Inferentialism and Logical Knowledge

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The Vann McGee Example

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- Counterexample: Vann McGee is competent with ‘if’ (by observation), yet he does not always accept modus ponens (by example)

The Original Vann McGee Example

1. If a Republican wins the election, then if Reagan doesn't win, Anderson will win.
2. A Republican will win the election.
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Problem: This is **not** an instance of modus ponens. The conditional 'if Reagan...' contains a contextually supplied variable, and it's different between 1 and 3.

Sidenote: Other Examples

- I don't completely understand some of the other examples that come up in the Tim vs Paul debate.
- I couldn't tell, for example, whether the stipulated rules for 'and' in the recently discussed example are meant to apply only to explicit occurrences for 'and', or also to implicit occurrences, as in phrases like 'the brown cow'.
- Maybe we can talk about that later if time; I'll just focus on the Vann McGee case.

Good News for Inferentialism?

- More like a frying pan to fire movement.
- Vann McGee thinks that 1–3 is an instance of modus ponens, so if we're trying to save the theory via this kind of stunt, we'll have to go very externalist.
- Perhaps we should say that what matters is that if an argument form is actually of the form *modus ponens*, or *and-elimination*, or whatever, then competent agents will reason using it.
- It isn't plausible that competence with a particular item of logical machinery requires (infallible) ability to recognise sameness of content across arguments.

A New Problem Case

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Imagine a person who is convinced (for whatever reason) that ‘Anne’ is a male name and ‘Harold’ is a female name. They won’t infer 2 from 1, because they’ll think (falsely) that it isn’t an instance of *and-elimination*.

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- Gottlob Jr believes in a distinction between sense and reference.
- He thinks that names denote their referent in unembedded uses, and their sense in embedded uses.
- And by ‘embedded’ he means any logically complex sentence.
- He won’t be prepared to use any argument form whatsoever, at least on the externalist understanding of argument forms.

One More Puzzle for Inferentialism as Motivation.

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- The game, I take it, is to justify logical knowledge.
- Getting some rules won't do; you need a complete set.
- Two approaches: lots of axioms, or lots of rules.
- The axioms approach is clearly out: Peirce's Law is totally not something that gets blind justification.

Rules Based Justifications

- The rules approach doesn't seem much better.
- Note that we've only so far had rules that go from sentence(s) to sentence.
- But we really need either sequent-to-sequent rules, or rules that discharge assumptions, and they are really not required for competence with the words.
- Put bluntly, we need universal introduction or something like it, and lots of people who are obviously competent with 'all' can't pull that off.

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- Put bluntly, we need universal introduction or something like it, and lots of people who are obviously competent with 'all' can't pull that off.
- I'm going to talk about *all-introduction* a bit, so let's just keep this in mind.

Four Kinds of Inferentialism

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My preference is for 1A. I want to say a few things in favour of 1A, and a bit about how it might help with the big problem about basic logical knowledge.

Option 2: Speaker Meaning

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- What inferential rules does the Kleene table person accept?
- For that matter, what inferential rules does really anyone who uses an n-valued table really endorse?

I think it's best to simply deny that the speaker meaning of the connectives for such a theorist is given by inferential rules. This is consistent with the actual meaning of the connectives being given by such rules.

To Be Sure..

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- Example one: Describing what the classical logician means by ‘not’ (if one is an intuitionist).
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Waystation

- Don't say that inferentialism is a theory of speaker meaning.
- Just say that it is, if anything, a theory of semantic meaning.

Logic Matters

- Gillian Russell has a nice recent paper discussing the epistemology of logic.
- She considers the Quine-inspired position that there is nothing distinctive about the epistemology of logic.
- And she notes that a downside of such a position is that it makes it hard to justify the rule of necessitation.
- She points out that *Quine* might not have thought that was much of a downside, but we all know better.

Logical Truth Matters

- But this lets off the Quinean too easily.
- We need a distinctive epistemology of logic to justify *all-introduction*. First order predicate logic has the kind of distinctive rules that Russell (rightly) draws attention to.
- How can we know, after a bit of futzing around to prove $\varphi(a) \supset \psi(a)$, that all φ are ψ?
- We have to know something special about $\varphi(a) \supset \psi(a)$, namely that it is a logical truth.

A priori and Logic

- If there is a distinctive epistemology of the a priori, that won't do the job that we need.
- We can't go from *It is a priori that* $\varphi(a) \supset \psi(a)$ to all φ are ψ.
- That will fail, dramatically, unless our epistemology of the a priori is infallibilist.
- And infallibilism is not particularly plausible, even about the a priori.

Analyticity Won't Help

- Neither metaphysical nor epistemological analyticity of $\varphi(a) \supset \psi(a)$ suffices to infer that all φ are ψ.
- The problem is that the premise need not be analytic in virtue of the predicates; it might be analytic in virtue of the name.

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- The problem is that the premise need not be analytic in virtue of the predicates; it might be analytic in virtue of the name.
- To be sure, there are possible combinations of what a name means and what analyticity is that would help, so there are ways out here. But the window here is small, and I'd rather look somewhere else.

Necessity Won't Help

- It is much too easy for $\varphi(a) \supset \psi(a)$ to be necessarily true, as long as there are distinctive necessary truths about a.
- And that will be true on either descriptivist or referentialist treatments of names.

Let's Try Logic

- So we need a distinctive notion of logical truth, to play a particular role in our theory of *all-introduction*.
- And this role must be epistemological, so we need to have a somewhat distinctive epistemology of it.

Politician's Syllogism

- We need a theory on which logic is special, and has a special epistemology.
- Inferentialism, of the 1A kind, makes logic special with a special epistemology.
- So, we need 1A inferentialism.

There is a small worry about the validity of the argument, but never mind that...

Semantics vs Meta-Semantics

- This could be taken as a motivation for thinking that the public meanings of logical terms are inferential rules.
- But it could also (perhaps less cleanly) be taken as a motivation for thinking that the logical terms have the (referential, non-inferential) meanings they have because of their inferential role.
- The latter will only make logic distinctive if logical terms are the only terms to have an inferentialist meta-semantics, but maybe that is plausible.
- My guess is that the semantic route is better here, because meta-semantics is so messy that it is unlikely that inferential roles won't play any role anywhere else.

Hypothesis

- We get logical knowledge when, and only when, we've actually used the correct rules. The correct rules are the ones that are part of the (meta-)semantics of the logical constants.
- If one's knowledge of A is logical, then inferring that one knows A is a logical truth is usually safe. It does not require knowing exactly what the rules are, just not having wildly mistaken views about them.
- One can infer from $\varphi(a)$ to $\forall x : \varphi(x)$ iff one knows that $\varphi(a)$ is logical.

Arithmetic Knowledge

- Let's work through an example to suggest a similar kind of story in arithmetic.
- I think arithmetic knowledge ultimately comes down to knowledge of a bunch of analytic truths (e.g., that nine is the successor of eight), and some very basic logical reasoning.
- The only rule in all this that need be appealed to 'blindly' is the transitivity of identity.
- Any arithmetic step in reasoning other than transitivity requires background knowledge of arithmetic facts.

Example

- A, B and C are trying to figure out how many socks are in the drawer.
- They each know there are seven green socks, and five blue socks, and that that's all the socks, and that no sock is both green and blue.
- From this information, they all infer, and come to know, that there are seven plus five socks in the drawer.

Example

- A is an adult with statistically normal arithmetic skills, so she quickly infers that there are twelve socks in the drawer.
- B is a three year old child, who is completely unreliable at arithmetic. She guesses that there are twelve.
- A knows there are twelve socks in the drawer.
- B does not know that there are twelve socks in the drawer.

The Four-Year Old

- C is four years old, and neither knows the answer immediately, nor guesses.
- She says to herself, “I think it’s twelve, but I better check.”
- She starts counting from seven, putting one finger up at each count.
- So she says “eight” and raises her thumb, “nine” and raises her index finger, and so on through saying “twelve” and raising her little finger.
- She looks at her hand, sees that she has five fingers raised, and concludes the answer is twelve.

The Four-Year Old

- At the end of this process, but not before, she knows that there are twelve socks in the drawer.
- It is because she has come to know that seven plus five is twelve that she has sufficient evidence to know there are twelve socks in the drawer.
- Similarly, it is because A knows that seven plus five is twelve that she can know there are twelve socks in the drawer to.
- C's evidence includes that $7+5=12$, and interestingly, includes it as a bit of a posteriori knowledge.

The Identity Inference

So C knows:

- The number of socks in the drawer equals seven plus five.
- Seven plus five equals twelve.

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- Note that she need not know, or even be able to state, anything like the principle of the transitivity of identity for this reasoning to go through. That can, at least intuitively, be used blindly.

Why is Transitivity Special?

- The inference from $x = 7 + 5$ to $x = 12$ needs to be mediated by propositional knowledge that $7 + 5 = 12$.
- The inference from $x = y$ and $y = z$ to $x = z$ does not need to be mediated by propositional knowledge that identity is transitive.
- What's the difference?
- The inferentialist has a schematic answer.
- The latter inference, but not the former, is based on a rule that is meaning-connected in the right kind of way.

Why Does Meaning Matter?

- Paul has an answer to this question too; it relies on a tight connection between having a term with such-and-such logical meaning, and having a certain inferential disposition.
- But I'm sceptical of this answer for (at least) two reasons.
- One is that it connects good inference to speaker meaning, and I think it should be connected to semantic meaning (or perhaps meta-semantics).
- And the other is that this won't generalise to rules like $\forall$-introduction.

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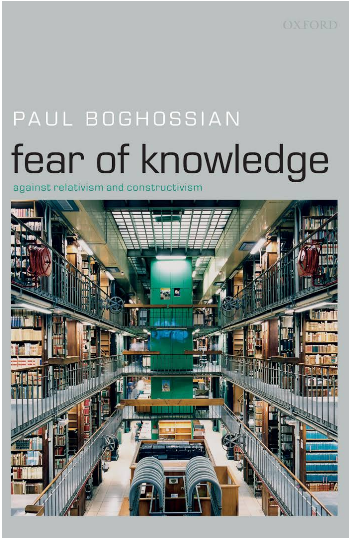
- We could just go relativist.
- Using the rules associated with the meanings of the logical terms is justification preserving because they are our rules.
- If we had other logical machinery (like the Sheffer stroke) in our public language, other moves would be permissible.
- But we don't.

But Really...


OXFORD
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fear of knowledge
against relativism and constructivism

The End