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The Pragmatics of Deductive Arguments

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Title: The Pragmatics of Deductive Arguments
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1. Do deductive arguments exist?

Supposing that arguments are put forward in defense of a standpoint, and that the context is one of critical discussion or persuasion dialogue, is there a type of argument that one would appropriately call "deductive"? I'm thinking foremost of single arguments, i.e. arguments that consist of one indivisible attempt to convince the other. Generally, in critical discussion single arguments are put forward in a single move. If it is appropriate to call the argument "deductive," the same holds of the move that puts it forward. So one could rephrase the question as follows: are there moves in critical discussion that one would appropriately call "deductive" moves?

Among argumentation theorists widely different opinions about deductive arguments obtain. The issue of deductivism is the contention that all arguments are deductive or at least reconstructible as deductive ones. Pluralists see deductive arguments as constituting one species of arguing among many. Other theorists do not operate with the concept at all (Gerritsen 2001, Section 3.3). Robert Ennis proposes that we abandon the attempts to classify arguments into types such as deductive or inductive. Rather one should evaluate arguments successively by different *sets of criteria,* such as deductive and inductive criteria (2001, 134). In his paper, Ennis convincingly brings out the great difficulties by which any attempt to define a usable concept of "deductive argument" is confronted. Consequently, I do not want to assume that any definition of "deductive" as an inherent property of arguments can be upheld, or that arguments can be classified as deductive or inductive per se, without taking their function in the dialectical context into account. Yet, it cannot be denied that with some arguments the evaluators - either the discussants themselves or external evaluators - will sooner be inclined to apply one set of criteria rather than another. Context as well as the way arguments are formulated may make the evaluator heading for a specific set of criteria (though he may come to reconsider). By "deductive arguments" I shall denote (single) arguments that invite an evaluation in terms of deductive criteria, even though they may not exclude the use of other criteria. By "deductive moves" in a critical discussion I shall denote moves that put forward such arguments.

The simplest examples of deductive arguments are those which are indeed deductively valid, and in which the validity is obvious to all concerned. For instance:

(1) *No beer*
Olga: Is there any beer in the fridge?
Paul: The fridge is empty, so there is no bottle of beer in there.

Many will immediately agree that it would be impossible for the fridge to be empty, whenever a bottle of beer would still be left in it. Validity is not the problem here. Yet one may wonder whether an argument like this one can ever be used in a serious attempt to convince one's opponent. If Olga is not yet convinced that there is beer in the fridge, why would she accept the premise that the fridge is empty? So how can Paul take that for granted in his argument?

The answer must be that argumentation is a dynamic process. Initially, Olga deems it

possible that there is some beer left in the fridge. Had Paul denied so without any argument, she might have been inclined to take the trouble of looking for herself. But with the argument Paul stands more chance of convincing Olga, for if Paul claims that the fridge is totally empty, it is less likely that he overlooked some bottle hidden behind a chunk of celeriac. If, basically, Olga trusts Paul's testimony, but if she still is wary of Paul's overlooking some bottles, Paul's premise is *prima facie* more acceptable to her than Paul's conclusion. Therefore, Paul can make use of an deductive argument in a serious attempt to convince Olga. The same kind of motivation recurs in the next example, but this time it is the opponent herself who directs the proponent towards the use of a deductive argument:

(2) *Driving test*

Percival:	I'm convinced I'm going to pass my driving test tomorrow (S2).
Olga:	Why?
Percival:	My instructor told me that I am all ready to take the test (A1).
Olga:	When did he say so?
Percival:	This afternoon, when he came to fetch Ottoline for her lesson (A2).

In this dialogue Percival defends his standpoint (S2) by adducing (A1) as a reason. Olga, as a critical evaluator, will not be inclined to judge this argument by deductive criteria, rather she will pass on to criteria for arguments from authority. But in the example she takes another route and advances tenability criticism with respect to the adduced reason (A1). By the way she formulates her tenability criticism ("When...") she invites a deductive argument. For, whatever direct answer Percival provides, the answer will always mention some time at which his driving instructor stated that he was all ready to take the test. Consequently the answer will always logically imply (A1). Indeed, the argument that supports (A1) by (A2) is a deductive argument (in the sense of inviting deductive criteria). Olga asked for it herself, and the validity of the argument will be obvious to her. For similar reasons as in example *No beer* the reason given in the argument (A2) will probably be more acceptable for Olga than the standpoint (A1) by itself.

The step to be taken by deduction may be bigger than in these simple examples, and the proponent may still succeed to get the message across that his attempt at convincing the opponent rests on a deductive relation. If so, the opponent as an evaluator of the argument will first apply deductive criteria. Yet she may deem the distance between premises and conclusion too large to immediately grant the validity of the reasoning. Consequently, the opponent will ask further critical questions to make the proponent supplement his argument by intermediate steps. Thus the structure of the single argument is replaced by that of a serial (subordinatively compound) argument. This is what happens in the discussion below about the behavior that fans of two soccer clubs, *Forward* and *Upward* are likely to display after the next match:

(3) *Hooligans*

Paul:	The place will be torn apart (S3).
Olga:	How come?
Paul:	For sure you know that if *Forward* doesn't win, *Forward's* fans will by their grief be driven to tear the place apart? (B1)
Olga:	Of course.
Paul:	And you know as well that if *Forward* doesn't lose, *Upward's* fans will by their grievance be driven to tear the place apart? (B2)
Olga:	Certainly.
Paul:	Well, then the place is sure to be torn apart.
Olga:	But what if it ends in a draw?
Paul:	Then they are jointly going to tear the place apart! (B3)

Paul's conclusion (S3) is a logical consequence of (B1) and (B2), the two premises granted by Olga. But for Olga this is not immediately obvious. She believes there still might be a gap in the deduction and poses a critical question: what if it ends in a draw? Paul then supplements his argument by deducing from his two premises that if it ends in a draw both groups of fans will act jointly in tearing the place apart (B3). If even then Olga would not be satisfied, Paul may spell out some more intermediate steps: if *Forward* wins, *Forwards* does not lose, hence it follows from (B2) that *Upward's* fans will tear the place apart; if *Upward* wins, then *Forward* does not win, hence it follows by (B1) that *Forward's* fans will tear the place apart.

The examples given thus far may suffice to show that there are deductive arguments and that they can be successful. We finish this section by an example in which the initial proponent fails to carry his point.

(4) *It all ends up equal*

Employer: You are not earning less than you did before.
Employee: I guess I am, though.
Employer: It's true that I did at first reduce your pay by 20 percent, but after that I raised it again by 20 percent. So it all ends up equal.
Employee: Now, wait a moment. That won't wash. A 20 percent cut, that leaves 80 percent, and then add 20 percent of those 80 percent, that makes ...hem ... 16 percent of my former wage. Add that. That makes no more than 96 percent of what I used to get!

The employer's argument clearly appeals to deductive criteria (calculation). In the present case no other criteria suggest themselves. Consequently, one may reject the employer's argument after it has been shown to be a deductive failure.

2. Two levels of evaluation?

The pragma-dialectic code of conduct for reasonable discussants (Van Eemeren and Grootendorst 1987, 1992, 2000) contains three rules pertaining to ways for testing a proposed argument's cogency (force of justification or refutation). First, there is the *Relevance Rule* (Rule 4) according to which a standpoint can be defended only by advancing argumentation relating to that standpoint (Van Eemeren and Grootendorst 1992, 132). This rule excludes nonargumentative means of persuasion (rhetorical tricks, manipulation of emotions) as well as completely irrelevant arguments. There are certainly cases of deductive arguments (in the sense that the proponent suggests deductive criteria) that must be rejected on account of this rule. In the following episode from a comic book, the opponent "forgets" to bring this rule into play, but external evaluators will not fail to show up the irrelevance:

(5) *Theory of relativity*

Kemal: To whom belongs that sword you got there?
Lambik: The sword belongs to Stan! I cannot give it to you!
Kemal: Lambik, are you familiar with the theory of relativity?
Lambik: Of course! Everything is relative!
Kemal: So think this through! Either the sword belongs to Stan or it belongs to me!
Lambik: Exactly!
Kemal: Stan claims the sword is his, but you know this is relative. So to whom does it belong?

Lambik: You are right, Kemal! It cannot but be yours! Here, take it and be gone! Your wine made me drowsy!

Kemal (*walks out with the sword*): Regular guy, this Lambik. Intelligent. Quick on the uptake!

(Adapted from Willy Vandersteen 1982, quoted in Van Eemeren, Grootendorst, and Kruiger 1984, 131).

For the remainder of this paper, I want to focus on somewhat more serious arguments, which cannot immediately be rejected on account of the Relevance Rule. Two other pragma-dialectic rules pertain to further steps in the assessment of an argument's cogency; these are the *Argument Scheme Rule* (Rule 7) and the *Validity Rule* (Rule 8).

The Argument (or Argumentation) Scheme Rule is stated as follows: *'A party may not regard a standpoint as conclusively defended if the defense does not take place by means of an appropriate argumentation scheme that is correctly applied'* (Van Eemeren and Grootendorst 1992, 159). For an assessment of the cogency of an argument, this means that one has to identify the argument scheme that was used in the argument and to check whether this scheme can be used in the given context (did the discussants in the opening stage agree that it could be used?). Further it must be checked which critical questions should be posed relative to the application of the scheme under scrutiny, and whether satisfactory answers to these questions obtain. (In an explicit critical discussion the opponent carries this through by actually asking these questions.)

The Validity Rule is formulated as follows: *'In his argumentation a party may only use arguments that are logically valid or capable of being validated by making explicit one or more unexpressed premises'* (Van Eemeren and Grootendorst 1992, 169). The evaluator should, therefore, also apply deductive criteria to check the validity of the reasoning put forward by the proponent. Doing so she should take into account any unexpressed premises that can be correctly reconstructed from the proponent's statements and the given context.

Since both rules are part of the code of conduct, evaluators (whether they are themselves participating in the critical discussion or rather evaluating the discussion from an external, theoretical perspective) should assess the cogency of each argument at two levels: a logical level (Rule 8) and a pragmatic level (Rule 7). A first question that arises, given this double task, is where the evaluator should start. Often there are indications, in the formulation of the argument itself or in the context, pointing to a specific argument scheme or, on the contrary, stressing the logical validity. For instance, in example *Driving test* one may recognize (A1) as presenting an argument from authority. The evaluator will be directed to Rule 7. It is rather doubtful whether it will then be useful, later on, to invoke Rule 8, supposing that the argument passed the test for cogency provided by the criteria for arguments from authority (under Rule 7). Do we really have to check every argument to see whether, after reconstruction, it presents us with a case of deductive validity? Roughly, this is to ask whether a deductivist *method* is always useful. It is a question that arises with arguments that seem *prima facie* not to suggest deductive criteria (Govier 1987; Groarke 1992, 1995). This paper, however, deals with arguments that do carry such a suggestion.

With deductive arguments one would expect evaluation to proceed the other way round. Such arguments as the one supporting (A1) by (A2) in example *Driving test* do focus the evaluators attention on a deductive link. She will, therefore start with Rule 8. If the ensuing investigation at the logical level results in establishing the validity of the argument, it will be rather doubtful whether there is any need to look for an argument scheme. In the examples of valid deductive arguments given above this seems wholly superfluous. That a positive result when applying deductive criteria settles the matter is also Ennis' opinion:

If the argument satisfies soundness standards, the job is done. We accept the argument

> and the conclusion, remembering of course that this acceptance is based on the assumption that the reasons are true or acceptable (Ennis 2001, 127).

If the result of applying deductive criteria is negative, we must, according to Ennis, go on to evaluate the argument by other sets of criteria. In terms of pragma-dialectical rules this means that Rule 7 will be taken up only after Rule 8 and that a positive result on either of the two levels of evaluation suffices to designate the argument as cogent. This seems to conflict with current pragma-dialectical views (Van Eemeren and Grootendorst 1987, 1992, 2000), according to which each argument needs to be checked on both levels, if necessary after the application of an *intersubjective explicitization procedure* to bring the unexpressed premises to light (Van Eemeren and Grootendorst 2000, 151-154; cf. 1984, 168-169 for the concept of an intersubjective explicitization procedure). Mention is even made of a fallacy of presenting logical validity as a sufficient condition for sound argumentation, instead of presenting it as a necessary condition. The proponent is supposed to commit this fallacy whenever he declares, exclusively on the basis of a positive result with Rule 8, that the cogency of his argument has been sufficiently defended (Van Eemeren and Grootendorst 2000, 175). But below we shall see that in the most recent version of the pragma-dialectical discussion procedure this 'fallacy' is gone.

The view that single arguments exhibit two levels: a logical level of argument forms and a pragmatic level of argument schemes has, in another context, been put forward by Antoine Braet (1997, 106-109; 1999, 111-115; 2002, 190-193), who used this distinction in his analysis of the enthymeme as it appears in Aristotle's *Rhetoric.* At the logical level we meet with logical principles or argument forms, at the pragmatic level with topical principles (when considering enthymemes), which are very close to argument schemes (when considering single arguments) as they are used in contemporary theory of argumentation. The functions of these two kinds of principles are quite distinct. Argument forms take care of validity, whereas topical principles (argument schemes) take care of the acceptability of the unexpressed premise and, consequently, of the acceptability of the conclusion, provided that the explicit premise is also acceptable. This is the guarantee function. Besides, topical principles (argument schemes) embody also a search or suggestion function: they help to find suitable arguments for a standpoint. According to Braet, formal (logical) principles cannot function in these two ways. "Formal principles cannot fulfil this double function. *Modus ponens,* for example, can neither suggest to a speaker a relevant argumentation nor guarantee the substantial acceptability of the conclusion" (1999, 113).

I do not want to detract from the significance of this comparison between enthymemes and single arguments. Yet, the question remains whether, in the case of single arguments, one must always take two levels into account. The cleft between logical and topical principles may not be so deep either. Indeed, the function of logical principles: to take care of logical validity can very well be said to constitute a way to guarantee the acceptability of the conclusion, which implies that logical principles, too, embody a guarantee function. Also, the suggestion function is anything but absent from logical principles, as anyone who has constructed proofs in systems of natural deduction knows. When trying to find a proof, one inspects the logical form of one's conclusion for a suggestion as to what rule of derivation to use, and through this rule of derivation one obtains suggestions for premises. Or the other way round: one focuses on available premises to see which rules of derivation apply to them. In view of these functions, logical principles can very well be subsumed under the topical principles as special cases. Of course, there may be different theoretical reasons to uphold the idea of two structural levels, one of logical argument forms and one of pragmatic or topical argument schemes. In the context of a procedure for the critical evaluation of arguments, however, it would seem a bit pointless to insist on this distinction for all cases, and thus to prescribe a double testing of each argument.

3. Unexpressed premises

Recently, some changes were introduced into the pragma-dialectical discussion procedure (Van Eemeren and Grootendorst 2003). These changes pertain not only to the well-known list of ten rules for critical discussion (Van Eemeren and Grootendorst 1987, 1992), but also to the underlying model, which comprises seventeen rules (Van Eemeren and Grootendorst 1982, 1984) or fifteen rules (Van Eemeren and Grootendorst 2000) in terms of speech acts and procedures. Among the rules concerned are Rule 7 and Rule 8, quoted above, which belong to the code of conduct (i.e., the system of ten rules). In the first place, it should be mentioned that the order of these two rules is now reversed. Former Rule 8 of the code of conduct (the Validity Rule) now reappears as Rule 7 in the following formulation: *'Reasoning that in an argumentation is presented in an explicit and complete way may not be invalid in a logical sense* (2003, Ch. 8). Unaltered former Rule 7 (the Argument Scheme Rule) has been renumbered as Rule 8.

As a consequence, it is no longer the case that each argument needs to be tested at two levels, for the Validity Rule will only apply to those arguments that are expressed in a fully explicit way. If the argument is not fully explicit, one should reconstruct the unexpressed parts, but unlike what used to be the case in earlier versions, this reconstruction need not give us a deductively valid argument. It should also become clear which argument scheme was used (2003, Ch. 6), so that the argument can be tested by the Argument Scheme Rule. On the face of things this last rule is still to be applied to all arguments, including deductive ones, but the more precise rules of the underlying system (2003, Ch. 6.) imply that in the case of a fully explicit deductive argument the Argument Scheme Rule can be skipped. In that case the Validity Rule is decisive. So ultimately each argument is to be evaluated at just one level: if the argument is fully explicit this must be the logical level, otherwise it must be the pragmatic level. Consequently, there is nothing wrong with Ennis' proposal to start with an evaluation at the logical level, that is to say by a set of deductive criteria. If that leads to a positive result, the opponent should give up criticism directed at the cogency of the argument. The alleged fallacy, mentioned above, of presenting logical validity as a sufficient condition for sound argumentation, instead of presenting it as a necessary condition, is scratched from the book of fallacies.

All the same, the new pragma-dialectical discussion procedure still excludes that a not fully explicit argument is evaluated exclusively by deductive criteria. But the occurrence of unexpressed premises in a deductive argument is quite an ordinary phenomenon, as the next example may show. The context of this example is the following: Agneta has a crush on Tony. She wrote a love note, but until now she did not dare to give it Tony. She is keeping it with her. This situation she just explained to her friend Louise. The conversation continues as follows:

(6) *Billet-doux*

Agneta:	It had to remain secret. And at first I really was the only one who knew about it (C1). Tony had no idea (C2).
Louise:	Yeah.
Agneta:	But later I told it to Doris, to no one else (C3).
Louise:	Gee!
Agneta:	And then it appeared Tony knew about it, too (C4).
Louise:	Oops!
Agneta:	So Doris passed it on (S6).

Agneta's standpoint is that Doris passed 'it' on (S6). Louise accepts the explicit reasons (C1) through (C4), which Agneta puts forward to support her standpoint. Louise can now use deductive criteria to see that the argument is cogent, and that she should also accept the standpoint. But to see this she must reconstruct some unexpressed premises (or ask Agneta to

provide intermediate steps, see example *Hooligans*). First of all she wonders: how can it be that Tony knows about 'it'? Louise investigates this using the following premise that is part of the common starting points:

[C5] Anyone who knows about 'it', knows about it from someone who knew about it before, except for those who knew about it initially.

So, because of (C2) and (C4) Tony knows about 'it' from someone, say Q1, who knew about it before and Q1 knows it from Q2, who knew about it even earlier, etc. When Louise is constructing this sequence, she knows she cannot introduce new Q's indefinitely, for the argument is about humans in a certain situation and not about a collection like that of the natural numbers. If she wants to do so she may introduce an extra premise to express this, but she may also consider this as part of the context. Further, Louise cannot reuse any Q's she has used before, since, as the second unexpressed premise states:

[C6] No one can know about 'it' (directly or indirectly) from oneself.

In Louise's sequence each Q, therefore, has to be a new individual, so that she must at last reach an individual, Qm, that is final in the sequence. Qm does not know 'it' from someone else, so Qm knew it initially (by [C5]). It follows by (C1) that Qm = Agneta. Since Agneta told 'it' only to Doris (C3), it must be the case that Qm-1 = Doris. To deduce from this that Doris passed 'it' on (to Qm-2) Louise needs one further unexpressed premise:

[C7] Tony ≠ Doris.

Of course one can imagine some context in which it would be a serious option that someone saw Agneta's note, so that the unproblematic acceptance of [C5] would be blocked. In that case, Louise would have to evaluate Agneta's argument by a set of criteria for abduction (argument to the best explanation) instead of one for deduction. That such a situation could occur as well, does not detract from the importance of an evaluation by deductive criteria in a context where no one deems such options to represent real possibilities. Neither does it matter that the argument is not fully explicit.

4. A philosophical example

Deductive argumentation is an important means of persuasion. The context of its use is, as we saw, not limited to cases where the argument is fully explicit. Whether evaluators take an argument at first or even exclusively to present a piece of deductive reasoning depends on context. If one deals with a calculation or a mathematical subject, one would not expect any other kind of argument (see example *It all ends up equal*). The next example is intended to show that deductive arguing matters a lot in philosophical discussions and that, once an argument has been accepted as deductively valid, there is in such a context as little need to look for argument schemes as in the earlier examples. It will further become apparent that also in a philosophical context one can have deductive arguments with unexpressed premises.

The example is taken from the final phase of Plato's *Protagoras.* According to Protagoras people that are altogether ignorant may nevertheless be very courageous. Socrates wants to refute Protagoras by making him admit that this is impossible. Socrates is the questioner, Protagoras the answerer. I have added some formalizations in parentheses. Most abbreviations are obvious, but **f** stands for 'the factor that makes a man a coward.'

(7) *Brainless but brave*

'Well, now, do you call what makes a man a coward (**f**), cowardice (**cw**) or courage (**cr**)?'
'I call it cowardice,' he said (**f = cw**).
'And didn't it turn out that they are cowards as a result of their error about what is to be feared (**e**)?'
'Certainly,' he said (**f = e**).
'So it's in consequence of that error that they are cowards?'
He agreed (**f = e**).
'And you agree that what makes them cowards is cowardice?'
He assented (**f = cw**).
'So cowardice proves to be error about what is to be feared and what isn't (**e**)?'
He nodded (**cw = e**).
'But now,' I said, 'the opposite of cowardice is courage.'
'Yes' (**Opposite(cr,cw)**).
'Now wisdom about what is to be feared and what isn't (**w**) is the opposite of error about that (**e**).'
At that he nodded once again (**Opposite(w,e)**).
'And error about that is cowardice?'
With great reluctance he nodded at that (**e = cw**).
'So wisdom about what is to be feared and what isn't is courage (**w = cr**), since it is the opposite of error about that (**Opposite(w,e)**)?'
At this he wasn't even willing to nod agreement, but remained silent. And I said, 'What's this, Protagoras? Won't you even answer yes or no?'
'Carry on yourself,' he said (**w = cr**).
'I've only one more question to ask you,' I said. 'Do you still think, as you did at the beginning, that some men are altogether ignorant (**I**), but very courageous (**C**)?'
'I see that you insist, Socrates,' he said, 'that I must answer. So I'll oblige you; I declare that from what we have agreed it seems to me impossible' (**No I is a C**).
(Plato 1991, 55-56, *Protagoras,* 360c-e. Translation by C. C. W. Taylor. Taylor's comments on the passage quoted can be found in his notes on pp. 211-212.)

In this passage, Socrates makes three deductive moves that are all accepted by a Protagoras gnashing his teeth. The first move is the step from **f = cw** and **f = e** to the conclusion **cw = e** (or **e = cw**). Nowadays this would be counted as a formally valid step based upon Leibniz's Law of the indistinguishability of identicals, or more specifically upon the laws of transitivity and symmetry of identity. From a theoretical point of view departing from logical insights at the time of the dialogue, it may be more appropriate to designate this step as based upon the meaning of identity statements. That is to say, it would be a materially valid step, rather than one that is formally valid. The same holds for the second deductive move that brings us from three premises: **cw = e**, **Opposite(cr,cw)**, and **Opposite(w,e)** to the conclusion **w = cr**. We would be inclined to supplement this step by an unexpressed premise:

- No object has more than one opposite.

But for the discussants and their audience this is likely to have been part of the meaning of 'opposite,' and therefore not a proper unexpressed premise. Consequently, for them the second step was materially valid and did not contain unexpressed premises either.

In his third and last deductive move, Socrates avails himself of **w = cr** to reach the conclusion that the class of the altogether ignorant and the class of the very courageous are

disjoint (**No I is a C**). We do not know exactly which were the common starting points of the discussants concerning the relation between an abstract singular term, such as 'courage' and the associated class of individuals having the corresponding property (the courageous). But it wouldn't take things too far to suppose the following two statements belonged to these common starting points:

- One who is altogether ignorant (**I**) does not dispose of wisdom about what is to be feared and what isn't (**w**).

- One who is courageous (**C**) disposes of courage (**cr**).

By adding these two starting points as unexpressed premises to the explicit premise **w = cr** one obtains a deductively valid argument for the standpoint that Socrates defends in this fragment of dialogue.

5. Pragmatics

This paper's conclusion should be that there is a class of arguments that make the evaluator focus on deductive criteria, leaving the theory of argument schemes, until further notice, out of the picture. Among these arguments there are many cases that call for an explicitization of unexpressed premises.

If an argument has been shown to be based on deductively valid reasoning after evaluation by deductive criteria about which there is agreement in the company to which the discussants belong, it should just be designated as cogent. If the result is negative one may see whether other sets of criteria would be suitable to evaluate the argument's cogency (cf. Ennis 2001). But sometimes this would be pointless (example *It all ends up equal*). Different sets of criteria are supplied by the various argument schemes and their associated critical questions. New rounds of evaluation with different sets of criteria will also lead to an explicitization of other unexpressed premises.

That deductive moves stand aloof from the pragmatics of argument schemes does not imply that pragmatic considerations do not pertain to that type of move. Questions remain about the best ways to act for participants in a critical discussion that are confronted by deductive moves, or that want to defend their own deductive moves against criticism. In other words: deductive moves have a pragmatics of their own. I shall conclude this paper by a sketch of a profile of dialogue (Krabbe 2002) that may serve as a starter for a pragmatics of deductive moves. What options are available for an opponent that is confronted with a deductive argument?

First, she may claim that the proponent committed a fallacy. If this is about a matter of cogency, the fallacy could be *ignoratio elenchi* or *non sequitur*. In the first case, the opponent claims that the reasons adduced by the proponent are altogether irrelevant (as in example *Theory of relativity* above) and that the proponent is to be blamed for this irrelevance (Krabbe 1992). In the second case she claims that, though the reasons may belong to the area of discourse to which the conclusion belongs, the reasoning is invalid and that the proponent is to be blamed for this invalidity. To prove the invalidity, the opponent may use the methods of counterexample, of logical analogy, and of logical analysis (Krabbe 1995, 1996).

Second, the opponent may react actively and critically to the proposed argument, for instance she may suggest different ways to interpret various parts of the argument and pinpoint quasi-logical aspects. Such matters can be discussed in dialogue and without charging one's adversary with a fallacy (Lakatos 1976; Krabbe 1999).

Third, she may ask the proponent to provide intermediate steps or she may just bluntly

express doubt about the alleged cogency of the argument. If the cogency is based on a simple logical rule that belongs to the common background, the proponent may thereupon point out this rule. He may also proceed to spell out some intermediate steps in the reasoning. Finally, he may challenge the opponent to maintain her doubt in a strictly regulated logical discussion (a so-called *Rigorous Persuasion Dialogue,* Walton and Krabbe 1995).

Fourth, one shouldn't forget that the opponent may also doubt or criticize the tenability of the premises.

Finally, the opponent may just accept argument and conclusion, with or without gnashing her teeth.

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