspectives according to which risks can be investigated. So the disciplinary perspective. Risks are also different according to many qualitative characteristics.

All this brings with it a problem that will be decisive for our recent topic, the essential character of some participation from an epistemological point of view. Will the determination of the magnitude of risk left to the technical experts only, will it lead not to an 'objective' measure of risk of the situation which the risk determination is about, as it is often claimed by risk science, /notice the two different meanings of 'objective'/ but will lead to a reproducible result, only. It is important recognize that risk, as any other calculation, can only be realised if some framesetting, a 'valuation process' /on it one of the first authors is E. McMullin, 1969/ fixes its background conditions. The 'valuation process is, can not be predetermined, it is always a choice. Experts making quantitative risk calculations have to make this choice before they calculate. /Strong trials can be made to standardise the calculations, standardisation has its advantages and disadvantages, needs, as other issues a SWOT analysis to understand its functioning, but it does not mean that choices are not made to be able to make calculations./ That is, far from being 'objective', as independent of choices calculated risk, but is result of a 'subjectively' enframed risk determination. It is expression of some sort decisionism. /Kristine Shrader-Frechette worked out a striking case of this decisionism concerning the problem of incineration of highly-radiating nuclear waste in the USA, the investigations at Yucca mountain. She demonstrated, beside a huge amount of ethical problems, another huge amount of problematic methodological decisions having strong effect on the expert advice worked out about the safety of the place. See in Burying Uncertainty, 1993./ This decisionism may especially be dangerous when the determination of the quantitative risk of the risky situation is left to the experts without any public, participative control of it. Once again, to understand this one has to think first of the problem of valuing. To be able to make any calculation

one needs to fix some preconditions which circumscribe both the subject and the methods. To be able to make risk calculations one has to do the same. But valuation is setting the value set accepted as relevant to the situation. These values express special sorts of relations of persons, groups to the investigated situation. Making a choice of them enframes the investigation of the risky situation, so has of highest practical value, for the results of the measurements will be the base for looking for decisions of pragmatic relevance.

One can leave the choice of these values and perspectives to the experts /see further/ in practical situations of different sorts. /More about this later in connection to the considerations of S. Funtowicz and J. Ravetz some 15 years ago./

The quantitative risk formula leads to some quantitative results. We saw that there is an inclination to say that these are the 'objective measures' of risks. We also saw that they lead to quantitative results only when the enframing make them well defined. It is useful to think of the quantitative risk formula as a metaformula that can generate risk descriptions, different ones, according to the different enframings, according to the prescriptions. With this one expresses some liberation from a decisionistic approach. Once again: measurable results express something objectifiable, so somehow expressing some constraint by the outer world. But risk expresses some social natural issue: 'damage' /or more broadly and symmetrically: 'stake', to be able to speak about chances too, not only of dangers/ is essentially related to human values. The perspective expressed by M. Douglas and A. Wildawsky in the early 80' may express this social-natural nature of quantitative risk, notwithstanding that it is mostly used to contrast the so called 'objectivistic' understanding of risk. /According to their formulation 'risk is what people identify as risk'./

E. Rosa in a basic article for the new Journal of Risk Research /1998/ tried to show a systematic place for public participation in quantitative risk analysis. According to him, one has to leave risk calculation to experts whenever they are able to do it. But, as he states, quantitative risk analysis is surrounded by uncertainty. If so, because results of risk analyses may have practical consequences on people, they should have write to co-determine what will be accepted as the valid risk description. With this he thinks a reconciliation can be reached between the two basic risk interpretation approaches, between defenders of 'objective' risks calculations and 'subjectivistic' approaches. One will just in the measure be encouraged to include into the description 'subjective' opinions as no exact calculation is available. According to him a broader basis is this way available for consensus building in risk issues: what is calculable is calculated and so exempt from from discourse, what is less or not will also be included into the descriptive knowledge base for risk decisions. We saw already, that

without an initial 'feed-backing' into the determination of the preconditions of calculation this method would lead to a covert decisionism as a form of reification. People will be prescribed what the risk situation is what they have to live in.

Let me concentrate now on another aspect of Rosa's considerations. He himself claims that his above mentioned considerations fully fit with ideas Funtowicz and Ravetz developed on different sorts of relations among the public and experts in policy issues. S. Funtowicz and J. Ravetz introduced the idea of „extended peer review” in considerations on uncertain issues some 15 years ago. With this they tried to face the problem, that many practically important issues are essentially different from those from which scientific experts draw their legitimation by promising, in principle, exact calculations. That means that characteristic for the typical policy issues Funtowicz and Ravetz also take into account is that knowledge about them is factually or essentially uncertain. So, scientific expertise is as much helpless as 'lay opinion' in these situations. Coupled the essential uncertainty situations with practically very important cases when the 'stakes' are very high they laid down their famous classification. According to this 1/ one can leave the decision on situations, as a technical simplification, to experts in which both stakes and uncertainty of knowledge are low, 2/ one has to move to a type of advisory relation in medium cases and 3/ one has to call for referendum by people in the third case. /The classification is principal, demarcations are open to discourse in any concrete case./

This is a very simple and important consideration for classifying policy situations, I believe. But it is also important to emphasize that it is, in one way, a type of commonplace. It is a reformulation of some classical Greek ideas: where /demonstrative/ knowledge is not available there doxa would rule, by necessity. Modern epistemic knowledge changes the idea of demonstrative knowledge to a more moderate one, to well established hypotheses, and one can say, if scientific knowledge is available, one makes it well to leave the cognitive characterisation of the situation for the scientists. I have two main problems with this. The one is that it leaves for knowledge of people only a residual place in the meaning that where nobody knows well the issues with certainty, they also have their place. This residual place is well reasoned, but it may fulfil an ideological role. That is why my second remark, as it was already developed in some direction earlier, is directed to the alleged 'objectivity' of exact expert knowledge. Let me concentrate now on a partly different aspect. As we know already very well, it will be come back to this, scientific knowledge may be exact only in purified, 'laboratory' conditions. Obviously the valuable considerations of Funtowicz and Ravetz should be modified by considering the possibility what can be called as 'remote expertise', that means an inadequate but exact expertise /the term will be

somewhat clarified later/. 'Remote expertise' may produce exact knowledge that is inadequate to the situation to which it is intended to utilise.

## On enframing and changing expectations for expertise and participation

I mentioned enframing in a narrowed down meaning already. To be able to make any calculation one has to make a previous 'valuing' and setting the value basis for the calculation. /More correctly, the whole 'valuing' works actually differently. By understanding the situation and interpreting goals and means one actually continuously 'values' his/her own research process. But, I think this, otherwise decisive difference is less interesting here./ 'Valuing' as realisation of enframing expresses enframing for a necessarily narrowed down medium, for scientific research. But it is useful to accept that enframing accounts for the whole world, has a cognitive /valuing/ as well as a moral and an aesthetic aspect. If so a full enframing brings us to a full-fledged reflection possibility on issues by people and as its adequate scientific investigation to interpretive sociology.

### Remarks on 'policy epistemics'

What is at stake is enhancing democratic participation in an increasingly expert driven society – states Fr. Fischer in his recent book /Citizens, experts and the environment, The Politics of local knowledge, Duke Univ. Pr, Durham and London, 2000/. In this chapter, we shall critically follow his argumentation. The social and technical complexity of modern world leads to a special sort of paradox: the mentioned goal, enhancing democratic participation in an increasingly expert driven society, is as much inevitable as it is impossible to realise. The stake from epistemological point of view is integration of 'local' and expert knowledge. We shall see in more details that this integration puts tasks of reorganising their relation, not only means a purely additive process. This task can be formulated as the task of unification of technical rationality of expertise with the social cultural cognitive orientation of the citizen. /NB. naming is not innocent, but orient through 'root-metaphers' behind the names. Unfortunately, even its defenders several times are ready to name citizen knowledge lay knowledge, or local knowledge. Both names narrow down citizen knowledge, just as the name 'citizen knowledge' may include a positive bias toward it./ The unification process itself means setting a discursive medium in which an ongoing discourse can be realised. /I think one can put a wrong question. According to this one asks if this discursive medium can be made homogenous and have a universal code and homogenous programmes. One can be inclined much more to think that it would be some sort of Mode 2 cognition. Heterogeneity in the medium would bring with itself as contextualisation some sort of open negotiations how the heterogeneous pieces of knowledge and

knowledge production should be unified. They would lead to good enough solutions at concrete places. Concerning Mode-2 cognition see H. Nowotny at al.: Re-thinking science, 2000./ Provided this unification succeeds, both expert and citizen knowledge would lose its earlier characteristics: they would get essentially related to each other. Experts explore issues as 'specialised citizens' and citizens develop and realise themselves as 'culturally, or lifeworld oriented experts'. In issues of managing technology they make up what can be called 'technological citizenship', an informed and democratic relation to technological development. How to develop it? I think we are at the very beginning of this process.

Why actually do we need essential participation in democracy? Let me summarise the reasons as Fischer did. First, it is essential to give meaning to democracy, second, to legitimate politics, third to contribute to professional inquiry. Concerning the third issue, our topic now, we shall try to detail it a bit, as contribution to instrumental and to value rationality. /On the contribution of participation to enhancing instrumental rationality more will actually be told in the presentation, including the problem of correction of non-realistic expert advices, so that sheeps would not be constrained to change their behaviour meanwhile 'waving their handkerchiefs'./

To realise essential participation needs a structural change in doing expertise. Recently, we may state, the knowledge producing activity of society is rather falling into two parts. The one is a mainly technocratically oriented expertise, instrumentalising reasoning, the second is a type of /recently rather weak/ moral discourse over this type of expertise. The recent cognitive system gives a central and supreme position for instrumentally oriented expertise in cognition and advising decision making structures. Fischer reminds to a perhaps more important characteristics. This is that technocracy became, as he thinks, overwhelming type of culture. In this detailed exploration of the instrumental effectivity and so, the role of /recent type of/ expertise became the main mode we understand the world and prepare action. The capacity of instrumental control gets the central place. Questions like 'what is feasible?', or 'given the constraints, how effectively is it feasible?' get the central role. Instrumental rationality of social action will be the decisive side. Framereflection, especially in its broadest sense, including moral discussion is pushed back. Not the goals and values are reflected but the means only. /Cum grano salis, of course. Changes in biotech capacities led by now to a second phase, to invite ethicians to 'tell the truth', as if essential innovations would not be challenging their /ethical/ control as well, but had ready made solutions. This situation clearly invites to enter a third phase of relation among scientists and ethicians, a co-evolutionary oriented period. Some sketchy remarks on this task may be found in the articles of A. Rip, and I. Hronszky in E. Ahola and I. Karatzas /Eds.:/

Socio-economic impact evaluation, Tekes reports of RandD impacts, 6/2000 and the summary by Rip in The IPTS Report, december/2000./

Let me make an excursion in theory of society. Cognition in and organisation of society mutually reinforce each other, even when society as a complexity always produces and reproduces contradictory changes too. If one follows the historical process how modern science /partly modern everyday life behind it/ constructed processes of the world into objects of exploration through objectification of them, and through stabilising their behaviour got predictable knowledge of them, utilisable for control, and if one also follows its positivistic reflection, especially its original form with A. Comte, one can make two remarks. Objectification efforts and positivist model of cognition and a special, technical-administrative form of regulation mutually reinforce each other. Organizing the world into a system in which processes of the world become a world of 'outer' objects and their interrelations gives possibility to a special type of control. /Wynne /1992/ on the constraints of 'upstream' environmental regulation concerning necessary standardisation efforts of life./

The second remark is on the changing historical period. Control, based on predictability of stable behaviour has special preconditions and they seem not to be exist on the way they existed until now. Interiorisation of complex issues of nature into and quickly accelerating 'dense interaction' in society /'globalisation'/ invalidate much of the efforts to standardise processes. Put it in expressions of risk research we are moving from 'emergency management' to 'crisis management'. / In 'emergency situations' one can exactly account for risky situations, they are, statistically, predictable /certainty is regained on the second level./ 'Strong signs' are used to develop reliable knowledge. Successful management of the situations needs command and control technology, with a hierarchy of managers and experts advising them.

Repairing penetration into the system is only needed when its running is loosing its regularity and it aims at reconstituting its regular running. In 'crisis situations', both 'emergency' and 'crisis' are taken as ideal cases, in opposition to 'emergency situations', breaks in the behaviour of the system are typical. Management should be based on a non-hierarchical organisation mode, on readiness to basic changes, on anticipatory knowledge, on 'weak signs', and it essentially needs the engagement of the public. The first type of situation can, in principle based on expertise /social constructivist considerations demonstrate that it is not a real case, because of the the need for local knowledge/, the effectivity of management principally depends on the skill of developing the needed system of expertise, on the skill of stanadrdisation, developing expertise for every type of role, its management is expert based in a society in which social functioning is based on a mechanical division. /We know, this is our

history, that this type of risk management worked quite successfully in instrumental terms. As a side effect of this instrumental effectivity claim one can identify a type of conservativity of the system of expertise, itself contrafunctional for instrumental aims. That conservativity means that expert communities are inclined to accept definitions of their work in terms of instrumental rationality instead of taking inspiration from goal or even more from value criticism (Compare it with ideas of Kuhn on scientific revolutions and his regret over the impossibility of answering many socially most relevant question in a normal science mode of working of scientific investigations.)/ As a consequence, the cognitive role of public is not essential, it is adding some missing 'local' instrumental knowledge to expert knowledge and produces 'resistance' in terms of value based behaviour.

The main role of public participation in cognition originates its, from science different, perspective, in its contextualising orientation. /More to that in the presentation./

### Lessons from the 'Wising up' study, trust-building through communication

An important research result was developed in 2000 by a group of researchers, including Brian Wynne, that shows how the one way type of communication understanding can mislead the firms when they try to introduce new products, in this case genetically modified /GM/ crops. The failure revolved around special topics of interactive understanding, around communicating scientific uncertainty and ignorance.

„Developing good ways to talk about how we will manage the things we don't know is maybe as important as good, open and frank information about the benefits and risks we do fully understand.” – as a representative of Unilever accepted in the foreword to the study. Having anticipated, in a study from 1997, key social and political contours of the intense public debates surrounding GM technology in 1998-2000 the authors put in the centre the institutional handling of scientific uncertainty and ignorance, how communication of new technologies may lead to a surprising result, that means instead of enhancing trust some sort of communication led to enhancing distrust as its result.

As the authors reconstructed: on one side reasonable public concern emerged about the regulatory context of introducing GM products because of sensing, by the public, important missing knowledge, on the other an idea of, through one way communication, a trial to persuade them through communicating certainties. And a result more public scepticism and mistrust emerged than was earlier. The authors of the work identified that the risk knowledge

communicators abandoned the 'humanly significant dimensions of uncertainty and ignorance'. „The different 'social constitutions' of particular technologies – that is, the distinctive values and social assumptions embedded in their development – were found to be of fundamental /though under-recognised/ importance for understanding public responses.”

They got a very interesting result, demonstrating that the public is not inimical to any new technology. „Issues arising from different new technologies /and their associated products/ are much more varied than has tended to be assumed in business planning or by academic economists. Different technologies may have wholly different implications one from another – for social relations, for regulatory integrity, for personal sense of security and agency, for retrievability under conditions of crisis, and for the social distribution of expertise.” „Whilst the diversified consumer-interactive character of IT and its associated products has tended to be experienced as user-friendly, reassuring, and susceptible to effective regulatory oversight /notwithstanding the possibility of buried and latent problems of major kinds/, GM's sensed patterns of oligopolistic ownership, technical opaqueness, and potentially irretrievable side-effects and unknowns appear to lead to a sharply different frame of understanding.”

In this relation their investigations show the crucial role of trusted 'others', and 'triangulating' in the communication process, the trial to enlarge the information resources .

Communication refers to the 'wholeness' of the 'receiver'. Hence one tries to enhance trust through and in communication on should not cover uncertainty, but make it public, and proactive communication is to prefer whenever possible. Full-fledged communication leads to learning, itself by its etimological roote an interactive process. It raises awareness and sensitivity, raises knowledge, both experiential and theoretical, changes or reinforces an attitude /expressed in a behaviour based on a set of interiorised social values and feelings and motivations/, urges to action, to solidify the atitude to skills of handling different situations through active participation. In contrast to this the trial to get through through one way communication demotivates at the best, raises problems of cognitive dissonance and results in activation of resistance to the issues one wanted to persuade through one way communication.

NB. Cognitive dissonance with deeply seated instrincts may be a hard obstacle for introducing and accepting progressive technologies, too. In this meaning precaution by the public is not necessarily good.

Going into deeper levels the authors of the 'Wising up' material make an important reminder: „A continuing tendency within industry and government to favour a simplistic view of human beings as 'consumers'... is helping to

perpetuate inappropriately simplistic 'market' models in areas of complex human interaction and judgement. While the results immediately relate to marketing processes, the authors, in their suggestions go deeper inside the construction processes of potential technological developments. Their conclusion is that „incorporation of new forms of social and humanities expertise, to complement those of existing technical specialists, will be required into companies' product development processes, as new forms of upstream social analysis.”

One-way-information based understanding may progress from informing about certainties to including informing about uncertainties and ignorance, to the 'we've got nothing to hide strategy', but still remains a one-sided effort. 'Authentic interactive understanding' is needed against reification and handling the others as simply tools for aims on the market in a historical period of consciously 'manufacturing risks' and trying to produce appropriate consumers. Co-evolution toward co-operation of authentic partners in a society including a changing sort of market? Instead of 'factual info'/'existing values of possible consumers', integrating them into ability of making 'choices', as instrumentalistic participation in 'decisions' about their own life? How far is it learning to live together with uncertainties and unknowns, as threats and chances, on the way of authentically participating in decisions about ways of life by producing and reproducing these uncertainties and unknowns a real recent perspective already?

People experience 'manufactured risks' through developing scientifically based technologies. 'Do they reflect the complexity of issues in which they penetrate and which they constrain to change?' – people begin to ask. Uncertainty, incertitude and the possibility of genuine surprise will also be focused on. / On incertitude and genuine surprise more in the presentation./ This also is what are people waiting to get a trustable answer for, to be able to develop autonomy of decision. Scientists can only begin to satisfy this need if they first overcome their own historically cristallised ideology, they reflex with which they try to defend their special social position. /I think this ideology is especially strong in the late socialist countries./ 'Crisis management' essentially needs as full as possible participation by the public and a strongest co-operation with experts.

In an landmark article Bryan Wynne put already 1993 the question of trust in expertise into focus. He emphasized then: to raise trust people should experience that the scientific predictions come true, that their knowledge should be integrated when producing solutions and scientific knowledge be clearly presented, moreover scientists should be ready to accept criticism. That article produced clear case for a sort of what could be called a 'remote, unrealistic expertise', both in the analysis when experts /through their limits of their

expertise/ were ignorant of essential factors and in policy advice when clear, abstract, from the essential real conditions 'liberated' suggestions were developed. /The cows, we know, just would have got to 'wave the handkerchief' and follow the instructions of experts./

The reaction to an expertise experienced as a 'remote' one can badly be different from distrust. Trust, can only be developed in a contextualised situation, in which the history of the person, institute that should be trusted can be evaluated by those who would be expected to believe in the advice and in which the practical questions everyday people necessarily have to put will be asked and answered. People should be included in an interactive way in trust building if one intends to really develop it, their involvement should be a part of building 'extended peer review'.

Let me make a short excursion to the idea of the so called 'extended peer review'. As mentioned already, Funtowicz and Ravetz argued for extending the well established peer review in scientific disciplines to cases of advice when knowledge would be of high uncertainty in situations of high stake. Actually Funtowicz and Ravetz correctly keep the primacy of 'extended peer review', in principle, for every case of advice. But to let run the machine more effectively in instrumental terms, for low uncertainty and low stake cases, we saw, they suggest accepting a simplifying approach according to which 'extended peer review' should only be really practiced in high uncertainty, high stake cases. With this, I would like to mention, they connected the task of developing 'extended peer review' to the certainty of knowledge, as we saw earlier, but did not deal with the problem of value plurality as another essential initiator of the need for 'extending peer reviews'. The case they worked out in a pioneering way is only a special case of extending peer review.

From a regulatory point of view extending peer review is a tool to reach the highest possible „social robustness”. Because responding to a wide range of policy, social, economic needs and concerns it might be expected that the highest possible consensus, or at least the highest quality of knowledge will be reached. Example: the task to avoid 'gender blind' assessment. *Mutatis mutandis*: to avoid any sort of 'blind' assessment. /NB. representing those groups who are unable to represent themselves./

Some sort of 'extended peer review' is already being practiced. Example: STOA 'plurality of experts, often including practical knowledge'. Cochrane Collaboration, established in 1993, with centres in 15 countries. To help people to make well informed decisions about health care. 'Patients' list, Madelaine Akriche, 2000, functioning as control or a different sort of knowledge to integrate? /A Hungarian evaluation: opinion vs scientific knowledge?/

Joint problem definition, potential or actual victims having practical knowledge of risks, those having practical experience as operators, policy makers should be included into the risk investigations.

### Remarks on a recent expert opinion on democratising expertise

It is worthwhile to have a short look on the report of the working group „Democratising expertise and establishing scientific reference systems” /1991/ at the DG Research of the EC. The report identifies experts as „key actors of ’governance’”, who serve in different roles, partly as proactive agenda-setters partly as resources. Who identify options, tackle or prevent problems, or assess impacts. The Executive summary states: „”Experts’ are consulted by policy makers, the media and the public at large to explain and advise ... diverse issues... However, many recent cases have shown that expertise, while being increasingly relied upon, is also increasingly contested.”” The report puts in centre this paradox that, as it correctly recognizes, makes difficulties for expert based policy processes. It wishes to restore credibility and trust. The reason it gives for the contestation of expertise concentrates on the problem experts often contradict each other, that ’traditional science’ has to reflect on its different, e.g. ecological effect without being able to appropriately dealing with it and that a lack of transparency undermines the legitimacy of the process. I think, at least two important things are further mention. One is, that the ideological expectation toward science and expertise is epochally changing, at least in two directions. First, while modern science drew its practical importance partly from a promise that it would give exact advices for the practice, based on conclusive calculations, making this way the world safer, we believe by now much more that the main role of science is to uncover a whole a whole range of alternatives, this way widening the decision room, than the opposite, leading only under special circumstances to conclusive basis for decisionmaking. Second, we know that exact calculability and prediction capacity has different non-technical obstacles. One of them, a seemingly only technical difficulty was named as ’trans-scientific problem’ already in 1972. Another originates in the non-linearity of the most processes. Beside this, and this is most important for us now, there is a problem which is often called a ’remote expertise’, that people experience that expertise might fulfill special criteria, but it does not provide solutions for their problem.

As mentioned the „Democratising expertise” report first concentrates on information issues, and states demands for „increased accountability and transparency in...policy making process, including the use of expertise.” But it also goes on to formulate as follows: „more is needed to improve the interactions between expertise, policy making and public debate.” This relates to

„the definitions of 'expertise', the meaning of 'democratising' in this context.” Seven aims were agreed on by the expert group, corresponding to 'democratisation' criteria: access and transparency, accountability, effectiveness, early warning and foresight, independence and integrity, plurality and quality” Through eventual adaption and implementation of linked actions, the authors of the report believe, a better quality of decisionmaking and restored trust in expertise /in European policy-making will be reached./

Among the suggested „action lines” we find: „iii More openness of expertise and greater opportunity for informed participation by society in policy making. A number of measures should better connect experts, policy makers and society at large, and make this process transparent:” „Attendance by the public and by the stakeholders at meetings where expert advice is developed and transmitted”, Publication of expert evidence and how it is used in reaching political decision”, „to enhance accountability by providing the public and the stakeholders with a 'trace' of the path to a particular decision”, „promotion of participatory procedures”. I quote more detailed on it: „The principles of access and accountability demand public debate, knowledge-sharing and scrutiny of policy makers and experts at the grass-roots level. Citizens' juries, consensus conferences, participatory foresight are among the mechanisms implemented on specific topics at local and national level.”

To the above mentioned „more openness of expertise and greater opportunity for informed participation by society in policy-making” will a further suggestion on iv. Broadening and integrating the expertise used in policy-making” put, with the objective of delivering „socially robust” knowledge. Under „socially robust” a notion of expertise is understood „that embraces diverse forms of knowledge /plurality/. Expertise, so the report, should be multidisciplinary, multi-sectoral, and should include input from academic experts, stakeholders, and civil society. Procedures must be established, states the expert material to review expertise beyond the traditional peer community, including, for example, scrutiny by those possessing local or practical knowledge, or those with an understanding of ethical aspects. This is sometimes referred to as 'extended peer review'.”

A 'democratic expertise' is one which satisfies the criteria of doing it in a „due process”, accessibility, accountability, pluralism characterises it. 'Democratising expertise' /the reverse side of 'expertising democracy'/ needs a new type of quality assurance, by extending the 'peer review'. The 'extended peer review' so the material would include outside the scientific, the disciplinary community. It includes those actually or potentially affected, also those who have practical knowledge of the issues. According to the expectation of the „Democratising expertise” expert group extending the peer review would lead to 'highest level'

of 'usable knowledge' of good quality, in the meaning that it is most scientific and involves the most knowledge of the effects.

Some remarks may not be useless in this relation. There is a main problem with the considerations above. Briefly it still preserves a main element of scientism and technocratism. Extended peer review will only be called for the assessment of effects. In a world advised by experts to technically change the effects of these technical changes will be assessed by an 'extended peer community', and, expectedly, fed back. What remains in dark, is the idea of participatory technology assessment, the full involvement in the process of generating technologies. /A requirement of which practicing can be suspended for technical reasons, compare Funtowicz and Ravetz in this respect, but, of which theoretical importance is essential./ For the group having written the „Democratising expertise” material the world is constructed by experts and only the evaluation of effects should be fed back. /In this respect it is not important if in form of a preventive action or as an after-action./ It seems not quite by chance that they make considerations on participation in a special perspective only. It is about avoiding that the participants would only express their own view of the issue in centre. Instead they should look for the common interests.

„The more the better. If you show you've got nothing to hide, then people will not be suspicious” – insist on one partner of the „Wising up” investigation, a public interest NGO director. Behind it stood the model of 'objective knowledge', 'rational actor' and 'enlightenment', insisting on a one way communication. Enhance information, now by openly confessing the uncertainty and ignorance, and perhaps those who refused an enlightenment trial concentrating on what is known would accept the enlarged enlightenment also including information on uncertainty and ignorance. Are people really ready to simply accept 'doing things for them' if they they will be informed about uncertainty and ignorance? It seems an answer in negative repeatedly puts an emphasis on /genuine/ participation.

The Science and society action plan, to realise it from 2002, of the DG Research is strongly based on the analysed expert group material. So, it seems it will be a very important step forward, for it puts emphasis on public participation but if it remains in its recent form it realises less than it could be done.

Understanding the relation of expert and 'lay' knowledge has gone through phases. One can remember how the felt constraint that 'lay' persons' opinion should be taken into account in negotiations about technological political issues was reacted on on a rationalistic way. According to this one could 'more

exactly' learn about how few everyday persons /including experts outside their narrow field/ know the scientific facts. From one survey: „only 31% of the British people correctly answered that electrons were smaller than atoms, and only 34% knew that the earth turns around the sun and that this takes a year.” Or: „In a similar way according to an American survey about 70% wrongly thought that natural vitamins would be more healthy than artificially produced ones and 50% supposed that acid rain was caused by nuclear power plants.” To summarise the argument based on surveys of this sort: Illiteracy of the public in science and technology issues prohibits to include them into a rational discussion.

On the one side we have weaknesses of expertise, on the other of everyday people. The negotiation, to optimise it, should be based on the knowledge for every party of a serious SWOT analysis and openness to accept criticism based on the weaknesses and threats demonstrated by the other parties.

### On precautionary politics

/more to this in the presentation/

Is there a basic contradiction between European and US approaches?

EU guideline, Communication by the Commission of the EU Communities 2000 on precautionary principle

Precaution based on scientific expert description of risky situations

Participation in evaluation and management, only. The lesson: give place for values in description and analysis too./

Clarification and two questions:

Precaution as Precautionary Approach, Precautionary Principle, Precautionary Measures

1/ Is the precautionary approach a new paradigm?

/Phase I, II, III/

2/ Is about taking the place of qRA?

/// Is it something to use in descr and analysis or in regulation?

The task of unifying a more scientific handling of risky situations with precautionary regulation, the lessons by the IPTS report /1999/: qRA and PP should and can work together

