Conditionals and Indexical Relativism

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This paper is about a class of conditionals that Anthony Gillies (ms) has dubbed 'open indicatives', that is, indicative conditionals "whose antecedents are consistent with our picture of the world" (1). I believe that what I say here can eventually be extended to all indicative conditionals, but indicatives that aren't open raise special problems, so I'll set them aside for today. In Weatherson (2001) I argued for an epistemic treatment of open indicatives, and implemented this in a contextualist semantics. In this paper I want to give another argument for the epistemic approach, but retract the contextualism. Instead I'll put forward a relativist semantics for open indicatives. The kind of relativism I'll defend is what I'll dub 'indexical relativism'.

I've changed my mind since Weatherson (2001) largely because of developments since I wrote that paper. There have been six primary influences on this paper, listed here in order that they become relevant to the paper.

1. The arguments that Jason Stanley (along with co-authors) puts forward in his (2007) for the view that all effects of context on semantic content are syntactically triggered, and in particular involve context setting the value for a tacit or overt variable.
2. John MacFarlane's defences, starting with MacFarlane (2003) of semantic relativism.
3. John MacFarlane's recent work, including MacFarlane (2009) at distinguishing the view that propositional truth can vary between different contexts in the same world, and the view that the truth of an utterance can be assessor-sensitive.
4. Tamina Stephenson's (2007) arguments in favour of a variable PRO_J whose value is set by assessors.
5. Philippe Schlenker's (2003) idea, modelled on some examples from Barbara Partee (1989) that plural variables can be 'partially bound'.
6. Anthony Gillies's (2009) suggestions for how to explain the acceptability of the 'import-export' schema in an epistemic theory of indicative conditionals.

I think it is noteworthy, in light of the claims one sometimes hears about philosophy not making progress, that most of the building blocks of the theory defended here weren't even clearly conceptualised at the time I wrote the earlier paper.

This paper is in seven sections. The paper starts with an argument in favour of an epistemic treatment of open indicatives, namely that only the epistemic theory can explain our judgments about inferences involving open indicatives. The argument isn't completely original, indeed much of what I'll say here can be found in Stalnaker (1975), but I don't think the scope of this argument has been sufficiently appreciated. There are a large family of epistemic theories, and in section two I'll set out some of the choice points that an epistemic theorist faces. I'll also introduce a fairly simple epistemic theory, not the one I favour actually, that I'll focus on in what follows. My preferred theory has several more bells and whistles, but I don't think those are relevant to the issues about relativism and indexicalism that I'll focus on here, and including them would just complicate the discussion needlessly.

In section three I look at four ways a theory could say that the truth of an utterance type is sensitive to context.[1] The four ways are generate by the ways the theory answers two questions. First, is the truth of the utterance type sensitive to facts about the context of utterance, as contextualists say, or to facts about the context of evaluation, as relativists say? Second, does the utterance type express different propositions in different contexts, as indexicalists say, or does it express a proposition that takes different truth values in different contexts, as non-indexicalists say? In using the term 'indexicalist', I'm implicitly assuming the theory, most associated with Jason Stanley (2007) , that the way an utterance type can express different propositions in different contexts is that it has a variable in its semantic structure, and different contexts assign different values to this variable.

Three of the four options generated by the two questions, indexical contextualism, non-indexical relativism, and non-indexical contextualism, have received some coverage in the literature. The fourth option, indexical relativism, has not been as widely discussed. In section four I say a little about its motivations, including its connection to recent work by Tamina Stephenson. The variable in the semantics for open indicatives is a plural variable; roughly it takes as values all those propositions that are known by the salient people in the context. In section five I note some odd properties about bound plural pronouns that will become relevant to the story that

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[1] It is actually a little tricky to say just what the relevant types are. I mean to use the term so that two people make an utterance of the same type if their utterances use the same words, with the same syntax, and the same elided material, and the same meaning. So two utterances of "I am Australian" could be of the same type, even if offered by different people. In some cases, e.g. "Steel is strong enough", it might be controversial whether two utterances that intuitively have different contents are either (a) of the same type, or (b) use terms with different meanings, or (c) have different elided material. I'll try to stay neutral on this point.

follows. The short version is that some plural pronouns can have their values set partially by antecedent linguistic material, and partially by context. So if a pronoun v refers to the Xs, it might be that a is one of the Xs because v is bound to a term that denotes a, and b is one of the Xs because b is contextually salient in the right kind of way to be one of the things that v denotes.

In section six I put forward the arguments against contextualism, and in particular against indexical contextualism. I start with some arguments from 'faultless disagreement', and go through four reasons why these might not be too strong. I then discuss some arguments from facts about when two people have said the same thing, or have said different things. These arguments tell against simple forms of indexical contextualism, but not against more sophisticated versions. But I conclude with a somewhat simpler argument, an argument from what I'll call easy agreement, that does seem to undermine indexical contextualism.

Finally in section seven I'll argue against non-indexical theories of open indicatives. The primary argument will be that the indexicalist has a good explanation of what's going on in McGee's 'counterexamples to modus ponens', an explanation borrowed from some recent work by Anthony Gillies, but the non-indexicalist does not. The indexicalist's explanation is that these arguments contain fallacies of equivocation; on the non-indexicalist position, it is hard to see how they equivocate. The upshot of the final two sections is that indexical relativism is correct.

1   Inferences Involving Conditionals

I'm going to start by offering an argument for an epistemic treatment of conditionals. The argument isn't particularly new, I'm basically just offering an extension of the argument in Stalnaker (1975), but I don't think the force of it has been fully appreciated. The argument starts with the observation that any instance of any of the following inference schema seems acceptable when the conclusion is an open indicative.

(1.1) *Not A or B*; so, *If A then B*
(1.2) *All Fs are Gs*; so, *If Fa then Ga*
(1.3) $f(x) = f(y)$; so *If $f(a) = c$ then $f(b) = c$*

Here are some instances of each of these inferences.

(1.4) Either Jack won't come to the party or Jill will; so if Jack comes to the party, so will Jill.
(1.5) All of Kim's students failed; so if Alex was one of Kim's students, then Alex failed.

(1.6) Peter's mother is Paul's mother; so if Peter's mother is Mary, Paul's mother is Mary.

Quite a lot has been written about (1.1)/(1.4) and I don't propose to add to it. It is arguable that part of the explanation for its attractiveness comes from pragmatic properties of disjunctions, and if that's right it would complicate the story I want to tell here. Instead I'll focus on the other two inferences.

Jonathan Ichikawa pointed out to me that (1.3) is not particularly compelling in cases where it is common ground in the conversation that $f(a)$ is not c. For instance, it is at least odd to say "Peter's mother is Jane, and she's also Paul's mother. So Peter's mother is Paul's mother; so if Peter's mother is Mary, Paul's mother is Mary." I think intuitions differ on these cases. I don't find the inferences as bad as many informants do, and generally speaking intuitions about knowledge-contravening indicatives are rather fuzzy. So I'm just going to focus on the case where the conclusions are open.

Ernest Adams (1998) has objected to the claim that instances of (1.2) always seem like acceptable inferences using the following example.

(1.7) Everyone who was at the party is a student. So if the Chancellor was at the party, the Chancellor is a student. (Adams 1998: 289)

I actually think this sounds like a perfectly fine inference. If I say that everyone at the party was a student, and someone takes me to thereby to be committed to the claim that if the Chancellor was at the party, she too is a student, then I won't complain. But perhaps my intuitions here are odd. Here is an intuition that I feel more comfortable with. If the conclusion of (1.7) is an open indicative, that is if it isn't ruled out that the Chancellor is a student, then the inference in (1.7) sounds perfectly fine to me.

Adams has to object to (1.2) because it provides counterexamples to a thesis he defends at some length. This thesis is that an inference from a single premise to a conditional *If p then q* is a good inference iff necessarily the probability of q given p is not lower than the probability of the premise. Schema (1.3) is also a problem here as well. In each case it isn't too hard to find instances where the probability of the premise is arbitrarily high, but the probability of the conclusion's consequent given its antecedent is arbitrarily low. For instance, let the salient probabilities be as below:

$$Pr(f(a) = f(b) = d) = 1 - x$$
$$Pr(f(a) = c \land f(b) = e) = x$$

If we let x be arbitrarily small, then the probability of the premise $f(a) = f(b)$ will be arbitrarily high. But the conditional probability of $f(b) = c$ given $f(a) = c$ will

be arbitrarily low. So the probability preservation property Adams has highlighted isn't what is always preserved in good inferences.

Each of the inferences in (1.1) to (1.3) is, in some sense, a good inference. It is easy to prove from that fact, and the assumption that good inferences are valid implications, that the conditional *If p then q* is true if *p* is false or *q* is true. If we assume Modus Ponens is valid (as I will throughout) then we can strengthen this conditional to a biconditional. It is obviously easy to prove this using the goodness of (1.1). Here is a proof that uses just (1.3), and some weak assumptions about truth. Line 1 is the only assumption, and every line seems to follow from the one before it.

(1) The truth value of *p* is the truth value of *p* & *q*
(2) So if the truth value of *p* is true, then the truth value of *p* & *q* is true
(3) So if *p* is true, then *p* & *q* is true
(4) So if *p*, then *p* & *q*
(5) So if *p*, then *q*

I've assumed here that we can treat *The truth value of p is true*, *p is true*, and *p* as equivalent, but this seems uncontroversial. And on pretty much any conditional logic there is, the move from (4) to (5) will be valid. Assuming bivalence, (1) is equivalent to the disjunction *p* is false or *q* is true. So we can infer from that disjunction to *If p, then q* without using the schema (1.1).

This might all suggest that open indicatives should be interpreted as material implications. But there is some data that tells against that. This suggestion from Richard Bradley (2000) seems correct.

> [O]ne cannot be certain that *B* is not the case if one thinks that it is possible that if *A* then *B*, unless one rules out the possibility of *A* as well. You cannot, for instance, hold that we might go to the beach, but that we certainly won't go swimming and at the same time consider it possible that if we go to the beach we will go swimming! To do so would reveal a misunderstanding of the indicative conditional (or just plain inconsistency). (Bradley, 2000, 220)

More generally, someone who regards *A* as an epistemic possibility, but knows that *B* is false, should regard If *A*, *B* also as something they know to be false. Bradley puts this in probabilistic terms as follows.

Preservation Condition: If $Pr(A) > 0$ but $Pr(B) = 0$, then $Pr(A \rightarrow B) = 0$

This isn't obviously the best formulation of his principle. In the example, what matters is not that *A* has non-zero probability, but that it is something that might be true. (These are different. The probability that the average temperature in Ithaca on January 1 next year will be *exactly* 32 degree Fahrenheit is 0, but that might be the exact temperature.) The structure of the inference looks to be what is given in (1.8), where K*p* means the relevant agents knows that *p*.

(1.8) ¬K ¬*A*

K¬*B*

So, K¬(If *A, B*)

But this is not valid if the conditional is a material implication. So now it is *impossible* to accept all of the intuitively plausible principles about inference involving conditionals are truth-preserving. There must be some other explanation of the reasonableness of all these inferences other than their being valid implications.

The best explanation I know of this 'reasonableness' is the one endorsed by Daniel Nolan (2003) as an explanation of inferences like (1.1). Nolan says that given an epistemic theory of the indicative, we can say that each of the inferences has the following property. Any speaker who knows the premise is in a position to truly assert the conclusion. Call an inference like this, where knowledge of the premise implies truth of the conclusion, epistemically acceptable. If we are confusing valid implications with epistemically acceptable inferences, this could explain why all of (1.1) through (1.3) seem reasonable. More impressively, this hypothesis of Nolan's explains why (1.8) seems reasonable, given an epistemic theory of indicatives. If we know that *A* is true in some epistemic possibilities, but *B* is false in all of them, then all the epistemically salient alternatives where *A* is true will be ones where *B* is false. So (1.8) will turn out to be a good inference, by Nolan's criteria. So (1.8), like (1.1) through (1.3), is epistemically acceptable. So given Nolan's epistemic account of reasonable inference, and an epistemic theory of indicative conditionals, we can explain the reasonableness of all five problematic inferences. In the absence of any other good explanation of this reasonableness, this seems to me to be a good reason to accept both Nolan's account and an epistemic theory of indicative conditionals.

2   The Simple Epistemic Theory of Conditionals

For concreteness, I'll work in this paper with a very simple theory of conditionals. I assume that in general a conditional *If p*, *q* has the logical form C(*p*, *q*, X), where C is the conditional relation, and X is a plural variable that denotes some propositions taken as fixed in the context. The simple epistemic theory makes two additions to this basic assumption.

First, there is some epistemic relation R such a proposition *s* is among the X iff some salient individual *i* stands in relation R to *s*. We'll use R(*i*) to represent those propositions. It will become important later that X is genuinely a plural variable, so R(*i*) is not a set of propositions, or a fusion of propositions (whatever that would be). Rather, I just mean to be plurally referring to the propositions that stand in relation R to *i*. (Note that I'm not saying anything here about how *i* is determined; my preferred theory is that it is the *evaluator* of any conditional utterance, but nothing in the simple epistemic theory turns on this.)

A very conservative version of the theory says that R is the knowledge relation. One can liberalise the theory in two respects. First, we can say that R is the 'position to know' relation. Second, we can say that *sRi* iff someone salient to *i* knows that S. A maximally liberal version of the theory says that *sRi* iff someone salient to *i* is in a position to know that S. I'm not going to argue for this here, but I think this maximally liberal option is the way to proceed, so that's what I'm going to adopt for the sake of exposition. Nothing turns on this adoption in what follows. Indeed the arguments against contextualism and for relativism are stronger the more constrained R is, so this is tilting the playing field away from my preferred outcome.

Second, the simple theory I have in mind says that C is basically just the a priori entailment relation. So C(p, q, X) is true iff p plus X a priori entail q. If you want to say that entailment is a relation between a set and a proposition, the claim is that the union of $\{p\}$ and $\{s: s$ is among the X$\}$ a priori entail that q.

There are several ways in which one might want to complicate the simple epistemic theory. My preferred theory involves some of these complications. Here are some complications that have been proposed in various ways.

First, we might change C to stipulate that whenever p and q are true, C(p, q, X) is true. This is equivalent to endorsing strong centring in the sense of Lewis (1973). Assuming every proposition in X is true, as I've done above, means that we've already guaranteed that C(p, q, X) is false when p is true and q is false.

Second, we might deny bivalence in the following way. Say that C(p, q, X) is true iff p and X a priori entail that q, false if it is not true and also p and X entail $\neg q$, and indeterminate in truth value otherwise. Going down this path allows one to endorse conditional excluded middle, as supported by Stalnaker (1981). Denying bivalence does not compel acceptance of conditional excluded middle, but it becomes an interesting possibility once you go down this path.

Third, we might say that R is a disjunctive relation, so some propositions are among the R(*i*) because they stand in an epistemic relation to *i*, and others are in because they are in some sense 'fixed facts' of *i*'s world. Nolan (2003) uses a quite different formalism, but if we wanted to translate his theory into this formalism, that's what we'd do.

Fourth, we could make C a more complicated relation. In particular, we could make it in a sense non-monotonic, e.g. by saying that $C(p, q, X)$ holds iff the epistemic probability of q given p and X is sufficiently high. If C is non-monotonic in this sense, then we can have a conditional logic that looks like some of the conditional logics in Lewis (1973).

For what it's worth, I favour the first and (a version of) the second of these complications, but not the third and fourth. Defending those preferences would take us too far afield however. What I mostly want to show in this paper is that whatever form of epistemic theory we adopt, we should adopt what I'll call an indexical relativist version of that theory. So I'll just presuppose the simple epistemic theory throughout, because the general form of the argument should be easily adoptable whichever complications one adds on. The task of the next section is to introduce indexical relativism.

3   Four Kinds of Sensitivity

Let's say that one is tempted towards a kind of moral relativism. So when old Horace, way back when, "Premarital sex is morally worse than driving drunk" he said something true in some sense, and when modern Kayla now says "Driving drunk is morally worse than premarital sex", she also says something true in a sense. How might we formalise these intuitions? (Not, I might add, intuitions that I share.) There are a few simple options, breaking down along two distinct axes. To save space, I'll write P for pre-marital sex, D for driving drunk, and < for the relation *is morally worse than*, in what follows.[2]

The first axis concerns the nature of propositions about the moral. One option is to say that moral codes are part of the propositions that are the content of Horace's and Kayla's utterances. For example, we might say that when old Horace makes his utterance, its content is the proposition *P < D in M_O*, where M_O is Horace's old moral code. Conversely, when Kayla makes her utterance, its content is the proposition *D < P in M_N*. where M_N is Kayla's new moral code. This option, as Sayre-McCord (1991) notes, treats 'moral' as being like 'legal'. When we say "Insulting the Thai monarch is illegal", the content of our utterance is the proposition *Insulting the Thai monarch is illegal in L*, where L is some salient legal code. That's why typical utterances of that sentence in Bangkok are true, but typical utterances of it in St Andrews are false. Call this option *indexicalism*, since it thinks there is

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[2] I don't mean to suggest that these are the *only* options. I'm leaving off options on which there are contextual effects on semantic content that are not syntactically triggered, for example. My reason for doing that is that there are, I think, good reasons for thinking that the context-sensitivity of indicative conditionals *is* syntactically triggered, so I don't need to investigate non-syntactic triggers here.

an indexical element in the semantic structure of what Horace and Kayla say. Because this will become crucial later, what I'm taking to be essential to indexicalism is simply the view that there is a moral code in the proposition expressed, not that it is the moral code of the speaker.

A quite different option is to say that the content of Horace's utterance is simply the proposition $P < D$. The relativism comes in because it turns out that propositions are true or false relative to, inter alia, moral codes. The proposition $P < D$ is true in M_O, and false in M_N. The analogy here is to the way the very same proposition can be true in one world false in another. This option, which I'll call *non-indexicalism*, says that moral codes function much like worlds; they are things relative to which propositions are true or false. The non-indexicalist takes Kaplan (1989) to be on the right track in saying that propositions are true or false relative to world-time pairs, but thinks that the indices relative to which propositions are true or false are even more fine-grained than that.

The second axis concerns which context is relevant to the truth of the utterance. One option is to say that it is the context of utterance. A second option is to say that it is the context of evaluation. Following Macfarlane (2007); MacFarlane (2009), I'll call the first option *contextualism*, and the second option *relativism*. The point that's worth focussing on here is that what choice we make here cuts across the choice we make on the first axis. So there are four options available. To set these out, we need to introduce a third character (call him Deval) who *assesses* Horace's and Kayla's utterances. For concreteness, call Deval's moral code M_A, and say that it agrees with M_N on the point at issue. Then here are the four options we have.

- *Indexical Contextualism*. The propositions that are the content of Horace's and Kayla's utteranes include moral codes, and which code that is is determined by features of their utterance. So the content of Horace's utterance is the proposition $P < D$ *in* M_O, and Kayla's the proposition $D < P$ *in* M_N. Deval should assess each of them as having uttered truths.
- *Non-indexical Relativism*. The propositions that are the content of their utterances do not include moral codes, and their utterances are only true or false relative to a moral code provided by an assessor. So the content of Horace's utterance is simply $P < D$, and Kayla's $D < P$. Since in M_A $D < P$ is true, Deval should assess Horace's utterance as false, and Kayla's as true.
- *Non-indexical contextualism*. The propositions that are the content of their utterances do not include moral codes, but the truth-value a moral utterance is the truth-value of its content in the context it is expressed in. So the content of Horace's utterance is simply $P < D$, and Kayla's $D < P$. Since Horace makes his utterance in a context where $P < D$ is part of the prevailing moral code, his utterance is true. So Deval and Kayla should assess it as true, even though

they think the proposition Horace expressed is false. This isn't contradictory; a person in another possible world can make a true utterance by expressing a proposition that is (actually) false, and for the non-indexical contextualist, moral codes are in a way like worlds. Kayla's utterance is true as well, since it is made in a different context.

- *Indexical relativism.* The propositions that are the content of Horace's and Kayla's utteranes include moral codes, and which code that is is determined by features of the context of assessment. So when Deval hears of these two utterances, he should interpret the content of Horace's utterance to be $P < D$ in M_A, and of Kayla's to be $D < P$ in M_A. Since the latter proposition is true, he should interpret Kayla's utterance as true, and Horace's as false.

It might make it easier to picture these positions in a small table, as follows.

	The speaker's moral code matters to utterance truth (contextualism)	The assessor's moral code matters to utterance truth (relativism)
Propositions include moral codes (indexicalism)	Indexical Contextualism	Indexical Relativism
Propositions are true or false relative to moral codes (non-indexicalism)	Non-indexical Contextualism	Non-indexical Relativism

The modern discussion of non-indexical relativism, though not under that name, traces to MacFarlane (2003). The modern discussion of non-indexical contextualism, under that name, traces to Macfarlane (2007); MacFarlane (2009). Much of this paper, and all of this section, is about setting out the distinctions that MacFarlane makes in the latter papers between indexicalism and contextualism. But once we do that, we see that there is a position, indexical relativism, that hasn't had much attention. I plan to change that.

Before we get on to the content of indexical relativism, a small note on nomenclature is in order. I've picked the names I have so (a) we'll have a compositional naming scheme and (b) we get 'non-indexical contextualism' to denote what it denotes in MacFarlane's terminology. This does mean using the term 'indexical relativism' in a slightly different way to how it has been used in the part. Einheuser (2008) and López de Sa (2007a) each use 'indexical relativism' to mean just what I've meant by 'indexical contextualism'. Kölbel (2004) also uses the term 'indexical

relativism', though López de Sa (2007b) argues that he too just means contextualism, and I'm inclined to agree. So though the name had been previously used, it had not been used to express a distinctive view.

On the other hand, there had been some discussions of the position I'm calling 'indexical relativism'. In Egan et al. (2005) we call such a position 'content relativism', though Cappelen (2008) uses that term for a slightly different position. In MacFarlane (2005) he discusses 'assessment indexicality', a property sentences have if they express different propositions in different contexts. So there doesn't seem to be a settled terminology for this corner of the table, and I propose to take 'indexical relativism' for it.

4   Indexical Relativism

In "Judge Dependence, Epistemic Modals, and Predicates of Personal Taste", Tamina Stephenson proposes a variant on Peter Lasersohn's (2005) relativist account of predicates of personal taste. Stephenson proposes that predicates of personal taste always encode relations between an object and an assessor. So when we say "Warm beer is tasty" we express some proposition of the form *Warm beer is tasty to X*. So far, this is not particularly new. What is interesting is Stephenson's suggestion that some of the time (but not always) there is a 'silent nominal' PRO$_J$, whose value is the 'judge'. So the utterance will be true as judged by y iff warm beer is tasty to y. There are several advantages to positing a tacit parameter. One that Stephenson stresses is that in some cases, e.g. when we are talking about the tastiness of various brands of cat food, we can let the value of this parameter be the cat rather than any human. But, by letting it by default take the value PRO$_J$, Stephenson shows that we can accommodate most of the intuitions that motivate Lasersohn's relativism.

Now Stephenson is not an indexical relativist, as I've defined that position. For according to the indexical relativist, propositions are only true or false relative to worlds. And Stephenson has propositions be world-time-judge triples. But I think we can adopt her idea to set out a kind of indexical relativism. I'll first say how this could go in the moral case, then apply it to conditionals.

The moral indexical relativist says that the context-neutral content of an utterance like Kayla's is not a complete proposition. Rather, it is a propositional frame that we might express as $D < P$ in $M(PRO_J)$, where M(x) is x's moral code, and PRO$_J$ is (as always) the judge. Relative to any judge, the content of her utterance is that $D < P$ in that judge's moral code. So relative to Horace, the content of her utterance is the false proposition $D < P$ in M_O, and relative to Deval it is the true proposition $D < P$ in M_A. That's why it is fine for Horace to say "I disagree", or "That's false", or "She speaks falsely", and fine for Deval to say "I agree", or "That's

true", or "She speaks truly". Now I reject any kind of moral relativism, so this isn't my theory for moral language, but it's a theory that could in principle work.

What I will defend is indexical relativism for indicative conditionals. In general, the content of an indicative conditional *If p, q* is $C(p, q, X)$, where the propositions in X are the 'background' propositions relative to which the conditional is assessed, and C is the conditional relation[3]. An epistemic theory of indicatives says that the value of X is (by default) $R(x)$, where r is some epistemic relation (on a broad construal of 'epistemic') and x is a salient individual. The indexical relativist position is that the content of an utterance of a conditional is (by default) a propositional frame that we might express as $C(p, q, R(\text{PRO}_J))$. Relative to an assessor a, the content is $C(p, q, R(a))$.

The argument for this position will come in sections 6 and 7. In section 6 I'll argue against indexical contextualism. The argument will be that if indexical contextualism were true, it should be harder to *agree* with an utterer of a conditional than it actually is. Then in section 7, I'll argue for indexicalism. The argument will be that we need to posit the third argument place in the conditional relation to explain what goes wrong in some arguments that are alleged to be both instances of modus ponens and invalid. I'll argue (not particularly originally) that these arguments involve a shift of a tacit parameter, namely X. This suggests that X exists. Between those two arguments, we can conclude that indexical relativism is true. Before that, I want to look at some arguments against indexical relativism.

In Egan et al. (2005) we mention two arguments against this position. One is that indexical relativism is incompatible with a Stalnakerian account of the role of assertion. Assertions, we said, are proposals to add something, namely their content, to the context set. But if the content of an assertion is different in different contexts, then it is impossible to add *it* to the context set. And that, we thought, was a problem. I now think there's a relatively simple way around this.[4] If you want to add a proposition to the context set, then there has to be a context. And relative to any context, a conditional does have a content. So given any context, the content of the conditional (relative to that context) can be added to the context set. And that's all the Stalnakerian account requires.

Perhaps a stronger version of this objection is that even if you can figure out, given the rules, what move a speaker is making according to this theory, this isn't a move that sensible speakers should want to make. So imagine that A says that if p, then q, and says this because they have just discovered something no one else

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[3] I'm assuming throughout that it is sufficient for the truth of $C(p, q, X)$ that it is a priori that p plus X entail q. I also think that's necessary, but I won't lean on this assumption.

[4] The move I'm about to make bears at least a family resemblance to some moves López de Sa (2008) makes in defending what he calls 'indexical relativism', though he means something different by that phrase.

knows, namely $\neg(p \,\&\, \neg q)$. Now B hears this, not because A tells her, but because of a fortuitous echo. B takes A to be expressing the proposition $C(p, q, R(B))$, and proposing that it be added to the context set. But that's a terrible proposal, we might object, because A has no reason to know that $C(p, q, R(B))$, since she knows nothing about B's knowledge. Since there is nothing wrong with A's utterance, and the theory interprets her as making an indefensible proposal to add something to the context set, the theory is wrong.

This objection is potentially a powerful one, and any version of indexical relativism must say something about such an objection. What I say is that the objection misconstrues $R(B)$. If B is considering an utterance by A, even if B does not know that A is the author of that utterance, then any proposition that A knows is among the $R(B)$. I think this holds quite generally. If A knowably asserts that p, and B considers it and says "That might not be true", what B says is false, even if B does not know whether p is true. The reason is that B is taking A's knowledge to be, for the time being, relevant to the context of her utterance. So in short, the knowledge on which A relies for her utterance is carried in to every context in which that very utterance is assessed. That's why it is acceptable for A to make such a sweeping proposal, namely that for every x who evaluates her utterance, $C(p, q, R(x))$ should be added to the common ground of x's context. This response relies heavily on specific features of the interaction between conditionals and context, and I don't think it generalises very far. It may be that this style of objection does defeat some prima facie plausible versions of indexical relativism, though it does not touch indexical relativism about open indicatives.

A related objection, to a quite different proposal, is made in King and Stanley (2005). They oppose the theory that the semantic content of an utterance is something like a character. They say the content has to be a proposition, and the reason for this is that "Our understanding of a sentence in a context is due to a compositional procedure that calculates the content of the whole sentence from the referential contents of its parts." This seems like a good reason for not taking the semantic content of a sentence in general to be its character. And we might worry that it could be extended to an argument against the view that the content of a conditional is a function from contexts of assessment to propositions. But on closer inspection it seems like no such generalisation is possible. After all, someone interpreting a conditional *can* assign a value to the variable X that takes different values in different contexts of assessment. They can just 'replace' PRO$_J$ with themselves when interpreting the conditional. The important point here is that the view that the utterance does not have a context-neutral semantic content is consistent with it having a content relative to any interpreter, and hence to interpreters discovering its content (relative to them).

The other objection we made to indexical relativism in the earlier paper was that it left as unexplained some phenomena about the behaviour of epistemic modals in propositional attitude reports that the non-indexical theory could explain. I still think this is an advantage of the non-indexical theory, but I don't think it is decisive. (In general, it isn't a deal breaker that one theory has to take as a brute fact something that a rival theory explain, although it does count in favour of the rival.) I'll say more about this objection when we discuss propositional attitude reports in more detail in section 6. But first, I need to introduce some facts about the behaviour of plural pronouns that my indexical relativist theory will exploit.

5   Partial Binding

Philosophical orthodoxy has it that all pronouns fall into one of two broad categories. On the one hand, there are deictic pronouns, whose job it is to refer (presumably directly) to a contextually salient object. On the other hand, there are pronouns whose job it is to denote (one way or another), an object denoted earlier in the discourse. Examples of the latter kind include the tokens of 'she' in (5.1) to (5.3).

(5.1) If Suzy enters the competition, **she** will win.
(5.2) Every student will get the grade that **she** deserves.
(5.3) If a dictator has a daughter, **she** is pampered by the state.

I'm not going to go into the (very interesting) debates about how many different kinds of pronouns are represented by the three tokens of 'she' above, nor about which of these pronouns are directly referential, which are quantifiers, and which are neither of these. All I want to note is that the pronouns represented here fall into a different category than simple deictic pronouns, that refer to a contextually salient individual.

Thomas (McKay, 2006, Ch. 9) has argued that the behaviour of plural pronouns mirrors the behaviour of singular pronouns. He shows that for every different kind of singular pronoun we can find, or even purport to find, we can find plural pronouns behaving the same way. The following three sentences, which are about a film school where girls make films in large groups, have pronouns that behave just like the three tokens of 'she' above.

(5.4) If some girls enter the competition, **they** will win.
(5.5) Some students will produce a better film than we expect **them** to.
(5.6) If a student dislikes some girls, **their** work suffers.

What is quite noteworthy about plural pronouns, however, is that they need not fall into one of the two major categories I mentioned at the start of the section.[5] It is possible to have a plural pronoun whose denotation is determined partially by context, and partially by the denotation of earlier parts of the discourse. Consider, for example, (5.7), as uttered by Jason.

(5.7) If Ted comes over, we'll go and get some beers.

It seems the 'we' there denotes Ted and Jason. It denotes Jason because it's a first-person plural pronoun, and Jason is the speaker, and the speaker is always among the denotata of a first-person plural pronoun. Arguably, the 'we' is anaphoric on 'Ted', but this does not mean it denotes only Ted. Rather, it means that Ted is among the denotata of 'we', the others being determined by context. One might object that really 'we' in (5.7) is deictic, and Ted is among its denotata because he has been made salient. I think that's probably a mistake, but I don't want to press the point. Rather, I'll note some other cases where such an explanation is unacceptable. The following example, due to Jeff King (p.c.) shows that 'we' can behave like a donkey pronoun.

(5.8) If any friend comes over, we'll go and get some beers.

Intuitively that's true, as uttered by Jason, just in case for some salient class of friends, if any member of that class comes over, Jason and that friend will go and get beers. Now it is controversial just how to account for donkey pronouns in general, and I'm not going to take a side on that. But however they work, donkey pronouns seem to fall on the second side of the divide I mentioned at the top of the section. And first person singular pronouns are paradigmatic instances of pronouns that get their reference from context. What's notable is that first-person plural pronouns can display both kinds of features.

This is not a particularly new point. Example (5.9) was introduced by Barbara Partee in 1989, and there is a longer discussion of the phenomena by Phillipe Schlenker in his (2003). The latter paper is the source for (5.10) and (5.11).

(5.9) John often comes over for Sunday brunch. Whenever someone else comes over too, we (all) end up playing trios. Partee (1989)

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[5] I thought this was a way in which plural pronouns were unlike singular pronouns, but Zoltán Szabó suggested persuasively that singular pronouns could also be partially bound in the sense described below. The interesting cases concern pronouns that seem to refer to objects made from multiple parts, with circumstances of utterance determining some parts of the referent, and the other parts being the denotata of the terms to which the pronoun is partially bound. I'm not going to take a stand on whether such pronouns exist, but if Szabó's suggestion is correct, then the need to take X to be a plural variable is lessened.

(5.10) Each of my colleagues is so difficult that at some point or other we've had an argument. Schlenker (2003)
(5.11) [Talking about John] Each of his colleagues is so difficult that at some point or other they've had an argument. Schlenker (2003)

Schlenker describes what is going on here as 'partial binding', and I'll follow his lead here. The 'we' in (5.10) is bound to the earlier quantifier phrase 'Each of my colleagues', but, as above, this does not mean that it merely denotes (relative to a variable assignment) one of the speaker's colleagues. Rather, it denotes a plurality that includes the colleague, and includes the speaker. And the speaker is supplied as one of the denotata by context.

The reason for mentioning all this here is that my theory of how conditionals behave involves, among other things, partial binding. The general semantic structure of a conditional is $C(p, q, X)$, where X is a plural variable that denotes some propositions. I think X can, indeed often is, partially bound. In simple cases a proposition is among the X just in case it stands in relation R to a salient individual i. In more complex cases, X is partially bound to an earlier phrase, and in virtue of that some proposition s is among the X. But the propositions that stand in relation R to i are also among the X, because X is only partially bound to the earlier proposition. If there were no other instances of partial binding in natural language, this would be a fairly ad hoc position to take. But there shouldn't be any theoretical problem with assuming that tacit variables can behave the way that overt pronouns behave.

6 Against Indexical Contexualism

One usual way to argue for relativist theories is to appeal to instances of faultless disagreement. It is natural to think that such arguments could work in the case of open indicatives. Since Gibbard (1981) there has been a lot of discussion over cases where A knows $\neg(p \,\&\, \neg q)$, and B knows $\neg(p \,\&\, q)$. It seems A can truly, even knowledgeably, say *If p, q*, and B can truly, even knowledgeably, say *If p, ¬q*. And, in the right context, it might seem that this is a case where A and B disagree. One might try and argue that the only way to explain this faultless disagreement between A and B is through some variety of relativistic semantics. I think that will be a hard argument to make out for four reasons.

First, some people hold that the notion of a faultless disagreement is incoherent. I suspect that's wrong, and the concept is coherent, but making this argument stick would require showing that faultless disagreement is indeed coherent. I want the argument for indexical relativism about open indicatives to not rely on the coherence of faultless disagreement.

Second, two people can disagree without there being any proposition that one says is true and the other is false. (This should be familiar from debates about non-cognitivism in ethics.) If A says "I like ice cream" and B says "I don't like ice cream", then there is a natural sense in which they are disagreeing, for instance. But arguments from disagreement for relativism generally require that when two people disagree, there is a proposition that one accepts and the other rejects, and that may not be true.

Third, there is some special reason to think that this is what happens in the conditionals case. In this case A and B are having a *conditional* disagreement. Perhaps we intuit that A and B are disagreeing merely because of this conditional disagreement. For comparison, if A and B had made a conditional bet, we would describe them as having made a bet in ordinary discourse, even if the bet is not realised because the condition is not satisfied.

Finally, as Grice (1989) showed, there can be cases where we naturally describe A and B as disagreeing in virtue of two utterances, even though (a) those utterances are simple assertions, and (b) the assertions are consistent. Grice's case is where A says that p or q is true, and B says that p or r is true, with stress on r, where q and r are obviously incompatible. Perhaps the natural thing to say here too is that A and B have a conditional disagreement; conditional on $\neg p$, A thinks that q and B thinks that r. So this argument seems to need a lot of work.

An apparently stronger argument comes from indirect speech reports. It seems that in any case where a speaker, say Clarke, says "If the doctor didn't do it, the lawyer did", then in any other context, we can report that by saying "Clarke said that if the doctor didn't do it, the lawyer did." This might look to pose a problem for indexical contextualism.

Assuming that the content of *If p, q* is $C(p, q, R(i))$, where i is some person made salient by the context of utterance. Let p be *The doctor didn't do it*, and q be *The lawyer did it*, c be Clarke, and h be the person who reports what Clarke said. Then it seems that what Clarke said is $C(p, q, R(c))$. But it seems that the content of what comes after the *that* in the report is $C(p, q, R(h))$. But since $R(c)$ might not be the same as $R(h)$, this should look like a bad report.

I think this is something of a problem for the indexical contextualist, but it isn't beyond repair. It could be that the variable i in the speech report is bound to the name at the start of the report, so the value of i in *Clarke said* $C(p, q, R(i))$ is simply Clarke herself. This is a slightly odd kind of binding, but it isn't impossible, so this doesn't quite rule out a contextualist theory.

As MacFarlane (2009) argues, the felicity of homophonic reports does not raise a problem for either kind of non-indexical theory. I'll argue that it also doesn't pose a problem for indexical relativism.

The indexical relativist thinks that, on its most natural interpretation, the content of Clarke's utterance is $C(p, q, R(\text{PRO}_J))$. Similarly, it might be thought that the natural interpretation of what comes after the *that* in the report is $C(p, q, R(\text{PRO}_J))$. So it isn't surprising that the report is acceptable.

I can imagine an objector making the following speech. "Assume that Clarke's utterance was sincere. Then it seems natural to say that Clarke believes that if the doctor didn't do it, the lawyer did. But it is odd to think that Clarke believes $C(p, q, R(\text{PRO}_J))$. What she believes is $C(p, q, R(c))$. The only way to get belief reports to work on the indexical contextualist theory is to insist that the i is bound to the subject of the report. But once you say that it is ad hoc to deny that the i is also bound to the subject in a speech report. And not just ad hoc, it implies that (relative to our context) Clarke doesn't believe what she says, for she says $C(p, q, R(\text{PRO}_J))$ but believes $C(p, q, R(c))$. On the other hand if the i is bound to the speaker in a speech report, so what Clarke is said to have said is $C(p, q, R(c))$, then (a) you have no advantage over the indexical contextualist, and (b) you can't explain why the report is felicitous, since you say she says something else, namely $C(p, q, R(\text{PRO}_J))$."

I have three responses to this critic. The first is that I'm not convinced that having a different treatment of belief reports and speech reports, letting i be PRO_J in speech reports and the believer in belief reports, is too terrible. The argument that it would be ad hoc to treat speech reports and belief reports separately seems weak. It is worse if we end up, because of the structure of the theory, accusing Clarke of insincerity. One way of avoiding that response is to accept the binding proposal. But it isn't the only way. If we make two assumptions about C and R, we can sidestep the danger.

The first assumption is that C is monotonic in the sense that $C(p, q, X)$ entails $C(p, q, X + Y)$. The second is that xRp is true in case someone salient to x bears R to p, and the utterer of the judged sentence is salient (in this sense) to the judge. (Note this is exactly the assumption that I made earlier to defend my proposal about what effect uttering a conditional has on the Stalnakerian context.) Now not all indexical relativists will want to make these assumptions, but I'm happy to do so. Now if Clarke believes *If p, q*, she believes $C(p, q, R(c))$. So she either believes she knows $\neg(p \ \& \ \neg q)$, or believes she knows some things that (perhaps unbeknownst to her) entail it. That means that, whoever the judge of her utterance is, she believes that $R(\text{PRO}_J)$ either includes or entails $\neg(p \ \& \ \neg q)$. So she believes $C(p, q, R(\text{PRO}_J))$, as required.

So I don't think the indexical relativist has to concede to the critic that speech reports involve binding in this way. But I might be wrong about this, so my second

and third responses concede this point, and argue that it doesn't harm the indexical relativist position.

The second response is that even with this concession, the indexical relativist has a small advantage over the indexical contextualist. Drawing on Stephenson's work, we could argue that (a) PRO_J is often the value of a tacit variable, and (b) whenever it is the default value of a variable, then that variable is bound to the subject of a propositional attitude report. If that is the case, then the indexical relativist could unify a number of different cases that would have to be treated separately by the indexical contextualist. Still, it is true that the non-indexicalist has an even larger advantage here, since they can explain why this (apparent) binding holds, but I don't think this advantage is decisive. This is the one argument for non-indexicalism that I mentioned in section 4 might still have some force, though not I think enough to override the argument for indexicalism in the next section.

The third response is that the indexical relativist has a simple explanation of why the reports are natural, even on the assumption that the i is bound to the speaker. First consider a similar case. Imagine Clarke had simply said "The lawyer did it", i.e. q. It would be natural to report her as having said that the lawyer actually did it. Now one can imagine being surprised at this. Clarke said something contingently true, but we reported her using a proposition *that the lawyer actually did it*, that is necessarily true. How is this possible? Well, it is because in saying q, she immediately and obviously commits herself to *Actually q*, and if a speaker immediately and obviously commits themselves to a proposition in virtue of an utterance, then it is natural to report them as having said that proposition. Speakers are generally committed to the truth of the utterances from their own perspective, so Clarke is committed to $C(p, q, R(c))$. (Arguably that is all she is committed to, as opposed to $C(p, q, R(PRO_J))$.) So we can report her as having said $C(p, q, R(PRO_J))$. And if i is bound to the speaker, that is what we do report her as having said by saying "Clarke said that if the doctor didn't do it, the lawyer did."[6]

So both the argument from disagreement and the argument from speech report against indexical contextualism have run up against some blocks. There is another argument, however, that is effective against it. This is an argument from easy agreement. Assume again that Clarke said "If the doctor didn't do it, the lawyer did." Assume that an arbitrary person, call him Rebus, knows that Clarke made this utterance, and knows that either the doctor or the lawyer did it, that is knows that $\neg(p \,\&\, \neg q)$. On that basis alone, it will be natural for Rebus to make any of the following utterances. "I agree"; "That's right"; "That's true"; "What she said is true";

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[6] This response is similar to some of the arguments for speech act pluralism in Cappelen and Lepore (2005).

"She spoke truly". Any of these are hard to explain on the indexical contextualist view, according to which agreement should be harder to get than this.

On the indexical contextualist view, Clarke said C(p, q, $R(c)$). Now on most accounts of what r is, Rebus need not know that $\neg(p \& \neg q)$ is one of the propositions in $R(c)$. He need not know that Clarke know this, or that Clarke could have known this, or really anything else. As long as he knows that Clarke made this utterance, it seems acceptable for him to agree with it using any of the above formulations.

There are two ways that the indexical contextualist might try to explain this agreement. First, they could try to argue that it is acceptable for Rebus to agree with Clarke's utterance despite not agreeing with the propositional content of it. Second, they could try to argue that it is the case, in any case fitting the above description, that he agrees with the propositional content of what Clarke said.

The first approach does not seem particularly attractive. Not only does it seem theoretically implausible, it is hard to find independent reason to believe that this is how agreement works. Generally if a speaker utters some term with a contextually sensitive term in it, then another speaker will not agree with the utterance unless they agree with the proposition we get by filling in the appropriate value for the contextually sensitive term. Or, perhaps more precisely, they will not accept all five of above forms of agreement.

This is how agreement works when the utterance contains an explicit indexical like 'I'. Note that if Clarke had said "I like Hibs", Rebus could say "I agree" if he too likes Hibs. But he couldn't have said, for instance, "What she said is true" unless Clarke liked Hibs. This is why the variety of forms of agreement matters. Perhaps more contentiously, I think this is also what happens when the original utterance involves quantifiers with tacit domain restriction, or comparative adjectives with tacit comparison classes, or modals, or any other kind of context sensitive language. So the indexical contextualist should look at a second option.

The second option is to say that the proposition Rebus knows, $\neg(p \& \neg q)$, will be one of the $R(c)$. There are two ways to do this. First, we could say that $R(c)$ includes all propositions that are known by anyone, so as long as Rebus knows $\neg(p \& \neg q)$, it is one of the $R(c)$. But this just about reduces back to the material implication theory of indicatives, since any conditional will be true as long as anyone knows the corresponding material implication. And that is implausible. Second, we could say that $R(c)$ includes any proposition known by anyone who hears c's utterance. That would again ensure that $\neg(p \& \neg q)$ is one of the $R(c)$. But again, it is fairly implausible. For one thing, it doesn't *seem* that the truth of the conditionals I'm writing in this paper depend on how wide a readership the paper has. For another, under some assumptions this again collapses into the material implication theory. Assume that there is an omniscient deity. Then for any conditional *If p, q*, the deity's

knowledge is among $R(c)$, and if $\neg(p \,\&\, \neg q)$ is true, then it is one of the $R(c)$. But then *If p, q* will be true, which was not what we wanted. Now we don't know that there is an omniscient deity, but it seems reasonable to require that our semantic theories be at least consistent with the existence of such a deity.

So I think the indexical contextualist has no explanation of this agreement phenomena. But the indexical relativist has no such problem. When Clarke's utterance is being judged by Rebus, it expresses the proposition $C(p, q, R(\text{Rebus}))$, so $\neg(p \,\&\, \neg q)$ is clearly one of the propositions in the third clause. That's why agreement with another's utterance of a conditional is so easy.

Similarly there is no problem for a non-indexical relativist. It is a little trickier to know whether there is a problem here for the non-indexical contextualist. It is easy to see why many of the locutions Rebus could use are acceptable. Rebus does, after all, accept the proposition that Clarke expresses, namely $C(p, q)$. The only complication concerns "She spoke truly." There is a sense in which that's not really true. After all, the non-indexical contextualist thinks that Clarke's *utterance* was false, since they think that an utterance is true iff the proposition it expresses is true in its context. If we think, as probably isn't compulsory, that "She spoke truly" means what the theorist means by saying the utterance is true, then there is a problem for the non-indexical contextualist.

Setting aside those complications, what is clear is that the phenomena of agreement raises a problem for the indexical contextualist, and not for the relativist. We can put the problem another way. If indexical contextualism is true, it should be possible for Rebus to say "Clarke's utterance "If the doctor didn't do it, the lawyer did" was not true, but if the doctor didn't do it, the lawyer did." Again, this seems like it should be possible on theoretical grounds, and it is possible for most contextually sensitive sentences. But this doesn't seem to be a coherent speech on Rebus's part. This is of course just another manifestation of the phenomena that agreement with conditionals is easy. If Rebus accepts that if the doctor didn't do it, the lawyer did, then he accepts that Clarke's utterance was true. The indexical contextualist can't explain this, so indexical contextualism is false.

7 Against Non-Indexicalism

The argument for an indexicalist account of indicatives is that they allow an elegant account of what is going on in apparent counterexamples to modus ponens, such as the cases due to Vann McGee (1985). What these cases turn on is that right-embedded conditionals, like *If p, then if q, r* seem equivalent, in some sense, to conditional with conjunctive antecedents, in this case *If p and q, r*. Given this equivalence, and the triviality of *If p and q, p and q*, we get the result that (7.1) is trivial.

(7.1) If p, then if q, p and q

And if (7.1) is genuinely trivial, then a number of awkward consequences follow. Perhaps the worst of these consequences is that we seem to get counterexamples to modus ponens. Let p be some truth that isn't knowable. Since (7.1) is trivial, it is true. And by hypothesis p is true. But on pretty much any epistemic theory of conditionals, *If q, p and q* will not be true. So we have counterexamples to modus ponens. (This is more like McGee's 'lungfish' example than the more widely cited example about the 1980 election, but the structure I think is basically the same, and the solution I offer will generalise to all these cases.)

What I'm going to say about these cases borrows heavily from some remarks by Anthony Gillies (2009). Gillies makes two observations that point towards a solution to the puzzle McGee's cases raise.

First, we cannot in general *assert* both of the premises, namely (7.1) and p, in contexts where the conclusion, namely *If q, p and q* is not assertable. This might need to be qualified in cases where people don't know what they can assert, but it is largely right. As Gillies demonstrates by close attention to the cases, some kind of context shift between the premises and conclusion is needed in order to assert the conclusion after the premises have been asserted.

Second, there are many reasons to believe that part of what why (7.1) seems trivial is that we evaluate its consequent relative to a context in which p is taken to be part of the evidence. Gillies formalises this by having the antecedent play two separate roles, first as a constituent of the conditional uttered, and second as a context-modifier relative to which the consequent is interpreted. The formal theory I'm building here is quite different to Gillies' because of very different starting assumptions, but I will adopt Gillies' idea to the framework I'm using.

Despite Gillies' first observation, there are still three reasons to take seriously the challenge McGee's cases raise. Two of these involve using modus ponens under the scope of a supposition, and the third involves agents who don't know what they know. The first problem concerns the following implication.

(1)	If p, if q, p and q	Premise
(2)	If $\neg p$, if q, $\neg p$ and q	Premise
(3)	p or $\neg p$	Logical truth
(4)	p	Assumption for argument by cases
(5)	If q, p and q	Modus Ponens, 1, 4
(6)	(If q, p and q) or (If q, $\neg p$ and q)	Or introduction, 5
(7)	$\neg p$	Assumption for argument by cases
(8)	If q, $\neg p$ and q	Modus Ponens, 2, 7
(9)	(If q, p and q) or (If q, $\neg p$ and q)	Or introduction, 8
(10)	(If q, p and q) or (If q, $\neg p$ and q)	Argument by cases, 3, 4-6, 7-9

But on the simple epistemic theory we've been using here, (10) will not be true in cases where the truth value of p is unknown, even though it seems to follow from two trivialities and a logical truth. (I'm assuming here either that classical logic is correct, or that p is decidable.) Now it might be noted here that on some theories, particularly those that follow Stalnaker (1981) in accepting conditional excluded middle, (10) will be true. But even on those Stalnakerian theories, there will be cases where neither disjunct of (10) will be determinately true. And we can rerun a version of this argument, taking as premises that (1), (2) and (3) are determinately true, to derive as a conclusion that one or other disjunct is determinately true.

The third reason is similar to the second. We can use modus ponens in the scope of a reductio proof. Or, more colloquially, we can use modus tollens. But the following argument does not look to be particularly compelling.

(1)	If p, if q, p and q	Premise
(2)	It is not the case that if q, p and q	Premise
(3)	Not p	Modus Tollens, 1, 2

It may be objected that modus tollens is more controversial than modus ponens. But since we can derive it using just modus ponens and reductio ad absurdum, this objection looks weak. So this would be a bad result.

It might be thought best to say here that modus ponens doesn't preserve truth, but it does preserve knowledge. If a subject is in knows each premise, they can know the conclusion. But that doesn't seem right either, though the cases are slightly obscure. Assume a perfectly rational S knows that p, but does not know that she knows that p, and in fact for all she knows she knows, q and $\neg p$ is true. Again assuming (7.1) is trivial, she knows it, and she knows that p, but on an epistemic interpretation of the conditional, she won't know *If q, p and q*, since she doesn't know she knows that p.

So there is a serious problem here. Once we accept that (7.1) is trivial, a lot of unfortunate consequences follow for the epistemic theory of conditionals. Any explanation of why (7.1) seems trivial will, I think, have to start with Gillies' insight that when we interpret (7.1), we evaluate its consequent relative to a context where p is taken as given. How might we do this? Three options spring to mind.

The first option is Gillies' theory is that it is part of the meaning of the conditional that its consequent be interpreted relative to a context where its antecedent is part of the background information. That has the nice result that (7.1) is indeed trivial. It seems, however, to lead to all the problems mentioned above. Gillies' response to these is to develop a new theory of validity, which has the effect that while modus ponens is itself valid, it can't be used inside the scope of suppositions, as I frequently did above. This is a very interesting theory, and it may well work out, but I'm going to try to develop a more conservative approach.

The second option is to say that just uttering a conditional, *If A, B*, adds *A* to the background information. This seems like a bad option. For one thing, there is no independent reason to believe that this is true. For another, it can't explain what is wrong with the following kind of argument.

(1) Burns knows that if p, then if q, p and q
(2) Burns knows that it is not the case that if q, p and q
(3) Burns is logically perfect, and knows the logical consequences of everything he knows
(4) So, Burns knows not p

In a case where Burns doesn't know whether p is true, and Burns is indeed logically perfect, then intuitively (1), (2) and (3) are true, but (4) are false. And since no conditionals were asserted, it is hard to see how the context was shifted.

The third, and best, option is to say that the variable in the semantics of an embedded conditional is partially bound to the antecedent. Normally when we say *If q, p and q*, the content of that is $C(q, p$ and $q, X)$, and normally X is $R(\text{PRO}_J)$. The view under consideration says that when that conditional is itself the consequent of a conditional, the variable X is partially bound to the antecedent of the conditional. So the value of X is p plus whatever is supplied by context.

The contextualist says that that value is $R(i)$, where i is usually the speaker. So the semantic content of (7.1) is $C(p, C(q, p$ and $q, p + R(i)), R(i))$. And that will be trivial since the middle term is trivial. The relativist says that the contribution of context to X is $R(\text{PRO}_J)$. So the semantic content of (7.1) is $C(p, C(q, p$ and $q, p + R(\text{PRO}_J)), R(\text{PRO}_J))$. And again, that is trivial.

This gives us a natural explanation of what is going on in the McGee cases. There is simply an equivocation between premise and conclusion in all of the cases.

What follows from C(p, C(q, p and q, p + *R(x)*)), *R(x)*)) and p is C(q, p and q, p + *R(x)*)). But that's not what we normally express by *If q, p and q*. At least, it isn't what we express once we've made it clear that p is not part of the background information. (Here is where Gillies' observation that the McGee cases seem to require a context shift between stating the premises and stating the conclusion becomes relevant.) So although modus ponens is valid, the McGee cases are simply not instances of modus ponens, since there is an equivocation in the value of a tacit variable.

It might be argued that this is too much of a concession to McGee. Some people have the judgment that (7.1) is not always trivial, in particular that conditionals *If A, then if B, A* are not always trivially true. Personally I don't get these readings, but I note that the theory allows for their possibility. After all, binding need not be compulsory. We can interpret the 'she' in *If Suzy enters the race, she will win* deictically, if that's what makes the best sense in the context. Perhaps in cases where people are hearing the false readings of *If A, then if B, A*, all that is going on is that the tacit indexical in the embedded conditional is unbound. Similarly, if one's reaction to seeing the McGee arguments is to interpret the embedded conditionals as false, I suspect what is going on is that one is hearing the variables here as unbound. As I said, I don't get these readings, but I can explain where these readings come from.

The story I'm telling about the McGee cases is hardly new. Indeed, the view that the McGee cases are not strictly speaking instances of Modus Ponens is old enough to have been disparaged by William Lycan in his attacks on Modus Ponens.

> But this very strict sense of 'instance' is neither specific nor intended in logic textbooks ... What students and professional philosophers have always been told is that barring equivocation or overt indexicals, arguments of the sentential form If A, B; A; therefore, B are valid arguments, period ... One can continue to insist that Modus Ponens is valid for the strict sense of 'instance', but at the price of keeping us from telling easily and uncontroversially when a set of ordinary English sentences is an 'instance' of an argument form. (Lycan, 1993, 424, notation slightly altered)

But why should we give any privilege to *overt* indexicals? Tacit variables can be just as important in determining which form an argument takes. For example, the following argument is, on the most natural interpretation of each sentence, invalid.

(1) No foreigner speaks a foreign language.
(2) Ségolinè is a foreigner.
(3) French is a foreign language.
(4) Ségolinè does not speak French.

That is invalid on its most natural reading because the tacit variable attached to 'foreign' in premises 1 and 3 takes a different value. No one would reasonably say that we should rewrite the logic books so the argument form *No F Rs a G*; *Fa*; *Gb*; so ¬*Rab* is not valid on this account. Lycan is right about the downside of this point. There is no way to tell easily and uncontroversially what the form of an argument in natural language is. But we should never have believed such careful matters of interpretation would be easy. (They say life wasn't meant to be.)

Having said that, on the indexical relativist proposal offered here, it isn't *that* hard to tell what the value of X in a typical indicative is. It is usually $R(\mathrm{PRO_J})$, and there might be a very short list of circumstances where it takes any other value. Any indexical account faces a potential cost that it makes interpretation more difficult than it might otherwise be, since the hearer has to determine the value for the indexical. The fact that X is usually $R(\mathrm{PRO_J})$ minimises that cost. What is new to my proposal is that X might be partially bound in the McGee cases. But that only helps the interpretative task, since it reduces the task to a familiar problem interpreters face when the speaker uses a partially bound plural pronoun.

But the primary point of this proposal is not to offer a new solution to the McGee cases. Rather it is to note one of the requirements of this kind of (relatively familiar) solution. An equivocation solution requires that there be something in the semantic content of the conditional that takes different values in the consequent of premise 1 and in the conclusion. And non-indexical theories, by definition, can't say that there is any such thing. For the whole point of such theories is to deny that the content of a conditional is always different in contexts with different information sets. So they cannot say the McGee arguments (or the other arguments I surveyed above that use Modus Ponens in embedded contexts) involve equivocation. But then it is hard to say what is wrong with those arguments. So these theories seem, implausibly, to be committed to denials of Modus Ponens. That's a sufficient reason, I think, to be an indexicalist.

Let's take stock. In section 6 I argued that the indexical contextualist has no explanation of why it is so easy to *agree* with another's utterance of a conditional. In this section I argued that only the indexicalist can offer a satisfactory explanation of what is going on in the McGee argument. The upshot of these two arguments is that we should be indexical relativists. For only the indexical relativist can (a) explain the agreement data and (b) explain what goes wrong in the McGee arguments.

As a small coda, let me mention one other benefit of the partial binding account. When I presented an earlier version of this paper at the LOGOS workshop on Relativising Utterance Truth, the following objection was pressed to the argument in section 1 for an epistemic treatment of indicatives. It is true that when we know that $f(a) = f(b)$, then we are prepared to assert *If $f(a) = x$, then $f(b) = x$*. But it

is also true that when we merely suppose that $f(a) = f(b)$, then we are prepared to infer inside the scope of the supposition that *If $f(a) = x$, then $f(b) = x$*. The epistemic account cannot satisfactorily explain this. At the time I didn't know how to adequately explain these intuitions, but now it seems the partial binding story can do the work. It seems that inside the scope of a supposition that p, the value of X is p + Y, where Y is the value X would otherwise have had. That is, the variable in the conditional is partially bound to the supposition that governs the discourse. That explains why all the inferences mentioned in section one are acceptable, even when the premise is merely a supposition.

Coda: Methodological Ruminations

The version of relativism defended here is conservative in a number of respects. Three stand out.

First, it is conservative about what propositions are. The propositions that are the content of open indicatives (relative to contexts of assessment) are true or false relative to worlds, not to judges, or epistemic states, or anything of the sort.

Second, it is (somewhat) conservative about how the sentences get to have those propositions as content. The standing meaning of the sentence contains a variable place that gets filled by context. To be sure, it is a plural variable that can be partially bound, but there is independent evidence that plural variables can be partially bound. And of course, and this is a radical step, its value can be different for different assessors of the one utterance. But from the indexical relativist perspective, the contextualist theory that values for variables are set by contexts of utterance is an overly hasty generalisation from the behaviour of a few simple indexicals. (It isn't clear even clear that the contextualist theory can account for simple pronouns, like 'you' or 'now' as they appear in sentences like the one you are now reading, so this generalisation might have been very poorly motivated in the first place.)

Third, it is conservative about the motivation for relativism. I haven't relied on intuitions about faultless disagreement, which is an inherently controversial topic. Rather, I've argued that we can motivate relativism well enough by just looking at the grounds on which people *agree* with earlier utterances. I think there is a general methodological point here; most of the time when theorists try to motivate relativism using cases of disagreement, they could derive most of their conclusions from careful studies of cases of agreement. This method won't *always* work; I don't think you can replicate the disagreement-based arguments for moral relativism with arguments from agreement for example. But I think that is a weakness with moral relativism, rather than a weakness with the methodology of focussing on agreement rather than disagreement with arguing for relativism.

Now one shouldn't fetishise epistemic conservativeness. But a relativism that requires less of a revision of our worldview should be more plausible to a wider range of people than a more radical relativist view. And that's what I've provided with the indexical relativist theory defended here.

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