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What is the ideal consensus conference, and how would we recognize it if we saw one?

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Abstract

The consensus conference is a participatory mechanism that envisages ordinary citizens engaging with experts (scientists and other knowledge producers) on issues of compelling social significance. It invites ordinary citizens to bring their life experience and values to the serious consideration of a technology that may have far-reaching consequences. Three selected examples of consensus conferences are examined in order to see how they match the ideal. The paper concludes with thoughts about the adequacy of evaluation frameworks and suggest that a more dynamic model of consensus conference evaluation (based on public understanding of science models) might invite more compelling reflections about the success or failure of a particular consensus conference.

The consensus conference is an inherently positive, idealistic, and value-laden type of participatory mechanism that envisages ordinary citizens engaging with experts (scientists and other knowledge producers) on issues of compelling social significance. It invites ordinary citizens to bring their life experience and values to the serious consideration of a technology that may have far-reaching consequences. The local mechanic, dentist, homemaker, teacher, retiree, or tree surgeon are tapped - but not the tree-hugger - because these folks should not have any hidden agendas nor know anything substantive about the topic under consideration. Paradoxically, they stand a chance of being selected if they possess the right kind of “ignorance” and yet are also judged to be open-minded, willing and able to tackle the topic, and available – the loss of six or seven day’s income is no hardship for these citizens. Perhaps this all sounds too good to be true. Can ordinary citizens bring “tutored preferences” to bear in order to inform scientific and technological priorities? Or are citizens bound to live in a society in which only the science elites, technocrats or politicians decide which programs or applications are developed or funded?

To put these questions in context I will need to explain my choice of the consensus conference as an exemplar of the connections I see between the ideals of science, deliberative democracy, and participatory technology assessment that we encountered in this course. In this I share the following critical observations by Torres, et. al. (2004):

> Deliberation is often viewed as superior to traditional forms of public involvement through which individuals or organizations state their viewpoints. Deliberation offers a different structure, resulting substance, and civic benefits. Through deliberation, the public is able to come to a better *shared understanding* of underlying issues, make substantively better policy recommendations, reduce friction, and experience "empowerment" as individual citizens. It is expected (but not known) that the civic benefits of deliberation–education, engagement, and social capital–can smooth implementation and provide lasting benefits for democratic life. Furthermore, decision-makers profit from the experience by acquiring substantial information about the values, aspirations, and specific concerns or recommendations of citizens on an issue, reinforcing their leadership position. At the same time, the likelihood of future conflict over the issues is substantially reduced and the road paved for successful, lasting implementation (p.2).

I introduce and employ a parallel I see between the notion of "well-ordered science" proposed by Philip Kitcher in *Science, Truth, and Democracy* (2001) and participatory mechanisms in order to ground the discussion of consensus conferences. I will follow this with a discussion on why and how the consensus conference model developed and, following Kitcher, suggest that the concept of an "ideal" consensus conference based on a particular evaluation framework is useful way to examine this particular participatory mechanism. Three selected examples of consensus conferences will then be examined in order to see how they match the ideal delineated within the framework. The paper will conclude with thoughts about the adequacy of evaluation frameworks and suggest that a more dynamic model of consensus conference evaluation (based on public understanding of science models) might invite more compelling reflections about the success or failure of a particular consensus conference.

"Well-ordered science"

I was struck by the idea of well-ordered science when we encountered it early in the course. Kitcher suggests that we can envisage a process that would allow citizens with "tutored preferences" to not only set scientific research priorities based on social values, but to allocate resources for them and decide how the results from these projects would be applied. Does not this "ideal" process have some similarity with the manner in which a consensus conference is conducted? In what follows, I give a bare bones explication of what Kitcher calls the 'ideal inquiry' without any of the richness and elaboration of the original, but just enough to establish points that I believe the two enterprises share.

The citizens, called ideal deliberators, engage in a process that is based on three decisions: 1) How are resources initially to be assigned to projects? 2) What are the constraints on morally permissible investigation? 3) How are the results of the investigation to be applied? Kitcher takes up step 2, the constraints on inquiry, separately. This phase mirrors the problems that consensus conference organizers face with regard to representation of points of view and Kitcher provides a process to deal with divergence of opinion. The first and third phases bear a close resemblance to what occurs in a consensus conference. Citizens come together (Kitcher does not elaborate on how these particular individuals are chosen or appointed) first of all to discuss what areas of inquiry to pursue. He continues:

> The first thing to recognize is that … they are likely to begin from a very partial understanding of the possibilities. An obvious remedy for their ignorance is to insist on transmitting information so that each deliberator becomes aware of the significance, epistemic and practical, attaching to the potential lines of inquiry. Ideal deliberation must involve presenting the structure of significance graphs, where the multiform sources of significance are revealed. Once this as been accomplished, the deliberators revise their own initial preferences to accommodate the new information…The product of the consideration is a collection of lists of outcomes the deliberators would like scientific inquiry to promote, coupled with some sort of index measuring how intensely they desire those outcomes. Personal preferences have given way to *tutored* preferences (Kitcher, p.118).

As all the possibilities are put on the table, the deliberators have a chance to explain to each other why they want particular outcomes to particular degrees and also to listen respectfully to the preferences of others. The aim is to arrive at consensus from among the competing claims and rationales. Kitcher outlines an iterative process to follow if this should not occur in the first instance. The third step in his process would be to assess whether particular scientific projects might deliver what the ideal deliberators collectively desire. In order to do this, it is "appropriate to turn…to groups of experts" (p.119). In this aspect, the ideal inquiry mirrors the consensus conference process – in reverse. The citizens decide what projects they want science to pursue and then summon experts to give them the probabilities that the scientific projects will yield the particular desired outcomes; in the consensus conference, citizens are informed by experts first and then deliberate on the basis of what they have learned. Again, Kitcher has a process to deal with issues arising out of the choice of - and potential disagreement among - the experts.

A "disinterested arbitrator" (facilitator?) uses the information about probabilities, together with the collective wish list, and draws up possible agendas for inquiry to which resources will be assigned. The final phase consists in a judgment by the ideal deliberators of the appropriate budgetary level and the research agenda to be followed at that budgetary level (p.121).

There have been a number of critiques of well-ordered science as the standard against which to measure real institutions and models (Hausmann, 2003, Kimmelman, 2002, Jamieson, 2002, Lewontin, 2002). Indeed, even Kitcher says "…there's no thought that well-ordered science must actually institute the complicated discussions I've envisaged…" but, "…what we would like, I suggest, is a feasible approximation" (p.123). I adopt this approach by proposing to sketch what the 'ideal' consensus conference would look like. That many do not reach the ideal is not a reason to abandon the strategy; rather, it might point the way to an evaluation process that will refine and build upon the consensus conference model so that it truly reflects democratic deliberation of science policy.

Origins and development of the consensus conference

The consensus conference is one of several methods that arose in the 1980s to try to inject more participation by average citizens into policy decisions regarding the development and use of technologies. This strategy was deemed necessary due to what was perceived as a loss of confidence in science as a factor in social progress. Many writers have situated the public's disaffection with science to have

occurred following incidents such as Love Canal, nuclear power plant meltdowns both at home and abroad, toxic oil spills, and the BSE crisis. Such loss of public confidence is reputed to have been the impetus for the birth of the traditional 'public understanding of science' (PUS) field, in which the public's lack of trust was equated with a lack of information about science and scientists. The "deficit" model of the PUS has been challenged by the critical or deliberative model, which maintains that the problem is not that the public does not listen to science, but that science does not listen to the public (Horst, 2005). Waiting in the wings is a third model, the network model, which will be discussed later in the paper.

For now, it can be posited that governments in Europe and the United States looked for ways to re-engage their populations with the aim of continuing the public support that that science and technology had previously enjoyed. Those countries with a formalized technology assessment agency were well positioned to work on this issue because of their dual role as information providers to constituents (the Congress or Parliament) and as gatekeepers. Ironically, the United States Office of Technology Assessment (OTA), which was established a full ten years before European technology assessment organizations and the agency upon which a number of such entities were modeled, closed down in 1995 - the year that the Danish Parliament established the Danish Board of Technology (DBT) as an independent body (Van Eijndhoven, 1997). The DBT has a direct connection with the decision-making body in Denmark (the Danish Parliament or Folketing) of which the countries that adopt its model can only dream. The Danish consensus conference model is only one of a number of participatory engagement methods that the DBT uses to evaluate and to promote ongoing discussion about technology. In Denmark, the decision to make use of the consensus conference method typically follows an annual procedure of identifying issues to be assessed, characterizing the main aspects of these issues ("the problem") and deciding who are the main "customers" or "target groups" of the assessment. In other words, the consensus conference method is chosen if and when it is deemed suitable for dealing with a specific issue that is up for assessment (Klüver, et.al, 2000).

It was not just happy accident that the consensus conference model evolved in Denmark, however. Danish culture, particularly in education, was influenced by a beloved historical figure, N.F.S. Grundtvig (1783-1872), a social and educational reformer. His folk school *(folkelig køjskole)* was conceived as a place where the native Danish language would be used to teach the ordinary citizens instead of the classical Latin and Greek of the exclusive universities. He had a strong belief in the abilities and wisdom of the ordinary people above the educated and elite. The term *folkelighed* that came to inform this institution is a multidimensional one. It can refer "to enlightened, responsible and tolerant participation in the exercise of power," "the quality of being of the people," or just plain "peopleness" (Borish, 1991). The tradition of people having a say in matters that affect them thus builds upon a sensibility that has long been integrated into Danish institutions.

What is the Danish "model" – does it come close to the ideal?

The Danish consensus conference model will be described in somewhat greater detail in order to provide a basis for comparison of the three case studies from the U.K., U.S., and Australia to follow.

The Danish Board of Technology has a store of experience and expertise that allows it to fit the issue to the method rather than the other way around. The choice of the consensus conference format is dependent upon the topic fulfilling the criteria of: 1) having current social relevance; 2) presupposing expert contributions; 3) being possible to delimit; 4) containing unclear attitudinal issues (DBT, 2005). The Steering Committee members are selected and assessed by the Board, which aims at a comprehensive coverage of the topic, vis à vis members' expertise. The Steering Committee approves the composition of the lay panel and draws up the list of possible experts.

The lay panel is recruited through newspaper ads and by sending out invitations to 1,000-2,000 randomly selected individuals over the age of 18. Those wishing to participate write a letter to the DBT, detailing some information about themselves and their motives for participating. Although the DBT aims to find non-experts, it places emphasis on the open-mindedness of the citizens and their desire to "probe the work of the experts" (DBT, 2005). A project manager who is also an employee of the Secretariat of the DBT is charged with the day-to-day management of the conference, and is assisted by a secretary. A facilitator whose special skills and training are in communication and group dynamics is employed to assist the lay panel, manage the preparatory weekends, and chair the conference. The preparatory weekends are used to introduce the participants to each other and to facilitate their working together as a group. They discuss the explanatory materials they have received and begin to formulate key questions and sub-questions. The panel may invite short presentations which often relate to ethical or legal aspects of the topic.

Day 1 of the conference is usually the first contact the panel has with the experts. Citizens hear from 10–15 presentations (around 20-30 minutes in length) on the specific questions they submitted to the experts. Day 2 is reserved for supplementary questions and any clarification that the lay panel requires. The final document is prepared beginning on the afternoon or evening of the second day. The facilitator is crucial in this process to ensure that all members have a voice. The work will often be carried out in smaller groups dealing with 2-3 related questions each. Day 3 is the presentation of the report which is read aloud by three of the lay panelists to an audience of the public, media, and may include parliamentary representatives. Experts are allowed to correct any technical errors, but not to alter the actual content. The final document is immediately disseminated to members of the Danish Parliament (Grunwald, 1995; Andersen & Jaeger, 1999; Bereano, 1999).

Transplantation of the Danish model

The Danish model of consensus conference was introduced in a much-cited 1995 article by Richard Sclove titled "Town Meetings on Technology." Anticipating the objection that such an innovation might work well in Denmark with its relatively small, homogenous population in comparison to the

unwieldy, diverse and pluralistic population of the United States, Sclove drew a comparison with the practice of juries to reach consensus on “highly contested, complex legal disputes” (Sclove, 1995). He also pointed to success in the U.K. as an example of a populous, racially and socioeconomically diverse country that had recently concluded its first consensus conference. So, how successful were these first attempts to replicate the Danish model? (In the interests of space, readers are referred to the self-compiled tables in the Appendix for more details about each consensus conference than could usefully be accommodated in the text.)

U.K. National Consensus Conference on Plant Biotechnology (1994)

The Plant Biotech Consensus Conference of 1994 was the first Danish-style consensus conference to be attempted in the U.K. Organized by the Science Museum and funded by the Biotechnology and Biological Sciences Research Council (BBSRC) it was composed of a 16-member lay panel, and a 21-member expert group. The conference followed the Danish model with some local changes that ultimately led to charges of bias by members of NGOs. Instead of one or two speakers presenting information at the preparatory weekends, the Plant Biotech organizers brought in 7 experts in the first weekend and 12 at the second weekend. The first day of the conference (ordinarily the first occasion for presentations from experts) the lay panel heard from 21 experts (Klüver, 2005). As a first attempt at a deliberative participatory technology assessment, the topic of plant biotechnology was chosen for its less controversial nature, compared to cloning and other hot button issues at the time (Purdue, 1999). Ironically, both pro- and anti-biotechnology groups claimed that the lay panel’s report supported their respective positions.

U.S. Citizen’s Panel on Telecommunications and the Future of Democracy (1997)

The first U.S. consensus conference took place in 1997, three years after initial planning for it had begun by major proponent Richard Sclove. Participating organizations included the non-profit Loka Institute, the Education for Public Inquiry and International Citizenship (EPIIC) program at Tufts University, and various other academic and governmental organizations. A directorate composed of four members from the principal sponsoring organizations established the 12-member Steering Committee which then put together the lay panel of 15 citizens. Citizens were contacted by random phone calling and supplementary targeted recruitment to be broadly representative of wider Boston's population. The telecommunications theme was chosen by the directorate members with a view to upcoming decisions concerning Internet access and other aspects of telecommunications reform. The format generally followed the Danish model. The above notwithstanding, the consensus report was judged to be too broad and “not timely to congressional needs” to have had an impact on policy and/or legislation (Guston, 1998).

Australian Consensus Conference on Gene Technology in the Food Chain (1999)

Australia joined a number of other nations by holding its first consensus conference in 1999. It was an initiative of the Australian Consumers Association (ACA) which, interestingly, put out a bid for sponsorship of the conference to a wide range of organizations that included the nation's premier scientific research organization, the Commonwealth Scientific and Research Organization (CSIRO). The Australian Museum won the sponsorship and jointly with the ACA established the Steering Committee. The topic was chosen by the ACA and the conference was timed to coincide with an upcoming decision by the Commonwealth government on gene technology and food regulation. The local format differed from the Danish model in that every stakeholder group that joined was able to place a representative on the Steering Committee, making it quite large at 17-members. The 14-member lay panel was recruited by a market research company hired for that purpose and a sub-committee of the Steering Committee provided a list of expert speakers to the panel who had the ultimate choice of experts. A professional evaluator was brought in late in the process which had a bearing on the comprehensiveness of the assessment. The consensus report produced by the lay panel showed a basic caution towards gene technology but not an outright rejection. A number of issues of concern were identified by the evaluators with respect to the conference process, in particular the methodology by which the experts and lay panel were chosen (McKay, 1999).

Evaluations of consensus conferences

It is not surprising that every aspect of the consensus conference model has been examined, poked, prodded, de-constructed and experimented with by proponents who are eager to institute participatory forms of technology assessment in their own countries. A fair question to be asked now is: have they been effective? The first response would have to be "how do you define effectiveness?" Where there is silence on that question, the default answer has to be "it depends," for there are few standardized criteria by which to judge whether the objectives of a particular engagement exercise have been met. Indeed, in some cases even the organizers themselves had not adequately addressed the issue of objectives (Rowe, Horlick-Jones, Walls, & Pidgeon, 2005). As for evaluation or assessment of a consensus conference "bolted on" after the fact, the situation is even more problematic. Some organizers found that their funding did not stretch to an independent evaluation, or simply got so caught up in the mechanics of the event that the formal evaluation was overlooked or tacked on midway through (McKay, 1999).

Several attempts have been made to formulate schema or frameworks in order to establish the criteria upon which a consensus conference may be evaluated (Guston, 1998; Rowe, 2000; Rowe, Marsh and Frewer, 2004 & Rowe, Horlick-Jones, Walls, and Pidgeon, 2005). By examining one of these frameworks, I hope to follow the approach outlined by Kitcher in his project of "well-ordered science." That is, it might be possible to measure how an individual consensus conference rates by holding it up to what

[some] researchers have tentatively idenified as the “ideal” participatory mechanism. In a systematic effort to address the evaluation issue, Rowe and Frewer (2000) identified the criteria listed in Table 1.

Table 1. Acceptance and Process criteria developed by Rowe & Frewer (2000)

Acceptance criteria

- **Representativeness**
  - The public participants should comprise a broadly representative sample of the population of the affected public.
- **Independence**
  - The participation process should be conducted in an independent, unbiased way.
- **Early Involvement**
  - The public should be involved as early as possible in the process as soon as value judgments become salient.
- **Influence**
  - The output of the procedure should have a genuine impact on policy.
- **Transparency**
  - The process should be transparent so that the public can see what is going on and how decisions are being made
- **Resource Accessibility**
  - Public participants should have access to the appropriate resources to enable them to successfully fulfill their brief.

Process criteria

- **Task Definition**
  - The nature and scope of the participation task should be clearly defined.
- **Structured Decision-making**
  - The participation exercise should use/provide appropriate mechanisms for structuring and displaying the decision-making process.
- **Cost Effectiveness**
  - The procedure should in some sense be cost effective.

The authors divide the criteria into *acceptance criteria*, which establish benchmarks by which to measure the construction and implementation of the participation exercise (i.e., outcome), and *process criteria*, which relate to the potential public acceptance of the exercise. Both kinds of criteria are considered necessary because of the complex and multi-dimensional nature of the consensus conference. The criteria were distilled from a number of suggested criteria the authors found in the

literature. (The checklist Rowe and Frewer developed to allow for more 'fine grained' analysis of each criterion is available in the Appendix, p. 29).

The evaluations of the three consensus conferences described above present a number of difficulties with respect to the application of these criteria. Evaluators used a variety of instruments (questionnaires, interviews, recordings and transcripts, background documents given to participants and so on) but there is no parity to be found among them in terms of whether the evaluation was integral to the planning for the event; whether the organizers allowed the evaluators be present at all Steering Committee planning meetings and access to accompanying documents; the amount of interaction allowed between the facilitator and the experts and a host of other variables. My original plan to apply Rowe and Frewer's criteria in toto is thus not a workable exercise, so I propose instead to extract and review only a few key criteria that can be applied across the three examples in the hope that the process will yield some insight into the components for an "ideal" consensus conference.

The criterion of representation

From the summaries above, it will be seen that ***representation*** is a crucial criterion – both in the citizen panel and Steering Committee as well as in the composition and selection of the experts. To assess how representation was achieved in a consensus conference Rowe and Frewer (2000) developed the following questions:

i) Were all persons with a legitimate interest in the issue (and therefore the outcome of the participation exercise) clearly identified?
ii) Were participants appropriately selected from among the group of stakeholders?
iii) Was the right balance achieved between participants acting as representatives (delegates) and participants acting in an individual capacity?
iv) Was enough effort made to get the right participants?
v) Whatever the intentions, was the group of participants actually representative (and stayed that way during the course of the exercise)?

The criterion of representation has been scrutinized in the literature on consensus conferences. Davies, Blackstock, and Rauschmeyer (2005) have written an exquisitely nuanced and well-argued paper that, among other things, identifies three aspects surrounding the choice of participants for what they call "minipublics" (consensus conferences). These are 1) the recruitment problem, 2) the composition problem, and 3) the mandate problem. Using the typology presented in their article, it is suggested that random selection best characterizes the kind of recruitment method typically used in consensus conferences. By this they mean that participants are chosen using quotas stratified by social and demographic categories such as gender, age, social class, and locality. "The rationale for these categories is that they are assumed to relate to significant differences in perspectives on an issue, deriving from the different life experiences and interests likely to be associated with these categories."

Such an assumption, they contend, is problematic because it assumes a relationship between the individual's location in the social structure and their value position – an assumption which, even if it holds *on average*, may well easily be false for a particular individual (Davies, et.al., p. 603) [italics in original].

The composition problem requires even more judgment as organizers make decisions about proportionality (which may lead to the absence of minorities or their marginalization within the group), selectivity (meaning only a purposively chosen selection of categories are represented), and/or universality (all categories are represented). Considering the desire to keep the numbers on a lay panel to around 14 persons, the result is usually something of a compromise between selectivity and universality.

The mandate problem refers to the ultimate authority that the participants hold within the process, or their responsibility in relation to others (p.606). Of the four possible positions they identify – delegate, trustee, guardian, and individual – it is as an individual that the person is selected for a consensus conference. Steering Committees or organizers will need to be clear about whether they expect that the person should adopt a "citizenship perspective" or whether the person's role within the process should be to solely represent and articulate his/her own personal perspective. An interesting conundrum can develop such that if the ultimate goal is consensus on the development or application of a technology, do the members of the citizen panel represent only their own personal perspective, or do they try to act as proxy for all citizens (i.e., as ideal deliberators with tutored preferences) in terms of a result? Davies, Blackstock and Rauschmayer offer a different solution to this problem by suggesting the use of a different sort of recruitment process – one that 'represents arguments' instead of individuals or groups. In this perspective, they note, the only way to ensure a 'representative' sample of discourses is to start from the discourses themselves: selecting a sample of individuals based on their fundamental value positions, rather than seeking to represent characteristics of the population that may be irrelevant to the discussion at hand (p. 608). At first blush this idea does seem to have merit, but upon reflection a number of questions come up: how is this different from a stakeholder role? Does this presume that arguments will not change during the consensus conference process? Using Kitcher's idea, individuals who have fundamental value positions can be characterized as deliberators with UN-tutored preferences. The point of deliberating with others is to arrive at "tutored preferences" that will match the social values embedded in well-ordered science.

Additional insight into the criterion of representation has been elucidated by Mark B. Brown (2006). He makes the point that citizen panels are far less participatory than their historical counterparts "from ancient Athens to New England town meetings" because the initiative comes from the organizers, rather than the citizens themselves. Random selection does not provide an equal *opportunity* for everyone to participate in addressing a given…issue. It provides merely an equal *probability* of being chosen to participate [italics in original]. On the point of participants being able to represent different social perspectives, he makes the point that the immediate aim of representing perspective is **deliberation** rather than **decisionmaking**; thus, the inclusiveness of deliberation can be judged

according to gradations of richer and less rich deliberation, rather than the less forgiving criterion of fair or unfair representation of interests [my emphasis] (p. 16).

The criterion of representation, then, is not such a simple matter to either define or assess. What can be hoped for is that the organizers of an ideal consensus conference would have had given much thought to the implications of their choice of methodology to select individuals. The framework provided by Rowe and Frewer presented above is cognizant of these facets; how do the three example consensus conferences fare when the criterion of representation is applied?

In the UK Plant Biotechnology Consensus Conference, Purdue (1999) notes that the Steering Committee not only lacked an environmentalist, but the Lay Panel was chosen in such a way (on the basis of "complex psychological tests") that privileged the lack of a position on biotechnology. In addition,

> The whole construction of the quality of their 'layness' did seem to induce an undue deference to the experts, irrespective of the expert's actual level and area of competence. While members of the Lay Panel were encouraged to take on a very challenging role, their capacity to mount an effective challenge to expert power was restricted by the accentuated innocence from which they were expected to operate (p.88).

The insight I took from this passage is: while the requirement that a participant not hold an established position with respect to the technology under consideration is to ensure open-mindedness and avoid undue influence by that member among the lay panel - it does nothing to mediate the power relations between the lay panel and the experts; indeed, it may exacerbate them.

The U.S. Telecommunications Consensus Conference project staff approached the representation issue by applying a 'mix and match' approach that attempted to anticipate how different people would interact together, based on address, occupation, age, educational attainment, and the response to a short essay question. Project staff and steering committee members acknowledge that this effort likely yielded a group of participants biased toward civic-mindedness (Guston, 1998). Given the discussion on 'mandate' above, perhaps this was a sensible approach.

The Australian consensus conference recruited participants by newspaper advertisements. In an effort to arrive at "a slice of Australian society," the Steering Committee decided to select one urban dweller and one rural dweller from each of the biggest states, as well as a person from a remote area. In the view of the evaluators, this resulted in the composition of a panel with a bias toward regional, rather than urban representation (not at all reflective of Australia's predominantly urbanized population). In addition, the absence of a pre-conference interview to assess attitudes and values resulted in a number of individuals who displayed "firm religious beliefs" leading to reservations by the Steering Committee as to how open the panel would be to scientific information or even to change (McKay, 1999, 6.2).

The criterion of task definition

A second criterion from the framework by Rowe and Frewer (2000) is ***task definition***. Questions they ask with reference to this criterion are:

i) Was the context to this exercise clearly identified?
ii) Was the scope of the exercise clear and appropriate?
iii) Were the aims and outputs clear and appropriate?
iv) Was the rationale for choosing this particular type of exercise clear and appropriate?

In the U.S. example, Guston (1998) states that the directorate - the four individuals from the principal sponsoring organizations - chose the telecommunications topic from among several other topics because of their perception that the "media appetite" for it was the greatest. He understood from the organizers that this consensus conference was intended more in the mode of a "proof of concept" exercise than as a deliberative exercise aimed at directly informing and influencing policymakers in government. In addition, while the organizers might have been moved to select this topic because of its perceived relevance and timeliness with regard to an actual legislative agenda, in actual fact the lay panel declined to take up the legislative issues although they had received a briefing on them. Feedback from participants, especially those in government, revealed that the timeliness of the topic was also miscalculated as the Congress had "dealt with such issues in the Telecommunication Act of 1997 passed just three months prior [to the consensus conference] and the pending regulatory decisions would be much more detailed in their specification of already-expressed legislative goals (p.15). Rather starkly, Guston stated that "this panel was the creation of an ad hoc collection of private groups with minimal public sponsorship at the national level" (p.16). Nevertheless, if one goes back to the stated task definition as being a "proof of concept" exercise, the consensus conference was arguably a success – and, until 2001, remained the only example of a consensus conference mounted in the United States (Torres, 2004).

In the U.K. example, Purdue (1999) noted that the pre-conference material sent out by the Science Museum suggested that the purpose of the conference was to 'test out' a form of governance developed in Denmark. The choice of the topic, he suggests, was restricted to plant biotechnology on the grounds that genetic manipulation of humans and animals were likely to be too contentious an issue for the lay British public. Purdue stated that environmentalists suspected that the Science Museum was hoping that plants could provide a non-contentious starting point for public acceptance of biotechnology. The aim of the conference according to remarks by several of the major players was to educate the public about biotechnology. For example, in his opening remarks Earl Howe explained the importance of the biotech industry and therefore the public understanding (and support) of it. Purdue takes this as evidence that "the conference was framed in terms of the deficit of public understanding needed to be made good if science and technology were to maintain …momentum" (p.86).

In Australia, the task definition for the consensus conference was noticeably more open-ended and inclusionary than either the U.S. or U.K. examples. The objectives published in the report by the conference evaluators were:

i) To facilitate broad public debate from a plurality of perspectives including commercial interests, health and safety, consumer rights to information,

environmental sustainability, trade imperatives, ethical concerns, research, regulation and so on.

ii) To empower members of the Australian public (the Lay Panel) to gain an informed understanding of ad provide input to this sensitive and important major technological issue, within the context of their own values and priorities.

iii) To gain insight for all stakeholders into the Australian public's plurality of views on gene technology.

iv) To bridge the gap and create greater mutual understanding between experts and Lay Panel (which may or may not lead to greater agreement) (McKay, 1999).

At least on paper the task definition was not framed in terms of a deficit in citizen knowledge or understanding but rather as an acknowledgement of the "plurality of perspectives" that exist among stakeholders, by which is meant both experts and the general public. Indeed, as Dietrich and Schibeci (2003) note, the Australian consensus conference provided the lay panel with the "…autonomy to draw discussions with [the] experts beyond the normal narrow technical boundaries typical in technology planning formulation." The Australian example is instructive because the objectives were supplied upfront by conference organizers.

The criterion of influence

The criterion of influence (impact) is somewhat narrowly defined in the framework by Rowe and Frewer (2002). Questions relating to the influence of the consensus conference are:

i) Were better specific decisions made as a result of the exercise?

ii) Did the exercise have a positive impact on corporate policy-making procedures?

iii) Did the exercise have a positive impact on the general corporate approach to handling the issues?

iv) Did the exercise bring a significant amount of constructive media attention on to the issues?

References in the above questions to "corporate policy-making" can be widened to mean government policy-making as well. Normally, this would be the one criterion that a prospective adopter of the consensus conference model would scrutinize most closely, for if it cannot be shown that a participatory exercise has had a definable, measurable effect, why hold one? One of the main complaints about participation methods is that they often have been perceived as ineffectual, simply being used to legitimate decisions or to give an appearance of consultation without there being any intent of acting on recommendations. This results in public skepticism and distrust concerning the motives of sponsors (Rowe & Frewer, 2000, p. 15).

Our three sample consensus conferences do not seem to fare well on this criterion. According to the independent EUROPTA Report, the British case showed that the consensus conference had a negligible effect on the (social) assessment of plant biotechnology and the related policy debate (let alone policymaking) (Klüver, et. al., 2000, p.75). In the United States, Guston (1998) reported in his evaluation

that the single greatest area of consensus among the respondents (to a post-consensus survey) was that the Citizens' Panel on Telecommunications and the Future of Democracy had no actual impact. No respondent, not even those governmental members of the steering committee or expert cohort, identified any actual impact (p.15). The Australian evaluators (who were engaged to evaluate the process, not the outcome or impact) nevertheless articulated sentiments that are common in the literature about participatory exercises:

> Before the Conference, the expectations of the Steering Committee of how the Report would be received varied from doubt, even cynicism, about its likely influence, through an expectation that its views would be taken into consideration, to hopes, if not expectations, that both the Consensus Conference and its Report would be influential. (McKay, 1999, sec.8).

To make sense of these diverse findings and try to pull out useful insights with regard to the viability of the consensus conference as a mechanism of participatory technology assessment, it is necessary to return now to the issues that opened this discussion.

Discussion and conclusions

I began by taking Kitcher's well-ordered science as a useful vehicle by which different consensus conferences could be judged against an "ideal." The Danish model, precisely because it is so well known and emulated, presents itself as a likely candidate for the "ideal consensus conference," yet it is apparent that many of its features evolved out of a particular cultural context. Would each country need to have similar institutions and traditions like Denmark's in order to mount a successful consensus conference? Since this can obviously not be correct, the strategy of delineating certain key criteria that, if present, would characterize an ideal consensus conference is one procedure that can be followed. This is what Rowe and Frewer (2004) attempt with their evaluation framework. I mentioned the difficulty of applying evaluation criteria to a consensus conference after the fact and this is also born out by Rowe and Frewer when they state "[w]ithout typologies of mechanisms and contexts, and an attempt by researchers to adequately define the exercise(s) they are evaluating against these, little progress will be made in establishing a theory of 'what works best when' "(p. 551). Nevertheless, I examined three criteria: representation, task definition, and influence, which brought up some of the issues that can attach to such seemingly straightforward criteria. When applied to the three consensus conference examples from the U.K., U.S., and Australia, it will be recalled that there were mixed results.

From what has been discussed in this paper I finish with three general observations: first, the value of using an "ideal" consensus conference (by means of an explicit evaluative framework) is necessary for the continued improvement of research on participatory mechanisms. Second, the "outcome" of a consensus conference may not be immediately known or usefully interpreted on a strictly quantitative basis alone. This is largely due to the third observation: our models for understanding how people feel about science and technology applications and their participation in deliberative exercises are still too limited. I flesh out these observations below.

A fundamental insight achieved by using the Rowe and Frewer framework is that evaluation can be applied to either the process used in a consensus conference or the outcome, but is rarely applied to both. Rowe and Frewer conducted a search of evaluation studies using the search string: "citizen or public AND participation or involvement AND evaluation or assessment" in major journals dating from 1981 (Rowe and Frewer, 2004b). They identified (with certain exclusions) 30 empirical studies of public participation exercises that established a definition of effectiveness a priori. On the question of outcome versus process, Rowe and Frewer observe that institutional and societal responses to a particular exercise may be manifest months or even years after an exercise has finished (p. 520).

This forms the basis for my second observation and is borne out with respect to the U.S. consensus conference on telecommunication and the Internet by Richard Sclove (personal communication, Dec. 9, 2005). He stated that although the consensus conference was not intended to have a direct effect on public policy, it *was* intended to "show that Americans could do this" [run a deliberative consensus conference]. Further, he said that largely as a result of the 1997 consensus conference, Loka Institute Board member Langdon Winner was able to successfully lobby Congress in 2003 for a provision in the 21st Century Nanotechnology Research and Development Act (P.L.108-153, Section 2, b.,10, D.) that would require participatory mechanisms (like consensus conferences) be used to evaluate and guide research and development in nanotechnology:

> … I believe Congress should seek to create ways in which small panels of ordinary, disinterested citizens, selected in much the way that we now choose juries in cases of law, be assembled to examine important societal issues about nanotechnology. The panels would study relevant documents, hear expert testimony from those doing the research, listen to arguments about technical applications and consequences presented by various sides, deliberate on their findings, and write reports offering policy advice. (Winner, 2003).

The point to be taken from the telecommunications example is that there is no linear route from the process to the expected outcome which leads to my third observation: any mechanism involving people is messy. People can be quixotic; they may not even know their own minds until presented with a persuasive case articulated by another person. They may just as likely be reacting to the authority of the messenger as to the message. Only the Australian evaluators touched upon this: "It happened that this panelist was also a persuasive and influential personality and he was opposed to gene technology as an unwarranted interference with nature. The material he introduced, combined with the views of some of the preparatory speakers, was influential in shifting the views of those Panelists, open to new developments in science in general and in genetically modified food in particular, to a more cautionary position" (McKay, 1999).

It could be that our models for evaluation merely reflect the age-old division between (and, some would say, preference for) quantitative "scientific" methodologies over "soft" qualitative social science-oriented methodologies. The call for more rigorous instruments and methodologies by which to measure smaller and more testable elements is framed and informed by a certain way of looking at the world, as is the alternative critical approach which favors context and an active

construction of the message by participants in a consensus conference. This duality has much in common with the dynamic nature of the public understanding of science (PUS) models alluded to earlier in the paper.

In addition to the deficit and critical models of PUS, a third model has been described by Maja Horst (2005) which seems particularly well-suited to how we can think about and evaluate the success or failure of a consensus conference. This perspective, which she labels "negotiated credibility in networks" or the "network" model for short, draws on analyses by Mike Michael in which "the public" is de-romanticized; instead, publics (plural) are seen as heterogeneous and characterized by stresses, discontinuity, fractures and non-linearity (Michael, M. as cited in Horst, 2005, p.9). There is a shift from the role of citizen to the role of consumer where science has become a consumable good which is distributed, consumed and evaluated in competitive settings. This change in focus sees "..people engaging in communication about science motivated by an individual experience of their own particular needs, and not primarily in order to fulfill a universal role as enlightened and educated citizens. In the network model, publics are temporal constructions of users of scientific knowledge with a plurality of ways of evaluating … knowledge and the emphasis is on contextual networks of negotiations over usability, credibility and influence" (Horst, 2005, p.10).

What relevance do these characterizations have for evaluating consensus conferences? Horst writes that:

> In traditional PUS, expertise is a function of the authority of science, whereas in critical PUS it is a function of procedural rules. But in the network model, there is no way of establishing such authority in advance. 'Time will tell' is the ultimate answer to questions about the robustness of knowledge [substitute 'evaluation of a consensus conference']. Socially robust knowledge is that which people continue to subscribe to….

The negotiation around expertise and credibility is something that only the Australian evaluators mentioned – might this be because the evaluators, whether knowingly or unknowingly – applied a method of evaluation that is closer to the contested nature of the network model?

> A way of getting around the time lag in this model and explore the possible robustness of knowledge, she says, is to stage an interim settlement by having some kind of measurement of preferences (in the form of election or poll) or a negotiation between parties. However, in the network model there is no normative ideal of consensus. Rather, negotiation can be one way of engineering a measurement of preferences, so that the multiplicity of individual preferences can be made visible to the policy makers (p.11).

Here, then, it seems we have come full circle. If we accept the consensus conference as a model of participatory exercise that is negotiated, adaptive, and always dynamic, then it follows that purpose of the evaluation will be to "take the temperature" of a given group of citizens with tutored preferences. The well-ordered science envisaged by Kitcher can thus be realized – again, and again, and again…!

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Appendix

Note on tables: I compiled the information about each consensus conference from the evaluation articles cited; that is, Purdue (1999), Guston (1998), and McKay (1999). It was my judgment that the information should be available to interested readers, but would impede the flow if included in body of the paper.

U.K. National Consensus Conference on Plant Biotechnology				
Year	**Sponsors**	**Selection of steering group**	**Recruitment method for citizen/lay panel**	**Selection method for experts**
1994	Biotechnology and Biological Science Research Council (BBSRC), Science Museum, London.	Representatives drawn from Science Museum, Parliamentary Office of Science & Technology, Zeneca Seeds UK, Consumer's Association, former editor of *New Scientist*, academic in social psychology. In addition, a full-time project manager was hired.	Radio and television advertisements.	Citizen panel selected experts from list provided by organizers.

Sequence of activities	**i. Ext./Internal eval./assessment.** **ii. Use of facilitator?**	**Overall conclusions or recommendations**	**Selected published critiques**
Information pack 2 preparatory weekends 3 day conference	i. Internal on three dimensions: impact on participants and general public; perceived usefulness of this dialogue model by funding agencies, and others; strengths and weaknesses of the consensus conference as a special form of technology assessment. ii. A professional facilitator was used.	In essence, the lay panel [gave] the field of plant biotechnology its qualified support. The panel conclude[d] that, "there is scope for people to intervene in controlled ways which have the potential to provide significant benefits, and at the same time to satisfy the requirements of those people who feel that matters are progressing too quickly with an implied lack of care". The lay panel advocate[d], among other things, tightening up the regulations governing the release of genetically modified plants into the environment, establishing effective international controls over the commercial	Purdue, D. (1999)

		exploitation of plant varieties, and providing consumers with clear and comprehensible information about new biotechnological products.	

U.S. Citizen's Panel on Telecommunications and the Future of Democracy				
Year	**Sponsors**	**Selection of steering group**	**Recruitment method for citizen/lay panel**	**Selection method for experts**
1997	EPIIC Program at Tufts University, the LOKA Institute, Massachusetts Foundation for the Humanities, *Technology Review* magazine (MIT), UMass Extension, UMass College of Social & Behavioral Science, Amherst College, NSF.	The directorate – formed from four members of the principal sponsoring organizations – established a 12 person steering cttee. composed of activists, academics, and reps of sponsoring, expert, and targeted groups. In addition, a project manager was hired.	Hired a reputable survey sampling company.	Steering committee selected experts after reviewing the questions from the lay panel.

Sequence of activities	**i. External/Internal eval/assessmt** **ii. Use of facilitator?**
2 weekend preparatory sessions with written briefings and guided exercises. Day 1: presentations of experts to panel. Day 2: discussion of expert testimony and writing of statement. Day 3: presentation of 4-page statement at a press conference attended by media.	i. External eval: Professor David Guston, Rutgers University (No. 5 in the Bloustein School Working Paper Series 9/3/98) ii. 2 professional facilitators were used.

Overall conclusions or recommendations
Policymaking We, the people of the Citizens' Panel on Telecommunications and the Future of Democracy, want to return to the vision of the founders of our country: government of the people, by the people, and for the people… We feel that business interests, profit motives and market forces too often dictate public policy to the exclusion of the interests of the people (an example of which is the 1996 Telecommunications Act). The new technology creates an even greater risk of the abuse of power. Policymakers need to anticipate the presently uncharted effects of the new technology, taking into account all aspects of a community (for example, the effect of Internet shopping on a local commercial/retail economy). Since business benefits from consumer spending, it must be strongly encouraged to return a percentage of profits to the community. Examples of what these funds could be used for include skill development for all ages, grants to nonprofit organizations for equipment, freenets, etc. We believe that policymaking positively impacts the future of democracy if a balance can be maintained between citizens' voices, corporate interests and government administration. There must be structures in place for citizen consensus panels that represent those people who will be affected by the decision to engage in meaningful debate on policy that remains above the partisan fray and allows deliberation and critical thinking. The Internet may hold more potential for this kind of participation than other forms of debate. But it also has more potential for polarizing people in like-minded chat rooms. Government can assume the role of initiator of citizen involvement through grants and subsidies and through research on programs to increase the interaction of citizens and government and involve citizens in decision-making. Citizen participation in the process of democracy does not make money. Telecommunications policy needs to support Internet versions of C-SPAN and citizens' panels. **Contents and Standards** The most reliable, usable and informed Internet content and standards will come from three areas, working both together and separately: governments (not by lawmaking, but, for example, by contributing research); socially responsible businesses; and knowledgeable and responsible citizens. We are concerned about misinformation on the Internet. Misinformation leads to poor decision-making. Data and information integrity is a question of reputation and "record" built up over time. We encourage the development of "seals of approval" for accurate and trustworthy Web sites. We are concerned with maintaining First Amendment rights--freedom of speech--with respect to the Internet. Our society has already shaped First Amendment rights and we believe these rights should apply equally to the Internet. There is a flip side to these rights, however. The First Amendment also allows anonymously maintained Web sites. We recognize that, by using these sites, we accept the risk

of not knowing who is informing us--just as when one reads an anonymously (or pseudonymous) published book. We see moral integrity as an issue of personal responsibility. As a society, there may be certain materials or information that we consider unacceptable. As a result, we encourage the development of products that give us the personal choice to limit access by our children to certain Web sites.

To those towns and cities that would use taxpayer dollars to hire private companies to block children's access to Internet pornography and other offending materials on the computers of public libraries, schools, and community centers, we encourage them to form volunteer citizens' panels, representative of their communities, that would agree to decide on blockable sites on behalf of their fellow citizens.

We strongly believe in the individual's right to privacy. We believe there is a need for legislation to prevent access to an individual's private, personal data files and other computer data without prior approval by the individual. We also believe that there is a need to require timely correction of any misinformation in their personal data files. We understand the government's need to monitor certain types of data, but only after due legal process under the Fourth Amendment. As information goes global and worldwide satellite coverage becomes possible, the United States has a responsibility to set an example of integrity in content. We are concerned about maintaining a free flow of information while not taking advantage of other countries through exploitative commercialism.

Universal Service

We hold this truth to be self-evident: that a citizenry connected by the Internet and other emerging interactive technologies will be more likely to ensure the future of democracy. We believe that universal service, rather than universal access or "affordable" service, should be an important national goal. Universal access means that the infrastructure exists; universal service is the ability to take advantage of that access, including the ability to broadcast. We agree that connecting K-12 classrooms, public libraries, and nonprofit health centers to the Internet is an excellent first step; however, we caution that it should not be the only step. We believe that each state, community and perhaps each neighborhood should come to its own solution(s) about the placement and means of funding additional equipment; however, we suggest that each community:

1. periodically redefine its definition of universal service in light of new technology, and
2. take care to include unrepresented and underrepresented groups.

We encourage the creation of community Internet centers and freenets, and strongly recommend that equitable funding mechanisms be found to provide grants to local governments and nonprofit organizations. We believe that ensuring universal service will positively impact the future of democracy by empowering individuals and strengthening ties among and between groups, and by increasing communication throughout all levels of society.

Universal service, however, means little without education.

Education and Technology

If the free flow of information is the foundation of democracy, then access to information is the cornerstone of democracy. Merging computer technology with education will greatly enhance access to information. In enhancing access to information, it is important to recognize that computers, like blackboards, are merely tools. We need nurturing of critical minds and encouragement of productive ways to use new information. This is best accomplished by teachers who are trained to use the new technology to achieve these goals.

All schools should utilize computers (including Internet use) beginning in kindergarten and continuing through high school. The appropriate use of computers in the classroom should reinforce the curriculum rather than expand it. "Use of computers" should not be a component of the core curriculum. For those schools engaged in developing Web sites, we want to underscore the need for multicultural and multi-ethnic curricula.

"Life-long learning" goals should be supported by making school computers available outside normal school hours to the general populace.

Conclusion

In conclusion, technology gives us tools; we must decide how to use them. Technology itself does not develop socially responsible citizens of a democracy, people and society do.

Published critiques: Guston, 1998

First Australian Consensus Conference on Gene Technology in the Food Chain				
Year	**Sponsors**	**Selection of steering group**	**Recruitment method for citizen/lay panel**	**Selection method for experts**
1999	Australian Museum and Australian Consumer's Union with stakeholders that included state and Commonwealth gov. depts., CSIRO, and many R & D orgs.	Australian Museum with the ACA rep. Committee chosen included people from academia, industry, journalism, Aust. Public service, CSIRO, NGOs, and R & D. Each stakeholder group (17) had a rep. on the Steering Committee.	A market research company was hired which placed ads in suburban and regional newspapers. Additional citizens were selected from the company's database.	A sub-committee of the Steering Committee selected the expert speakers.

Sequence of activities	i. Ext./Internal eval./assessment. ii. Use of facilitator?	Overall conclusions or recommendations	Selected published critiques
Briefing paper followed by two exploratory weekends to decide on questions and to select speakers. 3 day conference followed: Day 1: Panel and public audience heard from expert speakers on each key question. Day 2: Conclusion of expert testimony and beginning of report writing. Day 3: Delivery of report to public and media.	i. External evaluation was provided by an outside firm. ii. Facilitator was used as well as a writer and a publicist.	• that no new commercial releases of genetically modified foods be made, or unlabelled GM foods be imported, until certain conditions are met, including the establishment of an independent Gene Technology Office within a statutory authority and an all-encompassing labelling system; • that companies wishing to commercially release GE products pay a substantial licence fee to pay for insurance against risk and the funding of the independent regulatory authority; and • that Australia support a regulated approach to world trade in genetically modified organisms in negotiations over the Biosafety Protocol.	McKay (1999)

Rowe and Frewer (2004) Checklist of Evaluation Criteria and Measures Used in Evaluation		
Evaluation Criteria	**Aspect of criterion**	**Questions**
Task definition	Context Scope Aims and outputs Rationale for exercise	Was the context to this exercise clearly identified? Was the scope of the exercise clear and appropriate? Were these clear and appropriate? Was the rational for choosing this particular type of exercise clear and appropriate?
Representativeness	Stakeholders Selection Participants' role Commitment Actual representativeness	Were all persons with a legitimate interest in the issue (and therefore the outcome of the participation exercise) clearly identified? Were participants appropriately selected from among the group of stakeholders? Was the right balance achieved between participants acting as representatives (delegates) and participants acting in an individual capacity? Was enough effort made to get the right participants? Whatever the intentions, was the group of participants actually representative (and stayed that way during the course of the exercise)?
Resource Accessibility	People Time Facilities Expertise Finance Information	Were there enough people involved, with the appropriate level of skill and understanding, in setting up, running the exercise, and handling the outputs? Was sufficient time available to run the exercise? Were there enough suitable facilities and equipment to meet the needs of the exercise? Was expertise brought in, at the right level, to meet the needs of the participants? Was sufficient finance available to meet the needs of the exercise? Was enough good quality information available, at the right level of detail, in a good usable format?
Structured decisionmaking	Operational management Procedures Flexibility	Was the exercise well organized and managed on a practical level? Were the decision-making (or discussion) procedures used appropriate for the discussion/exercise and the

	Consistency Competence Validation of methods Shared understanding	participants? Was the exercise flexible and adaptable, as necessary? Were the decisions made (or conclusions drawn) consistent? Were the participants competent to contribute satisfactorily to the exercise? Were any methods used validated with reference to standards or some other form of quality control? Was there sufficient shared understanding of essential concepts and terms by all parties?
Independence	Procedures and outputs Feedback External checks	Did participants have a sufficient level of control over the procedures and outputs of the exercise? Did the assessment of the exercise adequately reflect the range of views available? Were there adequate external checks on independence?
Transparency	Legal or regulatory Publicity Auditability Availability Accessibility	Did the exercise comply with both the letter and the spirit of any relevant legislation or regulations on access to information? Was there adequate publicity? Was there a thorough audit trail, in a proper form? Was the audit trail available to all parties? Was the information available in an appropriate format, at the appropriate level of detail?
Influence (impacts)	Specific decisions Corporate policy Corporate style Media coverage	Were better specific decisions made as a result of the exercise? Did the exercise have a positive impact on corporate policy-making procedures? Did the exercise have a positive impact on the general corporate approach to handling the issues? Did the issue bring a significant amount of constructive media attention on the issues?
Early involvement	Familiarization Entry point	Were all the parties involved early enough to become familiar with all the elements of the exercise, in order to make a proper contribution? Did the exercise take place early enough in the decision-

		making process?
Cost-effectiveness (cost/benefit)	Effectiveness Benefit/cost Fairness	Was the exercise effective (did it meet all its aims?) Was the benefit /cost ratio high? Were the benefits fairly distributed across all the stakeholders?