ISSA Proceedings 2002 – Hearing Is Believing: A Perspective-Dependent Account Of The Fallacies

In an earlier project, I have attempted a description of 'fallacy' in terms of a "bad process" between arguer and audience that occurs in the act of arguing. This involves the key feature of exploring fallaciousness from the audience's perspective, considering ways that prevent the audience from fulfilling its role in argumentation, where it is unable to appropriately supply assumptions required to complete the argumentative exchange.

The current project has two aims:

1. the first is to explore which traditional fallacies may best be categorized as fallacies of "bad process," and give an account that justifies such a categorization; and

2. the second aim is to organize the traditional fallacies, generally, into a preliminary taxonomy that categorizes them according to whether they involve a problem with the product, procedure, or the process of arguing (and, hence, are primarily logical, dialectical or rhetorical). The question of the value of such a taxonomy will also be explored and the apparent problem of fallacies that seem to have instances that fit under each of the three headings while others belong to only one.

It is a mistake to think that there can be one account of the fallacies, captured under a single definition like 'a fallacy is an argument that seems valid but is not', or 'a fallacy is a deficient move in argumentative discourse'. Such an approach provides the frustrating results of examples that do not fit the account and raises suspicions about the legitimacy of such a project generally.

Rather, we should review the history of fallacy treatments, from Aristotle's basic lists, through the addition of the so-called 'ad' fallacies, to the richer and more varied modern accounts, with a view to asking whether the mistakes (insofar as we must agree that if fallacies are anything they are mistakes) arise in the

product that argumentation produces (a logical perspective), the procedural rules that govern the argumentation (a dialectical perspective), or the process of addressing an audience argumentatively (a rhetorical perspective). As the ideal fails to be achieved under each of these headings, we can speak of a bad product, a bad procedure, or a bad process (Tindale, 1999). It is only after exploring the essential characteristics of each of these types that we can step back and ask what, if anything, they have in common and so describe fallacies in a way that captures these essential differences.

1. The Three Perspectives

We might approach these perspectives in terms of their dependence on (or independence from) the context of argumentation. Thus, one perspective, the logical, treats arguments as products divorced from the contexts in which they arise. The criteria for success or legitimacy are captured by ideas like 'validity', 'soundness' or 'propositional relevance', that allow us to test arguments according to the internal relations of their parts. The corresponding fallacy will arise in terms of this internal relationship.

Thus, we can ask: *if there is a mistake here, can we assess it merely by looking at a relationship between parts of the argument and without recourse to its context?* The latter clause needs to be qualified, for we may indeed need to refer to the context to establish meaning, and errors of meaning can arise in this sense. But these precede the (re)construction of the argument itself and its subsequent testing.

The other two perspectives draw us essentially into the context. The dialectical perspective had its basis in dialogue and the idea of argumentation as a series of procedural moves in a dialectical context aimed at establishing one's thesis and/or refuting the thesis of an opponent. The criteria for success or legitimacy have to do with the correct use of the procedural rules, whether these sit outside as overriding governors of any discourse, or are agreed to by the participants for the purposes of the argument (as Socrates might solicit the commitment of his interlocutor to a particular procedural point during the course of a dialectical exchange). The corresponding fallacy will arise in relation to these rules, through their misuse or the prevention of their use.

Thus, we can ask: *if there is a mistake here, can we assess it by looking at the dialogue involved: what stage it has reached, what obligations are incurred, what agreements have been entered into? That is, where it has been and what has been allowed? These considerations require us to be aware of and make use of the*

context.

The second contextual-based perspective has its basis in the relationship between arguers or between arguer and audience, looking at the make-up of those different players, and what is appropriate or needed to convince the audience. It takes us beyond just the procedures employed to the arguer's knowledge of the audience and the active involvement of the audience in the development and success of the argumentation. The criteria of success and legitimacy have to do with gaining adherence of the audience. The corresponding fallacy will arise in relation to this goal, as the audience is impeded from performing its tasks or some feature of it (the audience) is misused or misled. That is, this perspective takes us into the domain of the audience. Thus, we can ask: *if there is a mistake here, can we fully assess it only by looking at the audience?*

This last perspective is the one that has received the least amount of attention, and so will receive more of the focus in what follows. I would point out, though, that nothing precludes a piece of argumentation being fallacious in more than one of these ways, and in fact our experience confirms that this is often the case. This, I think, has been part of the confusion. And it may be that the same 'standard fallacy' has manifestations under two or more of these perspectives.

2. A Lesson from Whately

Although only recently revived as a subject of concentrated study, fallacy-theory has given rise to a number of different taxonomies over the centuries. As an example of this, and to provide something against which to discuss my own suggestions below, we can take the taxonomy set out by Richard Whately in his *Elements of Logic* (1836). Whately organizes the fallacies into two basic groupings, each of which allows of various sub-sets, and provides a chart to show the relationships among them (156). Essentially, the basic distinction is between fallacies that are logical and those that are non-logical (material). The former, which contains what I will call type-I fallacies, is characterized by the fact that the conclusion does not follow from the premises. These in turn may be deemed purely logical, or semi-logical, depending on whether the problem in question hangs on some concern with meaning. An example of a purely logical fallacy would be the 'Fallacy of the Undistributed Middle'; whereas an example of a semi-logical fallacy would be the 'Fallacy of Ambiguity of the Middle Term'. The latter obviously has to do with the meaning of the middle term in a syllogism (although should an ambiguity be discovered, the argument in question would then presumably commit the logical fallacy of having more than three terms).

Whately's second major category, containing what I will call type-II fallacies, is characterized by the fact that the conclusion *does* follow from the premises. Again, he offers two general sub-sets of this (with further sub-sets of those):
a. those in which premises should not have been assumed; and
b. those for which the conclusion is irrelevant. Thus, for example, the 'ad' fallacies are type-II fallacies where the conclusion of the argument is irrelevant.

Lest we be confused by his having irrelevant conclusions *follow from* the premises (type-II), we can understand him to mean that though the conclusion does follow logically, it is not the one required (by the audience) for the argument itself to be accepted. That is, I am required to prove a conclusion, but I prove not that conclusion but one that might be mistaken for it. Still, we might do well to dwell over this question of irrelevance of the conclusion, and to whom it is irrelevant. It will in part account for the distinction I wish to make within his type-II fallacies.
While I agree largely with the basic division Whately has made, my concern is, then, to make a further division in the second category. But there are also fallacies he has identified as type-I the categorization of which we should clarify. The fallacy associated with analogy, for example, is listed under the logical fallacies. But his discussion (176-77) clearly indicates that he is thinking here of confusions that arise from the relativity of meanings. Thus a 'sweet' taste gratifies the palate, while a 'sweet' sound gratifies the ear. Two things seem to be connected, when they have in fact no resemblance. While he refers to analogy, then, what he has in mind is closer to our treatments of equivocation, which in some instances would fit the type-I category.
Again, under type-I fallacies he includes some 'from context', including Division and Composition. But the recourse to context here is no more than is needed for any check of meaning, and the problem still lies internal to the argument itself: "since in each of these [fallacies] the middle Term is used in one Premiss *collectively*, and in the other *distributively*" (180).
Disagreements with respect to type-I fallacies are not substantial, then. At least, no more than one might expect. And Whately himself anticipates this concern, defending the process in which he engages in a way that would be welcomed by anyone attempting a similar taxonomy: "if anyone should object, that the division about to be adopted is in some degree arbitrary, placing under the one head Fallacies, which many might be disposed to place under the other, let him consider not only the indistinctness of all former divisions, but the utter impossibility of forming any that shall be completely secure from the objection

urged, in a case where men have formed such various and vague notions, from the very want of some clear principle of division" (149). Sage advice that shows him open to adjustments to his own taxonomy, and a sentiment I would wish to share.

The question before us now is, whether it is sufficient to do as Whately has done and group together all the remaining fallacies under the broad heading of the non-logical or material. My proposal is that it is not, and it is to show this that I now turn.

3. Bad Process

Let's look more closely at the distinction made earlier between procedure and process. In the first of these (procedure) the attention is on the moves in the dialogue itself: who is saying what and when, and are they abiding by agreements or following rules. In the second case, while we could also look at the procedures involved, analysis of the argument *requires* us to consider the audience: its beliefs and attitudes, the objections it raises, and the ways even that its presence influences the meanings of terms. Consider the following example:

And the LORD sent Nathan unto David. And he came unto him, and said unto him: There were two men in one city; the one rich, and the other poor. The rich man had exceeding many flocks and herds: But the poor man had nothing, save one little ewe lamb, which he had bought and nourished up: and it grew up together with him, and with his children; it did eat of his own meat, and drank of his own cup, and lay in his bosom, and was unto him as a daughter. And there came a traveller unto the rich man, and he spared to take of his own flock and of his own herd, to dress for the wayfaring man that was come unto him; but took the poor man=s lamb, and dressed it for the man that was come to him. And David=s anger was greatly kindled against the man; and he said to Nathan, As the LORD liveth, the man that hath done this thing shall surely die: And he shall restore the lamb fourfold, because he did this thing, and because he had no pity. And Nathan said to David, Thou art the man. [...] And David said unto Nathan, I have sinned against the LORD. (2 Samuel, 12: King James Version)**(i)**

In this example, Nathan presents an analogy to David, insofar as a conclusion is drawn from that analogy and an action decided upon, we can see it as an argument. The argument is addressed to David, and this is important because in this piece we have both an arguer and an identified audience. In asking whether the argument is a good one, we must ask whether it is good for its intended

audience, David. We could, of course, ask whether it is good in itself and provide some kind of analysis of its logic, but that would surely miss the point. Arguments are directed at *someone* (or group). The success of Nathan's argument depends upon his accurate assessment of his audience's character – that he will be provoked to indignation by the story, and also, once it is revealed to him in the statement "Thou art the man," that he will see the other analogue as himself and the applicability of the conclusion, since he, David, has provided that conclusion (that such a man should be punished). If Nathan had misjudged his audience and constructed his argument otherwise, then the reasoning would fail. As it is, we have a successful argument.

But we see here the case for looking beyond the procedures involved in such reasoning to the parties involved, and we cannot assess the qualities of this argument from analogy without considering the audience for whom it was intended, that is, as the term is used here, without considering the process.

From the perspective of fallacies (rather than just instantiations of argument schemes, like the above example), what should strike us in traditional definitions is the emphasis placed upon *seeming* incorrectness (the semblance of validity, in Aristotle's formulation). A fallacious argument *seems* to be correct, but is not. Such a traditional understanding as this implicitly recognizes the importance of the audience. For if an argument *seems* to be valid (or correct, or cogent), it is important to ask to *whom* it seems so. This puts us directly in the domain of the audience, the hearer(s). For it is in that domain that many fallacies will or will not appear. We must take seriously the idea that arguments that fail to address their intended audience, that fail in an essential sense of relevance, are in some ways "bad." Insofar as our understanding of 'fallacy' has been broadening and the term's definition is still under debate, then this seems as legitimate sense as any to attribute to it.

One objection that is likely to arise to this is that it seems to make the fallaciousness of an argument relative to the audience that assesses it, and hence the same argument may be relevant in one context but not in another, doing away with any stable notion of incorrectness. But we can counter this by making several things clear:

a. It is not the audience that assesses an argument that matters, but the one for whom it was intended (admittedly, this will mean that sometimes we will have to reconstruct audiences as best we can when doing assessments of our own);

b. Argumentation is context-dependent, to talk of the same argument in different

contexts is to miss the point that, from this rhetorical point of view, the context is an essential component of the argumentative exchange; the argument is fallacious in its context, or not, nothing more;

c. Finally, and most importantly, not knowing whether a fallacy has arisen until we have assessed a context and its audience does not mean that we lack stable notions of incorrectness (or correctness): arguers used identifiable, repeated strategies (argument schemes) which have objective descriptions; where they are appropriately applied we have measures of correctness, otherwise we have measures of incorrectness or fallaciousness. Furthermore, a crucial tool of the rhetorical perspective, drawn from the work of Perelman and Olbrechts-Tyteca (1969), is the universal audience, a standard of reasonableness alive in each particular audience that I have discussed elsewhere (see 1999, chapter 4).

4. A Perspectival Taxonomy

I cannot defend a full taxonomy of fallacies in the space available here, but I will set out the proposal and address some of the placings of various fallacies under the headings 'logical', 'dialectical', and 'rhetorical' in order to illustrate the proposal in as detailed a way as possible. I begin with a chart that includes most of the more prevalent fallacies from past and recent treatments. It is not exhaustive and others could be added, but those included should be sufficient to make my points. The distinction that interests me the most is that between the dialectical and the rhetorical, so that distinction will receive the most attention in the discussion. This being said, I must allow (and echo Whately here) that in many cases what I would consider to be a rhetorical fallacy could also be recast as a dialectical fallacy simply (although it's not always so simple) by devising a rule that has been violated. Also, I have allowed that many fallacies have descriptions under each of the labels. This has, I believe, contributed much confusion over the nature and descriptions of fallacies**(ii)**. But what I want to focus on are fallacies that fit essentially and foremost into one of these three perspectives. Perhaps in some secondary sense some of them will fit another. But it is the primary sense that will concern us here.

Fallacy	Logical	Dialectical	Rhetorical
Illicit Process	√	X	X
Undistributed Middle	√	X	X
Modus Ponens & Tollens	√	X	X
Composition	√	X	X
Division	√	X	X
Equivocation	√	X	√
False Cause	√	?	X
Begging the Question	√	√	X
Straw Man	X	√	√
Slippery Slope	X	X	√
False Analogy	X	X	√
Hasty Generalization (unrepresentative sample)	X	?	√
Guilt by Association	X	X	√
Ad hominem	X	√	√
Ad baculum	X	√	√
Ad Verecundiam	X	√	√
Ad Ignorantiam	X	√	X

In the chart, a '√' indicates whether a fallacy belongs to that perspective; an 'X' excludes it from the perspective; and an '?' simply indicates that at this stage of the project it is unclear whether the fallacy belongs to that perspective.

From the chart, we can see that, for example, I would consider the fallacy of the Undistributed Middle to be a logical fallacy, the fallacy of the *ad ignorantiam* (appeal to ignorance) to be a dialectical fallacy, and the fallacy of the Slippery Slope to be a rhetorical fallacy. To illustrate my point I will discuss each of these.

I would assume that the assignation of the fallacy of the Undistributed Middle as a logical fallacy is uncontroversial, and I mention it only for completeness' sake. In an interesting discussion of 'fallacy' (interesting because he ponders the causes of such moves by otherwise reliable reasoners), Grice provides the following example: 'Jack says to Jill (whom he does not know very well), "Career women always smoke heavily. You smoke heavily, so you must be a career woman"' (2001, 6). Recognized as a syllogism (and how we make such a recognition is relevant but cannot be addressed here), we can see that the term which the premises have in common, 'people who smoke heavily' (the middle term), is positioned such that the conclusion cannot follow from it. It is possible for both Jill and 'career women' to be part of the class of people who smoke heavily without the two coinciding. That is, they could belong to different parts of the class. So the conclusion is not guaranteed by the premises. This is a feature of the internal relations of the statements involved, we do not need to know anything about the participants in this exchange, or their obligations toward each other, to make the assessment of the incorrectness of the argument. We have a logical fallacy.

Now consider the case of the *ad ignorantiam*. As an argument scheme often used in science (where for example it allows a positive conclusion to be drawn about a hypothesis in the absence of evidence disconfirming it), it allows an arguer to draw a conclusion on the basis of the absence of evidence *if* they have ascertained to the best of their ability that such evidence does not exist. That is, the argument scheme burdens the user with a dialectical obligation that he or she must fulfill to use the argument scheme correctly.

For example, an argument drawn from what I will call the 'Lomborg debate'**(iv)** can be reconstructed to read (it is a reconstruction, so I will not attribute it to the scientist who used it) that, since the reviews that have praised Lomborg's book have been in non-science journals, like the *Economist*, and by non-scientists, and since the reviews in science journals, like Scientific American, have been by

scientists and have involved scathing repudiations of Lomborg's arguments, then we can conclude that no scientists support his position. To argue in this way, the author is obligated to have canvassed both the two sets of journals that he cites and a reasonable sample of other reviews in order to be sure there are no counter instances to his conclusion. The legitimacy of his appeal to ignorance depends on this attempt to find evidence, and the assessor of the argumentation (whether its audience or a third party) must judge whether or not the obligation has been met. In doing so, that assessor is not looking at the internal logic of the argument itself, nor at the beliefs of the audience for which it is intended (although, in a *secondary* way such would be appropriate), but first and foremost the assessor must attend to a crucial aspect of the context, the meeting of this dialectical obligation, in deciding if a fallacy has been committed. If it has, what we have primarily is a dialectical fallacy.

The Slippery Slope involves a causal chain to an undesirable (or perhaps desirable) consequence. Since, for example, if a proposed action will set off a causal chain that, once begun, cannot be halted, and that will lead to an undesirable conclusion, then the proposed action should not be taken. It may be easy to approach this argument in a formulaic way such that we can simply appraise the probabilities involved in each claimed causal link. But the Slippery Slope argument is aimed directly at an audience. As important as the causal chain is, the conclusion hinges on the undesirability of the result. And in deciding *that*, we must consult the beliefs and values of the intended audience. Is it undesirable *to them*? If not, the conclusion does not follow, since the reason for not doing the proposed action has not been established.

Even the causal chain has its root in the rhetorical figure of the *gradatio*, a series of phrases or clauses constructed so that each, with the exception of the first, repeats the previous item. In her recent study of rhetorical figures like the *gradatio* in argumentation, Jeanne Fahnestock (1999) includes the following example from a *New York Times* piece supporting the reintroduction of wolves into Yellowstone National Park in the winter of 1994-1995.

1. Carcasses of large prey, like elk, slaughtered by wolves will add nutrients and humus to the *soil*. 2. The more fertilized *soil* will support lush vegetation, probably attracting snowshoe *hares*. 3. The presence of *hares* will likely prove a lure for *foxes* and other predators. 4. The *foxes* will also prey on rodents like *mice* in the area. 5. A misplaced *mouse* predator, like a weasel, is likely to fall prey to

an owl. (Stevens 1995, C1; italics added to emphasize overlapping terms; a interesting comparison can be made with the "lax" version of the same argument expressed in the text of the article.) (1999, 109)

We can imagine this causal chain placed into a (positive Slippery Slope) argument, and as Fahnestock puts it:
'the experts at scientific accommodation…realized that a gradation would most persuasively express the causal reasoning for the large, mixed audience of the New York Times' (109). That is, in her judgment, the argument is prepared with a specific audience in mind; it is, we might say, audience-directed. And in assessing its 'correctness' we cannot ignore its rhetorical nature. There do seem to be weak links in the causal progression, but when we look for a perspective from which to judge them, the perspective we turn to must be the intended audience. Or, rather, we consult the perspective of the universal audience within that particular audience; the principle of reasonableness at work within them. Where the Slippery Slope fails to address the audience, in either its causal progression, or more particularly in its claim of undesirable consequences, then the application of the argument scheme is incorrect. We have first and foremost a rhetorical fallacy.

Let me close out this part of the discussion with two further examples, emphasizing the relationship and distinction between the dialectical and rhetorical perspectives when it comes to fallacies.
The Straw Man (or Person) fallacy, a staple of most informal logic textbooks, is not a logical fallacy. We cannot assess it without going into the context, in particular the background, of the issue and any previous argumentation. But in this case, it does not seem that we can decide which of the dialectical or rhetorical perspectives is primarily involved in its incorrectness. The following is another example from the Lomborg debate. Here a scientist, Thomas Lovejoy, in a piece commissioned by *Scientific American*, is attacking Lomborg's treatment of biodiversity:
The pattern is evident in the selective quoting. In trying to show that it is impossible to establish the extinction rate, he states: "Colinvaux admits in *Scientific American* that the rate is 'incalculable,'" when Paul A. Colinvaux's text, published in May 1989, is: "As human beings lay waste to massive tracts of vegetation, an incalculable and unprecedented number of species are rapidly becoming extinct." Why not show that Colinvaux thought the number is large? Biased language, such as "admits" in this instance, permeates the book.

Lovejoy's concern seems to be with the language that Lomborg has used. But the greater problem seems to be that Lomborg has committed a Straw Man. That is, he has misrepresented Colinvaux's position by selectively quoting him to support his (Lomborg's) own ends. In doing so, Lomborg has clearly violated a widely recognized dialectical rule: do not misrepresent the opposition (for to such Colinvaux belongs). Thus, he commits a dialectical fallacy; the determination of which requires that we have recourse to the context. But, insofar as Lomborg's audience includes both the lay public and the scientific establishment, he has also failed to accommodate the beliefs and values of an important part of his audience. The principle of reasonableness within them (the universal audience) would never accept such an argument. On this front, it also is a rhetorical fallacy**(v)**.

I close with a further example to illustrate fallacies from the rhetorical perspective. Again, I draw on the wealth of material provided by the Lomborg debate. This is a letter to *Scientific American* by one A.B.

In the 1970s there was a lot of excitement over two books: one theorized that our planet had been visited by friendly aliens who had helped our ancestors with all kinds of "impossible" achievements, including the building of the pyramids; another proposed paranormal explanations for the Bermuda Triangle, complete with "irrefutable" evidence. I can't remember the titles of these books or the authors' names, but I do remember watching one of them being interviewed on television. Although the interviewer was definitely hostile, the author remained confident and self-assured. After 15 minutes or so of well-informed questioning, however, the interviewer had effectively boxed his guest into a corner. At which point the still smiling, recently successful author finally stated, "If I'd said it that way, I probably wouldn't have sold many books."

As far as Lomborg and his book go, I don't think we need look any further than the above statement. Also, growing up and going to school in Cambridge, England, I am extremely disappointed that Lomborg's book was published by Cambridge University Press. I just hope they realize how they have tarnished their reputation by publishing such a work. I think a more suitable vehicle would have been the checkout stand at the local supermarket, which thrives on misinformation and distorted facts.

There are several things we might draw from this example, but I want to attend to the double use of Guilt by Association. This is an argument scheme that casts aspersions on a position because of some questionable association that its holder

is believed to hold. The issue is always whether "guilt" exists, and can be transferred from one party to another. So, two questions are involved. A.B. provides two instances of Guilt by Association, one in each paragraph. In the first, he associates Lomborg with two pseudo-scientific authors of the 1970s, thereby categorizing Lomborg as non-serious and effectively dismissing him.

Having established Lomborg's 'guilt', this is transferred in the second paragraph to Cambridge University Press, Lomborg's publisher. Again, in these cases we must turn to the context to assess the reasoning. There may well be dialectical rules that we could imagine here (such as, you should establish guilt and not assume it), but first and foremost the attribution of guilt seems a rhetorical device designed to alter an audience's view of an individual or group. Would these examples be successful? Insofar, as he writes to the *Scientific American* and that publication has come out in opposition to Lomborg's work, then A.B. is accommodating the beliefs of his audience. But how does that audience "hear" this? That is, how do they receive it? And here we look again at the principle of reasonableness at work in the audience. This is an educated audience, groomed on respect for evidence and a desire to look seriously at the same. This audience cannot assess the 'guilt' of Lomborg (and hence CUP) because A.B. does not attempt to establish it. He gives a charged association on a suggestive analogy but without any support. As assessors of this argument (both arguments) ourselves, we should not allow that the audience would accept them, because the correct use of the scheme has not been followed. As such, a rhetorical fallacy has been committed (twice).

5. Conclusion

In part of his discussion of fallacies, Whately worries about interpretation. Sometimes, when a premise is suppressed, it could be interpreted so as to commit a fallacy under either of his type-I or -II divisions. So which did the speaker intend his audience to understand? He answers: 'Surely just whichever each of his hearers might happen to prefer' (1836, 150). What Whately has in mind is that if an author is prepared to commit a fallacy to persuade an audience, then that author doesn't care how the audience hears it as long as they accept it. But the point is also that, in such cases, the fallacy (i.e. which type it is) is in the hearing, it lies with the audience. What I have argued here is that the set of cases for which this is appropriate is much larger and includes fallacies that have received much different treatments elsewhere. For in more cases than we might have been imagined the fallacy is in the hearing, or in Aristotle's 'seeming'**(vi)**.

NOTES

[i] I am grateful to David Schmeidler for this example and its discussion, as this was included in his paper 'Rhetoric and analogies' (co-authored with Enriqueta Aragones, Itzhak Gilboa, and Andrew Postlewaite), presented at the Centre for Interdisciplinary Research, University of Bielefeld, October 2001.

[ii] Frans van Eemeren (2001) notes that fallacy theory failed to acknowledge the shift from Aristotle's dialectical notion of fallacy to the logical, thus accounting for some of the problems. He also indicates what I would take to be a similar missed shift when he writes of the ad fallacies that they 'are Airrelevant@ because they offer no logical justification for the opinion expressed; all the same, they may be a rhetorically effective means to persuade an audience' (146). (Although I doubt that he would take such an observation to the lengths that I will here.)

[iii] Note that I stress the fallacy of each argument scheme. Because for many of these there are perfectly legitimate applications (though not for all, as we see with the Undistributed Middle); the fallacy is the incorrect application of the scheme. Hence, I would distinguish between Slippery Slope arguments and Slippery Slope fallacies, depending upon whether an instance met the conditions of correct application.

[iv] In 2001 Bjørn Lomborg, a statistician and political scientist at the University of Aarhus in Denmark published a book title The Skeptical Environmentalist (Cambridge University Press). This has subsequently given rise to a heated debate between Lomborg and his defenders and members of the scientific establishment. As an exercise in argumentation, it has proved an interesting case study.

[v] I could imagine someone insisting here that even logical fallacies violate the principle of reasonableness in audiences. Indeed they do. But the point is that such contextual features as discussed here come essentially into our evaluation. Logical fallacies require no similar recourse to context.

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