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# The "Logic" of Informal Logic

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ABSTRACT: Are there any logical norms for argument evaluation besides soundness and inductive strength? The paper will look at several concepts or models introduced over the years, including those of Wisdom, Toulmin, Wellman, Rescher, defeasible reasoning proponents and Walton to consider whether there is common ground among them that supplies an alternative to deductive validity and inductive strength.

KEYWORDS: informal logic, reasoning, argument, inference, defeasible reasoning

## 1. INTRODUCTION

So-call "informal logic" developed in the 1970s as a result of dissensus. Its proponents disagreed with the conventional wisdom of the day in philosophy departments in the United States and Canada that the appropriate way to teach undergraduates how to analyse and evaluate arguments is to teach them some elementary formal logic. It was argued that, instead, learning non-formal techniques is truer to the phenomena and more effective in acquiring the desired skills and dispositions. (The use of term "informal," by the way, was thus a rhetorical device intended to "dissociate" the proposed new methods from the conventional method; nothing more.)

As the attention of those interested in informal logic turned to theory in the course of the late 1970s and early1980s, one of the assumptions of the day that came under challenge was the distinction between deductive and inductive arguments (see Weddle 1979, Fohr 1980a, Govier 1980a, Hitchcock 1980, F. Johnson 1980, Fohr 1980b, Weddle 1980, Hitchcock 1981). The issue first arose as a problem for argument identification and reconstruction. Since few arguments in public discourse are valid as they are expressed, are they really deductive arguments, but with unexpressed premises, or are they fallacious arguments, or are they inductive arguments? But the exhaustiveness of the deductive-inductive dichotomy was soon questioned as well. Govier drew attention to the "case by case reasoning" discussed by John Wisdom in the then-still-unpublished Virginia Lectures (1957, 1991), and to the concept of "conductive reasoning," introduced by Carl Wellman in *Challenge and Response* (1971), both of which presupposed that the deductive-inductive dichotomy was not exhaustive (Govier 1980b, see also Hitchcock 1981). There thus arose the question of what such an alternative or alternatives might be. For some, this has continued to be a central question for informal logic theory.

The purpose of this paper is to explore some historically-offered possible answers to this question of what alternatives there might be to deduction and induction, but before

doing so it is useful to clarify the question being considered and to remove some possible misunderstandings about the terms on which I am approaching it.

First, for present purposes the distinction between reasoning and argument is not germane. I need to explain this point.

Reasoning is a cognitive process, or various kinds of cognitive process. Harman opens *Change in View* with a description of an episode of reasoning:

> Intending to have Cheerios for breakfast, Mary goes to the cupboard. But she can't find any Cheerios. She decides that Elizabeth must have finished off the Cheerios the day before. So she settles for Rice Krispies.(1986, p. 1.)

Notice that, while Mary reasons here, she presen*t*s no argument to anyone, herself included.

The word 'argument' is used a many different (often incompatible) ways. Some use 'argument' to denote the record of an episode of reasoning. On such a usage, some might ascribe the following argument to Mary's reasoning as described by Harman.

> There are no Cheerios in the cupboard. The only explanation of why there are no Cheerios in the cupboard is that Elizabeth finished them off yesterday. So Elizabeth must have finished off the Cheerios yesterday.

Another sense of 'argument' is the reasoning presented to an interlocutor to try to persuade or convince that interlocutor of something. Mary produced no such argument in Harman's description of the situation, but we can image Mary responding to Arthur when he asks why Mary thinks Elizabeth finished off the Cheerios yesterday by saying:

> Yesterday there were only enough Cheerios left for one serving after I had some for breakfast, and Elizabeth, who likes Cheerios for breakfast, was the last person to have breakfast yesterday, right after I did, so Elizabeth must have finished off the Cheerios then.

Yet another sense of 'argument' argument corresponds to what is called a "case" in legal argumentation—that is, an interconnected vector of arguments, some leading directly (sometimes in chains) to the final standpoint being defended or maintained, others supporting it indirectly by anticipating and answering objections of various kinds (to the standpoint or to the arguments leading directly to it, either to the reasons or to the inferences). So we can image Mary's conversation with Arthur continuing, with Arthur challenging Mary's reasoning and her conclusion by suggesting that Elizabeth likes Shredded Wheat for breakfast as much as Cheerios, and also asking why the Cheerios couldn't instead have been finished off by Peter last night, who likes to have a bowl of Cheerios as a snack before going to bed. Mary could answer the first objection by pointing out that they were out of Shredded Wheat yesterday, and the second by reminding Arthur of Peter's earlier declared intention to stop having snacks before bed in order lose some weight. Mary's argument in the sense of her "case" would then consist of her original reasons for thinking Elizabeth finished off the Cheerios yesterday plus her counters to Arthur's challenges to that original argument. Exchanges like Mary's and Arthur's, or the products of them, are often called "argumentation."

Now, in all these examples, there is an illative move or a series of illative moves: from the basis or starting point of the reasoning or argument to the upshot that is inferred or alleged to follow from that basis. Some call this move an inference, others call it an implication, others call it a premise-conclusion link, and others call it a consequence relation. It is a key element in the reasoner's cognitive processing, and it is a key element in the arguer's attempt to persuade, convince, justify, show, establish, prove—call it what you will. What the present paper is investigating pertains to this illative move regardless of where it occurs, whether in reasoning, or in an argument in any sense, or in argumentation.

A second preliminary clarification needed is that what is at issue is not best conceived as types of reasoning or kinds of argument. I am persuaded by the arguments of those (e.g., Skyrms 1975, Hitchcock 1980) who contend that "deductive" and "inductive" are most fruitfully construed as modifying types of evaluative criteria, not types of argument or types of reasoning. Thus it may be asked of a piece of reasoning or of an argument whether the basis deductively implies the conclusion drawn from it or urged on for that reason, or equivalently, whether that relationship (the "illative move") is deductively valid. If it is determined that it is not deductively valid, it may asked whether the relationship is instead inductively strong. Although some of the material I investigate speaks of types of argument or types of reasoning, I will take the authors in question to be alluding to types of criteria for the evaluation of the illative move in an instance of argument or reasoning.

An illative move is a good one if the upshot is entailed by the basis (i.e., the former cannot be false if the latter is true) and the basis is different from the upshot (so the reasoning is not circular, the argument not question-begging). An illative move is also a good one, even if it is not an entailment, to the quantifiable degree that the basis makes it probable that the upshot is true or worthy of acceptance. The question motivating this paper can now be made clearer. Are those the only two ways that an illative move can be a good one? Is there some criterion or several criteria of merit of illative moves in reasoning or argument other than deductive validity and quantifiable inductive strength? The strategy of the paper is to examine a number of what appear to be such alternative criteria of illative merit that have appeared in the last 50 years or so and raise the following questions about them. Are they indeed distinct criteria from deductive validity and inductive strength? If so, are they all variations of the same criterion—are they equivalent or is one basic and the others reducible to it—or are they (or some of them) different from each other, so that there is not just a third criterion, but several others? The investigation in the paper will be programmatic rather than exhaustive.

## 2. REVIEW OF THE ACCOUNTS

In the following subsections I briefly describe and characterize six accounts that seem on the face of it to portray some third type of assessment of an illative move, independent of deductive validity and of inductive strength. These authors were selected for their presence in the informal logic tradition, or for the prominence of their accounts, I do not always present the respective authors' arguments in support of their contentions, or judge them myself.

*2.1 Wisdom's reasoning by parallels or case-by-case reasoning*

John Wisdom's "Virginia Lectures," edited and in 1991 published by Stephen Barker as *Proof and Explanation*, were delivered and tape-recorded in the spring semester of 1957. They are wide-ranging in philosophical subject matter, but what I want to extract from them (following Govier's (1980) long-ago lead) is what Wisdom called reasoning or arguing by parallels or case-by-case. Wisdom contended, against the view that an argument used to prove a point is good only if it is valid, that a justification can equally be based on an argument relying on parallel cases. Wisdom has in mind reasoning or arguments supporting claims of fact that are not going to be settled by finding additional evidence, but are instead what might be called matters of judgement. Among the many examples he gives is "This man is extremely religious" (1991, 39). The reasons people have for such claims cannot, he contends, be presented "in the form of demonstrations … as a step-by-step process" (39).  He seems to have in mind, to pursue this example, something like pointing to so-and-so, who all would agree is a religious person, and noting similarities between this exemplar and the man in question. As well, one could think of what would make anyone count as a religious person, a paradigm, such as conscientiously living by the precepts of his religion, praying for divine guidance before making important choices, observing the rituals of his religion without fail—and then reminding the doubter that so-and-so does all of those things. Wisdom's point seems to be that understanding a concept entails recognizing clear cases of when and how its properties pertain and when and how they don't, and therefore, in virtue of recognizing that the case in question is like the clear cases in relevant respects, one is entitled to infer that the case in question has the property in dispute.

Such reasoning or arguing, Wisdom says, is like, but not identical to, reasoning or arguing from analogy. In Wisdom's usage, an argument from analogy must be based on actual cases, and it must be in principle possible to carry out further investigations to determine whether what is claimed on the basis of the analogy really is so. An argument from parallel cases, in contrast, may be based wholly on imaginary but conceivable instances (111-112). Wisdom said it might be called argument from *a priori* analogy (111). He explains this idea, consistently, by describing possible examples. At one point, for instance, he says that he has in mind "typical sorts of procedure adopted by counsel in courts of law when they refer to past cases in justification of such a conclusion as 'Here there was negligence,' 'Here there was not negligence'" (139).

Is case-by-case reasoning a "third way," to be assessed independently of deductive and inductive norms? Wisdom's own position is that, "all deductive argument, absolutely all deductive argument, comes in the end to a case-by-case procedure; that deduction is a way of presenting arguments which might also have been presented through case-by-case reasoning" (154). He thinks this is so because he thinks that a deduction can function as a proof only to the extent that its premises are unproblematic, and they can be shown to be acceptable, if challenged, ultimately, only on the basis of case-by-case reasoning. So Wisdom would concede that one might identify a set of necessary and sufficient conditions of someone's being a religious person, note that so-and-so possesses those properties, and then validly infer that so-and-so is a religious person. But if anyone doubts so-and-so's religiosity, it will be because either he doesn't accept those properties as the necessary and sufficient criteria or he doubts that so-and-so

really is like that. The latter might be a factual matter to be settled empirically, but the former can only be settled by appeal to cases.

*2.2 Toulmin's warrants*

In *The Uses of Argument* (1958), Stephen Toulmin laid out a now-famous "pattern for analyzing arguments" (99). According to it any smallest unit of argument will exhibit the following pattern: a claim is inferred (with a qualifier and often subject to specified exceptions) from some particular data on the basis of a warrant that licenses the inference, a warrant that can be justified if challenged by reference to backing related to the subject-matter of the data and claim. The "Toulmin model," as it is widely termed, does not require that a good inference be deductively valid or inductively strong: the criterion of a good illative move is a justified warrant, and although such a warrant can be a law of deductive logic or a rule of induction, it doesn't have to be. So it might be thought that the Toulmin model represents a third type of norm of reasoning or argument beyond these two; but it doesn't. The model is open to the possibility of other types of such norms, and in that way it is not hostile to the view that these two might not exhaust the logical criteria of good reasoning or good argument, however by itself it supplies no such alternatives.

Toulmin needs, and in fact offers, an independent argument to show that there can be warrants that are "valid" although they are not entailments or inductively strong. The tack Toulmin takes is to argue that the issue is actually not to distinguish between "induction and deduction,…proof and evidence,…demonstrative and non-demonstrative arguments, …necessary and probable inference, or … conclusive and inconclusive reasoning," but instead to distinguish "between analytic and substantive arguments" (234). "Analytic criteria," he writes, "are beside the point when we are dealing with substantial arguments" (*ibid.*). And the key point is that "substantial arguments often involved type-transitions in the passage from the data and backing to the conclusion," which "means that we must judge each field of substantial arguments by its own relevant standards" (*ibid.*). So, for example, the kinds of warrants used in arguments about criminal guilt are likely to be different from the kinds of warrants used in arguments about the merits of an artist, and both will be different from the warrants used in arguments about predictions of performance in tennis (see 13-14).

Toulmin's particular interest in *The Uses of Argument* is in arguments used to justify belief claims. According to his account, there is no third standard of legitimacy for illative moves, but rather any number of them—as many as there are fields or subject matters of argument. (Although the book focuses on argument, it seems that the reasoning-argument distinction plays no role in his account.)

*2.3 Wellman's "conductive" reasoning*

In *Challenge and Response* (1971), an inquiry into the nature of justification in ethics, Carl Wellman argued that in addition to deduction ("that form of reasoning in which the claim is made that the conclusion follows necessarily from the premises" (4)) and what he called "induction" ("that sort of reasoning by which a hypothesis is confirmed or

disconfirmed by establishing the truth or falsity of its implications" (32)), there is also a third kind of justification appropriate in ethics, which he called "conduction."

> Conduction can best be defined as that sort of reasoning in which  1) a conclusion about some individual case  2) is drawn nonconclusively  3) from one or more premises about the same case  4) without appeal to other cases. (52)

Among the examples that Wellman offers are: "you ought not to have spoken so harshly because your words hurt her deeply" and "Martin Luther King is a fine man because, in spite of occasional arrogance, he is an unselfish and courageous worker for his fellowman" (52).

Such reasoning or argument is not deductively valid, Wellman says, because "even a perfect fit of premises to individual case is no guarantee of the truth of the conclusion because additional information may be uncovered to outweigh the given premises" (53). It is also to be distinguished from reasoning by analogy, which Wellman takes to be another way of drawing a conclusion about a particular case from one or more premises about that same case (53). Wellman does not take reasoning by analogy to be deductively valid: it is an appeal to analogous instances, and the conclusion is "not [linked to the premises] by a universal generalization" (53). However, in the case of conduction there is no appeal to analogous cases; the link between premises and conclusion "is entirely a priori" (53).

Wellman does not think that conduction is a uniquely ethical mode of reasoning: "Wherever some descriptive predicate is ascribed on the basis of a family resemblance conductive reasoning takes place" (54).

> For example … Bees have a language because they can communicate information about the location of flowers to one another. … In such examples factual conclusions about some individual case are drawn from information about the case. (54)

Wellman identifies three "patterns of conduction" (55). In the first, "a single reason is given for the conclusion" (55); in the second, "several reasons are given for the conclusion" (56); and in the third, "some conclusion is drawn from both positive and negative considerations" (57). In the latter case, the way the conclusion is arrived at can be suggested by the model of a sort of qualitative weighing of the pros and cons, though this model "is not always helpful" (58-60).

Wellman thinks it desirable that there be a logic of conduction, but after reviewing the conditions required for any such logic he reluctantly concludes that "to determine the validity of conductive arguments one would need a rule of inference for each set of predicates" and as a result, "[t]he appeal to logical rules seems pointless here, for one can just as well weigh the reasons in the original argument" (69). The only way to test the validity of a conductive argument is to "think it through" (see 78-83). However, Wellman does not think that such arguments are beyond criticism. "To argue," he contends, "is to make a claim to validity on behalf of the argument one is using" and such claims are contestable, for "the process of thinking and discussing … sustains or destroys the persuasiveness of argument" (99).

> To say that an argument is valid is to claim that when subjected to an indefinite amount of criticism it is persuasive for everyone who thinks in the normal way; to say that an

> argument is invalid is to claim that when subjected to an indefinite amount of criticism it
> is unpersuasive for everyone who thinks in the normal way. (99)

The upshot is that the conductive illative move is a fallible judgement of a direct evidentiary connection between claims based on an understanding of their meaning in the context. Such a move is made in reasoning (the product of which is an argument) and is asserted in presenting arguments to others. Such moves are standard in reasoning and arguing about particular ethical claims, but they are found anywhere that there is reasoning from some feature(s) of a case to another feature of the same case.

*2.4 Rescher's* provisoed assertion *and* probative reasoning

Nicholas Rescher's *Dialectics* (1977) is subtitled, *A Controversy-Oriented Approach to the Theory of Knowledge*. Rescher's principal topic was thus epistemology, not argumentation *per se*. However, Rescher held that "the process of disputation … offers …a vivid view of the structure and workings of the validating mechanisms which support our claims to knowledge" (3) and so he undertook its study from that point of view.

　　Among the fundamental dialectical moves Rescher claims occur in disputation is what he dubs "provisoed assertion."  This is the move, symbolized as "*P*/*Q*." that can be described in general terms as:

> "*P* generally (or *usually* or *ordinarily*) obtains provided that *Q*" or "*P* obtains,
> other things being equal, when *Q* does" or "when *Q*, so *ceteris paribus* does *P*"
> or "*P* obtains in all (or *most*) ordinary circumstances (or possible worlds) when *Q*
> does" or "*Q* constitutes *prima facie* evidence for *P*." (6)

As a move in disputation, a provisoed assertion of such a form must always be accompanied by either a categorical assertion of *Q*  ("*Q* is the case") or at cautious assertion of *Q* (that is, "*Q*, for all you have shown" or "*Q* is compatible with your expressed commitments")(6). Although Rescher does not say so, it seems clear that the pair of assertions thus forms an argument for *P*.  Rescher is quick to note that the *P*/*Q* relation is not an implication: *Q* does not entail, imply or assure that *P*; the connection is merely "normal, natural, and only to be expected" (7). Nor is the connection "a matter of mere probabilities—or how things go *mostly* or *usually*—rather, it is a matter of how things go *normally* or *as a rule*" (7). "The linkage," Rescher says, "is *presumptive* rather than deductively airtight" (8), and it has the implication that "in *dialectical* (as opposed to *deductive*) reasoning an assessment of the cognitive standing of a thesis can never leave its probative origins behind altogether" (8).

　　Rescher thus has identified an illative move that must be subject to a third kind of evaluative criteron besides deductive and inductive validity. What initiates and maintains such reasoning and argument is the correlative pair, presumption and burden of proof. How things stand "as a rule"—"the usual, normal, customary course of things" has a standing presumption in its favour (30-31), but presumptions are "usually tentative and provisional"—they are defeasible, (i.e., "subject to defeat in being overthrown by sufficiently weighty countervailing considerations" (31). The proponent of a claim in a

dispute situation has the burden of proof, and may rely on presumptions to support his claim. The critic in turn faces the burden of overturning those presumptions.

Reasoning and argument that proceeds by means of provisoed assertions is termed probative reasoning and argument. It is justified, Rescher argues, because it is rational to abide by warranted presumptions and established inferential ground rules. His defence of the latter contention takes up three of the book's eight chapters, and will not be reviewed here.

*2.5 Defeasible reasoning*

Before Walton drew attention to it (1996), the literature explicitly devoted to defeasible reasoning and related logics was not much taken account of by those identifying themselves as informal logicians. This work was carried out in the fields of computer science, cognitive psychology (artificial intelligence), linguistics and, within philosophy, by some in logic and epistemology. The outsider to this topic who thinks of acquainting himself or herself with defeasible reasoning faces the prospect of a 40-year accumulation of literature, highly technical, in several fields, and containing a number of overlapping controversies. In his *Stanford Encyclopedia of Philosophy* article on the topic, Robert Koons (2005) identifies defeasible reasoning with Aristotle's dialectical reasoning discussed in the *Topics*, but also notes that in the recent past it has been studied from the perspective of the semantics and pragmatics of communication (interpretations of texts and utterances are defeasible), of epistemology (evidence for beliefs, such as sensory experiences, are defeasible), of ethics (duties are defeasible), of philosophy of science (some argue that scientific laws are defeasible), and of artificial intelligence (which developed formal languages to represent defeasible reasoning, for instance in modeling expert systems such as idealized physicians' diagnostic reasoning).

Koons defines *defeasible reasoning* as follows:

> Reasoning is *defeasible* when the corresponding argument is rationally compelling but not deductively valid. The truth of the premises of a good defeasible argument provide support for the conclusion, even though it is possible for the premises to be true and the conclusion false. In other words, the relationship of support between premises and conclusion is a tentative one, potentially defeated by additional information.

John Pollock (1992), a prominent theorist, explains defeasible reasoning in a similar way:

> *Conclusive* reasons logically entail their conclusions. Defeasibility arises from the fact that not all reasons are conclusive. Those that are not are *prima facie reasons*. Prima facie reasons create a presumption in favor of their conclusion, but it is defeasible. (2)

Pollock (1992, 2-3) distinguishes two kinds of defeaters of arguments corresponding to defeasible reasoning. A *rebutting* defeater is an argument whose conclusion is the negation of the conclusion of the argument it aims to defeat. An *undercutting* defeater is an argument whose conclusion is the negation of the inference from the evidence to the conclusion of the argument it aims to defeat.

(Rebutting defeaters and undercutting defeaters correspond more or less to the two kinds of logical objections standardly identified in theories of dialectical

argumentation: objections (consisting of challenges or arguments) against the conclusion or standpoint, and objections (consisting of challenges or arguments) against the argumentation advanced as supporting the conclusion or standpoint. However Pollock's concept of an undercutting defeater does not make the further distinction found in dialectics between objections (i.e., arguments) against the premises, and objections (i.e., arguments) against the connection between the premises and the conclusion.)

Pollock (1992, 8) distinguishes his argument-theoretic theory of defeasible reasoning from Raymond Reiter's semantical default logic (see Reiter 1980), on two grounds. Pollock's system is "skeptical" (if we can neither refute nor confirm a thesis, we must withhold belief) whereas Reiter's is "credulous" (if we cannot refute a thesis, it should be accepted). In addition, Pollock's *prima facie* reasons "are supposed to be logical relations between concepts" (1992, 8), whereas Reiter's defaults "often represent contingent generalizations" (*ibid*.). A standard example of defeasible reasoning for Pollock is your reasoning that because an object looks red to you it is red. It is a conceptual truth, not an empirical generalization, that normally objects that look red are red. The classical example of default logic is: Tweety is a bird, and most birds fly (an empirical generalization), so (in the absence of evidence that Tweety is an exception) infer that Tweety flies. Notice that the distinction between a conceptually grounded and an empirically grounded inference parallels Wisdom's distinction between reasoning by *a priori* analogy and reasoning by inductive analogy.

Kooms (2005, 4) suggests that there is a general difference between epistemological approaches to defeasible reasoning, more common in philosophy (of which Pollock's is one of several) and logical approaches, more common in computer science (of which Reiter's is one among many). Epistemological approaches study the inferences whereby we modify our justified belief store. Logical approaches examine "a relation between propositions or possible bodies of information" (4), though unlike the deductive consequence of monotonic logic, the relation studied in the logical approach to defeasible reasoning is the non-monotonic relation of defeasible consequence. (A logic is monotonic if all sentences or propositions that can be validly inferred according to its rules from a given information or premise set, S, will also be validly inferred from any larger set of which S is a subset; a logic is non-monotonic if what can be validly inferred from S according to its rules can be altered if more premises or information are added to S.)

The distinction between reasoning and argument plays no role in the notion of defeasible reasoning, since, at least on Pollock's account, defeasible *reasoning* is defined in terms of the *argument* that corresponds to the reasoning. And given that the investigation of defeasible reasoning has been motivated by issues in a range of subject matters, the particular topic on which the reasoning occurs would have to be taken as immaterial. Defeasibility seems to be a property in play in reasoning and arguing for a variety of justificatory purposes, including belief claims, property attributions, interpretations, predictions and explanations. And insofar as one can persuade another by convincing him or her that a belief or attitude or course of action is justified, defeasible reasoning would seem to apply to (at least that type of) persuasion as well.

The legitimacy of the illative move in defeasible reasoning is not analyzed in detail in the literature I have seen. It is taken as unproblematic that such reasoning and such arguments occur and can be reasonable. Pollock describes defeasible reasons as *prima facie*, and notes that they create a presumption. But both of these concepts are presented as basic.

*2.6 Walton's presumptive reasoning and presumptive arguments*

Douglas Walton opens his chapter on presumptive reasoning in *Argument Schemes for Presumptive Reasoning* (1996, 17) with the following example of presumptive reasoning:

> Case 2.1:  John's hat is not on the peg.
>             Therefore, John as left the house.

According to Walton, the presumption at work in this reasoning is an unexpressed assumption, a major premise to the effect that "If John's hat is not on the peg, then (we can normally expect), he has left the house" (ibid.). A presumption is thus, on this account, a proposition that serves as a kind of inference licence. Walton characterizes it as a *prima facie* case or a plausible assumption that is generally accepted but cannot be definitively proved (19). The proponent of an assumption that functions as a presumption does not carry the burden of proof for it (in a dialogue in which he asserts or relies on it), although he does have the burden of disproving contrary evidence. Presumptive reasoning will thus be reasoning in which plausible assumptions function to licence inferences, and presumptive arguments will be arguments in which the conclusion is alleged to be supported by such presumptions, and in which, should the presumption be challenged, the arguer is obliged to either refute the challenge or to withdraw the conclusion. According to Walton:

> … presumptive reasoning is neither deductive nor inductive in nature, but represents a third distinct type of reasoning of the kind classified by Rescher (1976) as plausible reasoning, an inherently tentative kind of reasoning subject to defeat by special circumstances (not defined inductively or statistically) or a particular case. (42-43)

Walton regards presumptive reasoning as a kind of defeasible reasoning, citing Pollock (1991) (18), as non-monotonic reasoning (21), and he quotes examples from Reiter's (1987) paper on non-monotonic reasoning as examples of presumptive arguments (22). Clearly he is interested in the general commonalities of Pollock's and Reiter's views, not the specifics, noted above, that distinguish those two theorist's approaches.

Walton takes presumptive reasoning to be essentially practical—to be the way we reason about what to do; and he distinguishes it from "theoretical or discursive" reasoning, which "has a cognitive orientation, weighing reasons for and against the truth or falsity of a proposition" (11). In this respect his view is different from Pollock's, and more modest about the domain of presumptive reasoning, since Pollock regards defeasible reasoning as essential in reasoning about what to believe. Also, Walton's view is more oriented towards the interactive process of

argumentation than is that of people like Pollock who theorize defeasible reasoning from the point of view of rational knowledge acquisition and belief change. Walton wants to work out how presumptions, and their correlatives, burdens of proof, are to be assigned and can shift during the course of argumentative exchanges, and in particular, how the flouting of the rules governing those shifts can result in fallacies.

## 3. SIMILARITIES AND DIFFERENCES

There are a variety of points of comparison among the positions (or in the case of defeasible reasoning, families of positions) that have been sketched above. I will comment on nine of these, without pretending to be exhaustive.  These are summed up in Figure 1.

### 3.1 *"Validity" of the illative move explicitly not deductive or inductive.*

Most of the authors identify the illative move as distinctive, and in particular, as subject to neither deductive nor inductive norms. To put the point another way, they take it that an illative move can be in principle reasonable *even though* it is deductively invalid and (noted by some) not subject to standard inductive norms. Wisdom is perhaps an exception, since although he distinguishes case-by-case reasoning from deductive reasoning, he thinks the two are compatible in that he things deductive reasoning reduces to case-by-case reasoning. Toulmin explicitly distinguishes the reasoning of the type of argument he models from "the formal analysis of theoretical logic" (1958, 7), but he does not distinguish it from inductive reasoning. Moreover, arguably the warrants that justify the inferences in his model could conceivably be laws of deductive logic (or of inductive logic, if such there be); his main point is that they don't *have* to be. So Toulmin's view allows for illative

| | Not valid deduct. or induct. | Reason vs. Arg distinct. not imptnt | Has its own logic | Appli- cation restrict- ed | Legitim. of illative move defended assumed | Concept of defeasi- bility present | Concept of presump- tion explicit | Explicitly dialecti- cal | Test of a good illative move |
|---|---|---|---|---|---|---|---|---|---|
| Wisdom | ? | yes | -- | yes | defended | tacit | no | no | See it |
| Toulmin | ? | yes | yes | no | defended | yes | yes | no | Defensible warrant |
| Wellman | yes | yes | can't | no | defended | yes | tacit | yes | Withstands criticism |
| Rescher | yes | yes | yes | no | assumed | yes | yes | yes | Withstands criticism |
| Defeas. | yes/no | yes | yes | no | assumed | yes | yes | yes | Withstands criticism |
| Walton | yes | yes | -- | yes | defended | yes | yes | yes | Withstands criticism |

*Figure 1.*

moves to count as legitimate although they are neither deductively valid nor inductively strong. As for the others, Wellman, Rescher and Walton explicitly argue, or assert, that they have in mind reasoning or arguments that are neither deductive nor inductive, which is to say, that may be reasonable or legitimate although they fail according to deductive and inductive norms. The authors I have lumped under the heading, "Defeasible Reasoning," are too many and varied to be classified on this point. Suffice it to note that Pollock is explicitly modeling reasoning that is not deductively valid but *a priori*, not empirical, whereas Reiter is explicitly modeling reasoning that can employ empirical premises exclusively.

3.2 *Reasoning vs. argument.*

While the distinction between reasoning and argument was not noted in every case, each author mentioned moved back and forth between describing the illative move in question as found in reasoning and as exhibited in argument. It seems that whether the inference in question is made by the reasoner or is used or invited by the arguer has no bearing on the nature of the standards that may be applied to it..

3.3 *Distinctive logic?*

If we take a logic to be constituted by, among other features, a set of inference rules specifying the kinds of legitimate inference or argument that can be made within its domain, our authors are divided on the question of whether the kind of illation they have identified has or can have a logic of its own. Although Wisdom does not broach this question, pretty clearly he would think not, since reasoning by parallels or case-by-case is in each case unique. Toulmin doesn't address this question either. However, if a warrant is an inference rule (as it seems to be), and if each field has its own field-dependent warrants that apply to the reasoning within that domain, then it would seem to follow that each field will have its own logic, and so Toulmin would answer a "qualified yes" to the question of whether there can be non-deductive, non-inductive logics, for there are logics for every field. Wellman explicitly addresses this question and concludes, reluctantly, that conductive reasoning cannot have its own logic since such a logic "would need a rule of inference for each set of predicates" (69). Rescher and the most defeasible reasoning theorists, in contrast, do think there can be a logic (or logics) of defeasible reasoning, and various such logics have been proposed (default logic, non-monotonic logic, autoepistemic logic, circumscription, preferential logics—see Koons (2005) for a discussion of these). In his discussion of presumptive reasoning in (1996) Walton doesn't address the question.

3.4 *Restrictions on the domain of application of the illative move.*

Can illation that is deductively and inductively invalid be legitimate when used when reasoning and arguing about any kind of subject matter? Wisdom thinks it is to be restricted to non-empirical issues, matters that are to be settled on an *a priori* basis. Walton seems to think it applies, at least paradigmatically, in practical reasoning and

arguing, that is, reasoning or arguing about what actions to perform or policies to adopt. The other authors reviewed don't regard it as restricted by subject matter. Although Wellman discusses its application to justification in ethics, he explicitly avers that it may be used wherever a descriptive predicate is ascribed on the basis of a family resemblance (54). Toulmin, Rescher and the defeasible reasoning theorists all consider this manner of reasoning as applying to any topic in any field.

3.5 *Legitimacy defended.*

It struck me as interesting that the legitimacy of an illative move that is at the least deductively invalid and also uncertified by the norms of inductive reasoning or argument is defended by some of the authors reviewed (Wisdom, Toulmin, Wellman, Walton) and yet is taken as an obvious fact in no need of defence by others (Rescher, all the defeasible reasoning theorists).

To explain this difference one might hypothesize that such a move was problematic at an earlier time, but the arguments in support of it prevailed and so later it ceased to be problematic. However there is no evidence that Rescher or the defeasible reasoning theorists were influenced by the arguments of Wisdom, Toulmin and Wellman; moreover Walton's work is more recent, yet he feels obliged to defend presumptive reasoning as legitimate. Another hypothesis is that the philosophers considered themselves constrained to respond to the powerful influence of deductivism in philosophy—the view that the only appropriate norm for illation in reasoning and argument is deductive validity. Consistent with that suggestion is the fact that much of the defeasible reasoning literature arose in the study of artificial intelligence by computer scientists, not philosophers. However, Rescher is a philosopher, and one of the pioneers of the idea of defeasible reasoning, Roderick Chisholm (*Perceiving*, 1957), was also a philosopher.

3.6 *Concept of defeasibility present.*

Although the term 'defeasible reasoning' is not treated prominently in the informal logic literature before Walton (1996), the concept of defeasibility is explicit in all the authors surveyed save Wisdom, and it is tacitly there as well. In Wisdom's "case-by-case reasoning," there is always the possibility of conflicting cases, and so of the reasoning to a conclusion based on some cases being overturned by the notice of more compelling cases against that conclusion. The concept of a "rebuttal" in Toulmin's model acknowledges defeating considerations; Wellman considers the response to challenges essential to establishing the validity of reasoning; Rescher notes explicitly that presumptions will be defeasible (1977, 31); and of course for the "defeasible reasoning" theorists and for Walton, following them, the concept is central.

3.7 *Concept of presumption explicit.*

The idea that the reasoning under consideration is presumptive, or that the illative move is presumptive, would seem to go hand-in-hand with the concept of

defeasibility: the concepts seem to be correlates. And, indeed, the notion of presumption is explicitly mentioned and used in most of these accounts, being absent in only Wisdom. Wellman does not use the term, but he is explicit about conductive reasoning being *prima facie*, and arguably the concept of a *prima facie* reason entails the concept of presumption.

3.8 *Illative move seen explicitly as dialectical.*

The concepts of defeasibility and presumption are dialectical concepts. By that I mean they presuppose the roles of proponent and critic and the interaction of pro and con argumentation. It is thus unsurprising that most of the authors reviewed explicitly refer to the reasoning and argument they are discussing as dialectical. The only exceptions are Wisdom and Toulmin, and their accounts are certainly implicitly dialectical.

3.9 *Test of a "good" illative move.*

If the illative move in question is deductively invalid and not inductively strong on standard quantitative grounds, then how is it to be evaluated? What marks the difference between a "valid" and an "invalid" inference in such reasoning and arguing?  How these authors would answer this question is not always clear, so some interpretation is required. Their answers also vary to some extent. As far as I can tell, Wisdom holds that one simply "gets it" (my phrase, not his). The idea seems to be that as one is presented with a series of parallel cases that make the point, one eventually just recognizes that the property ascribed does indeed belong where it is predicated. Presumably, if the parallels offered do not show the connection, one will just see that too. In the case of Toulmin, a valid inference is one that is justified by a warrant that can be backed up. Ultimately, it follows, a valid inference is one whose justifying warrant can withstand criticism.  This property—the ability to withstand criticism—seems to be the test that all the other theorists reviewed would endorse. Wellman, as noted above, explicitly defines 'validity' in terms of the ability to withstand challenges. Rescher argues that probative rationality is a function of what is found convincing in general through dialectical disputation (see 1977, Chapter 3). Defeasibility theorists like Pollock see belief claims as justified for a person (i.e., reasonable for that person at the time) if he or she can refute proposed defeaters, and propositions as warranted (i.e., reasonable for anyone) if they would be justified for an ideal reasoner, one unconstrained by time or resource limitations (see 1992). And Walton (1996) regards plausible reasoning as valid if the arguer can successfully respond to the critical questions associated with the particular argument scheme he or she is using.

4. CONCLUSION

The above survey omits several important theorists from this review. As I read their work, Michael Scriven (probative reasoning, 1988), Trudy Govier  (reasoning with pros and cons, in 1999), Mark Weinstein (e.g., in 2003), David Hitchcock (justified

warrant, in 2005) and Robert Pinto (material inference rules, in 2006). All seem to endorse the legitimacy of the sort of illative move in question here. The concept of a material inference is found also in the work of Robert Brandom (1994) and before him, Wilrid Sellars (1980). If these theorists are added, there seems to be a significant support for the legitimacy of reasoning non-conclusively from grounds that provide presumptive support, and from using or inviting such reasoning in arguments designed to justify or persuade.

Even this partial survey is suggestive in a couple of respects. For one thing, the parallel and largely independent development of theories of defeasible reasoning and informal approaches to argument interpretation and appraisal seem to put beyond doubt the empirical fact of such reasoning and argument and to argue for its *bone fides*. The proposition that such reasoning and arguments are legitimate, one of the founding hypotheses of the informal logic movement, seems to have found fairly widespread confirmation. If so, informal logicians may well have something to learn from the variety of non-monotonic logics that have been developed for defeasible reasoning and argument. A second point is that if informal logic is identified, at least in part, by the endorsement of this sort of reasoning, then its proponents would seem to be committed to its dialectical character and its related social dimension. And that suggest an affinity between informal logic theory and other dialectical, socially oriented theories, such as Pragma-Dialectics (see van Eemeren and Grootendorst 2004). Many informal logicians have refrained from endorsing Pragma-Dialectics, so characterizing just how the two perspectives differ seems a project of mutual interest.

Finally, I should note that it has required some verbal gymnastics on my part to try consistently to refer to the standards or norms of reasoning as the salient topic instead of referring to types of reasoning or argument, as do several of the authors reviewed. Wisdom, Wellman and Walton in particular all use the "type" terminology, referring to case-by-case reasoning, conductive reasoning, defeasible reasoning, nonmonotonic reasoning and presumptive reasoning and arguments, often contrasting this with deductive and inductive reasoning and arguments. It is best to take such ways of talking as elliptical, for then all the difficulties of identifying particular types of reasoning and argument in practice can be avoided. The point is that when people reason and argue, in some cases they are being reasonable and their arguments are cogent even though the reasoning and arguments are deductively invalid and not quantifiably inductively strong. So the research task is not to formulate the identity conditions of some special type of inference or argument, but to formulate other-than-deductive or inductive criteria for valid reasoning and argument and the conditions under which it is appropriate to apply them.

link to commentary

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