ISSA Proceedings 1998 – Asymmetry In The Dialogue Between Expert And Non-Expert

1. Introduction

This paper is about argumentation involving expertise with not all discussants being experts. This type of debate is very relevant for a field like Science & Society (which can be defined as the analysis and evaluation of the social consequences of the development and use of scientific and technological knowledge).

In the field of Science & Society, one is often confronted with argumentation patterns that would not be considered adequate in more orthodox argumentation studies. In an earlier study on discussions about the consequences and acceptability of biotechnology, my colleague Rob Pranger and I noted a number of fundamental ambiguities (Birrer, Pranger,1995). We showed that many of these ambiguities could be related to a two by two matrix of four different worldviews. The matrix was taken from cultural bias theory**(i)**, a theory that suggests that standpoints on e.g. risk tend to cluster in four types, each with a different way of interpreting the same data; although in many cases one would say that a balance of the various aspects would be most appropriate, worldviews tend toward polarisation rather than mutual understanding and compromise. We also showed how these different, worldviewbased interpretations, and the resulting ambiguities in communication between adherents of different worldviews, could be related to different views on where the burden of proof should be put.

In the present paper, discussion between participants with unequal relevant expertise will be subjected to a more theoretical analysis. We will trace some fundamental difficulties that such discussions are facing. The conditions under which dialogue and argumentation with unequal expertise are conducted are in some respects crucially different from cases where there is no such inequality. Consequentially, the rules of the game must be different too. We will examine the way in which expert statements are treated in the literature, in particular the work of Douglas Walton**(ii)**, and suggest some extensions of the category systems that can be found there.

2. The model of information seeking dialogue

The exchange between expert and non-expert is characterised by Walton at various places as an 'information seeking dialogue' (e.g. Walton,1995; Walton,Krabbe,1995). The non-expert asks the expert for certain information, and the expert provides this information. In this type of dialogue, there is a basic asymmetry between the participants (Walton,1995: 113).

Let us test this characterisation as 'information seeking dialogue' on a simple case of expert advise: that of a single client and a single expert adviser. The client has a problem, and in order to be able to deal with this problem in the most adequate way, the client needs advice from an expert. Let us say that the client wonders whether a computer might be helpful in his(her) situation, and wants to know what would be the most useful hardware and software in this situation. The client turns to a computer expert for advice. The expert will now inquire about the nature of the practices of the client that might be relevant. Since the expert does not have direct access to this information, the expert is dependent upon the information that is selected by the client. But the client is not by itself able to make a fully adequate selection, for what is and is not relevant depends upon the technical options, and the client has no knowledge about that.

One could say that the client and the expert are experiencing the difficulties of distributed processing: each actor has relevant information for the other, but they cannot directly access each others relevance criteria. To use a computer metaphor, if the expert's knowledge could in some simple way be fused with the mind of the client into one big database, it would present no fundamental problem to find the best solution given the available knowledge; but since the relevant knowledge is distributed over two databases, connected only by a low capacity communication channel, effective combination of the two sources is much more difficult. This is of course not to say that expert advice is impossible; we know from experience that it is possible, and when expert and client take enough time to communicate it may work well. The point is that there can be no analytic guarantee that it will work, no guarantee that the expert indeed will find the best solution for the client. It is always possible that the expert, despite serious efforts, still does not have a correct idea of the problem of the client, and this need not be due to faults by either the expert or the client.

To what extent can we say that this dialogue between expert and client is an 'information seeking dialogue'? It is not quite information as such that the client gets from the expert. The client gets information that is selected, interpreted and

translated by the expert – on behalf of the client, that is, acting, as much as the expert is able to, upon the values, preferences etc. of the client. The 'information' is, so to say, impregnated with the client's normative and subjective attitudes, it not information in a general sense, it is personalised information. But what makes the exchange between expert and non-expert categorically different is that there is a selection, interpretation and translation process that is outside of the control of the client, and that the client is unable to check. This is different from a situation where someone inquires about the time, or about the location of the nearest post office. In such cases, the information requested can be specified by the information seeker. It can be that the information given is incorrect, but the information seeker will probably find out sooner or later, or at least is able to find out independently. It can happen that the first answer does not satisfy the information seeker, and that the seeker will have to respecify the question, but still the specification is under control of the information seeker only. For expert advice, that need not be the case; often, the client cannot specify precisely which information is needed from the expert, but only indicate a global objective the expert is supposed to support. Similar remarks can be made about the model of expert systems (Walton,1990). For a viable expert system, the competency of the advice seeker to specify the questions (with the help of the menu of the expert system) must simply be assumed; actually, expert systems are often designed to be used by semi-experts. So there seems reason to make a distinction between two types of dialogue: one of straightforward information seeking dialogue, where the information seeker is able to more or less fully specify the information needed; and one of expert advice seeking dialogue, where the advice seeking person is not able to do so.

3. Expert advice in societal discussions: The ideal case

So far the expert adviser had to reckon with the wishes and interests of one client only. We now move to a more complex setting, where expert advice is needed in a matter that involves more than one party. Let us take as an example a discussion about the risks posed by the use of a certain new technology, e.g. the manufacture of certain genetically modified organisms.

Risks posed by new technologies often are hard to assess, since much about them is not known yet. Generally, fault trees are used for such analysis, that is, every possible chain of events that leads to harm is assigned a probability, mostly by multiplying the (estimated) probabilities of the individual links in that chain. This results in an estimate of the probability that a certain harm will occur.

But this probability estimate is itself very uncertain. So with only this single estimate, the expert's judgement is represented in a poor, and in fact misleading way. For suppose the expert picks out a certain probability as the most likely probability of a certain harm, but, given all uncertainties, he thinks it not much less likely that the harm probability is a hundred times higher, then the latter judgement is obviously far more decisive than the first. So what the expert ideally would have to do is to specify a double probability distribution: for each estimate of the harm probability, there should also be a specification of the probability that that particular estimate is the right one. Of course this is not a feasible solution. First, one might ask how good experts can perform this difficult task. But even if the outcomes would make sense, such a double probability distribution would not be very helpful in a public discussion, for the information is too complex to be handled by most non-experts.

There is another possibility. One might ask the advice seeking persons to specify a certain (probability) level that marks the borderline of what they still find acceptable and what not. Then the expert can formulate an opinion on whether this one particular level will be exceeded or not (this single yes-or-no statement combines the probability estimates with how likely the expert thinks each of these estimates to be the right one). But in a societal discussion about risks, participants usually have different views on what is acceptable or not. So the expert has to deal with a heterogeneous group of clients, and each of them has a different question. Moreover, levels of acceptability will be the subject of a negotiation process. Not only will the various parties involved not want to show their ultimate bid on beforehand, they will also want to know what the result is when the acceptability level is shifted.

So we must conclude that even an ideal expert, who is trying to be as cooperative and helpful as possible, is facing a difficult task: the expert can only communicate judgements on the basis of normative judgements made on behalf of a particular client (the choice of the acceptability level), and even for that single client this information may not be enough. Again we see that much more is at stake than a simple exchange of information; whereas in the earlier example of the computer expert the main emphasis was on getting the client's problem in an undistorted form to the expert, here the emphasis is more on how to transmit all relevant information from the expert to the non-expert, in a form that the non-expert can handle.

4. Negotiation and the reliability of experts: Source reasoning

What we just analyzed was still an ideal case: we assumed that the expert was unquestionably dedicated to the questions and interests of any particular client. For advice in actual societal discussions this is a problematic assumption: even if the expert is a professional of high quality, and of the most sincere dedication, the question is on what grounds the advised persons could be convinced of that.

Non-experts are unable to check whether the judgement given by the expert is really based on their particular norms. Judgements on risk are themselves already highly uncertain. When conflicting interests are involved, the uncertainties and lack of transparency make the question whether or not to rely on a certain expert judgement a very crucial one.

This reliability issue can only be solved by reasoning about the source. This kind of reasoning is familiar in the area of law, with respect to the credibility of witnesses (Walton,1996). A witness may be considered of higher or lower reliability on the basis of indications concerning circumstances (was the witness really able to see that well in the dark) or personal character (a well-known criminal might be considered less trustworthy than a citizen of irreproachable reputation).

In what way would it be appropriate to question the source of certain expert judgements in societal discussions? Only rarely an expert will be of such a manifestly bad character that this reason alone is enough to cast reasonable doubt on the expert's statements. Usually, the indications are more circumstantial. For instance, one would not like the expert to have considerable direct personal interests in the matter at stake. It is also relevant whether the expert has direct ties to a particular party in the discussion. Formulated in a more general way, one would consider the checks and balances that control the expert's work. To what degree can one expect hidden biases to be exposed and countered? Of course flaws in the checks and balances can never be proof that the source's statements must be wrong. Nor should arguments concerning the context of checks and balances in any way be mixed up with an attack on the integrity of a person. Serious source questioning refers to the socio-organisational context, it evaluates the risks of accepting judgements from the source – on the basis of that context.

Walton distinguishes three types of 'source indicators reasoning' (Walton,1995: 152ff):

1. ethotic argument (the speaker is suggested to have a bad, unreliable character)
2. argument from bias (it is suggested that the speaker is less likely to take all sides into account, or that the speaker fails critical doubt)
3. argument from popular opinion (acceptance by a large majority is advanced as an argument for something to be accepted by anyone).

The first and third type of argument are not so interesting in the case of expert advisers in societal discussion: it was already argued that not many experts have such a manifestly bad character that the first argument has a serious chance, and the third type does not apply at all. The second type seems the more appropriate for our case.
Walton's elaboration of this category suggests that is mainly conceived as personal disposition. The problem with this psychological interpretation is that it makes an accusation of bias very hard to prove. It seems a rather unfair distribution of the burden of proof to demand that it is not only shown that there are insufficient checks
and balances to counter certain biases, but also that the particular person who is in that situation will actually fail to meet his/her responsibility**(iii)**.

I therefore propose to extend the typology above with a fourth category:
4. argument from socio-organisational environment, which includes arguments that refer not to the individual spokes person, but to the environment in which that person operates, and in particular the checks and balances to which the spokesperson is subject to, and the degree to which those checks and balances can be expected to prevent and counter the utterance of biased statements.
This category seems relevant not just when experts are concerned, but for source indicators reasoning in general, e.g. also when one has to depend upon a source for simple factual information that cannot be independently checked.

Similar remarks can be made with respect to Walton's 'characteristics of a credible arguers' (Walton,1996: 244ff), and the 'characteristics of dialectical bias' (Walton,1996: 249ff); here too the characteristics relate to the arguer only, not to the environment in which the arguer operates. Even when an example is discussed of a member of the board of directors of coal company saying that reports on the extent of the acid rain problem are greatly exaggerated, Walton sees the problem in the board member not immediately making clear that she had that position, not in the position itself (Walton,1989). With respect to 'bias in science', Walton refers to straight-forward scientific fraud (Walton,1996: 226);

but in areas where there are not yet clearly established scientific truths, there is much interpretive flexibility (Birrer, Pranger,1995).

What about ‘ad hominem’ which seems so close to source indicators reasoning? In recent work, Walton distinguishes three main types of ad hominem:
1. direct/abusive (bad character)
2. circumstantial (contradiction between claims and personal circumstances)
3. bias (failure of critical balance) (Walton,1995).

The first and third are very similar to type one and two discussed above for source indicators reasoning. The second looks relevant for source indicators reasoning also, but is not included there. This category of ‘circumstantial’ is, however, limited to manifest contradictions, so adding this category to the source indicators reasoning categories is not enough, for it still asks for positive indications of misbehaviour.
It seems questionable whether a broader category of sociological argument as suggested for the source indicator reasoning would make sense for the analysis of ad hominem arguments as well. As was emphasised earlier, that category was not meant to include attack on a person. There might be cases where a person can be blamed for making statements from a position that lacks sufficient checks and balances, but as far as I can see that can be a reasonable argument only if the situation of that person was hidden (like in Walton’s example of the coal board director), and in that case it can be accommodated in the category ad hominem circumstantial as described by Walton.

5. Conclusions
Societal debates involving expert judgements are an interesting field for the study of argumentation. We have examined argumentation involving expert judgements, and confronted it with the categorisations developed by Walton at various places. This has resulted in two suggestions:
1. Expert consultation is so different from straightforward information seeking, that they should not be put under the same heading without additional qualification. Either the category of ‘information seeking dialogue’ should be split, or a separate category should be introduced. Confusion raised by the term ‘information seeking dialogue’ (which might be taken to suggest that straightforward information seeking is the paradigmatic model here), can be avoided by using a term like ‘consultative dialogue’ for the general category.
2. The source reasoning categories also need extension with a category which

referring to socio-organisational (sociological) factors.
The first suggestion is specifically related to the analysis of the role of expert statements; the second, however, seems relevant to source reasoning in general.

NOTES

i. A good introduction to cultural bias theory is (Schwarz,Thompson,1990); a more extensive theoretical elaboration can be found in (Thompson,Ellis,Wildavsky,1995).

ii. Very recently, Walton published a book called Appeal to expert opinion. Arguments from authority (Pennsylvania University Press); it was not possible to include this in the analysis presented here.

iii. In Informal logic, Walton occasionally mentions one example in which context plays a role: the relevance of the financial interests of an expert's financial who appears in a court case; but in the following critical questions for the appeal to expert opinion, sociological context is again not mentioned.

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