The Argument of the Beard

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Abstract: The essence of the argument of the beard (so-called by some logic textbooks) is the tactic used by a respondent to reply to a proponent, "The criterion you used to define a key term in your argument is vague, therefore your use of this term in your argument is illegitimate, and your argument is refuted." This familiar kind of argument tactic is similar to the much more famous heap (*sorites*) argument of Eubulides, closely associated with the slippery slope argument. This article provides a system of classification for sorting out these three arguments, and related types of argument of interest in informal logic.

Résumé: La tactique familière selon laquelle on réplique à un adversaire en lui disant, "Le critère que tu as employé pour définir un mot clé dans ton argument est vague, donc ton usage de ce mot est illégitime, par conséquent, ton argument est réfuté," est semblable aux célébres sorites mégarites du tas d'Eubulide, et s'associe étroitement à l'argument de la pente glissante. Cet article décrit un système de classification qui distingue ces trois types d'arguments et quelques autres qui s'y rapportent dans le cadre la logique informelle.

The argument of the beard is a curiosity of the fallacy world. It occurs as a distinct fallacy (by that name) only in nine logic textbooks—Thouless (1930), Little, Wilson and Moore (1955), Moore (1967), Schneider (1967), Manicas and Kruger (1968), Byerly (1973), Damer (1980), Fearnside (1980), and Moore, McCann and McCann (1985)—in all of the textbooks searched in the University of Winnipeg Library and the author's personal collection. Moreover, there seems to be some uncertainty whether the argument of the beard is different from the slippery slope argument, or from the heap (bald head, *sorites*) argument of Eubulides.

The problem of this paper is whether the beard argument (a) represents a distinct category of fallacy in its own right, worth keeping in the logic curriculum, or (b) whether it is insignificant, or (c) whether it is the same as, or (d) belongs under, one of these other more widely recognized categories of argument.

The argument of the beard is to be distinguished from the philosophical tradition, cited as "Meinong's beard" by Barth (1974, p. 4). According to this tradition, entities can be referred to in natural languages by terms beginning with definite articles, like 'the State,' '*die Sprache*,' or '*l'homme*.' This tradition is something philosophers have worried about, without coming to any clear answer on it, according to Barth (p. 4). But it appears to be quite a distinct idea from what is known in the logic textbooks as the argument of the beard.

To get an idea of what the argument of the beard is supposed to be, the best place to start is Thouless (1930), the earliest mention of this argument (by that name) we have been able to find in the logic textbooks except of course for the ancient origins of what appears to be the same, or a comparable type of argument called the "heap" or "bald head" argument.

1. THOULESS ON THE BEARD ARGUMENT

Of all of the accounts of the argument of the beard, the clearest and most compelling is the one given by Thouless (1930). According to Thouless (p. 182), it is a kind of "crooked thinking" we use when arguing about two things which show a continuous variation, and one party to the argument denies the reality of differences between the two things. Thouless (pp. 182-183) uses a "very old example" to illustrate the fallacy.

Case 1: One may throw doubt on the reality of a beard by a process beginning by asking whether a man with one hair on his chin has a beard. The answer is clearly 'No.' Then one may ask whether with two hairs on his chin a man has a beard. Again the answer must be 'No.' So again with 'three,' 'four,' etc. At no point can our opponent say 'Yes,' for if he has answered 'No' for, let us say, twenty-nine hairs, and 'Yes' for thirty, it is easy to pour scorn on the suggestion that the difference between twenty-nine and thirty hairs is the difference between not having and having a beard. Yet by this process of adding one hair at a time we can reach a number of hairs which would undoubtedly make up a beard. The trouble lies in the fact that the difference between a beard and no beard is like the difference between white and grey in the fact that one can pass by continuous steps from one to the other.

The argument of the beard, so described, rests on the premise of a sequence of what Thouless calls "continuous variation"—a continuum along which there is no precise cutoff point so that you can say, exactly at this point, one thing changes to another distinctly different thing. For example, there is no numerically exact point—say, the difference between twenty-nine and thirty hairs—that is the difference between having a beard and not having a beard. Or in a continuum of shading from black to white, there is no single point where you can say, "Here is the exact point of difference between white and grey." Of course, you could arbitrarily define or stipulate such a point. But then, as Thouless astutely points out, a critic could "pour scorn" on the arbitrariness of that proposal.

The account of the argument of the beard is very reminiscent of a type of puzzling argumentation known in the ancient world as "the heap" or "the bald head," described in Walton (1992, pp. 37-38) as follows.

Case 2: If you take one grain away from a heap, it makes no significant difference you still have a heap. Each time you repeat this step, it makes no difference, because one grain is too small to make a difference between something being a heap or not. But repeated long enough, the conclusion of this reasoning will become absurd, for it will become obvious that what is left can no longer be described as a heap.

The case of pulling hairs from a person's head was also often used to illustrate the puzzle. This is the "bald head" version. This paradox of the heap (or bald head), often called the *sorites* argument, was invented by a Megarian philosopher named Eubulides, said by Diogenes Laertius (II-108) to be the author of many dialectical arguments in interrogative form. Eubulides, we are told by Diogenes Laertius, was called "Eubulides the Eristic," a philosopher who "propounded quibbles" and "confounded the orators with falsely pretentious arguments."[2] The version of the puzzle of Eubulides called the heap or the *sorites* is expressed by Diogenes Laertius (VII-82) as follows: "It cannot be that if two is few, three is not so likewise, nor that if two or three are few, four is not so; and so on up to ten. But two is few, therefore so also is ten."[3] Putting the argument in this way, it takes the form of a puzzle frequently called a paradox or "sophism" in logic (Walton, 1992, p. 38)—a case of a valid argument from true (or apparently true) premises to an absurd or false conclusion. But of course, in deductive logic, this represents a contradiction, for if the premises of a valid argument are all true, the conclusion must be true too. A paradox could even be defined as an inferential contradiction of this sort.

But a paradox or "sophism" is not a fallacy (or sophism, sophistical refutation) in the sense in which the logic textbooks more generally use this term. In the latter sense, a fallacy is an error of reasoning or deceptive tactic of argument that is commonly used to fool people by specious logic, and is therefore worth warning students about (Walton, 1995). What then is the argument of the beard as a fallacy in this sense?

Thouless (1930, p. 183) has an answer, when he shows how the argument of the beard is used as an effective tactic to get the best of an opponent in everyday argumentation.

In this argument, the fact of continuous variation has been used to undermine the reality of the difference. Because there is no sharp dividing line, it has been suggested that there is no difference. This is clearly a piece of crooked argument which would take in no reasonable person, so long, at any rate, as it was used about beards and not about anything which engaged our emotions more strongly.

As an example of everyday use of this argument, Thouless (p. 184) cites the following case.

Case 3: We do, however, frequently hear an argument against the distinction between a proletarian and a capitalist which begins: "When does a man become a capitalist? If a working man has 25 pounds in the bank, is he a capitalist?" This is the argument of the beard.

This denial of difference is a fallacy, in the context of the kind of political dispute Thouless has in mind in Case 3, if the difference between those who own capital and those who do not is a difference that can be genuinely defended as important and legitimate in social thinking. Just because the term 'capitalist' cannot be defined precisely, in numerical terms, that does not mean there can be no justification for using it in the discussion sketched out in Case 3.

The fallacy or "piece of crooked argumentation" of the beard, according to Thouless (p. 187) may then be described as "the device of badgering one's opponent" to define or provide "clear-cut ideas with which the other person can play an intellectual game" to unfairly attack the other party. The essence of the tactic is to argue, "This criterion x in your argument is vague, i.e., there is no definite cut-off point for it; therefore your use of x at all in your argument is illegitimate, and your argument is refuted."

The kind of problem of everyday argumentation Thouless is rightly concerned about occurs in a dialogue exchange where one party attacks a term or criterion used by the other party as too vague, and the second party is therefore impelled to define this term more precisely. In general, such a request for precision is appropriate and useful, as a move in a critical discussion. But it can, in some instances, be pressed ahead too aggressively, and so used as a sophistical tactic of argument to unfairly put pressure on the other side. For after all, terms in natural language are vague, generally, and if one redefines a natural language term to make it more precise, one can be attacked for that too (on grounds of arbitrariness, for example).

So Thouless seems to have found a distinctive type of argumentation here—which could be called argument of the beard—that is of legitimate interest for informal logic.

2. BEARD, CONTINUUM AND SLOPE

When we examine what other textbooks have written about the argument of the beard, some of them seem to have roughly the same basic idea of it as Thouless. However, some of them emphasize the continuum aspect of the argument more emphatically, suggesting that it could be a kind of slippery slope argument.

Fearnside (1980, p. 51) defines *the argument of the beard* as "contending that 'one more doesn't matter' in a situation where a line has to be drawn on a continuum." This description seems to allow that the argument of the beard need not be fallacious in all cases. However, Fearnside (p. 51) emphasizes the importance of recognizing that many guidelines that need to be drawn on a continuum in everyday affairs are arbitrary. Hence objecting to a line drawn, only because it is arbitrary, can be an unreasonable kind of argument.

Through all the vast difference between one end of a spectrum and the other, the difference between its various shadings remains infinitesimal. We grow old day by day, temperatures rise in a continuous sequence, pound by pound the ship loads cargo from empty to overloaded, day shades into night. The practical affairs of life absolutely require breaking into such sequences. The child must begin school at a certain age, he can marry at another, join the army at another, vote at another, run for U.S. Senator at another, get Social Security at another, and so on. These are only some of the lines drawn across the continuum of our lives. They have one thing in common: all are arbitrary. Now "arbitrary" in this sense means that the rules are matters of human convenience, not that they are unfair. There is no principle involved in whether the line 16, 17, 171/2, or whatever is taken as the age required in order to become a licensed driver. The line is arbitrary; it has to be. If it turns out to be a poor choice then some other arbitrary point along the age continuum can be selected instead.

The kind of example of the fallacious use of the argument of the beard that Fearnside indicates he has in mind (p. 52) is the following.

Case 4: A student objects because he cannot enroll in a class because a numerical limit has been set in place, arguing: "One more doesn't matter—setting the limit at 60 is arbitrary."

In this case, the student's premise that the line is arbitrary, setting the exact limit at 60 instead of, say, 61, may be true. Yet his contention that therefore the guideline set is unreasonable or indefensible does not follow from the arbitrariness of the limit alone. For as Fearnside has rightly argued above, many guidelines are (as a matter of practical necessity or convenience) arbitrary, but it does not follow, for that reason alone, that such a guideline is unfair. Institutional rules often have to be arbitrary.

Hence attacking a criterion as arbitrary is sometimes reasonable and sometimes not. But it is certainly a frequently used type of argumentation, and it does seem to carry weight in common practices of argumentation—sometimes quite correctly so, it would seem. But it seems that the beard argument is not exactly the same thing as the arbitrariness argument, as Damer's (1980) account of the beard argument indicates.

Damer (1980, p. 37) gives a very clear account of the kind of fallacy identified with the argument of the beard, but uses a different label for it.

This fallacy consists in assuming that small differences are always unimportant or that supposed contraries, as long as they are connected by intermediate small differences, are really very much the same. Hence, there is the failure to recognize the importance or necessity of sometimes making what might appear to be arbitrary distinctions or cut-off points.

The assumption involved in this fallacy is a very common one, and it is not easy to persuade people of its dubious character. This assumption is expressed in the common claim that "it's only a matter of degree." This "only a matter of degree" kind of thinking implicitly claims that small differences are unimportant

or that making definite distinctions between things on a continuum is almost impossible, or at least arbitrary.

Damer (p. 7) calls the fallacy described above the *fallacy of the continuum*, but adds (p. 38), "the ancient name of this fallacy is the fallacy of the beard." To deal with the fallacy, Damer (p. 39) recommends that an arguer insist that making distinctions between vague concepts like "rich" and not "rich," "failing or passing a course" is possible and necessary, even though it may be difficult. Damer (p. 38) rightly sees the source of the difficulty in dealing with this fallacy as the problem of making clear distinctions when dealing with vague words so often used in everyday arguments.

Byerly (1973, p. 56) defines the fallacy of the beard as "arguing from the vagueness of a distinction to the absence of any meaningful distinction." Byerly sees the beard fallacy as the opposite of the fallacy of "black-white thinking" where "boundaries are drawn too sharply and simply" (p. 56). Byerly offers the following example as an argument that commits both these fallacies.

Case 5: Let's be honest about it. Either you favor a socialized state running everything, or you don't. If you think the government should provide free medical care to everyone, why not have the government supply everyone's need for food, clothing, and shelter? Once you start down the slippery road to socialism, there can be only one result—the control of every facet of our life by a bureaucratic tyranny.

The problem with this example is that it is an instance of what would normally be called the slippery slope argument. It leaves out the middle steps—making it an instance of what is called the *short form* slippery slope argument in Walton (1992, pp. 170-173)—but it certainly has the "first step" and the "horrible outcome" characteristic of slippery slope arguments.

3. THE BLACK-OR-WHITE FALLACY

Beardsley (1966, p. 176) classifies the slippery slope fallacy as a subspecies of the type of argument he calls the black-or-white fallacy—which appears to be similar or identical to what is normally called the argument of the beard in other textbooks—notably, except Thomas (1977). However, unlike other textbooks that give illustrative examples of the argument of the beard that are really (or more standardly classified as) slippery slope arguments, Beardsley sees the slippery slope as a distinctive type of argument in its own right. He gives the following case (p. 176) as his illustration of the slippery slope argument.

Case 6: The assumption underlying our fatal drift toward a socialist economy is that one can have a little bit of socialism which is no more possible than having a slightly illegitimate baby or a slight case of murder. The society at the end of the road is regimented from top to bottom, according to a soulless master plan. We took the first step on that road the moment we allowed the gov-

emment to go beyond its legitimate task of policing the streets and negotiating with other sovereign powers. Once you have a Post Office, it is easy to argue that a TVA project would hardly be any different, or a federally owned and operated communications satellite system, etc., etc. There's no logical stopping place; you are hooked.

This case is a classic example of the slippery slope argument, and clearly exemplifies the step or series characteristic of that type of argument as well as the "no logical stopping place" characteristic.

Thomas (1977) follows Beardsley generally on the black-or-white fallacy, but not in all respects. Curiously, what Thomas (1977, p. 204) describes as the "black-or-white fallacy" sounds a lot like what other textbooks would call the argument of the beard (except, of course, for Beardsley, notably).

Anyone who argues or reasons that because something does not fall squarely within one category, it must therefore fall into a category at the opposite extreme simply because the difference between the two is "just a matter of degree" or "any line you draw is arbitrary," commits the "*black-or-white fallacy.*" For example, someone who argued that a certain piece of bread was not 100 percent fresh and therefore was clearly "stale" because the difference between fresh bread and stale bread was "just one of degree" and "any line of distinction is arbitrary" would commit the black-or-white fallacy. A variant is to argue that there really is no difference between two things (e.g. heavy versus light smoking, or freedom in one country versus freedom in another) because "the difference is only a matter of degree" or "any distinction is arbitrary."

This account is disorienting, because it combines some elements of what is normally called the "black-or-white fallacy" with the kind of argumentation that appears to be what is more normally seen as the opposite fallacy—the argument of the beard. Thomas does not use the expression (argument of the beard) at all, but the examples of arguments he gives above—about stale bread, smoking and freedom—would fit the description of the argument of the beard given in other textbooks like Thouless and Fearnside very well.

Thomas (1977) appears to have gotten his version of the black-or-white fallacy from Beardsley (1966), who also uses this phrase to describe something more like what is normally called the argument of the beard (although Beardsley does not use the term 'argument of the beard' at all). However, Beardsley's account of the black-or-white fallacy is somewhat different from the description of it given by Thomas, and also different from what most (or perhaps even all) of the other texts say. Beardsley (1966, p. 175) characterizes the black-or-white fallacy as "a subtle attempt to paralyze thinking about matters of degree by appealing to the arbitrariness of drawing lines." Beardsley (p. 175) offers the following form of argument as characteristic of this fallacy.

A large difference of degree is made up of many small differences of degree.

Therefore, a large difference of degree is not large at all.

This form of argument does seem somewhat similar to the kind of argument described by other texts as the argument of the beard. But by describing it as an

argument that appeals to the arbitrariness of a term or criterion, Beardsley's account seems different from the others.

Thomas (1977, p. 205) offers the following illustration of what he calls the "black-or-white fallacy," writing that he has "concocted" it himself, because examples of this fallacy are "difficult to find in published writings."

Case 7: I will go even further. I am still against the U.S. Post Office, and always will
be. It's the thin edge of the wedge of socialism. If the government is in the
business of carrying mail, then why not go into the business of electric power—
that is, the TVA and BPA? And it's only a step further to government own-
ership and control of telephone and telegraph lines—after all, how do these
differ from carrying letters? And if the government owns these, why not
mines and steel mills, farms and department stores—until everything is swal-
lowed up in socialism? There is no logical stopping-place, once you let the
government in. The only logical thing is to keep the government completely
out of everything.

But this example quite clearly fits the category indicated as the slippery slope argument by the broad majority of logic textbooks. We could even categorize Case 7 in the classification system of Walton (1992) as a classic case of the (full) slippery slope argument. It has all the elements of the "thin edge of the wedge," the intervening steps, and the "no logical stopping-place" characteristic of the slippery slope argument.

4. PROBLEMATIC TEXTBOOK EXAMPLES

Little, Wilson and Moore (1955, p. 11) define the argument of the beard as an opposite of the "black-or-white fallacy," or "false dilemma," which is committed "when we fail to admit the possibility of middle ground between extremes."

We are guilty of the *argument of the beard* if we use the middle ground, or
the fact of continuous and gradual shading, to raise doubt about the existence of
real differences between such opposites as strong and weak, good and bad,
and white and black. Blinded by this doubt, we may ignore significant differ-
ences because one extreme shades gradually into another. The fact that we
cannot determine the exact point at which white ceases to be white does not
prove that there is no difference between white and black.[4]

Citing the problem of how many whiskers make a beard (p. 11), Little, Wilson and Moore suggest that this problem of "determining an exact minimum" could lead to the type of error identified with the argument of the beard, illustrated by the following case.

Case 8: Superficially, the error is used to support the argument that a little more or a
little less will not matter. A student may argue that, since he has already been
absent from class six times, an additional absence will not matter. It is true,
of course, that there is not much difference between six and seven absences;
nor is there much more difference between six and eight absences. But if

one uses this argument to justify additional absences, he could conceivably reach the position of arguing that there is no difference between attending all classes and missing all of them.

If the student were to conclude that there is no difference between attending all classes and missing all classes, her argument would certainly be erroneous.

But this particular case is highly problematic to illustrate the error supposedly characteristic of the argument of the beard, because it raises the difficult question of what type of argument the student is using when she reasons that an additional absence will not matter, once she has missed six classes. Maybe it might not matter if, say she has already missed so many classes that she would fail the course anyway. But maybe it might matter if the attendance at the seventh lecture might be instrumental in overcoming the liability of the prior absence.

This curious argument seems to be related to what Perelman and Olbrechts-Tyteca (1969, p. 299) call the *argument du gaspillage* (argument from waste), which "consists in saying that, as one has already begun a task and made sacrifices which would be wasted if the enterprise were to be given up, one should continue in the same direction." An example would be a person who has started taking a course, and is thinking of dropping it, but then reasons that she must continue, because she has already put so much work into it. The argument from waste is a type of practical reasoning in deliberation that could possibly be reasonable in some cases, but that seems questionable, and could be erroneous, unjustified, or even fallacious in other cases. However it should be evaluated, it is a distinctive and curious type of argument.

Case 8 is puzzling because it appears to partly involve an argument something like the argument from waste. In this respect, it is different from the argument of the beard, of the kind that Little, Wilson and Moore see as the opposite of the black-or-white fallacy.

A very similar account of the argument of the beard is given by Moore (1967, p. 166), except that the example used to illustrate this type of argument is quite different from Case 8 above.

Case 9: Suppose the scores on 101 students are evenly distributed between zero and 100, and the instructor draws the line so that the lowest passing score is 60. A student with a score of 59 might contend that one point should not make this much difference. If the instructor agrees, however, that he is not justified in drawing the line between 59 and 60, then where is he to draw the line? How is he to draw any line at all? And if he shirks his responsibility for drawing the line, will he not ultimately be treating the students with zero and 100 as if there were no difference between them? We commit the argument of the beard whenever we dispute the right of authority to draw lines simply because the difference between the items on each side of the line is small.

The problem posed by this kind of case is that in any bureaucratic organization, like a university or a government agency, rules have to pick an exact, if arbitrary

cut-off point to define what meets a requirement. Otherwise, people will object that the rule is unfair or is too vague. Of course, once the cut-off point is designated, other people will argue that the rule is arbitrary.

In the context of this kind of case, people will use what seems to be a type of argument of the beard, citing the arbitrariness of the criterion to try to get another mark so they can get from a *D* to a *C* grade, for example. They might be likely to argue that the difference of one mark is really trivial, so that the instructor ought to be sympathetic in giving them the benefit of the doubt, and award them a *C* grade. This is not necessarily a fallacious argument in all instances, however.

The argument would be more easily portrayed as fallacious, however, if the pleader's conclusion is that there is really no difference between a *C* and a *D*, or even between any pair of numerical grades from zero to 100. The argument with this conclusion seems more like one that might properly be called the argument of the beard.

Another problem raised by Case 9 is the difference between vagueness and arbitrariness as an objection to a proposed criterion. Vagueness refers to the lack of an exact cut-off point. Arbitrariness can apply where there is an exact cut-off point, and refers to something else.

Manicas and Kruger (1968, p. 332) give quite a clear account of the fallacy of the beard:

> [The argument of the beard assumes] that since no distinction can be made anywhere along the line, no distinctions at all on a continuum are meaningful. There is no stopping-off point or line that can be drawn since all differences are connected by intermediary degrees on a continuum. In effect, then, it is absurdly concluded that even extremes, or contraries, are alike—hot is the same as cold, black is the same as white, smart is the same as stupid. Now, of course, this isn't so. Even though a sharp line cannot be drawn between contiguous, or overlapping, categories like "hot" and "warm," they are still significantly different from one another, let alone 'hot' and 'cold.' The inability to draw sharp distinctions in certain contexts does not mean that no distinction at all can be made, as this fallacy assumes.

This is an admirably clear account of the fallacy of the argument of the beard, but the first example Manicas and Kruger use to illustrate it (p. 331) is problematic.

Case 10: Marshall Tito of Yugoslavia used this fallacy facetiously when he supposedly remarked, 'There really isn't very much difference between the political systems of America and Yugoslavia; after all, America has two major political parties and Yugoslavia one, a difference of only one party.'

This ridiculously unconvincing argument is certainly a bad one. But it is not a good illustrative example of the distinctive fallacy characteristic of the argument of the beard. True, it is a citing of an important difference between two things as trivial, and therefore it is a weak and unconvincing argument. But it does not

really exhibit the exploitation of the lack of cut-off point in continuum characteristic of the argument of the beard.

Schneider (1967, p. 18) offers the following argument to illustrate the fallacy of the beard.

Case 11: Would you steal the last dollar a poor widow had? Would you steal to feed your starving baby brother if there were no other way to get him food? Either way you are a potential thief!

The problem with this case as an example of the argument of the beard is that it appears to be much closer to that often mentioned traditional fallacy, the *secundum quid* or "neglect of qualifications," also frequently called "hasty generalization"—see Walton (1990) for an account of these terms. Schneider defines the fallacy of the beard as "an argument that fails to recognize differences." But there are different kinds of differences that can be suppressed or not recognized in argumentation.

In Case 11, the basic problem is that many commonplace generalizations and rules are *defeasible* in the sense that they are subject to exceptions in particular cases, *viz.*, the injunction against theft, a practice that is generally wrong, but that could be justified or defended in an exceptional case, like those cited by Schneider.

This type of fallacious *secundum quid* argument, as cited in Case 11 above by Schneider, is not the same thing as the argument of the beard. The argument in Case 11 could be extended so that it would also involve the argument of the beard if the arguer were to add, "Therefore there's really no difference in principle between stealing and not stealing," or something of that sort. Even so, what is important to recognize here is that the *secundum quid* fallacy of neglect of qualifications is, in principle, a distinctively different sort of error from the kind of fallacy that is characteristic of the argument of the beard. By confusing these two categories, Schneider's example is a highly unfortunate case to use as an illustration of the argument of the beard in a textbook.

5. BEARD VERSUS SLOPE

The textbook accounts outlined above pose a problem. They are not consistent, and in many respects seem to be at odds with each other. Yet they do seem to be on to something that should properly be included in the treatment of fallacies. The examples they give to illustrate the so-called argument of the beard do indicate a problem that can be a serious obstacle to resolving a disagreement by reasonable argumentation. Criteria used in words and phrases in natural argument to make classifications are generally vague, and this vagueness in borderline cases is frequently used to attack the legitimacy of the criterion. But is the argument of the beard reasonable or fallacious, and if it is fallacious in some cases, what is the root of the error?

An even more pressing prior question is that of how to define the argument of the beard. It does seem to be somewhat different from the slippery slope argument. But some of the textbooks confuse the two, and indeed, if there is a difference between them, it is not exactly clear what it is.

It seems that the argument of the beard bears a very close relationship to the type of slippery slope that turns on the vagueness of a term, as opposed to other types of slippery slope arguments that are more causal in nature. Govier (1982) distinguished between several types of slippery slope arguments, including a purely linguistic one, as opposed to a causal one. Govier (1982, p. 308) defines the structure of the linguistic or *sorites* type of slippery slope argument as follows— where P is a property and x is a degree of difference between two cases—calling it the "fallacy of assimilation."

Fallacy of Assimilation

(1) Case (a) is P.

(2) Cases (b) - (n) form a series differing initially from (a) and then from each other, only by x.

(3) Considered in itself, each difference of amount x is insignificant.

Therefore:

(4) There is no difference between (a) and (b) - (n) with respect to P; all are equally P.

This form of argument does appear to correspond fairly well to the examples and descriptions of the argument of the beard given in the textbook accounts above. But does it represent the argument of the beard, or the (linguistic subtype of) slippery slope argument? Or are these two arguments really the same?

A comparable kind of problem of identifying a distinctive species of argument associated with a traditional fallacy arises in the case of the causal slippery slope argument. The causal type of slippery slope argument (Walton, 1992, Ch. 3) occurs where there is a causal sequence of events, and one party warns another that if he takes the first step in the sequence, he will not be able to stop the other steps from occurring, and therefore the final result will be some horrible (dangerous) outcome. This species of slippery slope argument is also frequently called the "domino argument." A pedagogical problem with identifying this type of argument is that students, once they are introduced to it, tend to see any argument where one party warns the other of negative consequences of a contemplated action as being a (causal) slippery slope argument. Such a classification is inappropriate, however. There is a difference between argumentation from negative consequences generally and the slippery slope argument in particular.

What is the difference? Presumably, it is that argumentation from negative consequences can be a one-step or two-step argument that bad consequences will or may occur, as a result of a contemplated action, whereas slippery slope argu-

mentation essentially involves the "no stopping point" idea that once you take the first step, you are then impelled along the sequence to the ultimate bad outcome. The idea of the repeating sequence or series is therefore very important to the slippery slope argument.

In the case of Govier's argument from assimilation then, the key premise is (2), which requires that the cases form a "series." A series could perhaps also be called a continuum. What is important to the slippery slope argument is that the series impels the respondent from one case (step) to the next, and so forth, so there is no turning back. What is important then is not just whether a series of steps exists, but the nature of that series. Is it just a sequence of causal outcomes or a few steps, where one leads to the other? Or is it a *slope*, a sequence of repeating or series-related steps such that, once you take the first one, you are impelled to take the next one, and so forth until, at some point in the sequence that is not precisely defined, you can no longer stop, and then the horrible outcome cannot be avoided?

One particular problem posed by the textbook treatment of the argument of the beard is whether it is a distinctive type of argument (or fallacy) in its own right, or whether it is just another name for the linguistic variant of the slippery slope argument. Intuitively, judging from the examples and descriptions of the argument of the beard given in the textbook accounts above, beard does seem to be different from slope.

6. The Abortion Argument Cases

To try to clarify our basic intuitions that the beard argument is distinctively different from the slope argument, we consider a pair of cases of familiar kinds of arguments on the abortion dispute. The first seems to be a beard and the second a slope.

In the first case of the pair (Case 12, below) Bruce and Wilma are having a critical discussion on the subject of abortion (the abortion issue). Bruce takes the pro-life standpoint, and Wilma takes the pro-choice standpoint, but both are willing to make significant concessions to accommodate the view of the other side. At one point the discussion turns to the question of whether the fetus in the womb is a person (baby) or not. Wilma denies that it is a person, but Bruce makes the assertion that it is a person in the third trimester only. Wilma then uses the following argument in reply to Bruce's assertion.

Case 12: Well, that's absurd, because if you take the fetus just the day after the third trimester, and compare it to the same fetus the day before, there's really no significant difference between the two entities, as developing organisms. Biologically, it's the same organism, and has all the same characteristics. Whether it's one day older or younger makes no difference, because the development of the spine, the brain, and the systems that support its cognitive and emotional functions, develop in a gradually continuing process. It's

absurd to say it's a "person" on the day after the third trimester, and then to say it's not a person just the day before that.

In this argument, Wilma considers two cases: the fetus the day before the third trimester, and the fetus the day after. The premise she asserts is that biologically, as a developing organism, there is no significant differences between these two cases. Hence she draws the conclusion that to say the one case has the property of being a person, while the other does not, is absurd, i.e., it is an untenable proposition that has been refuted by her argument.

Now let's consider a secondary case, in which the critical discussion between Wilma and Bruce on the subject of abortion continues after Wilma's argument in Case 12. In reply to Wilma's argument, Bruce says, "Well, you are just fiddling around with these picky borderline cases. But everyone has to draw the line somewhere. In present law, it is drawn at the moment of birth. I draw it at the third trimester, because there are plenty of well-established cases now where the baby needs to be treated as a physician's patient during that stage. Broadly speaking then, in the central areas of that third trimester stage, the fetus is clearly a person, an individual with rights." In reply to this move, Wilma then puts forward another argument, conveyed in the text of Case 13.

Case 13: Well, Bruce, you agree that if it's a person on day 30 of the third trimester, then certainly it's also going to be a person on day 29, because one day here isn't going to make any significant difference in this respect [Bruce nods affirmatively]. But don't you see that you can repeat this same argument over and over? If it's a person on day 29, then it's also going to be a person on day 28, and so forth. Because no one day makes a significant difference to whether it's a person or not, you can't stop this argument, once it gets started. It's going to be a person right back at the beginning of the first trimester, when the egg was fertilized by a sperm.

How might Bruce reply to this argument? He might counter: "Well, I draw the line right at the beginning of the third trimester, and that's where your sequence of if-then assertions has got to stop, from my point of view." And then Wilma might reply: "That's the whole point of my argument. You can't stop there, once you accept the premise that one day makes no difference on whether the fetus is a person or not." Bruce might then reply that he had to draw the borderline somewhere, and that it is at this third trimester borderline that Wilma's argument stops.

From this point the argument between Wilma and Bruce might continue in various ways. Wilma might say, "But that borderline is arbitrary. That's my point!" And Bruce might reply: "So what! You have to draw an arbitrary line (or one that is more or less arbitrary, anyway) at some point. And where I am drawing it is at least clean and precise." And then they might continue to argue about arbitrariness, and perhaps about whether Wilma has a different criterion, and whether that too is "arbitrary" or not.

Intuitively, judging somewhat carefully from what is written in the textbook accounts, a plausible hypothesis presents itself here. Case 12 is an example of the argument of the beard, while Case 13 is characteristic of the slippery slope argument. So interpreted, it seems that Case 13 is a special sub-case of the type of argument used in Case 12, an extension that brings in the additional idea of the series of steps that can be repeated over and over, and that ultimately becomes unstoppable.

7. SLOPE VERSUS HEAP

Eubulides' justly famous "heap" or "bald head" argument has been a subject of much attention in the fields of logic and philosophy. A particularly perspicuous version of it was given by Black (1970, p. 3), using the vague property 'short' as an illustration.[5] The first stage is the deductively valid argument represented in Case 14 below.

Case 14: (B_0) Every person who is four feet in height is short.
       (I)   If you add one-tenth of an inch, the person is still short.
       (B_1) Every person who is four foot and one-tenth of an inch is short.

In this version, there is a base premise (B_0), an inductive premise (I), and a conclusion (B_1). At the second stage, the inductive premise is reapplied now to the conclusion (B_1), which functions as a premise generating a new conclusion (B_2).

    (B_2) Every person who is four foot and two-tenths of an inch is short.

Clearly this *sorites* (or chain) argument can be continued until eventually it will entail the conclusion,

    (B_n) Every person is short.

But this outcome is a *paradox* in the sense that (a) it is a valid form of argument at each step, (b) the initial premise is true, (c) the inductive premise is true, (d) the new premises generated by the inductive premise and the prior conclusions are true (at least, in the first few inferences), (e) there is no well-defined, clear point where this process of step-wise inferring should stop the sequence of inferences from generating a series of false conclusions, culminating in the final false conclusion (B_n), but (f) the conclusion is false. This outcome is impossible, because if (a)-(e) are all true the (e) cannot be true. So we can say that the heap argument is a genuine paradox.

One way of defeating the heap paradox is to use fuzzy logic (Zadeh, 1987), which admits of degrees to which a predicate can apply to something. According to this way of representing the argument in Case 14, the degree the predicate

'short' applies to the person in question begins to decrease until we reach a point where it becomes completely inapplicable. This solution to the puzzle is still somewhat arbitrary, because there will be a last person in the series who is short, at some point, and every person after that point will fail to have the property of being short. But even so, the ultimate conclusion (B_n) will not follow from the given premises, as it did before.

The heap paradox does provide a nice model of the internal workings of the slippery slope argument instantiated in Case 13, but are these two arguments identical? It is argued in Walton (1992) that they are not.

In Walton (1992) four subtypes of slippery slope arguments are classified: the *sorites* slippery slope, the causal slippery slope, the precedent slippery slope, and the all-in (full) slippery slope argument. According to the analysis given in Walton (1992), none of these four types of argument is inherently fallacious. Each of them can be used fallaciously in some cases, but can be a reasonable kind of argument in many instances.

The *sorites* type of slippery slope is an argument that exploits the vagueness of term expressing a criterion that refers to a set of individuals (or sets of stages of an individual) that lie along a continuum. The set of individuals $a_0, a_1, \ldots, a_i,$ $\ldots, a_j, \ldots, a_n$, are such that some of them possess a certain property P and others do not. The objects lie along a continuum beginning at a_0 and ending at a_n. The points a_i and a_j are the last clear cases on the continuum where P is definitely possessed by the individual or not.

The following figure is used in Walton (1992, p. 54) to express the idea that the part of the continuum where it is unclear whether the individual definitely has property P or not is called the grey area.

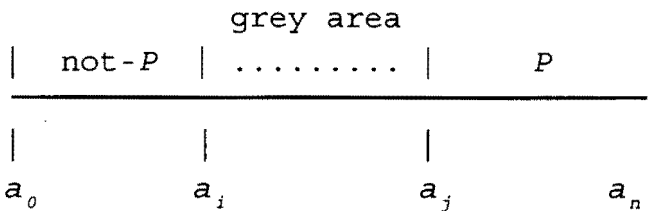### Continuum in a *Sorites* Slippery Slope Argument

Figure 1

The structure of a sorites slippery slope argument must be schematized as a type of dialogue or talk exchange of argumentation between a proponent and a respondent, according to the analysis given in Walton (1992, p. 55). The proponent

tries to get the respondent to definitely agree, or become committed to the concession that some individual a_k ($n \geq k \geq j$) has P. Then she (the proponent) tries to get him (the respondent) to concede that a neighboring object a_{k-1} also has P. Then she proceeds through a sequence which moves closer and closer towards the concession that a_i has P. The closer the proponent gets to ai in this series, the more strong or presumptively successful is the slippery slope argument. If the proponent gets to the point a_i in this series, she has successfully put forward a convincing (correct) slippery slope argument.

The form of a correctly used sorites type of slippery slope argument is represented by the following argumentation scheme (Walton, 1992, p. 56).

Argumentation Scheme for the Sorites Slippery Slope

1. *Initial base premise*	It is clearly beyond contention that a_k has P.
2. *General inductive premise*	If a_k has P, then a_{k-1} has P.
3. *Reapplication sequence premise-set*	A sequence of *modus ponens* sub-arguments linking premises and conclusions from the clear area through the grey area.
4. *Conclusion*	a_i may have P, for all we know (or can prove).

This type of argument is said to be presumptively reasonable when it is used correctly, according to the account given of its structure in Walton (1992, pp. 57-59), meaning that it can be challenged by asking appropriate critical questions of a designated type.

On this analysis, Case 12 lacks the structure of argument characteristic of the *sorites* slippery slope argument—the base premise, the inductive premise, and especially the reapplication sequence premise-set—whereas Case 13 can be shown to have all these characteristics. Here then, on the hypothesis we now advocate, is the essential difference between the argument of the beard and the slippery slope argument. The beard argument starts from a premise of (alleged) vagueness of a term, arguing that there is no real difference between two cases on either side of a criterion proposed to define the term. The slope argument uses not just two cases, but a whole series of cases, using a reapplication sequence of an inductive premise, going from an initial set of clear instances into a grey area, as shown in Figure 1. On this analysis the *sorites* slippery slope argument is a subtype of a more complex extension of the argument of the beard.

But where does Eubulides' argument of the heap come into this classification? Is it the same thing as the *sorites* slope, or is it something different? Our hypothesis is that the heap argument is a paradox that displays the internal workings of the *sorites* slippery slope argument in a clear model, by portraying it in a deductively valid form (resulting in a contradiction). By contrast, the *sorites* slippery slope is a characteristic type of real (actually used) argument, used in a critical discussion where two parties are trying to resolve a conflict of opinions. The slope is an argument that is used frequently in everyday argumentation, and

its function is presumptive—it is used to shift a burden of proof in a discussion from one side to the other.

In short, the heap is an abstract philosopher's or logician's model, while the slope is a tactic of reasoned persuasion that has (fairly common) instances in real use.

It is possible to see exactly how the heap is involved in the central structure of the *sorites* slope argument, as used in an everyday case, by considering the following extension of the argument between Bruce and Wilma in Case 13. Let's continue this argument from the point left off in our follow-up to Case 13 where Bruce has replied that Wilma's argument stops at the borderline of the third trimester, where he has drawn the line. Wilma then replies as follows.

Case 15: Even as we approach and pass over the borderline of the first day of the third trimester, one day isn't going to make any significant difference. You have to agree on this to preserve consistency, and yet one day after we pass from the third trimester to the second, you claim that the fetus is not a person. This amounts to a contradiction.

Here Wilma brings additional pressure to bear by arguing to Bruce that he can't have it both ways. If he wants to claim that there is no contradiction in his argument, he must somehow attack the inductive premise, or one of the other premises of the slope argument. Here the mechanism of the heap argument is revealed as being contained in the slope.

8. ARGUMENT FROM VAGUENESS OF A VERBAL CRITERION

Both the argument of the beard and the *sorites* slippery slope argument are misused, in some cases, as serious tactics of deceptive argumentation used to unfairly get the best of a speech partner in a dialogue exchange of arguments. Hence what is important for informal logic is to classify and define both types of argument as they are actually used in everyday argumentation to persuade a speech partner to accept a conclusion.

On studying how these arguments function in such exchanges, we see that both of them are subspecies of a more general type of argumentation that is used to attack a criterion used by one party to define a term or make a verbal classification. Vagueness of a verbal classification is often held to be a subject of criterion in argumentation for various reasons—if a term in an argument is vague, it could be criticized generally because it fails to meet some level of precision required for the argument.

Hastings (1963, p. 36) identified a species of argumentation he called "argument from criteria to a verbal classification," which he illustrated by the following example (rephrased below).

Case 16: Government bonds earn a five per cent annual interest rate this year. Five per cent can be classified as a mediocre return. Therefore, government bonds earn a mediocre return this year.

In this case, clearly the term 'mediocre' is vague, and subject to further discussion on how it should be defined exactly. Hence the argument from criteria to a verbal classification is defeasible, in the sense that it is open to critical questioning, and possibly subject to default if the appropriate questions are not answered properly.

In Walton (1995, Ch. 5, Sec. 3: p. 53) the form of argument (argumentation scheme) of what is called the *argument from verbal classification* (taken to be roughly equivalent to Hastings' argument from criteria to a verbal classification) is given as follows. In this scheme, a is a constant for an individual and x is a variable that ranges over the individual constants $a, b, c, \ldots$.

(*AfVC*) a has property F.

For x generally, if x has property F, then x can be classified as having property G.

Therefore a has property G.

According to the account in Walton (1995) the argumentation scheme (*AfVC*) has two matching critical questions that can be used to respond to its use in a given case..

(*CQ*1) **Does** a **definitely have** F?

(*CQ*2) **How strong is the verbal classification expressed in the second premise?**

The idea is that using an argument of the form (*AfVC*) in a talk exchange of argumentation like a critical discussion, shifts a weight of presumption onto the respondent to either respond appropriately or to accept the presumption represented by the conclusion of the argument.

But in addition to posing either of the two critical questions (*CQ*1) or (*CQ*2), the respondent can attack the argument from verbal classification by using one of two refutational or negative argumentation schemes in reply. One way is to argue that the verbal criterion given for the classification is too vague. The other way is to argue that it is arbitrary.

The argumentation scheme for *argument from vagueness of a verbal criterion* (Walton, 1995, Ch. 5, Sec. 3) is the following.

(*AVVC*)   Some property F is used to classify an individual a in a way that is too vague to meet the level of precision required to support such a classification.

Therefore, the classification of a as an F should be rejected.

(*AVVC*) is a dissociative or refutational scheme—what Kienpointner (1992, p. 306) calls a *Gegensatz* scheme—in the sense that it is used to refute or counter opposed argument. In this case, it is used to oppose ones of the form (*AfVC*).

The other dissociative scheme opposed to (AfVC) is that of the *argument from arbitrariness of a verbal criterion*, defined below. This form of argumentation was broadly recognized in Walton (1992, pp. 60-62), although no specific form of it is presented there. The context of its correct and incorrect use is outlined, however.

> (*AAVC*) Some property F is used to classify a in a way that is arbitrary.
>
> Therefore, the classification of a as an F should be rejected.

There are two critical questions matching (*AAVC*).

> (*CQ1*): **Is F really arbitrary?**
>
> (*CQ2*): **Is arbitrariness a sufficient reason for rejecting the use of F as a criterion?**

Question (*CQ2*) is significant, because sometimes arbitrariness is a good reason for rejecting a proposed criterion for a verbal classification, but sometimes it is not.

Both the argument from the vagueness of a verbal criterion and the argument from the arbitrariness of a verbal criterion are, in principle, reasonable arguments that can be used in a critical discussion or other verbal exchange of argumentation to shift a weight of presumption to the other side. But clearly also, both types of arguments can be used in a fallacious way in some cases to bring undue pressure to bear on an opponent.

Our aim here will not be to provide a framework for determining, in particular cases, when these arguments are reasonable and when they are fallacious. In an aside, we might add however that the argumentation schemes above would be the first step in such a project. Our aim here is the prior task of simply identifying the argument of the beard as a distinctive type of argument, insofar as a clear and useful account of this type of argumentation can be abstracted from the practical concerns treated in the logic textbook accounts surveyed above.

9. CLASSIFYING THESE RELATED TYPES OF ARGUMENTS

The classification we prefer is outlined in the typology of subtypes of argumentation from vagueness of a verbal criterion (Figure 2 below).

One aspect of this proposed classification that some might object to is that the phrase itself 'argument of the beard' strongly suggests the "bald head" argument (the same argument as that of the heap) of Eubulides. For whether you are pulling hairs off the top of the head or the bottom (in the jaw area) is irrelevant to the purpose of the illustration the type of argument is the same. Surely then, it might be objected, calling the type of argument we have "the argument of the beard" is misleading. For this phrase suggests the heap paradox of Eubulides, which on our theory, is something quite different.

Classification of Subtypes

*Argument from Vagueness of
a Verbal Criterion*

*Paradox of
the Heap*

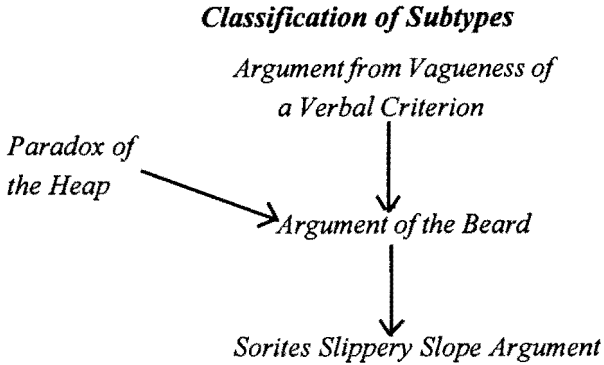*Argument of the Beard*

Sorites Slippery Slope Argument

Figure 2.

This point is well taken. By broadly following the textbook accounts especially those of Thouless and Fearnside—we have opted for a terminology that is somewhat misleading. Why not call the argument "the two-step vagueness rebuttal" or "the non-series continuum argument," or some such. We do not exclude such an approach altogether, and concede that Damer's label of the continuum argument for this type of argumentation, as an alternative, is quite acceptable. But the trend set by those textbooks we covered—the ones that do explicitly mention the argument of the beard—have set a precedent that is, broadly speaking, sensible and useful, once refined using the structures we have constructed above, to give an analysis of the appropriate argumentation schemes. Therefore, despite the slightly misleading aspect of the terminology (given the history of Eubulides' paradox, expressed so often in the form of the bald head version), we feel that, on balance, the term 'argument of the beard' is not a bad name to retain to identify this specific type of argument we have analyzed.

The main remaining question of classification is whether there is any significant type of argument corresponding to what the textbooks call the black-or-white fallacy. The first problem, as noted above, is that some of the textbooks have confused the issue by defining the black-and-white fallacy as though it is the same as the argument from the beard, or the same as the slippery slope argument. The textbook accounts are not consistent with each other at all, on this point, however. Others, more fruitfully, see the black-or-white argument as a kind of opposed or opposite argument to the argument of the beard.

The second problem is that terms like the "black-or-white fallacy," "false dichotomy," "black-and-white-thinking," and the like, have been used as generic labels for any kind of reasoning (e.g., in the formulating of questions) that force a sharply exclusive dichotomy or disjunction where none really exists, or is justifiable. And it would be misleading to narrow down the term "black-or-white" fallacy to refer to the special kinds of cases of the sort considered above, where vagueness versus arbitrariness of a term to make a verbal classification is the focus of the dispute.

Even so, there does seem to be legitimate room for the kind of argumentation designated under the heading of the black-or-white fallacy by some of the text-book accounts reviewed above. This category could usefully be taken to refer to the kind of inadmissible reply used when an arguer cleaves dogmatically to a vague criterion in the face of argument from vagueness of a verbal criterion by his opponent, while refusing to respond appropriately to the critical questions posed by the use of this argument. In the kind of argumentation illustrated in Cases 12, 13 and 15, this type of argumentation would be exemplified by the following response on the part of Bruce.

Case 17: The concept of a person, as you go along the continuum of the development of the fetus, is not vague. The fetus becomes a person on the first day of the third trimester. That's not an arbitrary definition—it is the absolute, only right one that any rational thinker could hold. None of your hair-splitting logic-chopping will convince me otherwise.

This dogmatic type of "digging in" without really being open to legitimate critical questioning of one's expressed viewpoint does represent a characteristic type of obstruction of the goal of a critical discussion that could be called a fallacy.

However, we are now transgressing the limits we have set for the scope of this investigation by getting into the area of evaluating which of these arguments are fallacious. Without dogmatically closing the issue then, we merely suggest that there may be room here somewhere for something like what has been called the black-or-white fallacy. Our inclination would be to find some other name for it, however.

10. THE PLACE OF THE ARGUMENT OF THE BEARD

Our investigation of the various cases, and the analysis of the structures of argumentation exemplified in these cases, indicates that Thouless was on to something highly significant, that is well worth preserving in the textbooks on informal logic and argumentation theory. He was right to note that vagueness and precision are often pitted against each other in everyday argumentation in critical discussions in certain characteristic ways that are well worth charting systematically.

Vagueness is a common everyday phenomenon in argumentation using a criterion to make a verbal classification. But vagueness is not always bad, or eliminable, from a logical point of view. On the other hand, the making of distinctions to clarify one's terms, to define them more precisely, and so forth, is frequently very desirable in contributing to the goal of resolving a conflict of opinions by reasoned argumentation in a critical discussion.

However, argument from vagueness of a verbal criterion can be pushed ahead too hard, in some cases. In some cases, admitting one's criterion is vague while still maintaining it, can be a reasonable reply to this type of argument. In still

other cases, eliminating the vagueness by moving to a criterion that is arbitrary, while admitting that the criterion is arbitrary, yet still defending it, can be a reasonable reply.

Requesting one's opponent clarify his terms in an argument is, in many cases, quite a reasonable and normally acceptable way of moving forward constructively in a critical discussion. But as Thouless (1930, p. 185) insightfully put it, this method of argument may be "no help but a grave hindrance if it marks off sharply in our thought things which are not sharply marked off in fact." According to Thouless (p. 185), in some cases, the very reasonable argument from vagueness of a verbal criterion becomes a "piece of crooked argumentation," used as "a device of badgering one's opponent to define his terms."

What is the difference between the legitimate and "crooked" or fallacious use of the argument from vagueness of a verbal criterion, and its subtypes, like the *sorites* slippery slope argument? A precise answer to this question (the evaluation problem) is not ventured here, but we are now in a position to move forward with the research needed to find the answer. Understanding the fallacious uses of the different subtypes of argumentation from a verbal classification is to be sought in studying the pragmatic profiles of sequences of dialogue (in a critical discussion) in which a proponent puts forward these types of arguments and a respondent replies to them.

In particular, the fallacious cases are those where the proponent puts forward the argument too aggressively, putting pressure on the respondent so he cannot ask the appropriate critical questions, or where the respondent badgers the proponent in a comparable manner.

On our analysis, the key to understanding the argument of the beard is the appreciation that in natural language argumentation, arguers are continually torn, or pushed back and forth between the polar opposites of vagueness and precision. All natural language criteria for classifying individuals based on a verbal criterion tend to be inherently vague. But such a criterion can be made precise (or more precise, i.e. less vague). But either way, an opponent can attack the argument. She can say, "That criterion is vague, therefore it is no good to make the sufficiently precise criterion needed in this case." As a response the proponent can make the criterion more precise, say, by quantifying it in a numerical way. But then the opponent can attack the new version of the criterion as arbitrary, by citing a borderline case where no non-arbitrary basis for the inclusion (or exclusion) of a specific case is feasible.

All these types of argument are legitimate, in principle, and can serve, used in the right context of dialogue, to contribute to the goals of a critical discussion. But evidently, as we have seen, and as the textbook accounts of the fallacies have long rightly warned us, they can also be abused, or used as devices of "crooked thinking." Further research on this family of arguments will help us to set up normative criteria for evaluating, in particular cases, when they have been used fallaciously and when not.

Notes

[1] The author would like to thank Victor Wilkes for searching through the logic textbooks in the BC section of the University of Winnipeg Library. Support for this work was financed by a Research Grant from the Social Sciences and Humanities Research Council of Canada. We did not keep track of the number of textbooks searched, but the total, both in the University of Winnipeg Library and the author's personal collection would be in excess of two hundred. It may be surprising to some that this many logic textbooks either on informal logic or containing materials on informal logic exist. The rate of production, at present, shows no signs of slowing down.

[2] According to W. and M. Kneale (1962, p. 15), 'eristic' is "the insidious term applied by Plato and Aristotle to arguments which they regard as frivolous." The Megarians, according to the Kneales (p. 15) were "universally credited with skill at verbal controversy."

[3] Loeb Library Edition, p. 237.

[4] Very similar accounts of the argument of the beard are given in Moore (1967) and Moore, McCann and McCann (1985).

[5] Black's version is actually a little more elaborate than the argument presented in Case 14.

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