Supposition: No Problem for Bilateralism

Ryan Simonelli

March 7, 2024

Abstract

In a recent paper, Nils Kürbis argues bilateral natural deduction systems in which assertions and denials figure as hypothetical assumptions are unintelligible. In this paper, I respond to this claim on two counts. First, I argue that supposition of assertions and denials in the context of bilateral natural deduction systems is perfectly intelligible. Second, I show that, by transposing such systems into sequent notation, one can make perfect sense of them without talking about supposition at all, just talking in terms of relations of committive consequence. Finally, I consider a possible conflict between the proposed interpretation of bilateralism and the introduction of epistemic operators into the language, briefly suggesting a solution, but claiming that this is a general problem for normative pragmatic accounts of content, not a specific problem for bilateralism.

0 Introduction

A bilateral system of logic provides rules for manipulating positively or negatively signed formulas. The standard way of thinking about the formulas that figure in bilateral systems, explicated by such authors as Smiley [18] and Rumfitt [16], is to think of the signs as expressing two opposite speech acts: assertion and denial.[1] Thus, a formula of the form $+A$ is taken to express the *assertion* of A whereas $-A$ is taken to express the *denial* of A. This way of thinking about bilateralism has recently come under fire by Nils Kürbis [11].[2] In his recent paper "Supposition: A Problem for Bilateralism," Kürbis claims that the notion of supposing an assertion or a denial makes no sense, as it involves embedding one speech act (assertion or denial) under another (supposition). Just as asserting a denial makes no sense, Kürbis claims that supposing an assertion makes

[1]Various other terms for these speech acts have been deployed, such as "affirming" rather than "asserting," and "rejecting" rather than "denying." Little hangs on such differences for our purposes here.

[2]For other expressions of this same basic argument, see also [8, 230-231], [4, fn. 23], [9, 221], [15, 11-17], and [20, 4-5]. I focus on Kürbis's recent paper here since it is the most sustained development of this argument.

no sense either. Since bilateral natural deduction systems of the sort proposed by Smiley and Rumfitt essentially feature such suppositions of assertions and denials, these systems, Kürbis claims, are unintelligible. In this paper, I will argue, in opposition to Kürbis, first, that suppositions of assertions and denials of the sort that figure in these natural deduction systems make perfect sense, and, second, that, by transposing these systems into sequent notation, one can make perfect sense of these systems in a way that does not appeal to supposition at all. So, supposition is no problem for bilateralism.

1 A Perfectly Intelligible Reading of Supposition

For our purposes, it will suffice to just consider the fragment of Rumfitt's bilateral natural deduction system consisting in the following operational rules:

$$\frac{-A}{+\neg A}\,{+_{\neg_I}} \qquad \frac{+\neg A}{-A}\,{+_{\neg_E}} \qquad \frac{+A}{-\neg A}\,{-_{\neg_I}} \qquad \frac{-\neg A}{+A}\,{-_{\neg_E}}$$

$$\frac{+A \quad +B}{+A \wedge B}\,{+_{\wedge_I}} \qquad \frac{+A \wedge B}{+A}\,{+_{\wedge_{EL}}} \qquad \frac{+A \wedge B}{+B}\,{+_{\wedge_{ER}}}$$

and the following pair of bilateral structural rules:[3]

$$\frac{+A \quad -A}{\bot}\,\text{Incoherence} \qquad \begin{array}{c}\overline{+A}^{\,u}\\ \vdots \\ \dfrac{\bot}{-A}\end{array}\text{Reductio}_+^{\,u} \qquad \begin{array}{c}\overline{-A}^{\,u}\\ \vdots \\ \dfrac{\bot}{+A}\end{array}\text{Reductio}_-^{\,u}$$

The Incoherence rule says that from the assertion of A and the denial of A one can conclude an incoherence. The first Reductio rule says if, given the assumption of an assertion of A, one can conclude an incoherence, then one can discharge that assumption and conclude the denial of A, whereas the second Reductio rule says that if, given the assumption of an denial of A, one can conclude an incoherence, then one can discharge that assumption and conclude the assertion of A. This fragment of Rumfitt's system constitutes a sound and complete proof system for classical logic in that an argument with premises $A_1, A_2 \ldots A_n$ and conclusion B

[3]This way of splitting up structural rules, which are combined in the presentations of Smiley and Rumfitt, follows the presentation of Incurvati and Schlöder [7]. They call the principle I call "Incoherence" "Rejection."

is classically valid just in case this system proves $+B$ from $+A_1, +A_2 \ldots + A_n$.[4] To see how this sort of system works, let us look at a simple proof which involves assumption of a signed formula. Consider, for instance, the proof of $+\neg(p \wedge q)$ from $-q$,

$$\dfrac{\dfrac{\dfrac{\dfrac{\overline{+p \wedge q}^{\,1}}{+q}\,{+_{\wedge_{EL}}} \qquad -q}{\bot}\,\text{Incoherence}}{-p \wedge q}\,\text{Reductio}_{+}^{\,1}}{+\neg(p \wedge q)}\,{+_{\neg_I}}$$

In this proof, we assume $+\langle p \wedge q\rangle$, derive an incoherence, and so discharge our assumption and write down $-\langle p \wedge q\rangle$.

Kürbis claims that there is no intelligible reading of the above proof according to which "+" expresses assertion and "−" expresses denial. Such a reading, he claims, would involve thinking of one speech act—assertion—as embedded within another—supposition. But this, Kürbis claims, is unintelligible; just as denying an assertion makes no sense, supposing an assertion doesn't make sense either. So, bilateral proof systems of the sort proposed by Smiley and Rumfitt are unintelligible. As a consolation to bilateral logicians who don't *take themselves* to be writing nonsense in using bilateral proof systems, he offers the following error theory:

> My best diagnosis is that the practice of bilateral logicians shows that their + and − are nonembeddable truth and negation operators. The description of − and + as speech acts does not match their use. [11, 23]

As a bilateral logician, I can report firsthand that this is not how I am using + and −. To be clear, I acknowledge that it is *possible* to read singed bilateral systems in this sort of alethic way, with the "two ways" of bilateralism being interpreted as truth and falsity, the two signs expressing these two opposite truth values.[5]

[4]See [7, 754]. Though they establish this result for a somewhat different system in which − expresses *weak* rejection, the same result holds in the same way for this system.

[5]For an illuminating account of the relation between normative bilateralism (of the Restall/Ripley sort) and truth-maker semantics, see Hlobil [5]. Though Hlobil is considering different formal systems, the general normative/alethic correspondence (a philosophical account of which is developed at length by Brandom [3]) applies here as well.

Indeed, this is how the signs are used, for instance, in Smullyan's [19] signed tableaux system.[6] However, that is not how I use them. I use them to express assertion and denial.

Here is how I propose we read the above proof, following Incurvati and Schlöder [7] [6] in thinking of the horizontal line of the natural deduction system as expressing a relation of committive consequence:

> Suppose we assert $p \wedge q$. Then we're committed to asserting q. But we deny q. Incoherence. So, given that asserting $p \wedge q$ leads to an incoherence, we're committed to denying $p \wedge q$. Thus, given that we deny q, we're committed to asserting $\neg(p \wedge q)$.

This reading seems perfectly intelligible to me. According to this reading, when we write down $+p \wedge q$ as an assumption in the context of the above proof, this is not to be read as not "Suppose *Yes, $p \wedge q$!*" (or something to that effect), but, rather "Suppose we assert that $p \wedge q$." We then reason about what we're committed to asserting or denying, given that hypothetical supposition. If we conclude that we're committed to asserting and denying the very same thing, given that assumption, we can discharge that assumption and conclude that we're committed to the opposite speech act. Kürbis claims that this sort of reading, according to which a supposition of a positively signed formula is read along the lines of "Suppose it is asserted that A" is unavailable to the bilateralist. He makes two points that are supposed to establish this. Neither of them do.

The first point Kürbis makes is that supposing that we assert A is distinct from supposing A. That is, of course, true. After all, one is not asking someone to suppose something contradictory when one says "Suppose that we assert A and suppose further that it's not the case that A," but one is asking someone to suppose something contradictory when one says "Suppose that A and suppose further that it's not the case that A." So there is indeed a crucial distinction between supposing an assertion of A and supposing A itself. And it's true, on this reading of speech act bilateralism, what one is supposing in the context of a hypothetical proof is the first sort of thing, not the second sort of thing.

[6] Fun fact: if you take the fragment of Rumfitt's bilateral natural deduction system consisting in solely the elimination rules, and you tweak the positive conditional rules so that they are of the same form as the positive disjunction (or negative conjunction) rules, and you do every proof by Reductio, then this system just is a notational variant of Smullyan's signed tableaux system.

As the above explication of this proof makes clear, when one writes down $+A$ in the context of a hypothetical proof as we do above, one is *not* supposing that A. Rather, we are supposing that we *assert* that A, and we then reasoning about what we're committed to asserting or denying given that supposition. So I acknowledge Kürbis's first point, but acknowleding this point does not itself raise any problem for this reading. On the contrary, this seems to be just what one should say on a normative understanding of bilateralism, according to which bilateral logic concerns the norms governing assertions and denials in a discursive practice.

The second point that Kürbis makes is that, when the bilateralist writes down $+A$ in the context of a proof, such formulas are "not reports that any such speech acts have been performed or assertions that they could be performed," (17). Of course, that is also true, but, once again, there is no reason that the proponent of the proposed reading must disagree with this claim. The activity one is engaged in when one uses a bilateral natural deduction system is not an activity of reporting what any particular individuals have asserted or denied, nor is it an activity of reporting which speech acts are possible (at least, in the alethic rather than deontic sense of "possible"). Rather, it is a way of articulating what speech acts anyone at all who traffics in assertion and denial of logically complex sentences, is *committed* to, either hypothetically, given other assertions or denials, or categorically. This is a normative enterprise, not a descriptive one. When one says, for instance, "If one denies q, then one is committed to affirming $\neg(p \wedge q)$" this is to be understood by analogy to my saying "If one moves one's king, then one can't go on to castle." In saying that latter thing, I am not reporting anything about any particular chess players. I am, rather, expressing the rules of the game of chess, in particular, how the act of moving one's king is normatively related to the act of castling. Likewise, if I say "If one denies q, then one is committed to asserting $\neg(p \wedge q)$," I am not reporting anything about any particular speakers. I am, rather, expressing the rules of the "game of assertion and denial" in a language that contains negation and conjunction, in particular, how the act of denying q is normatively related to the act of asserting $\neg(p \wedge q)$.

Now, the key problem for this sort of reading, which Kürbis does not discuss in this paper but which he discusses elsewhere [10] is meant to come when we consider sentences in which operators expressing assertibility or belief are logically embedded. For instance, if we read a supposition of $+A$ as "Suppose we assert that A," then it seems that, under that supposition, we're committed to asserting "It is assertible that A," but then, given the standard conditional rule, we can discharge our assumption and conclude "If A, then it is assertible that A," which is clearly not right to assert for most sentences (as we are certainly not omniscient). I will consider this concern and how one might respond to it at the end of this paper. For now, however, it is sufficient just to point out that there is an important distinction between a particular reading of supposition *getting the wrong result*, in the context of a particular set of bilateral rules, and that reading of supposition *being unintelligible*. Right now, it is just the latter charge that I am concerned to refute, and I take it that I have said enough to have refute it.

2 Doing without Supposition

Let me now spell out this normative conception in a bit more detail, which will enable us to transpose the above thoughts into an equivalent notation in which no talk of supposition is needed. Following Brandom [2], I think of the speech acts of assertion and denial as "moves" that one might make in "the game of giving and asking for reasons," (xviii). Whereas assertion is the basic sort of move that one might make, functioning to entitle others to make that assertion, denial is the basic sort of counter-move, functioning to challenge an assertion. On the proposed reading of bilateral natural deduction, the deducibility relation is understood as a relation of *committive consequence*, where, once again, this notion is understood along the lines proposed by Brandom [2, 157-166]. Thus, I read a sequent of the form $\Gamma \vdash \varphi$ as saying that *making* the moves in Γ, be they assertions or denials *commits one* to φ, be it an assertion or denial. For instance, $-q \vdash +\neg(p \land q)$ says that denying q commits one to asserting $\neg(p \land q)$. Likewise, $\vdash +\neg(p \land \neg p)$ says that one is simply committed to asserting $\neg(p \land \neg p)$. In the context of Weakening, this latter sequent can be understood as saying that one is committed to affirming $\neg(p \land \neg p)$ no matter what one asserts or denies. It is important to be clear that one's being *committed* to an assertion does not mean that one must actually *make* that assertion. As Restall [14] says "that way lies madness, or at least, making too many assertions," (82). The notion of being committed to asserting some sentence is indeed a kind of obligation. Crucially, however, it's a sort of *dispositional* obligation, one which can *triggered* in various circumstances, rather than a *standing* obligation. Specifically, if one is committed to an assertion, then one is obligated to actually make that assertion *if one is prompted to do so* in a dialogical context.

To illustrate the sort of dialogical context I have in mind here, consider a miniature game of giving and asking for reasons involving just two players, Norm and Maddy. Suppose Norm asserts A, making the move $+\langle A\rangle$. Now, suppose that Maddy takes asserting A to commit one to asserting B. Suppose further that Maddy herself has asserted C and takes it that asserting C commits one to denying B. Given this, Maddy is committed to challenging A, and, given that Norm has now asserted A, the conditional obligation that is incurred by this commitment is *triggered*, and Maddy must make the move $-\langle A\rangle$, which constitutes a challenge to Norm's assertion. Maddy must also give her reasons for this challenge. We've just specified Maddy's reasons informally. To spell them out formally, let us articulate some basic principles of reasoning.

First, we will need the following principle of *Cumulative Transitivity*, where φ and ψ are signed formulas:

$$\frac{\Gamma \vdash \varphi \quad \Gamma, \varphi \vdash \psi}{\Gamma \vdash \psi}\ \text{CT}$$

This says that if making all of the moves in Γ commits one to making the move φ, and making all of the moves in Γ along with the move φ commits to making the move ψ, then making all of the moves in Γ commits one to making the move ψ. The co-ordination principles I will now render as follows, using a sequent with an empty right-hand side to express the incoherence of the set of moves on the left:

$$\frac{\Gamma \vdash +A \quad \Delta \vdash -A}{\Gamma, \Delta \vdash}\ \text{Inc} \qquad \frac{\Gamma, +A \vdash}{\Gamma \vdash -A}\ \text{Red}_+ \qquad \frac{\Gamma, -A \vdash}{\Gamma \vdash +A}\ \text{Red}_-$$

Transposed into a sequent setting, Incoherence say that if making all of the moves in Γ commits one to asserting A and making all of the moves in Δ commits one to to denying A, then making all of the moves in $\Gamma \cup \Delta$ is incoherent. Reductio$_+$ says that if making all of the moves in Γ along with asserting A is incoherent, then making all of the moves in Γ commits one to denying A, whereas Reductio$_-$

says that if making all of the moves in Γ along with denying A is incoherent, then making all of the moves in Γ commits one to asserting A.

These principles suffice to articulate Maddy's reasoning. Taking CG to be the set of background commitments that Maddy takes to be common ground shared between her and Norm and which she leaves implicit in the specification of her reasons for the challenge, these principles enable us to articulate her reasons as follows:

$$\dfrac{\dfrac{\dfrac{(1)\quad \mathrm{CG}, +\langle A\rangle \vdash +\langle B\rangle \qquad \dfrac{(2)\quad \mathrm{CG} \vdash +\langle C\rangle \quad (3)\quad \mathrm{CG}, +\langle C\rangle \vdash -\langle B\rangle}{(4)\quad \mathrm{CG} \vdash -\langle B\rangle}\,\mathrm{CT}}{(5)\quad \mathrm{CG}, +\langle A\rangle \vdash}\,\mathrm{Inc}}{(6)\quad \mathrm{CG} \vdash -\langle A\rangle}\,\mathrm{Red}_{+}$$

We can read this reasoning as follows:

> MADDY: (1) Asserting A commits us to asserting B. However, (2) we are committed to asserting C, and (3) asserting C commits us to denying B, so (4) we're committed to denying B. Accordingly, (5) given what we're committed to, it's incoherent to assert A. So, (6) we must deny A.

Maddy's reasoning here involves the consideration of the incoherence that result upon the assertion of A, and this gives her the grounds she has to deny A, challenging Norm's assertion.

Let us consider again the proof of $+\neg(p \wedge q)$ from $-q$ above, but now transposed into sequent notation:

$$\dfrac{\dfrac{\dfrac{\dfrac{+p \wedge q \vdash +p \wedge q}{+p \wedge q \vdash +q}\,+_{\wedge_{EL}} \qquad -q \vdash -q}{+p \wedge q, -q \vdash}\,\mathrm{Inc}}{-q \vdash -p \wedge q}\,\mathrm{Red}_{+}}{-q \vdash +\neg(p \wedge q)}\,+_{\neg_I}$$

We read this proof as follows. Asserting $p \wedge q$ commits one to asserting $p \wedge q$, and so asserting $p \wedge q$ commits one to asserting q. Denying q commits one to denying q. So, asserting $p \wedge q$ along with denying q is incoherent. Accordingly, denying q commits one to denying $p \wedge q$. Thus, denying q commits one to asserting $\neg p \wedge q$. Given Weakening, we can take such a conclusion sequent as telling us that, no matter what our background commitments are, denying q commits us to asserting $\neg(p \wedge q)$ and such a fact can figure as a reason in a dialogical game of the sort spelled out above.

Note that, when transposed into sequent notation, there is no need to talk about supposition at all. We need only talk about the fact that making some moves commits one to making others, starting with trivial fact that making any move commits one to making that very move. So, not only is talk of supposition in the context of natural deduction perfectly intelligible, it is also *eliminable*: we can transpose a natural deduction system into sequent notation and speak only of relations committive consequence, without talking about supposition at all.

3 The Problem with Epistemic Operators

I take the reading of bilateralism I have just articulated to be the conception of what is expressed by bilateral notation that puts bilateralism on the strongest theoretical footing, and it is not susceptible to Kürbis's basic charge of unintelligibility. Let me now turn to what I take to be the reason that Kürbis does not consider a reading of this sort to be viable: the problem epistemic operators. Kürbis [10] poses this problem in response to a different style of bilateralism, developed by Restall [13], however, it is equally applicable to the version of bilateralism at issue here.

To illustrate this problem, consider any sentence p on which we are completely agnostic. It might be the claim "God exists," if we're agnostic in the theological sense, or it could be something trivial such as "There are an even number of blades of grass in Central Park." Whatever sentence p is, we don't believe that p. However, we also don't believe that $\neg p$; on the contrary, we believe that p very well may be true. So, though we don't assert p, we don't deny p either. However, it seems that these bilateral rules let us conclude that we're committed to denying p:

$$\dfrac{\dfrac{\dfrac{\dfrac{}{+p}{}^{1}}{+B(p)} \quad \dfrac{+\neg B(p)}{-B(p)}}{\bot}}{-p}$$

We read this proof as follows. Suppose we assert p. Given this supposition, we're committed to asserting that we believe that p. After all, belief is a basic norm of assertion. However, we assert that we don't believe that p. So we're committed to denying that we believe p. Thus, given our supposition of an assertion that p, we have an incoherence. So we're committed to denying p. In the same way, we can reason that we're committed to asserting p, since we also assert that we don't believe that $\neg p$:

$$\dfrac{\dfrac{\dfrac{\dfrac{\overline{+\neg p}^{\,1}}{+B(\neg p)} \quad \dfrac{+\neg B(\neg p)}{-B(\neg p)}}{\bot}}{-\neg p}}{+p}$$

Linking these two proofs together with our coordination principles, we can conclude that we're committed to asserting q, for any sentence q. Something has clearly gone wrong.

The problem can be made even more acute if we consider further the standard positive conditional rules from Rumfitt:

$$\dfrac{\begin{matrix}\overline{+A}^{\,u} \\ \vdots \\ \overline{+B}\end{matrix}}{+A \rightarrow B} \rightarrow_I^u \qquad\qquad \dfrac{+A \rightarrow B \quad +A}{+B}$$

With these rules, we can reason as follows:

$$\dfrac{\dfrac{\overline{+p}^{\,1}}{+B(p)}}{+p \rightarrow B(p)} \rightarrow_I^1$$

In this way, bilateralism seems to entail that we're committed to asserting that if something is the case, then we believe it. Bilateralism seems to commit us to the claim that we're omniscient. Now, I have picked the notion of "belief" here, but the same problem can be made with any number of sentences involving our epistemic relation to p or p's epistemic standing, such as "I have evidence that p," "There is evidence for p," "It is warrantedly assertible that p," "I assert that p," "Someone asserts that p," and so on. All of these sentences are such that if one asserts that p, one is committed to asserting them. And yet, where X is a variable ranging over all of these epistemic predicates, one doesn't want to say, for all sentences p, $\neg(p \wedge \neg X(p))$ or, equivalently $p \rightarrow X(p)$.

Now, it seems clear, on the face of it, what the problem is. The move from asserting p to asserting "I believe that p" is a good one in that it's commitment-preserving, it's goodness is a matter of the *pragmatics* of assert*ing* p rather than the *semantics* of what is assert*ed* (namely, p). Because the notion of consequence formally codified here is a broadly speaking pragmatic one, it pragmatic inferences are intuitively candidates for inclusion as consequences of the relevant sort. However, when we assert $\neg(A \wedge \neg B)$ on the grounds that asserting A and denying B is incoherent, the relevant notion of incoherence here needs to be a *semantic* notion of incoherence. Thus, we need to "screen off" pragmatic inferences and incoherences. There is a challenge, however, as to how to do this in such a way that doesn't presuppose the notion of semantic content that we are supposed to be accounting for in broadly pragmatic, inferentialist terms. For instance, we can't say that asserting A and denying B is incoherent, in the relevant sense, just in case it's impossible for A to be true and B to be false, since our aim is to account for the truth-conditional contents of A and B in terms of the norms governing their use in reasoning. Appealing to these contents to specify the relevant norms would result in a circular account. Thus, we have a challenge of "screening off" pragmatic inferences in a way that doesn't presuppose the notion of content for which we're supposed to be accounting in broadly pragmatic terms.

There are different ways to go here, and I won't give an exhaustive characterization of these different ways to do, nor will I defend in detail one particular way of going. The reason I will not is that this is not an issue for bilateralism in particular, but, rather, a general issue for *any* normative pragmatic account of consequence and content. The basic issue is discussed, for instance, by Brandom [1] in distinguishing truth-conditions from assertibility conditions, and is the core concern in Brandom's [2] "objectivity proofs." More recently this issue has been discussed by Restall [12] in response to Rumfitt [17]. Here, Restall suggests that supposition can actually play a role—that pragmatic inferences can be "screened off" in virtue of the fact that they are not preserved under supposition. Such a response might be formally spelled out in the context of bilateralism with an introduction a special suppositional force-marker $\mathbb{S}$, as suggested by Incurvati and Schlöder [6], which, notably, does *not* embed other force markers. While this suppositional approach to screening off pragmatic inferences might be made to work, here too, I want to show that appeals to supposition are strictly optional. The key thought of the approach I want to suggest is that we can to screen off merely pragmatic inferences as those that are not preserved across scorekeeping perspectives. That is, we need to understand the significance of the sentences not just in terms of *our own* assertion and denial of those sentences, but in terms of the significance of *anyone's* assertion and denial of them. Whereas pragmatic inferences are agent-relative, semantic ones are agent-neutral.

To introduce this approach, let me start by considering a different kind of case. If Norm says "I'm six feet tall" and Maddy says "I'm five foot four," Maddy's assertion commits her to asserting "I'm not six feet tall," but this does not function as a challenge to Norm's assertion. By contrast, if Norm asserts that he's six feet tall by assertorically uttering the sentence "I'm six feet tall," and Maddy asserts "You're five foot four," Maddy's assertion does function to challenge Norm's assertion. I am not going to give an inferentialist account of indexicals here. However, whatever the correct account is, it ought to have the consequence that Norm's saying "I'm six feet tall" and Mady's saying "I'm five foot four" are *not* incompatible, in that one assertion does not constitute a challenge to the other, whereas Norm's saying "I'm six feet tall" and Maddy's saying "You're five foot four" *are* incompatible, in that one assertion does constitute a challenge to the other. Insofar as the basic notion of the content of a sentence here is understood in terms of the role of in the game of giving and asking for reasons, this gives us a way of saying, pragmatically, how it is that Norm's saying "I'm six feet tall" and Maddy's saying "You're six feet tall" have the same content.

Whatever the correct account of indexicals is that applies to height ascriptions will, of course, apply to belief ascriptions as well. Thus, Norm's saying "I believe that *p*" and Maddy's saying "You believe that *p*" can be understood as having the same content, where, once again, this notion of content is understood in terms of inferential role. However, there are different pragmatics effects. Norm's asserting *p* commits him to saying "I believe that *p*," whereas Maddy's asserting *p* does not commit her to saying, to Norm, "You believe that *p*." Indeed, Maddy's asserting *p* is perfectly compatible with her saying, to Norm, "You don't believe that *p*." This distinction enables us to say that, while it is incoherent in the *broad* sense for Norm to assert both p and that he does not believe that p, it is not incoherent in the *relevant* sense, as it is not incoherent *at all* for Maddy to assert that p and that Norm does not believe that p. In this way, by considering the normative significance of speech acts that remains stable across perspectives, we have a way of screening off pragmatic inferences in inferentialist terms without presupposing the notion of truth-conditional content for which we are supposed to be inferentially accounting.

Admittedly, this no more than a gesture at a solution to the problem. We have considered just one case, but a full solution would have to show how *all* problematic pragmatic inferences can be screened off by appealing this same general strategy. For instance, I have not here shown how this pragmatic strategy can be deployed to screen off "Someone asserts that p." A full account along these lines is the task for another paper. Still, I hope this gesture suffices to show that this problem is not unsolvable. Moreover, as I hope to have made clear, this problem is not a problem for bilateralism in particular; it's a problem for any normative pragmatic account of consequence. Even more to the point, this is not a problem about supposition in the context of bilateralism. So, there are certainly problems that bilateralists must still resolve if their account of consequence is to be on solid theoretical footing. Supposition, however, is not one of them.

References

[1] Robert Brandom. Truth and assertibility. *Journal of Philosophy*, 73(6):137–149, 1976.

[2] Robert Brandom. *Making It Explicit*. Harvard University Press, 1994.

[3] Robert Brandom. *A Spirit of Trust: A Reading of Hegel?s* Phenomenology. Harvard University Press, Cambridge, Massachusetts, 2019.

[4] Ole Hjortland. Speech acts, categoricity, and the meanings of logical connectives. *Notre Dame Journal of Formal Logic*, 55:445–467, 2014.

[5] Ulf Hlobil. The laws of thought and the laws of truth as two sides of one coin. *Journal of Philosophical Logic*, 52(1):313–343, 2022.

[6] Luca Incurvati and Julian J. Schlöder. *Reasoning with Attitude*. Oxford University Press USA, New York, 2023.

[7] Luca Incurvati and Julian Schlöder. Weak rejection. *Australasion Journal of Philosophy*, 95:741–760, 2017.

[8] Luca Incurvati and Peter Smith. Is 'no' a force-indicator? sometimes, possibly. *Analysis*, 72:225–231, 2012.

[9] Nils Kürbis. *Proof and Falsity*. Cambridge University Press, 2019.

[10] Nils Kürbis. On a definition of logical consequence. *Thought*, 2023.

[11] Nils Kürbis. Supposition: A problem for bilateralism. *Bulletin of the Section of Logic*, 2023.

[12] Greg Restall.

[13] Greg Restall. Multiple conclusions. In Petr Hájek, Luis Valdés-Villanueva, and Dag Westerstahl, editors, *Logic, Methodology and Philosophy of Science*. College Publications, 2005.

[14] Greg Restall. Assertion, denial, and non-classical theories. In *Paraconsistency: Logic and applications*, pages 81–99. Springer, 2013.

[15] Greg Restall. Speech acts & the quest for a natural account of classical proof. 2020.

[16] Ian Rumfitt. "yes" and "no". *Mind*, 109:781–823, 2000.

[17] Ian Rumfitt. Knowledge by deduction. *Grazer Philosophische Studien*, 77(1):61–84, 2008.

[18] Timothy Smiley. Rejection. *Analysis*, 56:1–9, 1996.

[19] Raymond M. Smullyan. *First-Order Logic*. Springer Verlag, New York, 1968.

[20] Henrich Wansing and Sara Ayhan. Logical multilateralism. *Journal of Philosophical Logic*, 2023.