Weighing Evidence in the Context of Conductive Reasoning

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Abstract: Beginning with a review of the work of Carl Wellman and Trudy Govier on conductive arguments, this paper attempts (a) to bring to bear concepts from Pollock's account of defeasible reasoning on the study of conductive reasoning, (b) to distinguish among the various dimensions that go to make up the force of a pro or con consideration, and (c) to identify what enables us to make reasonable comparisons of the force of pro and con considerations.

1. Introduction

The questions I am most interested in concern the procedures and the logical bases on which we must rely when confronted with the task of weighing evidence. In this paper, I attempt to consider several aspects of that task that arise with respect to one particular type of reasoning or argument – what Wellman and Govier have called conductive reasoning or argument. I will be attempting to understand how we are to determine the relative *strength* and/or *weight* of pro considerations and counter-considerations when we are faced with the problem of evaluating conductive arguments.

2. Preliminary considerations

Before turning to questions concerning relative strength and/or weight, I will consider briefly (i) what is meant by the expression 'conductive arguments', (ii) the relationship between conductive reasoning and other types of defeasible reasoning, (iii) the relationship between pro and contra considerations on the one hand and what Pollock has called "defeaters" and diminishers on the other, and (iv) the question of what *makes* the considerations that come into play in conductive arguments positively or negatively relevant to the argument's conclusion.

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2.1 What is conductive reasoning or argument?

Conductive arguments are *one* species of defeasible arguments. An argument is defeasible if and only if its conclusion and or its force can be called into question by considerations that are *consistent* with its premises and that do not call those premises into question. Arguments which are deductively valid are not defeasible in the sense just defined. If an argument A is deductively valid, then any consideration which calls A into question must either call one or more of its premises into question, or else call the conjunction of its premises into question (because it calls the conclusion entailed by the conjunction of those premises into question).

When he introduces the concept of conduction, Wellman (1971, p. 51) treats it as a kind of *reasoning* in which we find "the leading together of various [independently relevant] considerations" and he goes on to define it as follows (1971, p. 53),

Conduction can be defined as that sort of reasoning in which 1) a conclusion is drawn about some individual case 2) is drawn nonconclusively 3) from one or more premises about that same case 4) without any appeal to other cases.

This definition makes it easy for Wellman to defend his claim that conduction differs from other types of defeasible reasoning: from induction (which on his account is defined [p. 32] as "the sort of reasoning by which a hypothesis is confirmed or disconfirmed by establishing the truth or falsity of its implications"), as well as from other types of argument that are neither deductive nor inductive in his sense: arguments from analogy (see p. 53), "explanatory reasoning" (inference to the best explanation"), and some sorts statistical or probability inferences.

Although she is drawing the notion of conductive arguments from Wellman, Govier (1999) gives an account of their nature which does not mention items (1), (3) and (4) in the Wellman definition just quoted. In addition to maintaining along with Wellman that

(a) "In a *conductive* argument, one or more premises are put forward as reasons supporting a conclusion . They are put forward as relevant to that conclusion, as counting in favor of it, but not as providing conclusive support for it" [p.155].

(b) Because they commonly acknowledge "counter-considerations" that "actually or apparently count against the conclusion" [Govier, p. 155] and are presented "so as to suggest openness to further reasons for support, and so as to suggest openness to counter-considerations," such arguments are offered "when we are in the domain of pro and con" (p. 157).

Govier stresses (p. 156) that

[i]n conductive arguments in which there are several premises, those premises support, or are put forward as supporting, the conclusion convergently

and (p. 157) that

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the relevance of any given premise does not require that it be linked (conjoined) to another premise.[1]

In what follows, I will (with the caveat contained in note 1) follow Govier's less restrictive account of what a conductive argument is.

2.2 On the relationship between conductive reasoning and other types of defeasible reasoning

Both Govier and Wellman want to insist that conductive arguments do not exhaust the category of non-conclusive (or defeasible) reasoning or argument, but constitute only one species of such reasoning or argument. Both, for example, want to insist that inductive arguments or reasoning don't count as conductive (though each means by "inductive" something different from what the other means[2]), nor do arguments based on analogy[3] nor reasoning to the best explanation.

Though it seems to me that Govier and Wellman are right to resist any attempt to *reduce* conductive reasoning to inductive, analogical or abductive reasoning, the relationship between conduction and these other sorts of reasoning may turn out to be more complicated than Wellman's or Govier's stories might lead us to suspect. Consider the following made-up example:

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[1] I am not sure that this last restriction fits *all* the examples of conductive arguments offered in Govier (1999). For example, in the passages from Hurka quoted on p. 160, Hurka's first "reason" seems to me to require 2 premises which are linked (that those who tell their children the Santa story know that what they're saying is false, but that "real myth-makers" believe their myths). Again the third reason offered in the passage from Trebbe Johnson on pp. 161-2 (that as a writer Johnson uses a great deal of paper, and that producing a great deal of paper requires the felling of many trees). The point I think Govier is trying to make might be better made if we distinguished between reasons and the propositions or premises that make up those reasons, and go on to say that if a conductive argument contains several *reasons* in support of its conclusion, each of those reasons provides nonconclusive support of the conclusion, and does so independently of the other *reasons*. One can make this point, while acknowledging that a single non-conclusive *reason* for a conclusion *can* require linking two or more "premises", no one of which supports the conclusion unless taken together with the other premises.

[2] Thus Wellman (1971, p. 32) defines "induction" as "that kind of reasoning by which a hypothesis is confirmed or disconfirmed by establishing the truth or falsity of its implications", whereas Govier (1999, p. 159) offers a different and much less restrictive account of "inductive" when she says

Arguments that are in this traditional sense inductive have premises and conclusions that are empirical and are based on the rough assumption that experienced regularities provide a guide to unexperienced regularities.

[3] See Wellman (1971, p. 53) where he points out that arguments from analogy depend on the *experience* of analogous cases, whereas in conduction the link between premises and conclusion "is entirely a priori" and (in conformity to requirement 4 of his definition on p. 53) that conclusion is reached "without any appeal to other cases." See Govier, who distinguishes between a priori and inductive analogies (Govier 2001, chapter 10) and who presumably agrees with Wellman that arguments based on inductive analogies (which depend on experience) are distinct from conductive arguments, since she maintains (1999, p. 157) that

[i]n a conductive argument, each premise can provide support for the conclusion in the way that it does only if there is an appropriate *conceptual* or *normative* relationship between its content and the content of the conclusion [italics added].

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Despite the fact that (1) Clark has only limited experience in management positions and (2) some of our employees may be uncomfortable with a woman in charge, I think (3) we ought to hire her as our executive director. For one thing, (4) she has recently earned an MBA from Harvard, and (5) the success rate for Harvard MBA's with problems like the problems we're facing right now has been fairly high. Moreover, (6) her management philosophy and her ideas about employee relations are very much like Wilson's, and (7) we all he agree he was an excellent manager before he retired. Finally, (8) placing a woman at the head of our organization at this point in time will project exactly the right sort of image to the community at large.

This passage purports to offer three reasons supporting the conclusion (3) – that Clark ought to be hired as executive director – while acknowledging the two counter-considerations put forward in (1) and (2). None of the three reasons supporting (3) are "conclusive" reasons for accepting (3), and the case for (3) depends on the *convergence* – or cumulative effect – of those reasons. In terms of the *general* shape of Govier's account of conductive arguments,[4] these features of the argument would seem to qualify it as a conductive argument

But note that on the surface the first reason *appears to be* something Govier would recognize as an inductive argument for (3) and the second reason *seems* to amount to an appeal to an inductive analogy. Of course, one might reconstruct the passage so that (4) and (5) "actually" constitute a subargument in support an unstated "real" first reason being advanced, namely that there's a reasonably good chance Clark will be successful in dealing with problems like the problems the organization currently faces. Analogously, we might interpret (6) and (7) as a subargument in support of another unstated "real" reason to the effect that Clark will, like Wilson, be an excellent manager.

But even if we choose construe the pair consisting of (4) and (5) and the pair consisting of (6) and (7) as subarguments advanced to support unstated premises of the "root" argument, it will remain true that the force of the overall argument presented depends in part on the strength of the inductive inference on which the first reason depends and on the strength of the inductive analogy on which the second reason depends. Moreover, one of the things that will need to be explored in what follows is the *exact* role that assessing the strength such sub-arguments should play when we attempt to assess the overall strength of the pro considerations *taken together* and to balance them against the overall strength of the con considerations taken together.

Furthermore, recognizing the possibility that individual pro reasons and individual con reasons, considered by themselves, might turn out to be inductive arguments or arguments from analogy, etc., may help to bring into clearer relief what may be the two most important – and perhaps the defining – features of conductive reasoning, namely (1) that it involves the *convergence* of individual reasons of different kinds, and (2) that therefore the problem of

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[4] The example does not conform to one particular requirement of Govier's account, namely that the reasons comprising a conductive argument consist of single premises that don't derive their force or relevance from being linked with other premises. But, as I pointed out in note 1 above, some of Govier's own examples seem to violate this requirement.

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"weighing" the pros and cons involves pitting the *combined* force of the pros against the *combined* force of the cons.

2.3 Pros and cons that occur "neatly in pairs"

One phenomenon comes into focus if we consider what Zenker (2010, p, 9) says about a particular example of a conductive argument, which he sets out as follows:

(CC1) Aircraft travel leaves a large environmental footprint.
(CC2) Aircraft travel is physically exhausting.
(CC3) Aircraft travel is comparatively expensive.
(CC4) Airports do not always route baggage correctly.

(PR1) Aircraft travel is comparatively fast.
(PR2) I am overworked and likely able to sleep on the plane.
(PR3) My department reimburses travel expenses.
(PR4) Environmental footprint-differences can be compensated by purchase.

(OBP) PR1-PR4 outweigh/are on balance more important than (CC1-4)

(C) It is apt to travel to the conference by aircraft (rather than by train).

Commenting on this argument, Zenker says,

> In this example, (PR2-PR4) counter (CC1-CC3), while (PR1) is not addressed by a counter-consideration ("is open"). It is difficult to discern how (PR1) could be addressed, other than by cancellation of a presupposition. Moreover, (CC4) remains unaddressed by any pro-reason.

Zenker *might* be taken to be suggesting that PR2 counters CC2, that PR3 counters CC2 and that PR4 counters CC1.[5]

   If this is what Zenker is actually suggesting (and I'm not completely sure that it is), we might be tempted to think that (OBP) is true in whole or in part because *individual* contra-considerations are outweighed by *individual* pro considerations. Wellman himself (1971, p. 68) says that "the factors [or considerations adduced in a conductive argument] do not *always* occur neatly in pairs, one pro balanced against one con" (italics added). In saying this he seems to be conceding that *sometimes* pro and con considerations do occur "neatly in pairs".

   It is important to see that, even when pros and cons occur neatly in pairs, an individual pro does not "outweigh" the individual con by calling into question the truth or acceptability of the statement which comprises the con (or vice versa) – that my department reimburses travel expenses doesn't call into question the fact that air travel is more expensive than train travel.

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[5] This impression might be reinforced by another comment he makes on the same page: "(PR3) could be retracted, e.g., upon coming to learn that the department cannot reimburse 100% of travel cost. This would constitute (CC5). Also (CC2) could be retracted and modified, e.g., upon coming to learn that one will fly first class or likely have an entire seat-row to oneself."

Rather, it "outweighs" the con by neutralizing or mollifying the strength or force which the counter-considerations can have to undermine the conclusion. For example, even though the price of a plane ticket is more than the price of a train ticket, that fact should not dissuade me from traveling by plane if I'm reimbursed by my department. Or the fact that I may be able to sleep on the plane doesn't change the fact that air travel is in many ways more exhausting than traveling by train– rather it calls attention to a fact that might make a plane trip in *this* case *less* exhausting than it otherwise might be and therefore a less compelling reason for avoiding it.

2.4 Defeaters and diminishers

Does this mean that, to the extent that pros and cons come "neatly in pairs", "weighing" them would come down to determining whether individual pros (or cons) are in some sense *defeaters* for individual cons (or pros)?

In answering that question it is worthwhile to locate the "effects" of this sort of "outweighing" in terms of John Pollock's account of *defeaters*. Pollock (2008, p. 4) has said: "Information that can mandate the retraction of the conclusion of a defeasible argument constitutes a *defeater* for the argument."

Pollock recognizes two and only two sorts of defeater – rebutting defeaters and undercutting defeaters. He writes (2008, pp. 4-5)

> The simplest are *rebutting defeaters*, which attack an argument by attacking its conclusion. …. For instance, I might be informed by Herbert, an ornithologist, that not all swans are white. People do not always speak truly, so the fact that he tells me this does not entail that it is true that not all swans are white. Nevertheless, because Herbert is an ornithologist, his telling me that gives me a defeasible reason for thinking that not all swans are white, so it is a rebutting defeater [for an inductive argument for the proposition that all swans are white].

He then (p. 5) introduces the second sort of defeater,

> Suppose Simon, whom I regard as very reliable, tells me, "Don't believe Herbert. He is incompetent." That Herbert told me that not all swans are white gives me a reason for believing that not all swans are white, but Simon's remarks about Herbert give me a reason for withdrawing my belief, and they do so without either (1) making me doubt that Herbert said what I took him to say or (2) giving me a reason for thinking it false that not all swans are white. Even if Herbert is incompetent, he might have accidentally gotten it right that not all swans are white. Thus Simon's remarks constitute a defeater, but not a rebutting defeater. This is an example of an *undercutting defeater*.

Pollock (2002, pp. 2-3) has argued that every defeater is either a rebutting defeater or an undercutting defeater.[6] Moreover, he insists (Pollock 2008, p.14) that an adequate account of defeaters requires us to introduce the idea of different "degrees of justification."

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[6] In arguing this point, he is arguing against those who have maintained that "specificity" defeaters constitute a third type of defeater. Pollock (2002, p. 2) says about specificity defeaters that "…the general idea is that if two

Not all reasons are equally good, and this should affect the adjudication of defeat statuses. For example, if I regard Jones as significantly more reliable than Smith, then if Jones tells me it is raining and Smith says it is not, it seems I should believe Jones. In other words, this case of collective defeat [roughly, cases where two inferences are so related that they appear to defeat each other] is resolved by taking account of the different strengths of the arguments for the conflicting conclusions. An adequate semantics for defeasible reasoning must take account of differences in degree of justification.[7]

According to Pollock (1995, pp. 103-104), differences in degree of justification necessarily come into play in determining whether a consideration *undercuts* an argument as well as in determining whether a consideration *rebuts* an argument.[8]

Pollock (1995, pp. 93-94 and 2002, esp. section 10 which builds on and modifies the earlier account) introduces methods which he thinks enable him to assign a *numeric* degree of strength or degree of justification to every argument. However, all that is actually required in order to take account of varying strength for purposes of determining whether a potential defeater *undercuts* or *rebuts* an argument from P to Q are judgments of *comparative* strength.

Now look back at Zenker's example, accepting the apparent suggestion that the role of the individual pro considerations in his example is to address individual counter-counterconsiderations. PR3 (my department will reimburse travel costs) can plausibly be taken to undermine any inference from CC3 (air travel is more expensive) to the negation of the conclusion C even though it does not imply the negation of the negation of the conclusion – it can therefore be seen as an *undercutting* defeater. (It is not a rebutting defeater because it is not a reason for preferring some *other* mode of travel to air travel,)

However, it is not clear that PR2 (I can probably sleep on the plane) either undercuts or rebuts an inference from CC2 (air travel is physically exhausting) to the negation of C. It is not a rebutting defeater, since it is not a reason for preferring some other mode of travel to air travel – obviously, I can probably sleep on the train as well. And it is not an undercutting defeater either: sleeping during the flight neither guarantees nor makes it probable that the "net exhaustion" is insignificant, so that fact doesn't deprive CC2 of its negative relevance. Despite this, PR2 is seems to have *some* effect on the force of CC2 as a counter consideration, since it suggests that the consideration highlighted by CC2 is *less compelling* than it would otherwise be.

Prior to 2002, Pollock (1995, pp. 102-103) had maintained that a potential defeater which is too weak to *defeat* an argument from P to Q does not diminish the strength of that argument or of

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arguments lead to conflicting conclusions but one argument is based upon more information than the other then the 'more informed' argument defeats the 'less informed' one." Pollock (2002, p. 3) reconstructs specificity defeaters in such a way that they turn out to be a sub-type of undercutting defeater.

[7] Pollock 2005 (chapter 3, especially subsections 4 through 8) contains an earlier attempt to incorporate degrees of justification into the account of defeasible reasoning. The account there is superseded by a somewhat different account in Pollock 2002.

[8] A consideration D undercuts the argument from P to Q if from D we can infer that P does not support Q. Roughly, in order for D to undercut the argument from P to Q, the argument from D to "P does not support Q" must, according to Pollock, be at least as strong as the argument from P to Q.

the degree of justification of its conclusion. But subsequently Pollock (2002, second paragraph of the abstract) "argues that defeaters that are too weak to defeat an inference outright may still *diminish* the strength of the conclusion" [italics added] – a point that is elaborated on with considerable mathematical detail in sections 6 and 7 of that paper. Without committing myself to Pollock's account of the "mathematics" of what he calls *diminishers*, I want to suggest that PR2, considered in relation to CC2, is not a *defeater*, but rather plays the role of a *diminisher* – rendering an inference or argument "weaker" than it would otherwise be.[9]

2.5 What makes a consideration positively or negatively relevant in a conductive argument?

Pollock (2008, p. 3) writes,

> Defeasible reasoning is a form of reasoning. Reasoning proceeds by constructing arguments for conclusions and the individual inferences making up the arguments are licensed by what we might call *reason schemes*.

A page later he connects reasoning schemes with inference rules when he says,

> In deductive reasoning, the reason schemes employed are deductive inference rules. [10]

Even Wellman, who expressed (1971, pp. 59-70) very considerable skepticism about the possibility of any "logic" or set of criteria for judging the validity of conductive argument, admits (p. 65) the possibility of such reason schemes for conductive argument:

Could there be principles of conductive reasoning? Since the validity of a conductive argument in no way depends upon the individual constants it contains, it should be possible in principle to formulate rules for conduction. Every valid argument belongs to a class of arguments which differ from it only in the individual constants used, and every member of this class is valid. Similarly, every invalid conductive argument is a member of a class of logically similar arguments all of which are invalid. Therefore, it should be possible to formulate a rule for each such class of conductive arguments declaring that all arguments of the specified kind are valid (or invalid).

And Govier (1999, p. 171 and 2001, pp. 398-399) makes a similar point. Calling attention (1999, p. 171) to the fact that "reasons must have a degree of generality" Govier identifies generalized "assumptions" which "underlie" the appeal to various considerations in conductive arguments. However, she insists on the further point that those generalized assumptions, such as

> Other things being equal, insofar as a practice would save people from great pain, it should be legalized

must always have *ceteribus paribus* clauses.

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[9] It is perhaps worth noting that Wellman (1971, p. 57), when describing conductive arguments of the third kind (those that involve both pros and cons) speaks of the possibility of finding additional considerations that would "support or *weaken* the conclusion" [italics added].

[10] Also, compare Pollock (2002, p. 2): "The basic idea is that the agent constructs arguments using both deductive and defeasible reason schemes (inference-schemes)."

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But where do such assumptions or reason schemas come from? What gives them the power to "license" individual arguments and inferences?

Wellman (1971, p. 66) suggests

> Such principles might be established in the same way that the principles of deductive logic are, by induction from clear cases of valid argument. Once established by clear cases, the rules of relevance might then come to be applied to arguments whose validity is in doubt.

Yet why are the "clear cases of valid argument" *clear* cases of validity? Perhaps in answer to such a question Wellman might fall back on something he said earlier (1971, p. 53), namely, that in conduction the link between premises and conclusion "is entirely a priori" – a note that is echoed in Govier's observation (1999, p. 157) quoted above in note 3 that

> [i]n a conductive argument, each premise can provide support for the conclusion in the way that it does only if there is an appropriate *conceptual* or *normative* relationship between its content and the content of the conclusion [italics added].

Indeed, even Pollock (1995, p. 107) appears to suggest something similar when he says

> … prima facie reasons are supposed to be logical relationships between concepts. It is a necessary feature of the concept *red* that something's looking red to me gives me a prima facie reason for thinking it is red. (To suppose we have to discover such connections inductively leads to an infinite regress, because we must rely upon perceptual judgments to collect the data for an inductive generalization).

Without developing the point in any detail, I note that Pollock's claim would turn out to be true on any conceptual role semantics, such as Brandom's, which recognizes "material inferences" which though valid are not formally valid. For on such a semantics, to recognize that an argument is valid but not formally valid is tantamount to recognizing that its validity is due to the nonlogical concepts occurring in its premises and conclusion. And given conceptual role semantics, that will be the case simply because the content of any concept *just is* a function of the "material" inferences involving that concept which are acknowledged or endorsed in the linguistic community in which the argument is put forth. In Brandom's account, "entitlement-preserving" inferences are defeasible,[11] and Brandom (2000, pp. 87-89) offers an explicit discussion of the nonmonotonic features of such inferences. It is also worth noting that although from one point of view Brandom takes material inferences to gain their force from the fact that they are acknowledged or recognized within a linguistic community, in the final analysis (1994, chapter 8, section 6) he wants to insist on the *objectivity* of the sort of "conceptual norms" implicit in such recognition and on the continuing possibility that the norms which are implicitly acknowledged or recognized by an entire community may turn out not to be correct. See also my comments in Pinto (2009, p. 286) about the relationship between the *implicit* norms involved when we *take* one thing to be a reason for another and the question of whether that thing *really is* a reason for the other:

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[11] The distinction between commitment preserving inferences (which are not defeasible) and entitlement preserving inferences which are defeasible is introduced in chapter 3 of Brandom 1994 (see esp. pp. 68-69).

… norms become *explicit* when such takings are challenged and discussion ensues about whether what has been taken to be a reason *ought* to be taken to be reason for this or that. When such discussion transpires, a space opens up in which the difference between our *taking* something to be or provide a reason and its *actually being* or providing a reason makes its presence felt.

3. The strength or weight of reasons that come into play in conductive arguments

Even where it is clear – perhaps on the sort of grounds alluded to in section 2.5 – that something is a reason for or against a possible conclusion, we encounter great difficulties in evaluating conductive arguments when we try to assess the *relative strength* of considerations pro and con. Indeed, after conceding (as we saw in section 2.5 above) that there may in fact be principles or "reason schemes" we can appeal to for purposes of validating the legitimacy of various pro and con considerations, Wellman (1971, pp. 66-69) offers three reasons why the existence of such principles offers little prospect for what he calls (p. 69) a "logic of ethics in any interesting sense." The third reason (pp. 68-69), and to my mind most powerful of the three, is that

> …even where these rules of relevance were applicable they would be insufficient to establish the validity or invalidity of a given argument. In any argument of the third pattern [i.e., one which mentions both pros and cons] it is not enough to know whether the premises are or are not relevant to the conclusion; one must know how much logical force the reasons for the conclusion have in comparison to the reasons against the conclusion. To determine the validity of any argument reasoning from both pros and cons, rules of relevance must be supplemented by rules of force. There is serious doubt whether this can be done.

3.1 Three types of question about the "logical force" to be attributed to a relevant consideration

There are at least three distinct types of question that can be raised about the strength, force or weight with which a consideration or set of considerations supports a conclusion.

   a) First, there are questions about whether – in the absence of counter-considerations – a single consideration, a set of considerations, is *sufficient* to warrant adopting one or another propositional attitude toward a propositional content P. For example, does consideration C warrant *believing* that P? Or does it merely warrant *accepting* that P (where accepting that P is a matter of being prepared to *use it as a premiss* in reasoning about the issue at hand, irrespective of whether we actually believe it)? Or again, does it warrant *suspecting* that P, or alternatively being *inclined to believe* that P? Does it warrant desiring that P? And so on. These sorts of questions do *not* involve explicit consideration of the *relative strength* of two considerations or of two sets of considerations. However, if we think of "positive" doxastic attitudes – e.g., suspecting that P, being inclined to believe that P, expecting that P will turn out to be the case (see Pinto 2007), being almost sure that P, and believing P without qualification – as forming

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a series of increasingly strong degrees of belief,[12] they may and often do concern "how strong a degree of belief" a consideration or set of considerations is sufficient to warrant.

b) Second, there are questions about the *relative strength* of two or more considerations or sets of considerations which bear on the issue of whether to adopt a propositional attitude A toward a propositional content P. Among such questions, two sub-types are especially prominent. (i) Does a particular consideration or set of considerations which supports adopting a *positive attitude* (e.g., belief) toward P *outweigh* a particular counter-consideration or set of counterconsiderations which support adopting that positive attitude toward *not*-P? This is the sort of question we face in trying to determine whether counter-considerations *rebut* pro considerations (or vice versa). (ii) Let X be a particular consideration or set of considerations which supports adopting a positive attitude toward P. Does the strength of X as a reason for adopting a positive attitude toward P outweigh a particular counter-consideration which threatens to *undercut* X's support for adopting such an attitude toward P – i.e., a counter-considerations which threatens to bring it about that X no longer gives *any* support for adopting a positive attitude toward P.

c) Finally, there is a third sort of question about force or weight that may arise. Let a consideration C support adopting a positive attitude toward P. Let CC be a counter-consideration which, in Pollock's language, neither rebuts nor undercuts C's support for adopting a positive attitude toward P. A third type of question can then concern (i) whether CC *diminishes* C's support for adopting such an attitude toward P, and (ii) whether, as a result of the diminished strength of C, the *overall* case for adopting some positive attitude toward P is no longer sufficient to warrant adopting that attitude toward P.

In what follows I will, for the most part, ignore questions of the first and third types, and concentrate rather on certain questions of the second type – questions about *relative* strength of two considerations or sets of considerations. And for the most part I shall be concerned with the questions about relative strength that must be answered in order to determine whether one consideration or set thereof *rebuts* or *undercuts* another.

3.2 A procedural proposal concerning the steps to be taken in answering questions about the relative strength of two or more considerations or sets of considerations

I suggest that the following is one way of making the process of assessing relative strength more manageable in cases in which there is more than one pro consideration and/or more than one con consideration.

1) We first identify cases like those considered in section 2.3 above in which at least some pro and con considerations occur "neatly in pairs."

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[12] In Pinto (2006, pp. 270-271 and 2010, pp. 287, 300 and note 3 on p. 308) I have discussed what I call a *qualitative* version of evidence proportionalism, which can be enhancing on thinking of these doxastic attitudes as representing ascending degrees of belief.

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2) For each such pair we determine whether one member of the pair either "defeats" or "diminishes" the other. We drop from further consideration any pro or con consideration which is defeated. (In cases of what Pollock calls "collective defeat" – i.e. cases where two consideration of equal strength defeat each other – we drop both the pro and the con consideration.) And we explicitly mark as diminished any pro or con consideration which has been "diminished" but not defeated.[13]

3) If, because of collective defeat, all pro and con considerations have been dropped, our verdict is that the result is simply a standoff and that as a result the argument for the overall conclusion simply fails.

4) If only pro considerations or only con considerations remain standing, then no further task of determining relative strength remains. If only pro consideration remain standing, then the argument succeeds in supporting its conclusion. If only con considerations remain standing, then the argument fails.

5) If we find that one or more pros and one or more cons remaining standing, then we proceed to the question of whether the set of remaining pros *taken together* outweigh the set of remaining cons *taken together,* or vice versa. If neither set outweighs the other, of if the cons outweigh the pros, then the argument fails to support its conclusion, i.e. fails to support taking a positive attitude toward the conclusion. Otherwise the argument succeeds – that is to say, supports our taking a positive attitude toward the conclusion.[14]

3.3 Assigning numbers to the strength or weight of the considerations occurring in conductive arguments

In explaining what conductive arguments are, Frank Zenker (2010, p, 2) has said that a feature of such arguments is that

> [p]ro-reasons and counter-considerations form (normally two) groups, the elements of which are partially ordered on some scale capturing the notion of comparative importance.

He suggests (p, 11-12) that in inductive arguments the importance of premisses is constant,[15] whereas in conductive arguments it must be represented by an evaluative mark R+, which he says (p. 11) "can but need not be represented by a numeral." He adds

> If it is [represented by a numeral], one speaks of a *weight*. Weights may be captured as a function assigning a real number to a premise.

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[13] Where one consideration diminishes its counterpart, both considerations remain standing, though with the diminished consideration marked as such.

[14] Here again, as was pointed out above we may still want to raise a question about which *sort* of positive attitude is warranted by the argument – but this question is no longer a question about *relative strength* of support.

[15] Zenker 2010 is advancing the extremely intriguing idea that inductive arguments be viewd as a limiting case of conductive arguments. In explaining this idea he says (p. 12), "…to generate the inductive structure from the conductive one, the range of assignable weights is constrained from R+ to some constant value."

Presumably, when he speaks of the weight of considerations, Zenker has in mind values other than purely epistemic values. He references (p. 11) Scriven's (1981) discussion of weight and sum methodology as it occurs in evaluation other than epistemic evaluation. But one ought not to forget the cautionary remark Scriven (1991, p. 380) later makes about that methodology:

> Although this method is a very convenient process, approximately correct and nearly always clarifying, there are many traps in it….The most intransigent problem arises from the fact that no selection of standard scales for rating weights and performances can avoid errors, because the number of criteria are not pre-assignable….So, either a large number of trivia will swamp crucial factors, or they will have inadequate total influence, depending on how many factors there are.

More broadly speaking, many authors who are interested developing computational approaches to the evaluation of argument and inference – such as Pollock (1995, pp. 93-94 and 2002) and Thomas Gordon – have approached questions of the relative strength of arguments and inferences by devising ways to assign numerical values to the strength of *any* argument or inference.

Pollock's (1995 and 2002) attempts to assign real or cardinal numbers to strength of support and degree of justification is perhaps the most interesting, since he eschews the approach of what he calls "generic Bayesianism", by which he seems to mean any approach that makes support and justification depend *entirely* on probabilities,[16] and offers an account in which certain probabilities have an essential, but nevertheless severely *constrained* role in determining "degree of justification." [17]

Though I think that in special cases it is possible to assign real or cardinal numbers to strength of support, like Wellman (1971, p. 57)[18] and Govier (2001, p. 396) I find myself quite unpersuaded by the attempts to make such assignments across the board, as it were. Moreover, as I will point out shortly, I think there are be *at least* two distinct aspects to the weighing problem as it occurs in conductive arguments and that in many cases it is not easy to get clear about the interconnection or interaction between those aspects.

As a result, in what follows I will *not* assume that numeric quantification of strength of support is available to shed light on the problem of weighing evidence, and more generally that in most cases the best we can hope for is to make judgments about the *comparative* force or strength of individual considerations or sets of considerations.[19]

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[16] Pollock (1995, p. 95) speaks of "a probabilistic model of reasoning according to which reasons make their conclusions probable to varying degrees, and the ultimate conclusion is justified only if it is made sufficiently probable by the cumulative reasoning. I will refer to this theory as *generic Bayesianism*."

[17] See my brief comment on Pollock's attempt in Pinto 2009 (p. 271 note 4).

[18] What Wellman says, though perhaps oversimplified, is nevertheless worth quoting: "The weighing should not be thought of as putting each reason on a scale, noting the amount of weight, and then calculating the difference between the weight of the reasons for and the reasons against. The degree of support is not measurable in this way because there is no unit of logical force in which to do the calculation."

[19] Of course, if we assume that the relevant notion of "stronger than" is transitive, we will usually be able to assign *ordinal* numbers to the considerations or arguments under consideration. I say "usually" rather than "always"

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3.4 A suggestion by Govier concerning how to determine the strength of a consideration

There is an interesting suggestion in Govier (1999, pp. 171-72 and 2001, pp. 399-400) about how we might determine the strength of the reasons that occur in conductive arguments. In Govier 1999 (p. 171), she begins by noting that when we put forward P1, P2 and P3 as reasons in a conductive argument for C, we are assuming something like

    1   Other things being equal, insofar as P1 is true, C.
    2   Other things being equal, insofar as P2 is true, C.
    3   Other things being equal, insofar as P3 is true, C.

She then observes,

> By spelling out qualified universals, as in (1-3) above, we are able to move beyond the apparently irreducible claim that "P1 is *relevant* to C" (in just this sort of case). We therefore gain a broader perspective that enables us to evaluate the strength of the reasons. We have to ask ourselves *what other things would have to be equal* (or taken for granted) if we were to reason "If P1 then C," and so on.

And in the next paragraph she indicates how formulating these "qualified universals" will enable us to evaluate the strength of the reasons.

> A reason for hiring a manager or going on holiday is not a sufficient, compelling reason for doing so. It is a reason for doing so, *other things being equal*. To reflect on how strong a reason it is *in the case or context we are considering,* we have to reflect on how many other things would have to be "equal" and whether they are so in this case. A strong reason is one where the range of exceptions is narrow. A weak reason is one where the range of exceptions is large.

The wording just quoted might seem to suggest that Govier takes the strength of such a reason to be a simple function of how many *kinds* of factor that constitute "exceptions" which would render the "qualified universal" inoperative. But that is not quite right, for in discussing another example she says (p. 172):

> That a person would want to see her mother before she died is a strong presumption, one that would be defeated only by a few and *rare* circumstances [italics added].

That is to say, the strength with which a consideration supports a conclusion depends on both the *kinds* of factors that constitute exceptions and the *frequency* with which those kinds of factors occur.

    It might sound as though we're in the neighborhood of early versions of Reiter's default logic, in which we are supposed to have at our disposal a list of the exceptions which undercut the inference to the default conclusion.[20] However, in the slightly later presentation in Govier 2001 she makes it quite clear (p. 400) that,

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because as Zenker (2010, p.2) seems to concede (in the passage quoted at the beginning of section 3.3   above) that the ordering may only be a partial ordering.

   [20] For a brief account of early default logic, see Walton (forthcoming).

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> [a] striking and important feature of *ceteris paribus* clauses is that such conditions [i.e., those that constitute exceptions to the qualified generalization] are not typically completely spelled out. In fact, to do this is usually not possible.

Despite the many aspects of this account that I find illuminating and appealing, I don't think that it can really shed light on how we can or should determine the *relative* strength of pro considerations and counter-considerations. That is because, as I see it, what Govier is calling an "exception" to a "qualified generalization" just *is* a counter-consideration which defeats – rebuts or undercuts – the "reason" put forward in a pro consideration. And I agree with Pollock that to determine whether an alleged "exception" D *does* defeat the argument from a pro reason PR to a conclusion C we must *first* determine the strength of the argument from PR to C relative to the strength of another argument involving D . D will qualify as a defeater – will be a genuine exception to the "qualified generalization" – if and only if it is either a rebutting defeater or an undercutting defeater. D will qualify as a *rebutting defeater* only if the argument from D to the *negation* of C is at least as strong as the argument from PR to C. And D will qualify as *an undercutting defeater* only if the argument from D to the conclusion that in these circumstances PR does not support C is at least as strong as the argument from PR to C.

In short, we can identify "exceptions" to a qualified generalization only if we are *already* able to compare the strength of arguments licensed by that generalization to certain other arguments. Therefore our ability to compare the strength of arguments licensed by that generalization to other arguments cannot presuppose a prior ability to identify "exceptions."

Something like the point I'm trying to make emerges if we take seriously a somewhat similar suggestion made by Hitchcock (1994, p. 62) – namely, that a conductive argument is valid if it is an instance of a certain sort of covering generalization. As he puts this point,

> A conductive argument "P(a), so c(a)" is non-conclusively valid if and only if it is not conclusively valid but, for any situation x, if P(x) then either c(x) or x has some overriding negatively relevant feature F which c(x) does not deductively imply.[21]

The rough idea in Hitchcock's suggestion is that the "consideration" mentioned in the premiss of a conductive argument non-conclusively supports the conclusion of that argument if and only if whenever the premiss-type is true of a situation then the conclusion-type will also be true that situation unless the feature mentioned in the premiss-type is "*overridden*" by a negatively relevant feature present in that situation – that is to say, by an "exception" which constitutes something like a counterexample to the covering generalization.

If anything resembling Hitchcock's account is on the right track, then applying the very idea of the kind of support found in conductive arguments always presupposes that one has a way of determining whether one consideration overrides another. *Relative* "strength" of support may well turn out to be so basic to the concept of non-conclusive support that it can't be *explained* in terms of anything more basic.

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[21] The final clause "which c(x) does not deductively imply" is present in order to avoid the consequence, which for certain technical reasons would obtain in the absence of that clause, that no conductive argument with a false conclusion could possibly be non-conclusively valid.

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3.5 The multidimensional character of our judgments about the relative strength of pro and con considerations

In section 2.2 above, I considered an argument which, although it might appear to be a "hybrid" argument, has an overall structure that would qualify it as a *conductive* argument. The example I used contained three reasons, one of which (call it reason 1) was or depended on an *inductive argument* (a variant on statistical or proportional syllogism) and another of which (call it reason 2) was or depended on an *inductive analogy*. An interesting feature of reason 1 and reason 2 is that – although the "reason schemes" which they (or the subarguments which support them) instantiate are *empirical* reasoning strategies that can be applied to a variety of different subject-matters – both reasons depend on and in a sense lead to something like value judgments (one concerned likelihood of *success*, the other concerned *how good a manager* someone would be).

Thus consider reason 1, as presented in the argument as originally formulated:

(4) She (Clark) has recently earned an MBA from Harvard,
(5) The success rate for Harvard MBA's with problems like the problems we're facing right now has been fairly high.

from which we might interpose the unstated conclusion

(I) There's a reasonably good chance that Clark will be successful in dealing with problems like those we're facing right now.

In assessing the bearing of these consideration on the conclusion

(C) We ought to hire Clark as our executive director

two types of question dealing with relative force of reason 1 into play

(a) The first question concerns the *strength of the inference* from (4) and (5) to the conclusion that Clark will be successful in this regard, relative to the strength of the support for the various counter-considerations mentioned in the argument. For want of a better term for labeling such questions, I'll call them questions about *risk* we are taking in relying on the pro consideration relative to the risk we are taking on relying on the counter-considerations

(b) The second question concerns how much "importance" or *weight* ought to be accorded to "success in dealing with just this set of problems with problems like those we're facing right now", relative to the "importance" or *weight* of factors mentioned in the counter-considerations. Because of the way the term 'importance' will be used in the following sections, I'll dub these simply questions about the *weight* to be accorded a premiss or reason.

Analogous questions arise with respect to the second reason offered (which concerned how good a manager Clark will be): (a) how strong is the inference from (i) the similarity of certain of Clark's views to Wilson's views to the conclusion (ii) that Clark will an excellent manager and (b) how much weight should be accorded to "being an excellent manager," relative both to the other features mentioned in the pro considerations and to the features mentioned in the counter considerations.

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In short, in order to compare the strength or force of reasons 1 and 2 to the strength or force of the counter-considerations, we have to take account of both (a) the relative risk we take in relying on the "premisses" on which those reasons depend and (b) the relative *weight* that should be accorded to the features cited in those "premisses".

There is in this duality of dimension something *analogous* to the factors that are taken account of in certain applications of decision theory when one calculates the "expected utility" of the outcome of a course of action. One determines the expected utility of a course of action by listing its possible outcomes and then adding up the products of (a) the numeric *probabilities* of those outcomes and (b) numeric *utilities* of those outcomes. However, when comparing the weight or force of considerations and counter-considerations in a conductive argument we hardly ever have at our disposal either a numeric measure of the risks we're taking in relying on their various premises or numeric measure of the importance or "utility" of the feature or features with which those premise are concerned.

Nevertheless, it is crucial to remind ourselves that we often have good reasons for judging the reasons for one conclusion to be stronger (in the sense of involving less risk) than the reasons for another conclusion, even when we have no way to assign a number to the strength of either. Thus, for example, Wellman (1971 p. 63) reminds us that

> there are certain rules of thumb that serve as criteria for the strength of an argument from analogy. The greater the number of instances, the greater the variety within the known instances, etc., the more logical force the argument from analogy has.

And Hempel (1966, pp. 33-37) offers a more nuanced account the roles of quantity, variety and precision of supporting evidence in assessing the strength of the confirmation of a hypothesis by favorable test findings. The factors he discusses are presented as a basis for judging that the strength of supporting evidence in one case is greater than the strength of supporting evidence in another, even though those factors don't provide a basis for assigning a *numerical* assessment of the degree of support.

3.6 On assessing the relative strength of pro and con considerations: importance, weight, and force

For the most part the conductive arguments that Wellman (1971, chapter 3) discusses deal with ethical subject-matter. However, Wellman explicitly recognizes (p. 54) one exception to that generalization:

> Whenever some descriptive predicate is ascribed on the basis of a family resemblance conductive reasoning takes place. In all such cases there are several criteria for the application of the term and each of these criteria may be satisfied to a greater or lesser degree and they may vary in importance as well. The fact that one or more criteria are satisfied in a particular instance is a reason for applying the term, but the inference is non-conclusive and does not appeal to the fact that the criteria have been found empirically associated with the term in other cases.

We might say that descriptive predicates fitting this description exhibit *open texture*. If we examine the ten examples Govier (1999, pp. 160-166) has assembled we will find, I think, that all but one them are arguments which turn on predicates that exhibit such open texture.[22]

The three characteristics Wellman ascribes to predicates exhibiting open texture, namely

      1) there are several criteria for the application of the term

      2) the criteria can be satisfied to a greater or lesser degree

      3) the criteria may vary in importance

also apply, I think, to the "good-making" or "right-making" characteristics on which we base our ethical or moral appraisals.

It is tempting to think, therefore, that what gives rise to the need to assess relative strength (in the sense of *weight*) of pro and con considerations in conductive arguments is rooted in the fact that the *conclusions* of such arguments involve the application of predicates (normative and/or descriptive[23]) whose applications are based on criteria or "features" exhibiting these three characteristics. In the case of normative predicates, the criteria on the basis of which we ascribe them are the non-normative "right-making" or "good-making" features on which the normative status ascribed in the conclusion "supervenes".

The first of the three characteristics listed above can explain why there can be both pro and con considerations for the application of the term to a particular situation – it is because each consideration will typically concern the application of the term to situations which exhibit *one but not all* of the criteria for its application. The second and third characteristics can explain why the *weight* of conflicting considerations can be compared. The *weight* of a consideration would be a function of (a) the extent or *degree* to which a criterion has been satisfied and (b) the importance of that criterion. And the overall *force* of any consideration would be a function of the *weight* of the consideration and the *risk* involved in relying on that consideration.   Figure 1 presents a graphic representation of how the relationship of the force of a consideration is related to these factors.

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[22] The first example from Hurka turns on the concept of a "deeper truth in myths"; the second example from Hurka on the concept of "white lie"; the example from Trebbe Johnson on the concept of "environmentally conscious lifestyle"; the example from Griffin on the concept of "natural" psychological impulses; the example from Skinner on "needed changes in the human condition"; the first example from Schafer-Landau on the concept of what is "highly impractical"; the example in Schafer-Landau's account of Morris' arguments about punishment on the concept of being "morally insensitive"; the example from Solomon on the concept of a "vague incestuous aura"; and the example from Thomas Schelling on the concept of "beneficiaries" of programs to combat global warming. The one exception appears to be Wisdom's technical discussion of sense-perception – and I for one have trouble seeing the argument in this passage a being a conductive argument.

[23] A few normative predicates appear to have little or no "descriptive" content – e.g., 'good,' 'bad', 'right', 'wrong', 'praiseworthy', 'blameworthy'. Many normative terms have both a normative and a descriptive dimension – e.g., 'murders', 'cheats', 'steals'. And of course many descriptive terms are often used in ways that exhibit no normative dimension at all – 'white', 'purple', 'three inches long', 'French', etc.

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┌─────────────────────────────────────────────────────────────────────┐
│                                                                     │
│      **Force** (*strength*) of a consideration C (which turns on a feature F)   │
│                              │                                      │
│                        is a function of                            │
│                              ↓                                      │
│      **Risk** taken in relying on C   +   **Weight** of C (which turns on F)    │
│                                             │                       │
│                                       is a function of             │
│                                             ↓                       │
│                          **Importance** of  F   +   **Degree** to  which       │
│                                                     F is  present  │
│                                                                     │
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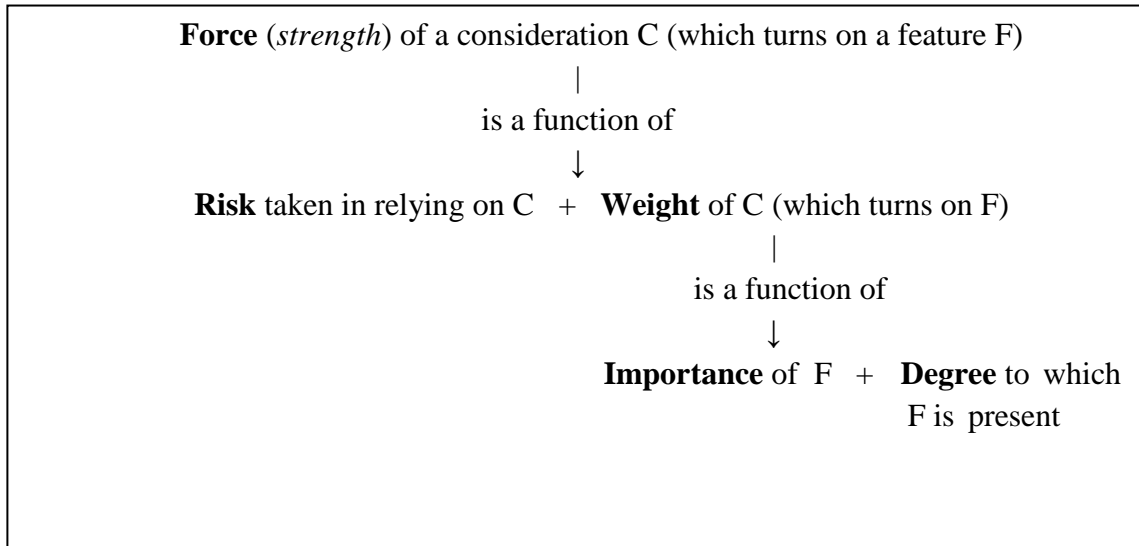
Figure 1

3.6.1 Assessing importance of criteria

What calls for further comment is the idea that criteria may vary in "importance." Here it may be useful to distinguish two types of issue:

    (a) the relative importance of criteria for the application of predicates which have a *normative* dimension, and

    (b) the relative importance of criteria for the application of *purely descriptive* predicates exhibiting open texture.

For each of these two types of issue, it *may* be possible to make at least some progress in understanding the basis on which we ascribe relative importance if we make particular assumptions about each of these types of issue.

    (a) Assume that the *normative* assessments we make are tied to our *preferences*. Then (i) it is reasonable to suppose that two factors α and β will each be considered a ground for a positive evaluation of X's if other things being equal we prefer X's that exhibit factor α to X's that don't exhibit α and prefer X's that exhibit β to X's that don't. Moreover (ii) it is reasonable to suppose that α will be considered a "more important" factor than β if and only if, other things being equal, we prefer X's that exhibit α but not β to X's that exhibit β but not α. Approaching normative assessments in this way *need* not force us to view

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such assessments as "*purely* subjective." For we can distinguish, as I do, between

(i) preferences which are grounded in good reasons all things considered and

(ii) preferences which are not grounded in such reasons.

(b) Assume we learn to employ purely descriptive predicates exhibiting open texture at least in part from exposure to "prime examples" of items to which those predicates apply (as, presumably, we learn to apply color words). Then our application of such predicates to new cases can depend at least in part on our judgments about the relative similarity of new cases to those prime examples. Where we find ourselves judging that both A and B are Xs, but that A is more similar to a *prime* example of X than B, we can reflect on which differences between A and B are responsible for our similarity judgment concerning the case at hand. Reflection on such cases may lead us to realize that certain features should be treated as *irrelevant* to whether something is an X, and may also lead us to realize that among the features that *are* relevant some are responsible for our judging that one A is *more* similar to *prime* examples of X than B is. Features which account for judging new cases to be "more similar" to *prime* examples might then be deemed "more important" than relevant features which do not.

I do not offer these suggestions as *solutions* to the questions about the rational bases for judgments of comparative importance. But I offer them as avenues for further investigation and as indications that there may well be ways to uncover a *rational* basis for judgments of comparative importance.

3.7 On judging whether the pro considerations *taken together* outweigh the con considerations *taken together*

For starters, it is perhaps worth noting Pollock's (1995, pp. 101-102) discussion of "the accrual of reasons." Pollock says (p, 101):,

> If we have two independent reasons for a conclusion, does that make the conclusion more justified than if we had just one? It is natural to suppose that it does, but on closer inspection that becomes unclear.

Pollock's arguments on this point trade on his idea that strength of support is often dependent to some degree on the probability of the conclusion given the premise. But it is easy to show that even where the probability of C given P1 is high and the probability of C given P2 is high it need not be the case that the probability of C given P1 & P2 is high. Accordingly, when we have two independent reasons P1 and P2 for a conclusion, what ought to matter is how "justified" the conclusion is on the *conjunction* of P1 and P2.

Wellman (1971, pp. 68-69) makes a similar point when, having conceded that there may indeed be "rules of relevance" to which we might appeal in evaluating conductive arguments, it is hard to see how we could have adequate "rules of force" that would enable us to settle questions about which *combinations* of pro (or con) considerations "take precedence" over *combinations* of con (or pro) considerations:

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…the relevant factors do not always occur neatly in pairs. Any rules of logical force that will enable us to judge the validity of conductive arguments which incorporate all the relevant information must tell us which *combinations*, where the combination is a function of the degree of each factor as well as which factors are combined, *take precedence over which other combinations*. Each such *combination* has its *own* logical force and would require a separate rule of force. In the end, very little generalization is possible here. [Italics added.]

Govier (1999, p. 170[24]) lists the "questions to be asked in evaluating conductive arguments," but she does not tell us how we are to go about *answering* those questions. And after listing the questions, she states

If we deem a conductive argument *cogent*, we commit ourselves to the judgment that the reasons in the premises, considered together, provide good grounds for the conclusion – even in light of the counter-considerations constituting reasons against the conclusion. That is, we commit ourselves to the judgment that, on balance, the pros *outweigh* the cons, and do so to a sufficient degree that they are good grounds for the conclusion.

A few sentences later, she comments, correctly in my view, that

[t]his might all sound hopelessly difficult. But it cannot be so, because we do it all the time.

Granting that weighing pros and cons in these cases is something we do all the time, we can still ask

(a) what *enables* us to do it, and
(b) what makes the answers we give to the questions Govier lists *reasonable* answers to those questions?

especially in light of the fact that we must typically compare the *combined* force of pro considerations to the *combined* force of con considerations. I want to suggest that the observations in the preceding section (3.6) may enable us to *make a start* in answering questions (a) and (b). Since what follows is merely a tentative suggestion that might enable us to "make a start," I will make the simplifying assumption that the relative importance of pros and cons turns on criteria which warrant a normative conclusion (ignoring pros and cons that warrant the application of non-normative predicates exhibiting open texture).

3.7.1 Comparing the force of a *single* pro consideration to a *single* counter-consideration

In making such a comparison, we could begin by comparing the *importance* of the features. Let F1 be the feature on which one of those two considerations turns and F2 the feature on which the other consideration turns. If we prefer a situation which has F1 but not F2 to a situation to a situation that has F2 but not F1, then we judge the consideration which turns on F1 to be of greater importance than the consideration that turns on F2. Otherwise we judge the two

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[24] See also Govier 2001 (pp. 401-02) where a similar, but shorter, list of steps is offered – but here the list is formulated as a list of things we must do in order to appraise a conductive argument.

considerations to be of equal importance. The greater the "degree to which we prefer one feature to the other" (e.g.," just a bit", "a fair amount", or "to a great extent"), the greater the relative importance we accord to the consideration on which that feature turns (e.g., slightly more, moderately more or a great deal more). Where neither feature F1 nor feature F2 comes in degrees, we may equate the relative weight of the considerations which turn on those features to be identical with their relative importance.

Where one or both of features F1 and F2 come in degrees, the relative *weight* of the considerations should depend not just on the relative *importance* we attribute to the considerations, but also on the *degree* to which we estimate the features on which the considerations turn are present in the situation with which the conductive argument is concerned. Here is a very preliminary proposal concerning how we might take such estimates into account. Let D1 be the degree to which feature F1 is present and D2 the degree to which F2 is present. In determining whether we prefer situations which have F1 but not F2, etc., we determine whether – other things being equal – we prefer F1 in degree D1 to F2 in degree D2. If we do, then we count the consideration that turns on F1 in degree D1 to have greater weight than the consideration which turns on F2 in degree D2. The greater the "extent to which we prefer one combination to the other" (e.g.," just a bit", "a fair amount", or "to a great extent"), the greater the *relative* weight we accord to that set of considerations in comparison with the other set of considerations ("slightly more weight," "moderately more weight," or "considerably more weight." If we don't prefer either combination to the other, we judge the two sets of considerations to be of approximately equal weight.

Where we estimate the risks taken in relying on competing considerations to be different, the estimated difference between them should be taken into consideration in judging the relative *force* of the two considerations (if no such difference obtains, then the relative force of the two considerations will have the same order of magnitude as their relative weight). Here again is a very preliminary proposal concerning how we might take such estimates of risk into account. For each consideration we roughly estimate the degree of risk incurred in relying on it as high, medium, low or nil – see the defense of such non-numeric estimates of the force of considerations in section 1 of Fischer (2010). We might then count a spread between high and low to be a marked difference in risk, and a spread between medium and either high or low to be a moderate difference in risk. Finally, we *might* adopt something like the following principles for estimating the comparative force of a single pro and single contra consideration on the basis of differences in risk and relative weight of those considerations:

(i) A marked difference in risk in favor of a *less* weighty consideration gives *slightly* more force to the *less* weighty consideration, but only if the latter had only *slightly* less weight than the weightier consideration.

(ii) A moderate difference in risk in favor of a *less weighty* consideration results in a 'standoff", but only if the less weighty consideration had only *slightly* less weight than the weightier consideration.

(iii) A moderate difference in risk in favor of *a slightly weightier* consideration gives *slightly* more force to the weightier consideration

(iv) A moderate difference in risk in favor of a consideration which has moderately more weight gives *moderately* more force to the weightier consideration

(v) A moderate difference in risk in favor of a consideration which has considerably more weight gives *considerably* more force to the weightier consideration

(vi) A marked difference in risk in favor of a consideration which has moderately more weight gives it *considerably* more force to the weightier consideration.

If we accept anything along the lines of this sketch, we will be able to say that

(a) what *enables* us to compare the relative *force* of a single pro and a single con consideration is our ability (i) to estimate *the degree to which those features are present* in the situation with which those considerations are concerned, (ii) to determine our *preferences* with respect to the features on which those considerations turn, and (iii) to estimate the *degree of risk* we undertake in relying each of those considerations.

(b) our comparisons of relative force based on these preferences and estimates will be *reasonable* if and only if both the preferences and the two sorts of estimates on which such comparisons depend are reasonable – i.e., are preferences and estimates *for which we have good reasons all things considered*.

3.7.2 Comparing the relative force of a *set* of pro considerations with a *set* of con considerations

Comparisons of the relative force of *sets* of pro and *sets* of con considerations is complicated by the fact that the relative force of a *combination* of two or more pro (or two or more contra) considerations doesn't follow in any straightforward way from the force of the *individual* considerations that comprise that combination. Thus I might have a very strong preference for the flavor of chocolate over most other flavors, and also a strong preference for the flavor of sour cream over most other flavors, but *abhor* the taste of anything that combined the flavor of chocolate with the flavor of sour cream. Because of this, when bringing our preferences into play, we must compare our preferences with respect to the *combinations* of features on which each set of considerations turn – that is to say, the combination of features on which the individual pro considerations turn (call it combination A) and the combination of features on which the individual con considerations turn (call it combination B). Moreover, in determining whether we prefer the conjunction of features on which the pro considerations turn, we ought to consider each feature to be present *in the degree to which the relevant consideration claims it to be present*.

An additional factor – which may in fact simplify our comparison – is that occasionally some one pro consideration or some one contra consideration may be an *overriding* consideration – "trumping," as it were, all the considerations on the other side (see Pinto and Blair, p. 207). For example, in deciding whether or not to purchase a particular vehicle, we might consider the fact that it is "unsafe at any speed" to be an overriding con consideration which cannot be

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outweighed by any combination of pro considerations – irrespective of how attractive we might consider that combination of those pro considerations to be. Or, consider the following example, suggested by Steve Paterson. Suppose my child has been bitten by a snake, and I think from my glimpse of it that the type of snake is not poisonous. I would be wise to consider even a small risk that my judgment about the type of snake is wrong sufficient to render the *possible* threat to my child's life an overriding reason to rush the child to a hospital immediately.

If, other things being equal, we prefer situations which exhibit one of the two combinations to situations which exhibit the other combination, then we judge the *set* of considerations which turns on the preferred combination to be of greater *weight* than the set of considerations which turns on the other combination. The greater the "extent to which we prefer one combination to the other" (e.g.," just a bit", "a fair amount", or "to a great extent"), the greater the *relative weight* we accord to that set of considerations in comparison with the other set of considerations. If we don't prefer either combination to the other, we judge the two sets of considerations to be of approximately *equal weight*.

But the relative *force* of a set of considerations can't be equated with their relative *weight* – as we saw in section 3.6 above, the force of a consideration is a function both of its weight and of the risk of error associated with that consideration. How then are we to take into consideration such relative risk of error when we are trying to estimate the relative *force* of the two sets of considerations? In cases, like the snakebite example above, where a small risk of error gives rise to an *overriding* consideration, taking risk of error into consideration is a fairly straightforward matter. But in situations where no single consideration is overriding, things are more complicated. At the present time, I see no alternative but to suggest that we must repeat the attempt to compare combinations of pro and con considerations, this time including in each component of a combination not just our estimate of the degree to which the relevant factor is present, but also the risk that our estimate of that degree is "off the mark". Though such a strategy strikes me as feasible for relatively small sets of considerations, I am not at all confident that it will prove feasible when *large* sets of considerations are at stake. For such larger sets, additional simplifying strategies will have to be considered – but that is a task which lies beyond on the scope of this paper.

3.8 Conclusion

If we accept anything along the lines of this sketch, we will be able to say that
1) for *both* (a) comparisons of the relative force of a *single* pro and a *single* con considerations and (b) comparisons the relative force of a *set* of pro considerations and that of a *set* of con considerations, our ability to make such comparisons depends on our ability (i) to estimate *the degree to which the features on which those considerations turn are present* in the situation with which those considerations are concerned, (ii) to determine our *preferences* with respect to the combinations of features on which the considerations in those sets turn, and (iii) to estimate the *degree of risk* we undertake in relying on each of those considerations.

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2) our comparisons of relative force based on such preferences and estimates will be *reasonable* if and only if both the preferences involved and the two sorts of estimates on which such comparisons depend are reasonable – i.e., are preferences and estimates *for which we have good reasons all things considered*.

Finally, I would want to add a clarification to my claim that the preferences which guide our judgments about comparative weight are reasonable if they are preferences for which we have good reasons all things considered. When it comes to conductive arguments whose conclusion involves application of normative predicates (or involve decisions about what to do), that S has good reasons all things considered for preferring X to Y should *not* be taken to mean that the reasons which (potentially) ground S's preferences would be acknowledged by all, or even most, members of the discursive community S is addressing. What makes a preference an appropriate ground on which *S* might judge the relative force of considerations pro and con is that it is well-grounded within the context of *S*'s thought.

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