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## WELLMAN'S TYPOLOGY OF ARGUMENTS\*

### 1. Deduction, Induction, and Conduction

How many types of argument or reasoning are there? Traditionally the answer has been one or two: deductive and possibly inductive. In (1971) Carl Wellman argued for a kind of reasoning that was neither deductive nor inductive:

How can one make clear the nature of this kind of reasoning? We have discovered its existence by noticing that certain arguments in ethics are left over when all deductive and inductive ethical arguments have been studied. It is tempting, therefore, to define a conductive argument as any argument that is neither deductive nor inductive. ... [T]he sort of argument I have in mind is not the only sort of inference that refuses to fall into the two traditional categories of reasoning. At some point statistical or probability inference will require a kind of reasoning that is neither deductive nor inductive. I also believe that there is something that might be called explanatory reasoning: reasoning from a body of data to a hypothesis that will render them intelligible. And if the argument by analogy cannot be reduced to some sort of statistical inference, it must be admitted as a distinct kind of reasoning. Obviously it is necessary to find some way to characterize the sort of arguments I have in mind from other sorts that are also nondeductive and noninductive as well. (Wellman 1971, 51–52)

From this pivotal passage the following can be established:

a) Wellman's reason for thinking that there are conductive arguments is the existence of particular cases that appear to be good antecedently to being evaluated against a deductive or inductive or even conductive (because it has not yet been formulated) standard and, more importantly, fail

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to comply with deductive and inductive standards, i.e., they are not deductively or inductively valid; for example: “You ought not to have spoken so harshly because your words hurt her deeply,” or “Martin Luther King is a fine man because, in spite of occasional arrogance, he is an unselfish and courageous worker for his fellowman” (Wellman 1971, 53).

It is important to realise (and given that Wellman provides further argumentation he does seem to realise it at least in part) that the ‘failure’ does not automatically follow from the ‘antecedence’; for example, there may be deductively valid arguments whose validity is apparent to us antecedently to any appeal to deductive logic (e.g., the inference from being a bachelor to being unmarried), but this clearly does not make them non-deductive. That there are such cases amounts to a meta-epistemological strategy of *particularism* but Wellman does not seem to realise this and argues instead that the validity in question must be due to a weaker, non-deductive relation between the premises of the argument and its conclusion. Wellman cannot, then, conclude that there are conductive arguments simply because their validity was not established by appeal to deductive or inductive standards, because this is what *particularism* predicts even for some deductively valid arguments; deciding validity antecedently to applying a standard is not the same as failing to comply with the standard, nor does the latter follow from the former. Wellman needs to (and, since he does this in a large part, recognizes the need to) provide further argumentation that the arguments in question do actually fail to comply with deductive and inductive standards, that the validity being decided is distinct from deductive and inductive validity and obeys a different logic. It will be shown later that his argumentation falls back onto antecedence; hence, it is not strong enough to establish conduction as a normatively distinct kind of reasoning.

b) Wellman takes the terms ‘reasoning’, ‘argument’ and ‘inference’ to be interchangeable and the terms ‘deductive’, ‘inductive’ and ‘conductive’ are intended to classify these interchangeably. For example, Wellman will talk indifferently of deductive reasoning, a deductive argument, and a deductive inference, and wherever ‘deductive’ is applicable in one of the three respects it will also be applicable with respect to the other two.<sup>1</sup>

c) Although he doesn’t specifically say so, Wellman intends his typology to be mutually exclusive. For example, if an argument (or reasoning or

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<sup>1</sup> That is to say that it is impossible for a deductive argument to contain an inductive inference. It is possible, however, for the deductive validity of an argument to be established by an inductive inference, namely by virtue of having a form that has been found to be deductively valid in all other instances.

inference) is deductive then it cannot be inductive or any of the other kinds Wellman lists.

d) Wellman is arguing against a traditional typology where all reasoning is deductive or inductive. There are several subtypes of non-deductive non-inductive reasoning. Conductive reasoning is one particular subtype.

Wellman does not succeed in establishing conduction as a distinct type of argument because throughout he makes the mistake of confusing the epistemic issue of how the goodness or validity of an argument is discovered or known with the conceptual issue of what that goodness or validity actually consists of and how it is to be explicated. For instance, we may see the deductive validity of an argument without actually constructing a formal proof, and it is reasonable to suppose this happens frequently; no modern logician believes that reasoners literally follow formal laws of logic when they reason, except when deliberately trying to do so. This does not affect in the slightest what the relation between the premises and conclusion of the argument actually is, and hence it does not affect what type of argument it is.

There may be room for saying that conduction is a distinct kind of reasoning or inference (breaking Wellman's threefold identification of reasoning, inference, and argument). A major desideratum for whether we should say that something is reasoning is the thought that reasoning must obey a logic that can systematically decide whether that reasoning is good or bad. Thus, deduction is reasoning because it obeys the laws of deductive logic and these can be demonstrated always to generate truth from truth. Whether reasoning can be conductive depends on whether there is a conductive logic. If not, conduction is more psychology than reasoning.<sup>2</sup> We will return to this in the next section.

First of all, let us make the best of Wellman's typology that we can, remembering that each argument should belong to one and only one type. However, Wellman's definitions of 'deductive' and 'inductive' do not seem well-suited to bring this about; in fact, Wellman commits a category-mistake. First, Wellman's definitions:

(DEDUCTION): "that form of reasoning in which the claim is made that the conclusion follows necessarily from the premises"<sup>3</sup> (Wellman 1971, 4).

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<sup>2</sup> The situation parallels Popper's discussion of inductive logic. If there is such a thing as inductive logic then we can talk unproblematically about inductive reasoning, if not then induction is just a heuristic, a means of discovery and useful psychological habit. Popper would deny that there is an inductive logic and therefore he removes induction to the realms of psychology; Wellman allows for such a logic and thus allows for genuinely inductive reasoning.

<sup>3</sup> Note that this does not imply that all deductive arguments are deductively valid –

(INDUCTION): “that sort of reasoning by which a hypothesis is confirmed or disconfirmed by establishing the truth or falsity of its implications. To show that the consequences of some hypothesis are true is to provide evidence for its acceptance” (Wellman 1971, 32). It is important to realise that by “the consequences of some hypothesis” is meant its consequences when conjoined with auxiliary hypotheses and not merely substitution-instances (which, strictly speaking, are not consequences anyway, since a universal generalization is not logically guaranteed to have any instances). Induction is thus wider than what Wellman calls ‘extrapolation’, viz., “reasoning from some members of the class to some generalizations about the entire class” (Wellman 1971, 32).<sup>4</sup> This seems to be an argument from the particular to the general.

(CONDUCTION): “that sort of reasoning in which 1) a conclusion about some individual case 2) is drawn non-conclusively 3) from one or more premises about the same case 4) without appeal to other cases.” What Wellman is attempting to describe is a kind of reasoning from particulars to particulars – shown by the fact that the conclusion is drawn about some individual case from premises about the same case – that differs from arguments from analogy (which are ruled out by the “without appeal to other cases” clause). In this reasoning the link between premises and conclusion is established *a priori* by reflection (Wellman 1971, 53).<sup>5</sup>

In a very interesting discussion Nielsen (2000, 78–83) refers to two ways of distinguishing deduction and induction as *forms of inference* and as *modes of inference*. These correspond respectively to drawing the distinction on the claimed necessary connection or in terms of its ‘figure’ (in the Aristotelian sense), viz., from general to particular, from particular to general, from particular to particular, or from general to general. One traditional classification has it that deduction moves from the general to the particular

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deductively invalid arguments still *claim* there to be a necessary connection. Interpreting this notion of claim is problematic. If it means only what the arguer thinks the connection to be then there can be deductively valid arguments that are not deductive because the arguer does not believe the connection to be necessary, among other curious results. Although evaluating how well the argument matches the arguer’s own conception of it is a useful and probably a necessary exercise for determining how well the arguer has argued, classifying arguments on this basis is a mistake.

<sup>4</sup> This seems to be missed by Govier (1987, 66) who identifies induction with extrapolation when she says that a conductive argument “differs from an inductive argument in that it is not a case of confirming or disconfirming hypotheses *by instances*” [my italics].

<sup>5</sup> The *a priori* nature of the inference is never made particularly clear in (1971). Govier picks up on it and calls it variously non-empirical, non-inductive, conceptual, normative, criterial (Finocchiaro 2011, 234), without, unfortunately, making it any clearer. An attempt at clarification based on Wellman’s earlier (1968) paper will be made later in the paper.

and induction from the particular to the general, but this leaves two figures unclassified, and also seems to exclude a number of deductively valid arguments in those figures from being deductive. For the moment, the important point Nielsen argues is that we can use either or both as long as we are consistent. Wellman, however, does not draw the distinction consistently, for his definition of deduction characterizes deduction as a *form* of inference whereas his definition of induction characterizes induction as a *mode* of inference. Although each definition individually is permissible their combination is a category-mistake and it is no surprise that they fail to form mutually exclusive sets. Conduction seems to be characterized in both ways: as non-conclusive (form) and as being from the particular to the particular (mode).

To firstly remove the category mistake from Wellman's account and secondly achieve mutual exclusivity we either have to redefine deduction as characterizing those arguments that do not move from the particular to the general (i.e., those that are not inductive) or redefine induction as characterizing those arguments in which the conclusion is not claimed to follow necessarily from the premises. Redefining deduction (i.e., using the deductive/inductive distinction as a distinction between modes of inference) avoids problematic aspects of what is meant by there being a 'claim' to be a necessary or non-necessary connection and seems to do less violence to what Wellman says, for he does *not* count as inductive "any argument in which the truth of the premises would make the conclusion probable" (Wellman 1971, 32–33).<sup>6</sup> Statistical syllogisms like this count as deductive argu-

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<sup>6</sup> However, he does not seem consistent for earlier (Wellman 1971, 21) he describes the following as inductive: "I have eaten at Barney's ten times and have enjoyed nine delicious meals; therefore, if I eat at Barney's again tonight, I will enjoy another delicious meal." Surely, this is an argument in which the truth of the premises makes the conclusion probable and is therefore not inductive according to his later description.

Govier seems to prefer the opposite course of redefining induction, finding Wellman's definition of induction idiosyncratic. In support of this, she argues that cases of disconfirmation are equivalent to *modus tollens* and hence are deductively valid arguments. However, this is a mistake; the hypothesis involved is really a probabilistic conditional and not a universal material conditional, so a negative instance partly determines this probability rather than falsifying the conditional. After observing  $n$  swans that are white, if the next swan is not white then this 'disconfirmation' amounts only to saying that  $n/n+1$  swans are white. The 'hypothesis' does not actually commit to any probability. Of course, falsity of the universal conditional follows deductively from the disconfirmation, but it is not the disconfirmation itself. Note also that although it follows deductively the conclusion of this argument (being the negation of a universal conditional) is particular, viz.,

$$F(a) \wedge \neg G(a)$$

therefore,  $\neg \forall x F(x) \supset G(x)$

so we have an argument from particular to particular which is not inductive and which preserves truth by the conclusion having less content than the premises.

ments on this redefinition despite the fact that their conclusions only follow with a certain probability and are not detachable. Note that not only arguments from the general to the particular are deductive but also arguments from the general to the general and from the particular to the particular. Conductive and analogical arguments thus come out as deductive.

What of conductive arguments? Note that there is some room for interpretation of Wellman's definition. Wellman says that the conclusion is *drawn* non-conclusively and (though it is not part of the definition) that the link between premises and conclusion is *established* in an *a priori* yet presumably non-conclusive way by reflection. In itself this does not imply that the link between premises and conclusion actually is non-conclusive. You may have a deductively valid argument whose conclusion you would not draw conclusively because, for instance, you were not sure whether your proof is correct. Similarly, you may forego proof-construction altogether and argue for the validity of a certain argument because it is identical in form to other arguments known to be valid, thus establishing its conclusion only non-conclusively; the validity of a deductive argument is then established inductively. Clearly, this does not mean that the argument whose validity and conclusion is in question is a non-conclusive or non-deductive argument.

On this interpretation the definition of conductive arguments does not, then, rule out a deductive premise-conclusion relation or say anything at all about this relation, and since it is the premise-conclusion relation that characterizes arguments, 'conductive' does not describe a type of argument. However, this interpretation is nothing more than a possibility, a logical finesse, and is soon rejected if Wellman is correct and the examples he gives do not actually have deductive premise-conclusion relations, i.e., if he can prove failure along with antecedence. Now, any argument whatsoever can be made deductively valid by being considered as an enthymeme. We must see whether Wellman's conductive arguments can likewise be reconstructed as enthymemes.

Wellman anticipates and responds to this idea. First of all, Wellman denies that validity is a purely formal matter and that by "valid" he does not mean validity in virtue of form but something much broader. He gives examples of arguments, e.g., "you ought not to do that because it causes avoidable pain" that are valid in this broad meaning yet deductively invalid. Adding a 'missing' premise in order to make this deductively valid seems redundant when its validity is already obvious without any such premise. The arguer who identifies validity with deductive validity has to deny that this is a good argument or explain its deductive invalidity away. He then says that there are deductively valid arguments that are yet not formally valid,

e.g., “since this is green, it is extended” (Wellman 1971, 70–71). Later he defines validity as that which is “persuasive *when subjected to an indefinite amount of criticism*” (Wellman 1971, 92 [italics original]).<sup>7</sup> It is this wider concept of validity that we attribute to good and corroborated conductive arguments.

However, Wellman does not seem to be speaking specifically about conduction here, but intends this concept of validity to be attributed to all good arguments, even those that are deductively valid. Because in the end it is an indefinite amount of criticism that constitutes the grounds of our attribution of validity, the rules of deduction do not seem to decide the issue of validity by themselves, and it becomes unclear what their function is. Perhaps it is on their basis that the arguer can make for his argument an initial claim to validity, or perhaps Wellman's definition should be seen as a functional definition that can be realized by deductive validity. The implicit claim to validity to be found in all arguments – the claim to be persuasive after criticism – in some cases at least depends on deduction. What Wellman needs to support his claim that conduction is a distinct type of argument is an argument whose implicit claim to validity cannot, when the argument is not deductively valid as given, be represented as the missing premise of a deductively valid argument, yet it does not seem that he has done this, and it will be shown that the functional role this definition of validity seems to require can always be occupied by the associated conditional of the argument. In other words, even if we concede “since this is green, it is extended” is seen to be valid without the help of the associated conditional “If this is green, then it is extended” it does not follow that the conditional does not represent and lay open to the process of criticism the implicit claim to validity; to claim it does falls back on the claim of antecedence that we have already shown to be insufficient. All that Wellman has done is offer a concept of validity that is not properly speaking an alternative to deductive and inductive validity but only a functional description thereof. It is not another type of validity. But for conduction to be distinct from and belong to the same typological level as deduction and induction, another type of validity is precisely what we need.

To the logical trick of treating all these arguments as enthymemes he comments: “The difficulty is that adding such premises often makes the arguments useless for the purposes of justification. ... [T]o assume that everything coloured is extended seems to beg the question. In other cases, ... the

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<sup>7</sup> When the conductive inference is described it will be seen that this validity corresponds with a kind of corroboration of our non-conclusive inference.

arguer may not be in a position to justify accepting that additional premise” (Wellman 1971, 71). Govier is impressed with this line of thought, arguing that such premises would be unknowable and impossible to formulate in advance. There is also the fact that it is simply absent from the phenomenology of the reasoning. Here she seems to approve of Hitchcock’s phenomenological test for whether a premise is missing. Hitchcock (1985, 94) says that “the most serious objection to regarding an enthymeme’s implicit assumption as a missing premiss is that we are unaware of having omitted a premiss when we advance an enthymeme.”<sup>8</sup> Since we acknowledge the validity of the argument even without the addition of or being aware of any missing premise, Govier concludes that the argument must have a different kind of validity and be a different kind of argument. This seems to be Wellman’s (1971, 32–33) thought too when he says: “In conduction the truth of the premises does not necessitate the conclusion” and earlier (Wellman 1971, 14) when he says: “[T]he way out would seem to be to allow a weaker logical relation between the premises and conclusion in ethical reasoning.” Here he talks of conductive arguments as characterizing a different kind of premise-conclusion relation and clearly means these to be distinct from deductive and inductive arguments.

In response two points should be made. The first is that there is a premise we can add that we can formulate in advance and presents no special problem of knowability, as everybody would agree – this premise is the associated conditional or *logical minimum*, i.e., a material conditional in which the conjunction of premises is the antecedent and the conclusion is the consequent. Now, of course it is true to say that the logical minimum only repeats what the argument said already and has no justificatory role to play, but this does not mean that it is not part of the structure of justification and does not play an inferential role in this structure. What the logician offers is a conceptual analysis of justification, an account of what needs to be the case if some piece of reasoning is to be good. The logical minimum is not meant to justify, it *is* justification, or at least a representation thereof; it expresses the *implicit claim to validity*. If the logical minimum is false

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<sup>8</sup> In (2011, 194) Hitchcock writes:

The difficulty with supposing that arguers routinely suppress a premiss that they conceive their argument as having is that we have no awareness of such a supposedly suppressed premiss, even when we are reasoning things out for ourselves (Hitchcock 1985). Readers can check this phenomenological fact directly by reflecting on inferences they make for themselves, immediately after making them. It will readily be discovered both that the inference is not formally valid and that there is no awareness of having omitted a premiss.

then the reasoning is bad and challenging the claim to validity amounts to challenging the truth of the logical minimum; there can be no instance where the logical minimum is false and the reasoning is good, and Wellman and Govier do not seem to suppose otherwise, for their argument hinges on the goodness of the argument when the missing premise is absent and not when it is false.

The second and more important point is that even if we concede that the validity of certain arguments can be known without reference to their formal features, it would not follow that we have a different kind of validity and a different kind of argument. Hitchcock's phenomenological test turns out to be a rather dubious pretext for deciding whether a premise is missing or not; passing it would just mean that, in some cases at least, validity can be established without following the rules but just by "thinking it through" to use Wellman's phrase. This would be a kind of *particularism* and would have no consequences with regard to the types of argument there actually are; particularism implies antecedence only, not failure, and we have already said and supposed Wellman to have conceded that this is not enough. Wellman's argumentation does not then really advance on his unconsciously particularist claims. All three philosophers seem to want to argue for failure from antecedence alone, and this is a *non sequitur*.

Particularism will be explained in the next section, but first Wellman's definition of conductive argument needs to be discussed. Comparing Wellman's original definition to the way conductive arguments tend to be presented in the modern literature shows two quite striking differences, one concerning what Wellman's definition does say and one concerning what it does not say. As for what it does not say, it does not say that in conductive arguments there are considerations pro and con that have to be weighed. Of course, the third pattern of conduction (Wellman 1971, 57) does have this feature, but Wellman is keen to point out that weighing pros and cons is not definitive of conduction for there are other forms of reasoning in which weighing takes place, including inductive reasoning where positive and negative instances may be weighed against each other (Wellman 1971, 58). Many of the arguments described as conductive in the modern literature – which seems nowadays to include almost any argument that contains pro and contra considerations – are not conductive according to Wellman's original definition. What, then, are they? It will be shown that they inductive.

At least some reasoning on the grounds of pro and contra considerations has the form of a statistical syllogism. Consider the following example from Zenker (2011, 78):

Peter was born in Sweden  
90% of Swedes are Protestants  
Peter's parents emigrated from China 15 years ago  
Therefore, Peter is a Protestant

Peter's being Swedish is a pro consideration for his being rich, whereas his having Chinese ancestry is a contra consideration. By Zenker's lights it is an inductive argument, where by inductive he means only that the conclusion does not follow with necessity from the premises.<sup>9</sup>

Where, then, do conductive arguments come in? Why can't all pro and contra arguments be given this kind of analysis? Zenker (2011, 79–80) says:

Unlike the inductive case, the pro and con premise groups *can*, but they need not be jointly consistent. Moreover, adding or retracting a relevant premise from either the pro or the con group *can*, but need not result in a difference with respect to the support conferred by the premises. ... The distinct support behaviour under premise-change can be explained by the independent relevance of the premises for the conclusion, and by an arguer not only retracting or expanding premises, but also updating the *importance* of premises. ... The odd connection between premise revision and support-strength appears to be the most marked difference between the conductive and the inductive structure.

What Zenker seems to have in mind is that Peter's having Chinese ancestry weakens the strength with which the pro consideration supports the conclusion; in probabilistic terms, the frequency ratio of Swedes with Chinese ancestry who are Protestant is lower than that of Swedes *simpliciter* who are Protestant. All contra considerations function by narrowing the reference class. Only when everything relevant has been considered and you are looking at the narrowest reference class can you say anything unconditionally about the probability of the conclusion; otherwise, all arguments of this type say only that the conclusion is made probable relative to the grounds of the argument.

What Zenker seems to be saying is that in a conductive argument, however, the contra consideration weakens the argument without affecting the strength of the pro consideration or being relevant to it (or at least it can do, some considerations occur in pairs where one member undercuts its partner). This is because the relevance of each premise to the conclusion is potentially independent of the relevance of all the others. This contrasts

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<sup>9</sup> Wellman himself seems to equivocate between calling these inductive and deductive (see note 6). By my lights this is a deductive argument, since although the conclusion does not follow with necessity from the premises, it follows necessarily from the premises by a determined probability and cannot follow by any other. Statistical syllogisms are deductive arguments.

with the case above where the relevance of having Chinese ancestry and of being Swedish are not independent.

The problem then is whether the considerations in the pro group are more important, more relevant, and outweigh those in the con group. This is expressed in an On-Balance Principle (OBP). Zenker's (2011, 80) example of a conductive argument is:

- (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-CC4).
- (C) It is OK to travel to the conference by aircraft (rather than by train).

What is the support given by (PR1-PR4) to (C)? It does not seem to be mere relevance. They are not sufficient conditions, so there does not seem to be deductive support. The indications are that each provides inductive support. Now, it was suggested above that it could not be inductive because (CC1-CC4) can weaken the support for (C) without weakening the support from (PR1-PR4) and this should not be possible in inductive arguments. However, while it is true of *extrapolations* that any contra consideration must function by narrowing the reference class, this is not shown to be true of inductive arguments as such, which it should be remembered is a wider class than that of extrapolations. In some sense, the fact that you might arrive at your destination without your baggage is a disconfirmation of the hypothesis (here a desired state of affairs) that you will arrive together with your baggage, while the fact that it is fast is a confirmation of the hypothesis that you will arrive as quickly as possible. Obviously these two considerations are completely independent; it is not the case that one is less likely to arrive quickly because the airport has incorrectly routed your baggage. The argument is inductive nonetheless, and it should be remembered that Wellman endorses weighing of considerations in inductive arguments.

Another reason that many examples given of conductive arguments given would not be conductive for Wellman is that they are not from the particular to the particular. Despite the fact that Wellman (1971, 52) himself describes the fact that conduction concerns the individual case as conduction's most striking feature it has largely been dropped from later discussions (Blair 2011, 2). According to Govier any set of premises, whether

particular or general, that are each of them positively relevant to the conclusion, whether particular or general, without establishing it conclusively or with some probability, form a conductive argument. She gives an example (Govier 1987, 69): “Blacks are equal to whites because they are as healthy as whites, they are biologically very similar to whites, they are as intelligent as whites, and they share basic needs with whites.” All the premises and conclusion here are general, making it deductive according to the distinction proposed, and the conclusion is not entailed by the premises. Yet surely we cannot simply say that this apparently good argument is bad because deductively invalid. By treating it as conductive, by treating each premise as adding some logical weight to the conclusion, Govier would say that we give the argument a fair hearing.

Note that if “equal” in the demonstrandum simply meant similar in health, in biology, in intelligence, and in needs, then this argument would be deductively valid. Obviously, Govier does not mean this kind of situation. Nor does she mean the kind of situation where although not jointly sufficient each premise is necessary, for necessary conditions are by definition true in the same models that the conclusion is true, so ruling out models where a necessary condition is false *ipso facto* makes it more likely that the conclusion is true. That the conclusion is not established conclusively is beside the point here. There is nothing non-demonstrative in this kind of reasoning or argument.

The situation that seems to be intended is where the predicate involved has conditions that overlap but few or none that are necessary. To give a hackneyed example, it is not a necessary condition of a game that one play against an opponent (think of solitaire) yet playing against an opponent can legitimately be considered a good reason for applying the predicate “game.” Wellman (1971, 54) says:

Wherever 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 a 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 of the 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. For example one might give the following arguments: Bees have a language because they can communicate information about the location of flowers to one another. Hunting is a game because it is fun and involves a competition between a hunter and his prey. ... In such examples factual conclusions about some individual case are drawn from information about that case.

Note that “bees have a language” and “bees communicate information about the location of flowers to one another” are general statements, yet it still makes sense to consider bees communicating information as the “particular instance” for which the applicability of the term “language” is being decided. Being particular does not mean that it must concern a particular bee, yet it should be noted that if this inference is made for a particular bee, it follows, because of its *a priori* nature, that it can be made for all bees. This means that we can consider the statements in a particularized form after all and then consider the general forms as universal generalizations of the particularized form, or in other words, as the deductive consequence of the conductive inference. This goes also for Govier’s example. Blacks being as healthy as whites, and the other considerations she brings forwards, can still be considered as a particular instance for which the applicability of the term “equal” in the sense intended is being decided, and it still makes sense to express the conductive inference in purely particular statements and consider its universal generalization as inheriting the goodness or badness of the conductive inference so expressed.

Here we have a clue about what “thinking it through” actually consists of, and perhaps of ‘conductive’ as characterizing a type of inference rather than a type of argument. Conductive inferences might be more widespread than he makes it appear here, since in a paper that seems little-discussed in the literature on conduction but which provides considerable insight on precisely what he takes a conductive inference to be, Wellman (1968, 438) says:

Since there is no sharp line between essential and nonessential characteristics, it is a mistake to look for some essence common to all instances of a term. Instead, a term is usually applied on the basis of many overlapping characteristics which form a family likeness. As a rule there is no such thing as the criterion for the use of a descriptive expression.

This implies that in justifying the use of an expression by giving its criteria one will normally have to give more than one criterion. Whether or not a word correctly applies will usually depend upon several characteristics which may be present or absent in varying degree. Upon occasion these various criteria may even conflict with one another. Which criteria are relevant to the use of a term on any particular occasion will depend primarily upon the circumstances under which it is to be used.

The criteria act as purely linguistic grounds for applying the predicate and ultimately involve an appeal to convention (Wellman 1968, 441):

The use of an expression can be justified by pointing to the presence of its criteria in the object to which it has been applied. In justifying one's use of an expression by pointing to its criteria one is appealing to a linguistic convention. Beyond this appeal no further justification is possible or necessary.

The *a priori* nature of the conductive inference noted by Wellman and Govier, then, seems to reside in its appeal to linguistic convention. A convention is prescriptive rather than descriptive; it is not a generalization from linguistic behaviour and hence giving a criterion “does not appeal to the fact that the criteria have been found empirically associated with the term in other cases.”

Conduction then depends on Wellman's Wittgensteinian conception of a criterion. It is not purely Wittgenstein's because Wellman disagrees with Wittgenstein over one interesting point, namely the application of a predicate on the basis of private sensations. Wittgenstein regards this as futile because you are no more able to tell whether you have applied the predicate correctly to your sensation as you are to the object in question. Wellman agrees with this but says that this is not the real issue. Accepting Wittgenstein's dictum that criteria must be observable, Wellman (1968, 445–46) claims that only private sensations are directly observable, and rather than justification coming to an end here, we can justify this claim by noting that subjective differences in our experiences and illusions are best explained by positing an intermediate private object. Wellman concedes that since the object is private there is no way of establishing the correctness of applying the predicate<sup>10</sup> to it; whereas were the object public, correctness could be corroborated by the fact that more than one person used the predicate in the same way of the same thing. Wellman responds that corroboration is only useful if the predication already has strong claims to be correct; comparison of one person's use of a term and another person's amounts to corroboration only if we already have reason to believe these uses to be the correct ones. Whether we have such reasons depends, irrespective of whether we posit private sensations, on memory for our applications of predicates to be consistent. This point is interesting because Wellman says that we know the validity of conductive arguments simply by “thinking them through” and it does not seem too much of a stretch to take this “thinking through” as a kind of introspection of whether some criteria fit some mental object.

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<sup>10</sup> Not exactly the same predicate; a mental object is not literally “red”. “Red” is predicated of the mind-external object on the basis of ascribing some red\* property to the mental object.

Where have we got to so far? We have defined inductive arguments as those whose premises are all particular and whose conclusion is general (but not, strictly speaking, a universal material conditional). We have defined deductive arguments as all the other possibilities. This is a version of the traditional typology and leaves no room for conductive arguments or arguments by analogy as distinct types of argument that are neither deductive nor inductive, with the result that their goodness must always be reducible to deductive validity when emended with missing premises. There is an option for considering conduction as a type of inference that does seem to take place in certain reasonings, although by no means all reasonings that include the weighing of pro and contra considerations, even when these considerations are independently relevant, for this independence can also occur with those inductive arguments that are not extrapolations.

## **2. Conduction as a type of meta-epistemological strategy**

What kind of thing is conduction as it has been described above? Is it genuinely a type of inference or does it belong more to psychology than to reasoning? This comes down to the question: is there a logic of conduction? Wellman does not absolutely deny the possibility of a logic of conduction but is sceptical of the prospects; it would certainly not be a logic in the usual sense because its validity would depend on the matter of the argument rather than the form, and every change in matter (or at least in the predicates) would require a new rule.

There are two kinds of rules that we would need for such a logic. The first kind is rules of relevance. These rules are sufficient for conductive arguments in the first and probably the second patterns, where there are respectively one or more than one criterion positively and independently relevant (and none that are negatively relevant) to applying the predicate. The complication is when criteria are satisfied that tell against applying a predicate without necessarily making it inapplicable, such as the lack of an opponent in the application of the predicate "game." This situation calls for a second kind of rule called rules of force. Although it may be possible to formulate rules of relevance<sup>11</sup> Wellman doubts whether it is possible to

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<sup>11</sup> For reasons that go far beyond the scope of this paper rules of relevance cannot be formulated; there can be no theory of relevance at all, or at least, we are better off treating relevance as an unanalysable primitive relation. This gives us even less reason to treat conduction as a type of reasoning.

formulate rules of force and it is, besides, useless to do so – one is better off simply ‘weighing’ the pros and cons in the original argument by “thinking it through” rather than by trying to apply a rule (Wellman 1971, 61–70).

Granted these points, let us return to the original question: is conduction a kind of reasoning at all? Wellman takes this question very seriously and provides a fairly lengthy response (Wellman 1971, 70–82) that is based around the fact already discussed that we can tell that some arguments are valid although they are not deductively valid and without making them deductively valid by adding missing premises. It has been counter-argued that being able to tell that some arguments are valid by non-deductive means is precisely what you would expect if you allow *particularism* and does not mean that the concept of validity we are applying in these judgments is not deductive validity.

Conduction, then, is an epiphenomenon of the meta-epistemological strategy of *particularism*.

To explain what is meant by “the meta-epistemological strategy of *particularism*” we need to look at the Problem of the Criterion. This is an old problem that was revived in Chisholm (1973). Chisholm (1973, 14) says:

[1] You cannot answer question A [‘what do we know?’] until you have answered question B [‘how are we to decide whether we know?’]. And [2] you cannot answer question B until you have answered question A. Therefore [3] you cannot answer either question. [3a] You cannot know what, if anything, you know, and [3b] there is no possible way for you to decide in any particular case.

In other words, unless you know some things antecedently there is no way of telling whether the rules correctly capture what we do and don’t know; there is no way of validating the rules. This does not mean that those rules do not apply to those cases but only that the truth in those cases can be established without appeal to or reference to the rules. Conversely, without rules there is no way of telling whether you do know what you think you know. Holding [1] and [2] together, therefore, leads to scepticism. Chisholm calls the alternatives *methodism* and *particularism*. The methodist devises rules and decides to live with the fact that there is no way of justifying or testing these rules further; by applying these rules he determines what we know, letting things fall how they may with regard to what we thought we knew, with the common result that we really know far less than we thought we did.

The particularist assumes that she does know some things (for the common-sense particularist this is more or less what she thinks she knows)

and tries to discover rules to systematize these particular judgments. This has the advantage endorsed by Chisholm of (potentially, at least) preserving the majority of our judgments. The important point for my purposes is this: the particularist may discover in her judgment rules of deductive or inductive logic or even rules of relevance and force that she did not actually use in reaching her judgment. Indeed, that she did not use such rules is precisely the point of her strategy and to be expected. It obviously does not follow that those rules do not apply or that we are attributing in our judgments a different concept of validity. Perhaps it might be possible that we do not know what type of validity we are attributing, but this is a different matter.

Now, we can create a collective noun for all of these particular judgments and call them conductive arguments, but this is not necessarily a different kind of argument in the sense of having a different kind of premise-conclusion relation, and arguing that it must be because we did not use the rules or entertain any missing premise or feel any premise to be missing is beside the point – if the particularist position is the right one this is exactly what we would expect. This means that we should beware of drawing conclusions about logical structure from phenomenological points about our decisions over validity; these are not evidence that our reasoning is not deductive, unless we take an old-fashioned view that logic is actually descriptive of our psychological processes rather than a normative reconstruction thereof. These phenomenological contra considerations become pro considerations with the change to a meta-epistemological perspective.

There are many places where Wellman and Govier seem to be endorsing particularism without apparently realising that this is what they are doing. Here is a list (references are to Wellman 1971):

- i. pg. 7 “[O]ur knowledge of validity, even in deduction, does not depend upon explicit definition.” Granted: but this does not imply that validity itself does not depend upon explicit definition.
- ii. pg. 9 “I doubt whether it can be held that when a speaker advances a valid ethical argument in non-deductive form he *always* has in mind additional premises that make the argument deductive. ... The fact that one can produce an additional premise that will transform the argument into deductive form does not prove that one needs to do so.” Granted: but what the speaker has in mind is not the issue. One does not need to add the premise in the sense that one can see the argument’s validity without such a premise, but this does not mean that the premise is not necessarily true and a part of what makes the argument valid.

- iii. pg. 66 “Such principles [rules of conduction] 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 appeal to clear cases, these rules of relevance might then be applied to arguments whose validity is in doubt.” This is a meta-epistemological strategy and directly presupposes that there are clear cases that can be seen to be valid (by being thought through) without appealing to rules of any kind, even those of conduction, for these are precisely what we are attempting to establish.
- iv. pg. 80 “Hence, *if* the only way of distinguishing between valid and invalid arguments were to appeal to criteria of validity, then it would follow that conductive arguments are not really reasoning. But there is a way of distinguishing between valid and invalid arguments – thinking through the arguments.” Thinking through the arguments emerges here as the means of establishing validity without appeal to rules, including rules of conduction. However, there is no reason to say that arguments whose validity is established in this way are necessarily conductive.
- v. pg. 132–33 “[J]ustification ... may be observed and described as a psychological struggle in which one person tries to force another to back down ... But it is more than a psychological struggle because at its core are certain critical claims to truth, validity, to be upsetting, to be reassuring, to be adequate. Therefore the actual outcome of any particular psychological struggle never settles once and for all the issues being fought over in the process of justification. It is this peculiar ambivalence of justification that enables what we actually do in discussion and thinking to serve as a test of critical ideals like truth, validity, and being justified.” Here we have the idea of the critical ideals themselves being tested by corroboration of cases.

Govier (1987, 73–74; 1980, 14) makes Descartes an ally to her cause. “I think; therefore, I am” does not, Descartes and Govier agree, require the universal premise “Everything that thinks exists.” This is true in one sense and false in another: it does not need an additional premise epistemically, but it does need it logically. One does not need to have formulated the proposition “Everything that thinks exists” and have an attitude towards it, but this does not necessarily mean that one can believe it to be false. Perhaps one could conceivably believe this to be false, but one could not believe the logical minimum “If I think, then I exist” to be false; this is the advantage of using the logical minimum.

What meta-epistemological strategy is Descartes adopting? DePaul (2011, 297) takes Descartes as a *methodist* – having decided on that which

is clearly and distinctly perceived as his criteria of truth, Descartes goes through what he thinks he knows and rejects anything that does not bear this mark. This does not seem fair: to take as true whatever is perceived clearly and distinctly is not the same as formulating the rule “Whatever is clearly and distinctly perceived is known” and then applying it. Such a rule is only descriptive of epistemic judgments already made, that is to say, what Wellman has called ‘clear cases’. Thus it seems fairer to take Descartes as a particularist.<sup>12</sup> He begins with a particular judgment “I think; therefore, I am” and proceeds therefrom. This seems to be Govier’s view also when transported into the meta-epistemological perspective for she quotes Descartes as saying that the means to discover truth is to start from particular notions and then form general conceptions and rules from these (Govier 1987, 74). This is particularism. Note, however, that Descartes is talking about *knowledge* of particular truths, not their truth itself. That knowledge of the validity of the inference from “I know” to “I exist” may not depend on any additional premise does not mean that the inference’s validity itself does not depend on any additional premise, and it is not clear that Descartes would dispute this or that he makes the mistake that Wellman and Govier do of confusing a meta-epistemological strategy with a non-deductive logical relation.

### **3. Conclusion**

It has not been established that there is such a thing as conductive arguments. The fact that one may decide that a certain argument is valid without appealing to a logic of deduction or induction is precisely what the particularist position predicts, and in the various passages where Wellman suggests that the logical rules themselves and the critical meanings they are meant to capture can be tested firstly against particular, non-formal judgments and secondly by a never-ending process of criticism, he seems

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<sup>12</sup> Arguably, Descartes is not a common-sense particularist because initially he only takes the cogito itself as the extent of his knowledge. However, Descartes knows beforehand what truths he wants to reinstate as known even while accepting that their truth is initially subject to doubt. The inconclusiveness of the conductive inference does not prevent whatever is established by it from being a genuine item of knowledge. The cogito, it might be said, is the only conclusively established and therefore infallible truth, and it is from this that he ‘proves’ that God could not deceive us over what we clearly and distinctly perceive and justifies a rule to that effect describing our judgments. By this means Descartes intends to remove the doubt concerning common-sense truths, but we were acting in accordance with this rule all along.

to endorse the particularist position without realising it. The particularist position does not have the consequence that the arguments Wellman calls conductive are not deductive; the term 'conductive' is not shown to characterise arguments at all but only a kind of reasoning to the extent that thinking an argument through qualifies as reasoning.

'Conductive' arguments are particular to particular and hence deductive arguments with the associated conditional added, the acceptability of which conditional depends on the strength of the conductive inference. Rejection of enthymematic reconstruction on the basis of phenomenological issues such as how one comes to know conclusions or establish principles dissolve if you concede particularism; adding the *logical minimum* to the argument (which does not mean that it plays a role in the conductive inference) is perfectly reasonable because in the end what is needed is a conceptual analysis of the goodness of an argument or piece of reasoning and it is no objection to being part of such an analysis that there may be some kind of epistemic redundancy.<sup>13</sup> As far as the typology of arguments goes conduction is reducible to deduction.

As for the typology of inferences, what the conductive inference seems to consist of (to be found in Wellman's discussion of Wittgenstein's conception of a criterion) is application to some private mental object of some predicate few or none of whose criteria of application are necessary. This does not make the inference irremediably subjective; the weights that result from weighing pros and cons are intersubjective in that they ultimately reflect each speaker's conformity to a linguistic convention and are subject to an indefinite amount of criticism. Conduction is best thought of as a set of cases whose conclusions can be seen to follow from their premises without reference to rules and can (despite being non-conclusive) be used as basic cases of knowledge because their twofold intersubjectivity give them the authority and means to validate the rules we might discover in them. It remains to be seen whether rules of relevance and force can be discovered in them, but Wellman himself is sceptical, and if not then there is no logic of conduction and conductive 'inferences' belong more to psychology than to reasoning.

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<sup>13</sup> Furthermore, it seems to me that it is part of the concept of p's being a reason for q that, in this particular instance, "if p then q" is true. This does not mean that the truth of p guarantees the truth of q – we do not seek to generalize this conditional so as to make it reliable, nor do we say that it is certain. We say only that whenever one thing is taken as a reason for another, even an inconclusive reason, commitment to the logical minimum connecting these two things is implied. This is a conceptual/logical matter and not an epistemic matter; how useful the logical minimum may or may not be epistemically is beside the point.

S U M M A R Y

In this paper Wellman's classification of arguments into deductive, inductive, and conductive and his way of defining these terms is shown to be both internally inconsistent and externally under-motivated; he does not succeed in showing that there are no types of argument that are both deductive and inductive or that there are types of argument that are neither deductive nor inductive, though we may concede that our classifying an argument as valid does not always require appeal or reference to the rules of deduction or induction. This is an epistemological or even meta-epistemological point about how we make certain classifications and implies nothing about the classification itself. Taking this meta-epistemological perspective also affects an entire battery of arguments aimed against the reconstruction of arguments as deductive enthymemes; seeing that an argument is valid without the help of a missing premise does not mean that such a premise is unnecessary or that the argument is non-deductive.

