What is wrong with deductivism?

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I indirectly show that evaluative deductivism is wrong by accepting that if it were true that all good argumentation is deductive, then we should take all inferences to be deductive. Then, I explain that deductivism involves a set of wrong assumptions and that its goals are better achieved by a pragmatic-linguistic account of argumentation like LNMA

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1. INTRODUCTION

In "Deductivism as an Interpretative Strategy: A Reply to Groarke's Recent Defense of Reconstructive Deductivism", David Godden (2005) distinguished two notions of deductivism: as an *interpretative thesis*, deductivism is the view that all natural language argumentation must be interpreted as being deductive; in turn, as an *evaluative thesis*, deductivism is the view that for a conclusion to be justified, it has to follow of necessity from the premises —or in other words, that for a piece of argumentation to be good, it has to be deductive. In that paper, Godden argued that evaluative deductivism is wrong and that, for this reason, interpretative deductivism must be grounded on something other than the claim that deduction is the only adequate standard of argumentation goodness.

Despite Godden's remarkable observations in that paper, evaluative deductivism has proven to be difficult to refute straightforwardly, for it involves not only a basic intuition about what good argumentation is, that is, an intuition that cannot be checked against independent or more basic criteria, but also a simple strategy for rendering deductive any piece of argumentation —namely, to assume that it involves an implicit conditional premise having as its antecedent the conjunction of the set of premises of the original

argumentation and, as the consequent, its conclusion (which, in turn, may be qualified as required with a 'necessarily', 'probably', etc.).

Thus, my first goal in this paper is to *indirectly show* that evaluative deductivism is wrong. In order to do this, in sections 2 and 3, I build the following *modus tollens*: as Godden has argued, "the correctness of deductivism as an evaluative thesis can be invoked as a reason for its acceptability as an interpretative strategy. Clearly, if [D1] were true —that is, if the only acceptable standard of evidence was that embodied in the rules of deduction— then [D2] would follow as a consequence." (Godden, 2005: 5) Thus, by showing that interpretative deductivism is implausible, I indirectly demonstrate that evaluative deductivism is wrong. My argument here will be based on a distinction between reasoning, argumentation, inference and argument that helps to clear up some misunderstandings about deductivism —especially, the view that deductiveness is a sufficient condition for argumentation goodness and the view that deductiveness and validity are synonyms.

My second goal in this paper is to *explain* why evaluative deductivism, so understood, is wrong. Authors endorsing evaluative deductivism presume that the highest standard of inference is to require the conclusion not to be wrong if the premises are right. In section 4, I argue that the normative model of inference that I defend in this paper accommodates this standard in a certain way without implying that deductive inferences are the only inferences that can be taken to be good. As I will point out, this alternative version of the standard of inference springs from the very notion of inference: what makes an inference good is constitutive of what an inference is, not a matter of accomplishing standards that, according to some basic intuition, seem sound.

2. THE RELATIONSHIP BETWEEN VALUATIVE DEDUCTIVISM AND INTERPRETATIVE DEDUCTIVISM

As Godden pointed out:

> D: if it is true that for a conclusion to be justified it has to follow of necessity from the premises (evaluative deductivism), then it is plausible that natural language argumentation must be interpreted as being deductive (interpretative deductivism).

D is the way in which this alleged standard of inference would take a toll on our methods to appraise natural language argumentation. Now, in order to build our *modus tollens* from D, we have to show that interpretative deductivism is implausible. To this end, we might try to question the very idea of an obligation to interpret natural language

argumentation one way or another, for on which grounds could we be obliged to such a thing? Since normative claims are so tricky, this might look like a promising strategy. However, merely questioning the grounds for such obligation would not work for our goal of showing that evaluative deductivism is wrong, since our *modus tollens* requires D to be correct. Therefore, let me try to show instead how it is that if evaluative deductivism is true then we have this obligation, and also to explain what having this obligation could mean.

In principle, as Godden observes, if evaluative deductivism were true, then we would have good reason to believe that individuals aim at making deductions —for, otherwise, they would not aim at making good argumentation, which is implausible if the practice of arguing is to make sense as it is. Consequently, in order to properly represent what they mean, we should render their inferences deductive.

As it happens, people do not always reason or argue in a way in which what they put forward as their conclusion cannot be false if what they put forward as their premises is true, nor do they put forward their conclusions as following necessarily from their premises. So, in order to render their inferences deductive, we have to reconstruct what they actually say or think. This is the common way of understanding interpretative deductivism: in it, 'interpreting' does not stand for 'understanding' but for 'reconstructing'.

Yet, it is not only that if evaluative deductivism is correct, then it is plausible that we have to reconstruct natural language argumentation and reasoning as being deductive. Besides, evaluative deductivism requires that we have an obligation to reconstruct natural language argumentation and reasoning as deductive. The reason is that, since a good deal of everyday argumentation and reasoning looks good at first sight and yet does not look deductive at first sight, unless we really had to reconstruct natural language argumentation and reasoning as if it were deductive, there would be good argumentation that fails to be deductive. In this sense, as Groarke pointed out, the deductivist endorses the view that the meaning of words like 'therefore', 'so', 'hence', etc. announces the speaker's intention of making a deductively valid inference (Groarke, 1992: 114). Consequently, mainstream deductivism also provides this conditional to operate:

> D': if it is true that for a conclusion to be justified it has to follow of necessity from the premises (evaluative deductivism), then it is true that natural language argumentation must be interpreted as being deductive (interpretative deductivism).

Importantly, D and D' amount to acknowledge, on the one hand, that we build arguments as a means to represent natural language

argumentation and reasoning —that is, arguments would be reconstructions from real things such as reasonings and pieces of natural language argumentation, as they occur in everyday life, and on the other hand, D and D' imply that being a deductive inference cannot be the same as being a good inference: after all, the fact that people intend to infer well —which is the reason why (it is plausible or true that) we have to interpret them as making deductions— does not mean that they get to do it. Consequently, evaluative deductivism would not establish an identity between argumentation goodness and deductiveness (since deductivists admit that for a piece of argumentation to be good, it has to consist not only of good inferences, but also of good premises); but it would not establish an identity between deductiveness and validity either (because deductiveness would be a type of inference, which can be good or bad in turn). In this view, evaluative deductivism would be the thesis that deductiveness is a necessary but not sufficient condition of both argumentation goodness and inference goodness.

In a way, this was Copi's view (1978: 32) when he argued that deductiveness and validity are different notions. It is also the view of authors such as Berg (1987), Vorobej (1992) and Godden (2005), who maintain that whether an inference is deductive or not is a matter of the arguer's intentions: specifically, an inference would be deductive if its conclusion is meant to follow of necessity; and if it actually does follow of necessity, then the inference would be not only deductive but also valid.

Yet, authors such as Machina (1985) and Hitchcock (2013) disagree with this intentionalist notion of deductiveness. For example, Hitchcock says: "appeals to the intentions or claims or beliefs of reasoners and arguers are vacuous in many cases and are unnecessary for argument appraisal (…). As one can confirm for oneself by immediate retrospection, reasoners who draw a conclusion for themselves from information at their disposal are typically unaware of whether they are drawing it conclusively or non-conclusively. Reasoners just draw their conclusions, and it is only after that inferential act, if at all, that they determine whether their conclusion follows conclusively or non-conclusively. As for arguers, they sometimes claim a qualitative degree of support for their conclusion by qualifying it with terms like 'must' or 'probably' or 'presumably' or 'may.' But they do so in a minority of cases. If we cannot discover an arguer's intentions in this respect, we must construe the argument as ambiguous and test it against both deductive and inductive (and conductive) standards." (Hitchcock, 2013: 200)

On the contrary, I think that we can only appraise argumentation by considering the intentions of the arguers —not only

their communicative intentions in general, but also the way in which they mean their conclusions to follow from their premises. For instance, imagine someone saying "John's car is in front of his home; so, he's at home." It is only by ascribing a certain epistemic force to her conclusion that we can say that her argumentation is good or bad: if we take her to mean that *necessarily* John is at home, we will say that her argumentation is bad; whereas if we take her to mean that presumably John is at home, we will say that her argumentation is good. At any rate, unless we attribute some intention in this respect to the speaker, we will not be in a position to appraise her argumentation.

Notice that, for the deductivist, the latter would also be a deductive inference whose conclusion is "presumably, John is at home", which would follow necessarily from the premise "John's car is in front of his home" and the implicit premise "if John's car is in front of his home, then, presumably, he is at home." (Groarke, 1992: 115) Amongst others, Govier (1992) and Godden (2005) have argued that we must not incorporate as a premise the conditional that makes explicit the inferential link between premises and conclusion of an inference, because, as Lewis Carroll (1895) would have shown, this conditional does not play the same role as the premises of the argument. However, as Castañeda (1960) and Botting (2015) have observed, that premises and associated conditionals play different roles does not imply that we cannot reconstruct inferences as deductive arguments, for, as pointed out, arguments are mere reconstructions of the inferences that we make, and we build them in order to appraise the semantic properties of these inferences: if the model actually helps to determine whether the inference is good or bad, whether it does it by rendering the inference deductive or not is irrelevant. Thus, if we think of interpretative deductivism as the thesis that we can reconstruct inferences as deductive in order to appraise them, then deductivism would be harmless. But, of course, this is not what interpretative deductivists contend: their claim is that (it is plausible/true that) we must reconstruct inferences as deductive in order to accurately represent what people mean when they infer.

So, my next step is to present a theory of argumentation able to make sense of the two intuitions behind D and D' —namely, that we build arguments to represent the inferences that we make in arguing and reasoning, and that deductiveness and validity are not synonyms— and yet also able to relieve us from the obligation to reconstruct natural language argumentation and reasoning as deductive in order to properly represent what individuals aim at when they aim at making (good) inferences.

3. REASONING, ARGUMENTATION, INFERENCES AND ARGUMENTS. THE LINGUISTIC NORMATIVE MODEL OF ARGUMENTATION

Within the framework of formal logic, an argument is usually defined as a set of propositions, one of which —the conclusion— follows from the others —the premises. But the problem with this definition is: if the premises of an argument do not follow from the conclusion, isn't such set of propositions just a set of propositions? As Fohr (1979: 5) observed, the common usage of the term 'argument' —and the very business of appraising arguments— requires that there can be bad instances of it. This is why he recommends refraining from thinking of arguments as things that exist *in vacuo*, but rather to think of them as being person-related (Fohr, 1979: 5).

In Bermejo-Luque (2011), I proposed a linguistic normative model of argumentation (LNMA) that, in a way, captures Fohr's intuition that the best way of avoiding such problems is to adopt a pragmatic linguistic perspective able to give up Platonism altogether. LNMA follows Bach and Harnish's (1979) Speech-act Schema in order to characterize argumentation as a second order speech-act complex; that is, as a speech-act composed of a speech-act of adducing (the reason) and a speech-act of concluding (the conclusion or target-claim). Acts of adducing and acts of concluding are constatives —whether directly or indirectly performed, literal or non-literal; but they are second order because they can only be performed by means of first order constative speech-acts. According to this model, a performance of, for example, "I promise I'll take care, don't worry" —which, in principle, involves just two first order speech-acts, i.e., a promise and a request— turns into a speech-act complex of arguing because it turns into the constative speech-act of adducing that the arguer commits herself to take care and the constative speech-act of concluding that the addressee should not worry.

Two speech-acts become an act of adducing R and an act of concluding T because of their relationship to an implicit inference-claim whose propositional content is "if R, then T." To put it shortly, it is by attributing to the speaker the implicit inference-claim "if (it is true that) I commit myself to take care, then (it is true that) you should not worry" that we interpret her utterances of "I promise I'll take care" and "don't worry", as a single speech-act —namely, an act of arguing. Normally, the fact that the speaker has used some epistemic modal (like 'probably', 'necessarily', 'presumably', etc.) or an illative expression like 'so', 'therefore', 'since', 'consequently', etc. is what authorizes us to interpret the speaker's performance as a speech-act of arguing. Very roughly, the idea is that, illocutionarily, acts of arguing count as attempts at showing a target-claim to be correct. To the extent that they succeed in this —

which means that the target-claim has been correctly qualified by a certain epistemic modal (semantic conditions) and that the act of arguing is a good means of showing this (pragmatic conditions)— they will be deemed good argumentation.

In order to determine whether a target-claim has been correctly qualified, we have to build arguments. In LNMA, arguments are mere representations of the particular inferences that supervene on acts of arguing and on acts of reasoning (i.e., particular inferential processes that are the mental counterparts of acts of arguing). In contrast with acts of arguing and acts of reasoning, which are, so to speak, 'objects' of the world, arguments are constructions, not abstract eternal objects from a Platonic world. From this perspective, we would not use arguments, but produce them in order to represent the inferences that we make.

As such, arguments can be obtained by displaying a variety of models, such as those of the different formal systems or informal argumentative schemas. For its part, LNMA adopts Toulmin's model of argument (Toulmin, 1958), because its underlying conception of material inference matches the analysis of argumentation that the SAS for the speech act of arguing provides (Bermejo-Luque, 2011: 60-68). Accordingly, LNMA follows Toulmin's intuition that modal qualifiers are key to the semantic appraisal of argumentation. Yet, in contrast with Toulmin's model, LNMA's model of argument incorporates two types of modals: ontological and epistemic.

In everyday discourse, we can make explicit the variety of ways in which we can put forward a certain semantic content p in a first-order constative speech-act by saying, for instance: "p is true," "p is (more or less) probable," "p is (more or less) acceptable," "p is (more or less) verisimilar," "p is plausible," "p is necessary," "p is possible," and so on. These ontological modals are terms that make explicit the type and degree of pragmatic force of the constatives comprising an act of arguing. They are ontological because they are meant to express the value of our propositions as representations of the actual state of the world. When we put forward a propositional content with the appropriate pragmatic force given the actual state of the world, we make first-order constatives that are semantically correct —like the correct assertions "(it is true that) snow is white," "(it is necessary that) a bachelor is an unmarried man," "(it is possible that) there is life in other planets," and so on. Contrastingly, the modal that expresses the pragmatic force with which we draw a conclusion is an epistemic modal. This modal is meant to communicate what we take to be our credentials for concluding, i.e., the type and degree of support that our reasons are supposed to confer on our target-claims because of our inference-claims. For example, in saying that a claim holds truly, necessarily,

possibly, plausibly, (more or less) probably, etc. i.e., in saying things such as 'certainly p', 'necessarily p', 'it might be the case that p', 'plausibly p', '(more or less) probably p', etc., we are expressing something about the status of this claim as knowledge, about the confidence that we may place in it. Thus, any second-order speech-act of concluding involves, either explicitly or implicitly, not only the ontological modal of the first-order constative that it is built on, but also the epistemic modal that indicates the force with which this first-order claim is concluded.

Thus, as representations of the inferences that supervene on acts of arguing and acts of reasoning, arguments in LNMA consist of the following elements: premises (corresponding either to the speech-act of adducing a reason, R, or to the cognitive input in the act of reasoning, CI), conclusion (corresponding either to the speech-act of concluding a target-claim, C, or to the cognitive output in the act of reasoning, CO), warrant (corresponding either to the inference-claim in the act of arguing, IC, or to its counterpart in the act of reasoning; i.e., the inference-motivation, IM) and the representations of the epistemic and ontological modals, em and om, of each of the speech-acts making up the act of arguing (corresponding to the type and degree of constative pragmatic force with which the speaker, either implicitly or explicitly, puts forward the propositional content of each constative) or of the judgments and beliefs constituting the act of reasoning (corresponding to the type and degree of assent to each propositional content constituting the act of reasoning). Thus, an ascription of both epistemic and ontological modals (ultimately, the ascription made by the arguer or the reasoner —which, in case she doesn't make them explicit, is something that we will have to infer from the context) is part of the layout of arguments, and the semantic appraisal of an act of arguing or reasoning results in the process of determining the right ascription of modals to each represented claim or judgement/belief (i.e., the process of ascertaining whether or not the ascription made by the arguer or the reasoner is correct after all). This model of argument can then be outlined as follows:

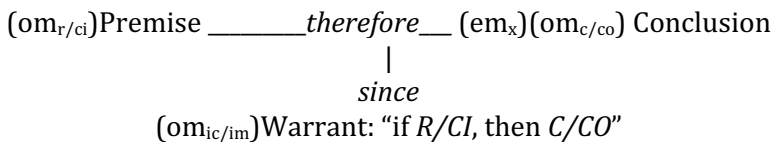

Figure 1 – LMNA's Model of Argument

(The contents of the antecedent and the consequent of the warrant correspond to the whole first-order constatives R and C of the act of arguing, i.e., to their propositional contents in conjunction with their —implicit or explicit— ontological modals, or to the whole cognitive input and output, CI and CO of the act of reasoning, i.e., to their propositional contents and their corresponding type and degree of assent.)

Let φ represent the idiomatic function that, for each ontological modal of a conditional, assigns the epistemic modal needed to draw a conclusion having this conditional as its warrant —or, in other words, the term that is used in a certain language for expressing either the pragmatic force of any speech-act of concluding having a conditional so qualified as its inference-claim or the type and degree of assent to the cognitive output having a conditional so qualified as its inference-motivation.

$$\varphi(om_i) = em_i$$

On this account, an argument is valid (i.e., the inference is good, whatever its type) iff $em_i = em_x$ and om_i is correct —that is, if it is the ontological modal that actually corresponds to the inference-claim as a constative or to the inference-motivation as a belief or judgement, given the actual state of the world. In other words, an argument is valid if and only if the epistemic modal that the speaker (or reasoner) has used for concluding or coming to believe the cognitive output is the epistemic modal that φ assigns to the ontological modal of the speaker's implicit inference-claim or inference-motivation, and this ontological modal is appropriate for this inference claim or inference motivation given the actual state of the world.

In LNMA, deductive arguments are arguments representing acts of arguing or acts of reasoning whose inference-claims/inference-motivations are meant to be necessary truths (like "if this is red, then it is coloured.") We know that an inference-claim or inference-motivation is meant to be necessary because the conclusion was drawn with such epistemic pragmatic force. In case this conditional is a necessary truth indeed, the argument will be valid, and the arguer will be entitled to epistemically qualify the conclusion with a 'necessarily'. For example, pieces of argumentation such as "she is in the garden or in the living room, and she is not in the garden; so, necessarily she is in the living room" or "this may be red; so, necessarily, it may be coloured" are deductive and valid because their corresponding inference-claims are the necessary truths "if (it is true that) she is in the garden or in the living room, and (it is true that) she is not in the garden, then (it is true that) she is in the living room" and "if (it is possible that) this is red,

then (it is possible that) it is coloured." Likewise, valid probabilistic arguments will be those representing acts of arguing, or acts of reasoning whose inference-claims/inference-motivations are meant to be (more or less) probable, so that they entitle us to epistemically qualify their conclusions with a '(more or less) probably/likely'. For instance, "our currency is losing value; so, very probably, the inflation rate will rise" has as its inference-claim "if (it is true that) our currency is losing value, then (it is true that) the inflation rate will rise", which is very probable indeed (and makes the argumentation inductively valid).

Because LNMA deals with inferences as kinds of doings, it allows for an inference to be invalid and still be, for example, a deductive inference. Specifically, in LNMA, validity is not the same as deductiveness: 'deductive', 'inductive', 'conductive', 'abductive', 'presumptive', etc. are names for types of inferences (i.e., of forms of inferring), and any of them may be wrong.

4. EVALUATIVE DEDUCTIVISM

LNMA deals with arguments as reconstructions of the inferences that we make in arguing and reasoning. On the other hand, it characterizes deductiveness in terms of the way in which the speaker or reasoner epistemically qualifies her conclusion, and it characterizes validity as a matter of the correctness of the corresponding inference-claim or inference-motivation. Thus, LNMA also provides an account of the distinction between deductiveness and validity. As a consequence, LNMA is able to make sense of the two intuitions underlying conditionals D and D', as pointed out in section 2. In turn, by means of LNMA's particular account of deductiveness and the theory of interpretation and reconstruction that this model involves, we can have a fair representation of what individuals say when they reason or argue without rendering deductive all of their inferences. Consequently, I have shown that interpretative deductivism is wrong and, by *modus tollens*, I have also indirectly shown that evaluative deductivism is wrong.

Unfortunately, I think that this is the most we can do in terms of showing that evaluative deductivism is wrong, because, as pointed out in section 1, this thesis is but a basic intuition about what a good inference is. In the remaining sections of this paper I would like to explain, in turn, what is wrong with evaluative deductivism.

Evaluative deductivists endorse the intuition that for an inference to be good, its conclusion cannot be false if the conjunction of its premises is true. But how do we establish what the actual set of premises of an inference is if, as we have seen, interpretative deductivism requires that we add whatever premises are needed in order to precisely warrant this? No doubt, rendering inferences

deductive by including the associated conditional as a premise may be a functional strategy for evaluation: by doing so, we can "discover" where the eventual failure of the argument lies. As we have seen, there is no problem in reconstructing inferences as deductive in order to appraise them. The worse thing we can say about this kind of weak interpretative deductivism is that because it turns any inference into a good one —e.g., an instance of *modus ponens*— it does not seem like a good strategy to determine whether or not a certain inference is good after all. Actually, the deductivist strategy only works for assessing arguments as a whole: according to this strategy, bad arguments are bad because, despite being deductive, they include one or more unacceptable premises.

For its part, LNMA also deals with the evaluation of inferences in terms of the evaluation of the claims that inferences consist of. In LNMA, we reconstruct inferences by means of a theory of interpretation that does not require us to put in the speaker's mouth anything else but the first order constatives that she made in her act of arguing, including the implicit inference-claim. An obvious advantage of this method is to avoid the dilemma of being either too strict or too charitable in our reconstructions: all that we need in order to represent an inference is to be able to understand the propositional content that has been adduced, the propositional content that has been drawn from it and their corresponding pragmatic forces as such constatives. Once we have these constatives, we also have the inference-claim, and all we have to do is check whether or not all of them have been correctly qualified, just as interpretative deductivism maintains. Yet, because LNMA distinguishes between premises and inference-claims, it is also able to provide an independent account of inference goodness.

Alternatively, we can understand evaluative deductivism as the view that for an argument to be good, the conclusion has to follow of necessity from the premises. As we have seen, in LNMA this amounts to require the conclusion to be advanced with a 'necessarily' and the corresponding inference-claim or inference-motivation to be a necessary truth. Yet, why should we require the conclusion to be advanced with a 'necessarily' and not with any other epistemic modal? As we have seen, LNMA allows us to epistemically qualify our conclusions in a variety of ways, which correspond to a variety of types of inferences different from deduction, and it explains what it means to say that such inferences are good. From this point of view, deductivism would simply look extravagant.

However, evaluative deductivism undoubtedly has a significant appeal. As Johnson put it: "According to some, the strongest argument for deductivism is its solid theoretical development. (…) the desirability of having an objective evaluation of argument is, historically, one of the considerations that has led theorists to opt for it. It is not just that there

is the possibility of objective evaluation but as well the belief that arguments can settle (philosophical and other) issues once and for all …conclusively." (Johnson, 2011: 23) As Johnson observes, theories of inductive strength do not get the consensus that theories of deductive support get. This is why deductivists such as Musgrave contended that "the only valid arguments are deductively valid arguments, and that deductive logic is the only logic that we have or need. The deductivist ploy regarding so-called non-deductive or inductive or ampliative arguments is to recast them as deductive enthymemes with unstated or missing premises of one kind or another." (Musgrave 2012: 125) So, what is so good about *modus ponens* and other types of deductively valid arguments? The obvious answer is that they set the highest epistemic standard for inference: after all, the requisite that the conclusion cannot be false if the conjunction of the premises is true makes inferring an utterly safe tool for getting new beliefs.

However, such requisite invites us to think about what 'cannot' actually means here. Consider this example of an alleged deductively valid argument, by Shecaira (2018: 477):

> (1) During an election year, you cannot trust a politician who provides an optimistic prediction about a social problem that his party vowed to solve.
> Jones, a member of the labor party running for re-election this year, says that unemployment rates will go down.
> You cannot trust Jones on this.

Shecaira defends what he calls a methodological deductivism and offers this kind of examples in order to explain the benefits of supplying as much premises as needed for producing deductive argumentation whenever possible. He claims that, by doing so, speakers make their argumentation more easily scrutable, which I think is true. However, rendering deductive a piece of argumentation by adding more information is far from easy. Going back to Shecaira's own example: is it really impossible that the premises of this argument are true and yet the conclusion is false? What if Jones is under oath or is a close friend of the addressee, for example? Most of the times, non-monotonicity can only be redeemed by adding the associated conditional as a premise, not just by adding new information.

Consider also this example by Musgrave (2009: 224):

> (2) [If a and b share property P, and a also has property Q, then it is reasonable to conjecture that b also has property Q.]
> a and b share property P.
> a also has property Q.

> Therefore, it is reasonable to conjecture that b also has property Q.

Again: what if b also has property R, which is incompatible with Q? My point with these examples is to show that unless we render inferences formally valid, it is difficult to render them deductively valid.[1] This is why deductivism is typically associated with a defence of formal deductive logic (Johnson 2000: ch. 3): playing by the rules of formal deductive logic seems to warrant that if our premises are true, our conclusion cannot be false.

However, formal-logical deductivism needs to prescribe rules of inference that cannot be justified in turn. They are supposed to be self-evident. Yet, as van Mcgee (1985) pointed out, even *modus ponens* has counterexamples. Contrastingly, in LNMA, inferential normativity is a matter of the constitutive conditions of the very practice of inferring. That the normativity of inferring is constitutive of the practice of arguing explains why people are usually good at inferring and at distinguishing between good and bad inferences despite knowing nothing or very little about formal logic: learning to infer amounts to mastering the use of epistemic modals, and much in the same way in which learning to make assertions involves learning what counts as making a good assertion, learning to infer is *eo ipso* learning what counts as inferring well.

Certainly, the idea that, if things are as I say or believe, my conclusion also has to be as I say or believe is a high epistemic standard for a conclusion. However, in its own way, LNMA is able to incorporate this *desideratum*, for assessing an inference according to LNMA is a matter of determining whether or not the ontological modal that the speaker attributes to the inference-claim is the one that it actually deserves. Accordingly, in LNMA being good argumentation implies that if things are as the speaker adduces, the conclusion has to be as the speaker claims, and this standard holds not only for deductive inferences, but also for any type of inference.

There is still one last move for the deductivist to make: to renounce to defend interpretative deductivism and contend that it is only good natural language argumentation that we have to interpret as being deductive. That amounts to refusing D and D' altogether. However, this is a difficult move for him to make, for, in principle, the procedure to render deductive a piece of argumentation is the same

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1 LNMA explains this fact by pointing out that what makes an inference deductively valid is that its inference-claim or inference-motivation is a necessary truth; and only conceptual, mathematical and formal truths seem the kind of truths that can be necessary.

whether the argumentation or reasoning is good or bad. So, in order to contend that it is only good natural language argumentation that must be reconstructed as being deductive, the deductivist must offer a reason (basically, a theory of argumentation interpretation) to outlaw this procedure in the case of bad argumentation. Without this theory of argumentation interpretation, the prohibition to reconstruct bad argumentation as deductive can only be obeyed as long as we can intuitively recognize argumentation goodness without first recognizing deductiveness. Yet, this view would go against the main intuition behind evaluative deductivism, which is that the essence of argumentation goodness is deductiveness.

Lacking a theory of argumentation interpretation also poses a problem for the use of formal logic as a tool to determine inference goodness. This is so because the use of formal logic requires the formalization of natural language argumentation and reasoning in accordance with the definition of well-formed formula of the formal system to be used. That means that the selection of a particular formal system to appraise argumentation takes a toll on the verdict about its value: choosing two different formal systems may result in contradictory verdicts. This is not a problem when systems are compatible with each other, like classical propositional logic and classical predicate logic: in those cases, the right verdict is the one that renders the inference valid —even though, as Gerald Massey (1975) observed, if no system renders the inference valid, we will not be allowed to say that it is invalid. But what if we choose systems that involve different notions of validity, just like classical, intuitionistic or paraconsistent logical systems do? As I argued in Bermejo-Luque (2008), in view of this quandary, we should rather say that formal logic does not serve to determine inference validity, but only to show that a given inference is/isn't good according to one system or another.

Contrastingly, an additional advantage of LNMA is that it does not rely on brute intuitions to reconstruct and assess argumentation and reasoning, but on an independent theory of meaning such as the Speech Act Schema for the act of arguing. By interpreting —in the sense of 'understanding'— what the arguer said, we get at an argument that allows us to determine the goodness of the inference and the argumentation without having to edit the speaker's meaning.

REFERENCES

Bach, K. & R. Harnish (1979) *Linguistic communication and speech acts*. Cambridge, MA: MIT Press.

Berg, J. (1987) "Interpreting arguments," in *Informal Logic* 9: 13-21

Bermejo-Luque, L. (2008) "Logic as (normative) inference theory," in *Informal Logic* 4: 315-333

_____ (2011) *Giving Reasons: A linguistic-pragmatic approach to Argumentation Theory*. Dordrecht: Springer.
Botting, D. (2016) "The Logical Evaluation of Arguments," in *Argumentation* 30/2: 167-180.
Carroll, L. (1895) "What the Tortoise said to Achilles," in *Mind* 4: 278-80.
Castañeda, H. N. (1960) "On a Proposed Revolution in Logic," in *Philosophy of Science* 27: 279-292
Copi, I. (1978) *Contemporary Philosophical Logic*. Nueva York: St. Martin's Press
Fohr, S. (1979) "The deductive-inductive distinction," in *Informal Logic Newsletter* 11/2: 5-8
Godden, D. (2005) "Deductivism as an Interpretive Strategy: A Reply to Groarke's Recent Defense of Reconstructive Deductivism," in *Argumentation and Advocacy* 41/3: 168-183
Govier, T. (1992) "What is a good argument?," in *Metaphilosophy*, 23/4: 393-409
Groarke, L. (1992) "In defense of deductivism: Replying to Govier," in F.H. van Eemeren, R. Grootendorst, J. Blair & C. Willards (eds.) *Argumentation Illuminated*: 113-121.
Hitchcock, D. (2013) "Appeals to considerations," in *Informal Logic* 33/2: 195-237
Johnson, R (2011) "Informal Logic and Deductivism," in *Studies in Logic* 4/1: 17-37.
_____ (2000) *Manifest Rationality. A pragmatic theory of argument*. Mahwah NJ: Lawrence Earlbaum
Machina, K. (1985) "Induction and deduction revisited," in *Nous* 19/4: 571-578.
Massey, G. (1975) "Are There Good Arguments that Bad Arguments Are Bad." in *Philosophy in Context* 4: 61-77. Reprinted in H.V. Hansen & R.C Pinto (1995).
McGee, V. (1985) "A counterexample to *modus ponens*," in *Journal of Philosophy* 82/9: 462-471.
Musgrave, A. (2009) "Popper and hypothetico-deductivism," in D. Gabbay, J. Woods & A. Kanamori (eds.) *Handbook of the History of Logic*. Volume 10: Inductive Logic. Elsevier: 206-234.
_____ (2012) "Deductivism surpassed: Or, Foxing in its Margins?," in *Journal of General Philosophy of Science* 43: 125-132.
Shecaira, F. (2018) "The Value of Methodological Deductivism in Argument Construction," in *Informal Logic* 38/4: 471-501.
Toulmin, S. E. (1958) *The Uses of Argument*. Cambridge: Cambridge University Press.
Vorobej, M. (1992) "Defining deduction," in *Informal Logic*, 14/2&3: 105-118.