Change of Logic, Change of Meaning

Jared Warren

There seems to be logical disagreement: philosophers and logicians apparently disagree about whether inference rules like *modus ponens* are valid and about whether instances of the law of excluded middle are logically true. Against this, some philosophers have claimed that despite appearances, advocates of different logics aren't *really* disagreeing with each other. According to this way of thinking, the logical constants *mean different things* in the mouths of the warring parties—call this the *Change of Logic, Change of Meaning (CLCM)* thesis.

The *CLCM* thesis has been popular amongst philosophers who think that logic is analytic or true in virtue of meaning, but even W.V. Quine, the canonical critic of both analyticity and meaning, accepted a version of the thesis. In fact, in Quine's writings we find the most developed statement of an important argument for the *CLCM* thesis that I call the translation argument.¹ Despite its distinguished history, the *CLCM* thesis and the translation argument have fallen on hard times. When J.C. Beall and Greg Restall recently presented a novel form of logical pluralism, they took pains to distinguish their brand of pluralism from the *CLCM* type, and even despite their efforts, influential commentators like Hartry Field and Graham Priest expressed concerns that the new brand of pluralism collapsed into the older, discredited *CLCM* type.²

A common reaction to the *CLCM* thesis is to claim that different logics agree about a common core of meaning constituting inferences for the logical connectives, and so agree about the meaning of "not", "or", "if", etc. Early and informal versions of this type of view were pioneered by Hilary Putnam in the

¹See Quine (1960a), (1960b), and especially (1970); as a skeptic about meaning, Quine might not have accepted my terminology (he titles the relevant section of his *Philosophy* of *Logic*: "Change of Logic, Change of Subject")—see section 6 below for discussion of the apparent tension between the CLCM thesis and Quine's broader views in the philosophy of logic.

²Beall & Restall (2000) and (2006), Field (2009), and Priest (2001); see Restall (2002) for arguments differentiating Beall and Restall's logical pluralism from Carnap-style versions that accept a form of the CLCM thesis.

1960s and Susan Haack in the 1970s, but it has recently been developed in more detail by Francesco Paoli, Greg Restall, and others in the proof theoretic tradition in the philosophy of logic.³ These accounts typically proceed by presenting an account of the meaning of logical constants that would allow for a shared meaning for these constants among proponents of different logics, thus undermining the CLCM thesis without addressing Quine's arguments directly. In contrast, my approach will be to closely criticize and attempt to improve upon Quine's arguments.

The CLCM thesis is often treated as a position that, if not dead, is certainly on life support. Against this consensus, I will argue that, *pace* recent trends in the philosophy of logic, the CLCM thesis is true and a reformulation of Quine's translation argument for the CLCM thesis is sound. Like Quine, I will proceed from a general metasemantic background, without assuming any particular metasemantics for the logical constants.⁴ My central concern is philosophical, but at various points excegetical-historical matters concerning Quine will be relevant. The first task is to get clear on what, exactly, the Change of Logic, Change of Meaning thesis does and does not say.

1 The *CLCM* Thesis

At heart the CLCM thesis says that two speakers having different *attitudes* toward a logical claim is incompatible with those speakers meaning the exact same thing by that claim. A few preliminary clarifications are required before a more careful statement can be given.

There are three main attitudes that are relevant: acceptance, rejection, and neither acceptance or rejection. Accepting a sentence on an occasion is—at least for truth-apt declarative sentences— tantamount to believing the content that the sentence has on that occasion. Historically, many proof systems for formal logics, such as natural deduction systems, have worked only with the attitude of acceptance. A rule like modus ponens sanctions acceptance of ψ whenever ϕ and $\ulcorner \phi \rightarrow \psi \urcorner$ are accepted.⁵ Rejecting a sentence on an occasion is—at least for truth-apt declarative sentences—tantamount to disbelieving the content that the sentence has on that occasion. This is stronger than merely not believing

³See Putnam (1962), Haack (1974), Paoli (2003), and Restall (2002), for example.

 $^{{}^{4}}$ For my own views on inferentialism and the meanings of the logical constants, see my (2015).

⁵For the sake of simplicity, throughout the paper I'll often work with familiar formal logical symbols (like "¬", "→", "∨", "∧", etc.) in place of their English counterparts.

the content of a sentence: when S rejects p, p is actively barred and excluded from S's beliefs (at least under guise "p"). The early formal logicians didn't see any reason to formulate rules involving rejection, since they thought rejecting ϕ was simply a matter of accepting " ϕ "'s negation, $\lceil \neg \phi \rceil$, but this analysis has subsequently been called into question.⁶

To assume the standard acceptance-based analysis of rejection in a context where we'll be considering non-classical logics quite generally, is to risk begging important questions. For instance, paraconsistent logics don't include the rule of explosion $(\phi, \neg \phi \vdash \psi)$ and dialetheists—philosophers who think that some contradictions are true—have advocated paraconsistent logics to accommodate the possibility of our accepting some sentence, like the liar sentence ("this sentence is not true"), and its negation (which it is identical to) at the same time.⁷ If rejection was analyzed as acceptance of negation, any situation where we accepted the liar sentence would be one where we also rejected the liar sentence, since in accepting the liar we also, thereby, accept its negation; but dialetheists like Graham Priest typically deny that a sentence can be both accepted and rejected at the same time and in the same manner.⁸ Accepting the classical analysis of rejection means ruling their view incoherent at the outset.

The third attitude I mentioned, that of neither accepting nor rejecting a sentence, is really a motley rather than a psychological natural kind: there are many apparently distinct attitudes that all fall under the general rubric of "neither accepting nor rejecting" a sentence. One such attitude is suspension of judgment; another is simply having never even considered the relevant sentence; yet another is leaning heavily toward acceptance [rejection] but without enough conviction to count as fully accepting [rejecting] the sentence. All of these attitudes, and others like them, I count simply as the attitude of neither accepting nor rejecting.

The *CLCM* thesis is meant to apply only to logic, which means it is meant to apply only to differences in attitudes concerning *logical* sentences as opposed to scientific or moral or aesthetic sentences. It would probably be okay to take it is a given that we know which sentences are "logical" and which are "scientific" or whatnot, but just to be clear, let's take logical sentences to be logical truths

 $^{^6\}mathrm{See}$ Ripley (2011) for an overview of acceptance and rejection and the associated speech acts of assertion and denial.

 $^{^7 \}rm See$ Priest (1987) for diale theism and paraconsistency. Diale theists accept truth-value gluts—sentences that are both true and false—but while the term "diale theism" has become associated with the views of Priest and his followers, the views of other glut the orists (e.g., Beall (2009)) differ substantively from Priest on many important matters.

⁸See the discussion in chapter 6 of Priest (2006).

(like the law of excluded middle or any of its instances), logical falsehoods (like any instance of $\neg \phi \land \phi \urcorner$), and claims concerning logical entailment relations (like "modus ponens is valid" and "affirming the consequent is a fallacy"). That is, I'll be counting instances of logical truths, falsehoods, and laws as "logical", as well as general statements of those laws, and comments upon those statements or laws that use metalogical terminology ("is valid", "is logically true"). There may be sentences that are difficult to classify as "logical" or "non-logical" given my somewhat fuzzy characterization, but that shouldn't seriously trouble us, since we'll be focused on clear cases below.

Discussions of the *CLCM* thesis typically focus on there being a difference in meaning between the logical constants like "not" and "if" in the mouths of different speakers, but thus far I have been focused on sentences, rather than logical constants. This difference is less than it may seem, since I will argue that a difference in meaning amongst logical sentences containing a logical constant Δ will naturally lead to different meanings for Δ . However, as I will discuss below, we have to be careful here, to take into account merely notational differences.

With these clarifications in place, a simple version of the CLCM thesis says that if ϕ is a logical claim in our language, then anyone whose attitude toward ϕ differs from ours, must mean something different than we do by ϕ . But this simple formulation is too simple in at least two respects.

Firstly: our formulation of the CLCM thesis should take into account the division of linguistic labor illustrated by famous thought experiments given by Hilary Putnam and Tyler Burge.⁹ Assuming that Jack and Jill both speak the same public language, it is natural to think—for familiar externalist reasons—that they mean the same thing by their various logical terms *even if* they differ radically in their attitudes toward sentences containing those terms. This can happen because Jack and Jill are disposed to differ to the same experts and to treat each other's idiolects as homophonically translatable into their own (where as usual, an "idiolect' is one's personal language and a "homophonic" translation maps each sentence-type to syntactically identical sentence types in the other language). So when Jack and Jill take their first logic class and argue about whether or not instances of Peirce's law are logical truths, they both mean the very same thing by "if" and "logically true" and whatnot. This is because, in the most natural version of the imagined situation, both disputants take themselves to be bound to the public meaning of the relevant words and would thus defer

 $^{^9 {\}rm See}$ Putnam (1975) and Burge (1979). Later, in section 4, another key idea from the literature on semantic externalism will be discussed.

to experts on the matter. Defenders of the CLCM thesis can agree with this wholeheartedly.

Secondly: our formulation of the CLCM thesis should abstract away from mere slips of the tongue and other explicable computational errors. We don't want the CLCM thesis to be so strict that someone who makes a momentary lapse in their reasoning, say when using the conditional (" \rightarrow ") in a complex proof, thereby means something different by the arrow than we do. Computational failings can result from inattention or lack of memory or other issues, but these aren't relevant to meaning differences.¹⁰ I'll call any error of this kind a "computational error" without offering any precise characterization of what this means. This clarification allows defenders of the CLCM to avoid the absurd result that mere slips of the tongue or lapses of concentration when doing or discussing logic result in meaning changes.

Building in these two clarifications explicitly gives the following schematic formulation of the CLCM thesis:

CLCM: for any logical claim ϕ , if A and B disagree in their attitudes toward ϕ then A and B mean something different by ϕ provided that (i) neither A nor B are disposed to defer to a common source in adjudicating logical disputes and (ii) neither A nor B is making any relevant computation error in the disagreement

Below I'll sometimes say that two parties "clearheadedly disagree" when they disagree and conditions (i) and (ii) are both met and that A "clearheadedly" has some attitude toward sentence ϕ if they have the attitude without being disposed to defer or as the result of some computational error. **CLCM** is supposed to show that logical disagreements are merely verbal in some sense, but we must be careful, for the relationship between difference of meaning and true disagreement is a bit more subtle than it might seem at first glance.¹¹

To argue from **CLCM** to substantive meaning differences in the logical constants of A and B requires some care, for two parties can mean something different by the logical constants while still accepting the same logic. To illustrate,

 $^{^{10}}$ Of course saying this assumes that we have some manner of distinguishing norms of use from actual patterns of use, and in detail this might involve giving solutions to the notoriously tricky problems of rule-following: see Kripke (1982) and the literature on rule-following taking off from Kripke's discussion. I won't be sketching a theory of how this is to be done here, I will simply be tacitly assuming, as most philosophers believe, that there is some naturalistically acceptable account of rule-following that will distinguish errors from non-errors.

 $^{^{11}{\}rm Cf.}$ the recent literature on "merely verbal disputes", e.g., Chalmers (2011) and Jenkins (2014).

imagine a language where the roles of our familiar conjunction (" \wedge ") and disjunction (" \vee ") symbols are systematically swapped but everything else remains the same.¹² In this imagined language, all instances of the schema $\neg \phi \wedge \phi \neg$ will express logical truths rather than logical falsehoods, since the schema will represent not contradictions, but rather instances of the law of excluded middle. What this trivial example shows is that meaning something different by logical terms is not sufficient for having a true logical disagreement.

Let's say that two languages are *notational variants* if they can be transformed into each other by simply replacing (types of) symbols in one language by (types of) symbols in the other language and vice-versa. And say that they are grammatical variants if grammatical sentences in one language can be systematically transformed into grammatical sentences of the other language merely be rearranging symbols in a systematic way and vice-versa, e.g., one language might write simple predications with predicate "F" and term "a" as "Fa" while a grammatical variant might write them as "aF".¹³ I'll say that two languages are stylistic variants just in case each language has a notational variant that is a grammatical variant of the other.

In a real logical disagreement, roughly, A and B differ in their attitudes toward the same logical claim (whether it be expressed by different sentences in each of their respective languages), but neither speaks a language that is stylistic variant of the other. Our focus will be on these, rather than trivial syntactic disagreements where each language is a stylistic variant of the other. In a real logical disagreement, the dispute over ϕ means, according to **CLCM**, that A and B differ in meaning about ϕ , which is most naturally seen—giving that the languages of A and B aren't stylistic variants—as owing to a difference in meaning of some logical constant appearing in ϕ . So, e.g, the proponent of the *CLCM* thesis will standardly take classical logicians and intuitionists to mean different things by "not" and perhaps several other logical constants. I will return to discussing the nature of logical disagreements below, in section 5. Let's now turn to Quine's infamous translation argument for the *CLCM* thesis.

 $^{^{12}}$ Cf. the discussion in chapter 1 of Haack (1974).

¹³Obviously to make this fully rigorous I'd have to digress to say exactly what "systematically transformed" meant. I think this can be done in a satisfying manner by appeal to recursive algorithms for moving back and forth between the two grammars, but I'm content to leave things informal here.

2 Quine's Translation Argument

Quine presents his translation argument most fully in his book *Philosophy of* $Logic.^{14}$ There he discusses a situation in which we are in dialogue with people who accept that contradictions can be true but stave off triviality by adopting a paraconsistent logic saying (using old fashioned notation: "." for conjunction and "~" for negation):

My view of this dialogue is that neither party knows what he is talking about. They think they are talking about negation, '~', 'not'; but surely the notation ceased to be recognizable as negation when they took to regarding some conjunctions of the form 'p.~p' as true, and stopped regarding such sentences as implying all others. Here, evidently, is the deviant logician's predicament: when he tries to deny the doctrine he only changes the subject.¹⁵

From here Quine considers the possibility of encountering people who seem to have adopted a deviant logic that allows them to clearheadedly accept instances of $\neg \phi \land \neg \phi \urcorner$ without being led to triviality. In fact he imagines that those we are in dialogue with regard some sentences of this form as "obvious". In commenting on this possibility he gives what I am calling his "translation argument":

...I must stress that I'm using the word 'obvious' in an ordinary behavioral sense, with no epistemological overtones...It behooves us, in construing a strange language, to make the obvious sentences go over into English sentences that are true and, preferably, also obvious...every logical truth is obvious, actually or potentially. Each, that is to say, is either obvious as it stands or can be reached from obvious truths by a sequences of individually obvious steps...In a negative sense, consequently, logical truth is guaranteed under translation. The canon 'Save the obvious' bans any manual of translation that would represent the foreigners as contradicting our logic (apart perhaps from corrigible confusions in complex sentences). What is negative about this guarantee is that it does not assure that all our logically true sentences carry over into truths of the foreign language; some of them might resist translation altogether.¹⁶

 $^{^{14}}$ Quine (1970)—he also gives the argument more briefly in his (1960a) and (1960b). 15 Quine (1970), page 81.

¹⁶Quine (1970), pages 82-83.

Let's try to reconstruct Quine's argument.

Call a sentence ϕ in (any) language community *C* obvious if nearly all members of *C* are willing to unhesitatingly assent to ϕ in all circumstances.¹⁷ And say that a sentence ϕ is *potentially obvious* (in a language community *C*) if it is obtainable from obvious sentences via a sequence of individually obvious steps (where a step is obvious if nearly everyone in *C* unhesitatingly assents to all applications of the step). Quine claims that every logical truth is potentially obvious in our language community, but he also needs to rely on the stronger claim that in *any* language, logical claims are, at least, potentially obvious:

Logic is Obvious : any logical sentence in any language L is potentially obvious for L-speakers

Let us also assume, plausibly, that as radical interpreters of the language of some language community C we are able to determine whether a given sentence or inferential transition is obvious in C.

The central maxim of translation that Quine appeals to enjoins us to 'save the obvious'. Quine doesn't explicitly formulate the principle, but it seems to mean:

Save the Obvious : when translating language L of language community C into English, we should reject any translation t that takes a sentence that is (actually or potentially) obvious to members of C into a sentence of English that is not true

With these two principles formulated, Quine's translation argument can be represented as follows:

- 1. Any logical truth ϕ is true and its negation, $\neg \phi \neg$, is false (*trivial premise*)
- 2. Logical sentence ψ in language L is actually or potentially obvious in community C (Logic is Obvious)
- 3. So: sentence ψ can not correctly be translated into a false sentence of English (2, Save the Obvious)
- 4. So: sentence ψ can not correctly be translated into $\neg \phi \neg (1, 3)$

¹⁷It won't concern us here, but Quine also briefly discusses a notion of relative obviousness: a sentence ϕ in language community C is *circumstantially obvious* if nearly all members of C are willing to unhesitatingly assent to ϕ in some restricted class of circumstances.

Since ϕ was an arbitrary logical truth, this argument shows that for any logical truth, we shouldn't translate a sentence that speakers of a foreign language regard as obvious into the negation of one of our logical truths. If speakers accept every sentence that they regard as obvious and rejecting ϕ is analyzed as accepting $\neg \neg \phi \neg$, then the argument establishes that if someone regards a sentence as obvious, then that sentence shouldn't be translated into a logical falsehood in our language.

Thus far Quine's translation argument cannot even purport to establish the *CLCM* thesis, since while the translation argument, of course, talks a good deal about "translation", it says nothing about "meaning". As an infamous meaning skeptic, Quine doesn't endorse anything as strong as the *CLCM* thesis—his formulation is "change of logic, change of subject"—but if we accept the following principle connecting meanings and norms of translation, a version of the *CLCM* thesis follows from Quine's argument:

Translation and Meaning : if sentence ϕ in language *L* cannot be properly translated into sentence ψ in language *K* then ϕ and ψ do not mean the same thing

I think this principle is relatively uncontroversial: clearly if two sentences mean the same thing, then they can be properly translated into each other; our principle is simply the converse of this platitude. And so—using **Translation and Meaning**—the alien sentence ψ cannot properly be translated into any of our logical falsehoods and so doesn't mean the same thing as any logical falsehood in our language. So it seems that Quine's translation argument shows that accepting the negation of any of our logical truths amounts to changing the meaning of some of our logical terminology.

Taking the soundness of the translation argument as a given for the moment, there are still problems with Quine's argument. Even if the translation argument is sound, it would only rule out the possibility of logical deviance of a very particular sort, viz., deviance that involve sanctioning the acceptance of the negation of some classical logical truth. Assuming, as Quine does, that classical logic is the logic of our language, most deviations from classical logic do not meet this condition. As just one example, intuitionistic logic does not sanction the acceptance of contradictions or the negations of any other classical logical truth. While it is of course true that intuitionists fail to accept the law of excluded middle ($\lceil \phi \lor \neg \phi \rceil$) this does not mean that they accept the negation of any instance of the law. So Quine's translation argument only targets a fairly recherché form of logical deviance, and thus—even if sound—does nothing to rule out deviance that consists in failure to accept some classically valid forms of reasoning.¹⁸

This point alone severely limits the scope of Quine's argument, but things are even worse than this. The **Logic is Obvious** principle drains the argument of much of the force it had against even the restricted kind of deviance against which it is targeted. To illustrate: imagine people who *tentatively* accepted some contradictions without regarding them as obvious, even in the weak sense in which Quine is using the term. These people would accept some contradictions, but nothing in the translation argument would guarantee that they had changed the meaning of negation, conjunction, or any other logical notions. This is because **Save the Obvious** only bars the translation of *obvious* sentences into falsehoods. So not only does Quine's translation argument rule against only a very particular form of logical deviance, but it also attacks that restricted type of deviance only when it appears in a very particular form. For these reasons, the translation argument, as presented by Quine, has very limited application even if sound.

Is the translation argument at least sound? Unfortunately no, for the principle **Save the Obvious** is highly dubious. There were times in our past in which false sentences were regarded as obvious, e.g., before Columbus it was regarded as obvious that the world was flat (let's assume). Applying the principle of **Save the Obvious** to 10th century humans would result in our being unable to translate the sentence "the Earth is flat" (assuming without loss of generality that their language was syntactically identical to modern English) into a falsehood. But it seems clear that their sentence "the Earth is flat" properly translates into a false sentence of our language, viz., "the Earth is flat"! So the principle of **Save the Obvious** is false as a general constraint on acceptable translations.

In sum: Quine's argument is unsound; and even if it were sound, it would fall well short of establish the CLCM thesis. Despite these problems, I think that the spirit of the argument is correct and that a more carefully formulated translation argument can successfully establish the CLCM thesis. Some of the clarifications and alterations I will offer are perhaps already implicit in Quine's

¹⁸This point was also noted by Morton (1973). And although he doesn't stress it, Quine was probably aware of this, for he says—in one of the quotes given above—that his argument is aimed at rejecting translation manuals "that would represent the foreigners as contradicting our logic", and he might have intended "contradicting" to be read quite literally.

very compressed discussion; this section has merely argued that the most natural reconstruction of Quine's argument is seriously problematic and falls far short of establishing the CLCM thesis.

3 A New Translation Argument

The two main problems with Quine's translation argument are (1) the argument is insufficiently general to establish **CLCM**; and (2) the interpretive principle of **Save the Obvious** is false as it is currently formulated. I think that a fairly straightforward modification of **Save the Obvious** manages to solve both of these problems at once.

The key is that rather than the behavioral criterion of obviousness, we need to require that our translations preserve the attitudes of speakers, at least according to the tripartite division of section 1. Imagine that we're translating from a language L to a language K and say that a translation t preserves attitude \mathcal{A} if, whenever L-speakers have attitude \mathcal{A} toward L-sentence ϕ , then K-speakers have attitude \mathcal{A} toward $t(\phi)$.

Save the Logical Attitudes : When translating language L of language community C into English, we should reject any translation t that doesn't preserve clearheaded attitudes of acceptance, rejection, and neither acceptance or rejection for logical sentences

Where, as in section 1, an attitude toward a sentence is held clearheadedly just in case it is held in the absence of dispositions to defer and computational errors. *N.B.* that this principle is stated only for logical sentences. Obviously, a general version of this principle is false. Why logical claims should be treated differently will be discussed at length below, but first let's apply this principle to give a new translation argument, establishing the *CLCM* thesis. To make things easier to follow, I'll assume, without loss of generality, that we're discussing a single sentence ϕ , syntactically individuated, occurring in two languages:

- 1. Logical sentence ϕ in language L is clearheadedly accepted by L-speakers (assumption)
- 2. Logical sentence ϕ in language K is not clearheadedly accepted by K-speakers (assumption)
- 3. So: logical sentence ϕ in language L cannot be translated into logical sentence ϕ of language L (1, 2, Save the Logical Attitudes)

4. So: logical sentence ϕ in language L cannot be translated into logical sentence ϕ of language L (3, **Translation and Meaning**)

Directly analogous arguments can be given with either rejection or neither acceptance or rejection in place of acceptance in the above argument, and together these arguments obviously establishes **CLCM** as given in section 1.

To illustrate how this new argument goes beyond Quine's and rules out types of logical deviance that don't amount to accepting the negation of one of our logical truths: consider a language that accepts all and only the logical principles of intuitionistic logic. In particular, this means that speakers of this language don't accept every instance of the law of excluded middle ($\ulcorner \phi \lor \neg \phi \urcorner$). Imagine, in particular, that these language users clearheadedly fail to accept the sentence "either the Patriots are the best team in football of the Patriots are not the best team in football". Can we translate this sentence of their language homophonically into our own? No, since doing so would violate **Save the Logical Attitudes** and so by **Translation and Meaning** this instance of excluded middle doesn't mean the same thing in the two languages, and similarly for many other instances as well. So unlike with Quine's argument, we have established the full *CLCM* thesis, and can rule out logical deviance even when the deviant logicians don't accept the negation of any of our logical truths.

Of course, the entire force of this argument hangs on the extremely strong **Save the Logical Attitudes** principle. Why should this principle be accepted? The argument for accepting the principle rests on a deeper, metasemantic principle of charity, applied to logical sentences. One (partial) version of the principle, the version supporting the above argument, is as follows:

Logical Charity: For any language L, for any logical claim ϕ : ϕ is true in L if and only if ϕ is clearheadedly accepted by L speakers

Before defending this principle, first let me make three brief points of clarification concerning it.

(i) Obviously some logical sentences are so long an complex that speakers have no attitudes toward them. This means that, as above, clearheaded acceptance should be understood in a dispositional sense. I won't trouble to try to make this out in detail here, since it would involve us in complications that aren't relevant to our purpose. Those who are skeptical that such a dispositional sense can be made out are invited to read **Logical Charity** so that it applies only to logical claims that we have some attitude towards, and to alter the arguments below accordingly. (ii) **Logical Charity** explicitly uses the

notion of a sentence being "true in" a language L, but nothing too specific or technical is meant by this. Most importantly, philosophers with disparate views on the nature of truth (deflationists, correspondence theorists, etc.) can all accept a version of **Logical Charity**, if they so desire. (*iii*) **Logical Charity** talks of clearheadedly accepting/rejecting some sentence ϕ , but this should not be confused with clearheadedly accepting/rejecting some sentence ϕ as a logical truth/falsehood. The latter attitude is much more complex, conceptually speaking, than the former, since the latter attitude involves having the concept of a logical notion, but the former does not. The former and not the latter is what is at issue both because we want the *CLCM* thesis to apply even in cases where our interlocutors are conceptually simple, lacking sophisticated logical and metalogical notions.

One recherché concern about **Logical Charity** to mention, before launching into a general defense: for some dialetheists, some sentences can, in addition to being both true and false, be both true and not true. Assume that p is such a sentence in dialethic language L, then by Logical Charity, p is clearheadedly accepted by L-speakers, but it is also, by Logical Charity, not clearheadedly accepted by L-speakers. This might be thought problematic, but perhaps not, for the dialetheist can admit that sentence is both accepted and not accepted, and this is different from admitting that a sentence can be both accepted and rejected (see the discussion in section 1). In any case, the counterintuitiveness here stems from the counterintuitiveness of a notion of negation that allows some sentences to be both true and not true, not from any problem in Logical Charity itself. Subtleties aside, the pattern of clearheaded acceptance and rejection of logical sentences is languages with true contradictions will differ from the pattern of clearheaded acceptance and rejection of logical sentences is language without true contradictions and hence, by the new translation argument, logical constants like "not" in these languages will differ in meaning.

The general idea behind **Logical Charity** is that for logical sentences, the only mistakes that are relevant in explaining away mistaken attitudes fall under the rubric of either what I have been calling "computational errors" or mistaken deference. Possible exceptions and objections to this will be explored in section 4 below. This kind of charity principle, applied to logic, is endorsed, at least tacitly, by many philosophers who have written about metasemantics in the philosophy of language and mind. This goes beyond writers who have explicitly spoken about charity or norms of interpretation and includes almost everyone who ground meaning or content in language use. The connection between charity in translation and use-based theories of meaning has been recognized before, e.g., Paul Horwich, a proponent of a Wittgenstein-style "use" theory of (the nature of) meaning, writes:

... once its precise content is elaborated, Davidson's Principle of Charity arguably boils down to the use theory of meaning.¹⁹

And in a survey article on conceptual role semantics (CRS), Ned Block writes:

A further motivation for CRS is that it explains a reasonable version of a principle of charity (one of a number of such principles to be found in the work of Quine and Davidson) according to which we cannot rationally attribute irrationality to a person without limit. Attributing unexplainable irrationality leads to a poor match of roles. If the best translation yields poor enough matches, then the alien conceptual system is not intelligible in ours.²⁰

As a brief and incomplete list of philosophers who I think are either tacitly or explicitly committed to endorsing **Logical Charity** includes those who have explicitly written about charity and rationality in interpretation like Christopher Cherniak, Donald Davidson, Daniel Dennett, Eli Hirsch, David Lewis, W.V. Quine, and others; those who have endorsed used-based theories of meaning like Paul Horwich, Ludwig Wittgenstein and others; those who have endorsed conceptual role semantics like Ned Block, Hartry Field, Gilbert Harman, Christopher Peacocke, and others; global inferentialists like Robert Brandom, Caesar Cozzo, Wilfrid Sellars, and others; and more besides.²¹ Of course, having a distinguished list of writers whose works offer support for **Logical Charity** is no proof of **Logical Charity**'s truth. To further support **Logical Charity**, I'll need to say something in response to the central objections that could be raised against it.

4 Avoiding the Charity Trap

The natural worry about the new translation argument is that if **Logical Charity** can be used to show that we don't ever really disagree about logic,

¹⁹Horwich (1998), page 72.

 $^{^{20}}$ Quoted from Block (1998).

²¹See Cherniak (1986), Davidson (1984), Dennett (1987), Hirsch (2011), Lewis (1974), Quine (1960b), Horwich (1998), Wittgenstein (1953), Block (1986), Field (1977), Harman (1982), Peacocke (1992), Brandom (1994), Cozzo (1994), Sellars (1953).

then similar reasoning would show that we never really disagree about *any*thing (science, morality, history, etc.). But that is absurd, so we would have a reductio of the new translation argument—the argument would simply keep too much bad company. I call this worry the charity trap. The charity trap isn't simply an imaginary bogeyman—many philosophers of science have, at least seemingly, fallen into the charity trap. For just one famous example: in his massively influential *The Structure of Scientific Revolutions* Thomas Kuhn writes:

Consider...the men who called Copernicus mad because he proclaimed that the earth moved. They were not either just wrong or quite wrong. Part of what they meant by 'earth' was fixed position. Their earth, at least, could not be moved.²²

Here Kuhn is (or at least seems to be) endorsing the idea that Copernicus and his critics didn't really disagree because they meant different things by the word "earth": for Copernicus, "earth" didn't mean fixed position, but for his critics, it did. Arguably Kuhn and several other influential mid-twentieth century philosophers of science (Feyerabend, Lakatos) fell into the charity trap in arguing that seemingly straightforward scientific disagreements weren't really disagreements at all.²³

Without worrying too much about exegesis here, the position represented in the Kuhn quote amounts to acceptance of something like **Scientific Charity** the idea that clearheadedly accepting some scientific sentence (e.g., "The earth does not move") suffices for the truth of that sentence (and similarly for clearheaded rejection and falsity). I think that most of us agree that it is absurd to think that putative scientific disagreements aren't actually real disagreements. So in order to ward off the bad company problem posed by the charity trap, the proponent of the new translation argument needs to say something plausible about how we can accept **Logical Charity** while rejecting analogous principles like **Scientific Charity**.

The key to doing this is to note that **Logical Charity**, in effect, claims that the only acceptable explanations of logical disagreement are corrigible computational failings of memory, attention, or the like; and semantic deference. When there is disagreement without one of these, there is meaning variance (as **CLCM** holds). **Scientific Charity** likewise imagines that the only acceptable explana-

²²Kuhn (1962), page 149.

 $^{^{23}}$ See Feyerabend (1975) and Lakatos (1970).

tions of scientific disagreements are corrigible failings of memory, attention, of the like; and semantic deference. Assuming that Copernicus's opponents were clearheaded then we can only explain their apparent disagreement with Copernicus via meaning change, and so—as Kuhn claimed—"earth" means something different in their mouths than it does in Copernicus's mouth.

In the scientific case though, there are other explanations of disagreement aside from the two allowed by **Scientific Charity**. This is because for many scientific names and predicates, the meanings seem to be fixed not merely by the theory in which these terms are embedded, but also by the world. This is perhaps the central tenet of *semantic externalism*, brought to the fore in philosophy by the work of Saul Kripke, Hilary Putnam, and others and explored more deeply by Tyler Burge, Gareth Evans, and many others.²⁴ To illustrate the central idea, using the example given by Kuhn, both Copernicus and his opponents all causally interacted with the earth (and, of course, lived, loved, and died on the earth) and this is part of what fixed the meaning of the term "earth" in each of their mouths. By responding to certain causal interactions with the earth by revising their "earth"-beliefs in various complicated and coordinated ways, Copernicus and his opponents all managed to mean the same thing by "earth" and other scientific terms despite clearheadedly differing in their "earth"-beliefs.

Obviously I've given the mere barest sketch of how the metasemantics of scientific terms works, but the details aren't that important for our purposes. What matters is that, following the work of Kripke, Putnam, and others, it seems obvious that **Scientific Charity** is false because the metasemantics of scientific terms involves, in addition to acceptance of various sentences and inference patterns, causal interactions with objects in the world. This kind of causal anchoring is what allows for the charity trap to be avoided, at least in the scientific case. Other domains of human discourse—moral, mathematical, modal, etc.—will have to be evaluated on their own terms with respect to the charity trap. But it is not *ad hoc* to suppose that, whatever the ultimate details of scientific metasemantics, causal interaction with items in the world is an important part of the story of how scientific terms get their meanings and referents. This is, if not unanimously accepted, close to it in contemporary philosophy so the defender of the new translation argument can, along with everyone else, point to causal features and semantic externalism in rejecting

 $^{^{24}}$ See Kripke (1971), (1980), Putnam (1975), Burge (1979), and Evans (1982)'s chapter 11, for a very small taste of influential externalist writings.

Scientific Charity.

But note that nothing analogous to the the semantic externalist story is at all plausible for logical terms and sentences. We don't causally interact with negation or disjunction or conjunction or other logical constants. In fact, it's not even clear what it could mean to causally interact with negation, unless some kind of metaphysically mysterious hyper-realism about logic is endorsed. But even those who think there is some kind of unique platonic abstract object, NEGATION, typically don't think that we do or could causally interact with NEGATION. On any plausible view of the metaphysics of logic, negation isn't something out there, in the world, accessible to us causally, whether in Cleveland, the Andromeda galaxy, or Plato's heaven. As such, the kind of semantic externalist picture that saved scientific disagreements from **Scientific Charity** can't be applied to logic, and so can't save logical disagreement from **Logical Charity** and the new translation argument.

There is another idea in metasemantics that, though still controversial, could be used to undermine **Logical Charity** without requiring some kind of inexplicable causal contact with logical notions: *reference magnetism*. This general idea has been developed in many different ways, but the central component is that certain meanings are intrinsically more eligible to serve as the referents or meanings of our terms than others. So, applied to the case of logic, someone might assume that the classical meanings of "not" and "or" and the like are reference magnets, so that even if we were to accept only intuitionistically valid inferences and intuitionistic logical truths, we would still mean classical negation by "not" because the magnetic force of the classical meanings could overcome the demands of charity.

Metasemantic theories invoking reference magnetism have been offered by David Lewis, Theodore Sider, and others in recent philosophy.²⁵ The standard ways of fleshing the idea out appeal to metaphysical notions such as *naturalness* or *metaphysical structure* in order to explain how some meaning could be intrinsically more natural than another. In principle this idea could be applied to logic, but even if it is accepted that a property like *having positive charge* is intrinsically more natural than a property like *being located in Ohio*, it is harder to see how naturalness or some similar notion could be applied to logic. What could it mean to say that classical negation is intrinsically more natural than intuitionistic negation or paraconsistent negation?

 $^{^{25}\}mathrm{See}$ Lewis (1984), Sider (2011), and Williams (2007) for discussion.

Theories that allow for naturalness or the like to be applied to logical notions are still extremely controversial. Most metasemantic theories do without metaphysical notions of this kind. Of course, this isn't an argument against such approaches. I only mean to point out these approaches are non-standard and will be left to one side here. The predominant metasemantic view in philosophy involves some combination of charity to language use together with causal interactions among speakers and with the world. Those who reject **Logical Charity** face the burden of providing a metasemantically plausible explanation of putative logical disagreement. Here I have argued that the two most popular approaches to this task are problematic, but I certainly haven't considered every possible approach.²⁶

That this type of view need not fall into the charity trap despite endorsing **Logical Charity** has been the burden of this section. I certainly don't claim to have fully defended the metasemantic background to the new translation argument here, but I think I have done enough to indicate that required background fits into a popular and defensible in metasemantics and the philosophy of language and mind.

5 Logical Pluralism and Logical Disputes

Quine is famous for being an advocate of pure first-order classical logic both in the face of alternatives (like intuitionistic and paraconsistent logics) and extensions (like modal logic and second-order logic).²⁷ Accordingly, his translation argument and the surrounding discussion has sometimes been read as a defense of classical logic against its deviant competitors. But it is hard for me to see Quine's argument, discussion, or the *CLCM* thesis itself as supporting classical logic in any strong sense. The general metasemantic principles that back both Quine's translation argument—and my own—apply indifferently to both languages that use classical logic and those that use alternative logics.²⁸

As such, the true lesson of the preceding discussion is not logical monism in support of classical logic, but rather *logical pluralism*. Principles like **Logical Charity** entail that whatever logic is accepted in a given language, in a clearheaded fashion, will be correct in that language. And, as the translation argu-

 $^{^{26}}$ See, e.g., Schroeter (2012).

 $^{^{27}\}mathrm{See}$ his (1970) for a general discussion of his philosophy of logic and attitude toward non-classical logics.

 $^{^{28}\}textit{N.B.},$ the issues concerning Logical Charity and languages with true contradictions, discussed above.

ment brings out, this means that the logical notions like "and", "not", and "if" in languages that don't accept exactly the same principle and rules for these notions, will mean something different in the imagined languages than they do in our language. Obviously, the possibility of something like this state of affairs follows from trivial semantic conventionality: the word "not" could have meant, in some imagined language, what our word "cat" means, but this clearly doesn't establish any form of *logical* pluralism, since the word "not" in the imagined language has ceased to be a negation sign in any sense.

In some cases though, e.g., when the imagined language uses "not" in the way that intuitionists use "not", the symbol will play a role very much like "not" plays in our language, and so will be recognizable as a negation symbol or, at least, a negation-like symbol, in the imagined language. In this sense, generalized to the other connectives, the *CLCM* thesis goes hand-in-hand with a radical type of pluralism concerning the logical notions, where "not" means something different in a language that uses classical logic than it does in a language that uses intuitionistic or paraconsistent logic despite, in each of these languages, being recognizable as a notion of negation (or a negation-like notion).²⁹

This pluralism doesn't map over directly onto the type of logical pluralism recently and influentially endorsed, under that name, by J.C. Beall and Greg Restall. Beall and Restall's brand of logical pluralism concerns the consequence relation itself and the notion of a "situation" used in the consequence relation having different admissible interpretations within our own language. On one understanding of a "situation", you end up with classical logic; on another, intuitionistic logic, and so forth and so on. Whatever the merits or demerits of this type of logical pluralism, it doesn't follow from the CLCM thesis in any direct manner.

Once its pluralist implications are noted, it's natural wonder where the CLCM leaves logical disagreements and disputes in the philosophy of logic concerning which logic is the right logic. The answer is far from simple. As a first step to approaching it, let us distinguish between (a) logical disagreements and (b) disagreements about logic. First, logical disagreements: these were briefly discussed at the end of section 1; say that A and B are having a logical disagreement if they disagree in their attitudes toward some logical sentence ϕ . Now, of course, as section 1 highlighted, this might happen trivially if A and B speak languages that are what I there called "stylistic variants" of

 $^{^{29}\}mathrm{See}$ section 4 of my (2014) for a general discussion of this type of conceptual pluralism.

each other, so a *real* logical disagreement is one where A and B clearheadedly disagree in their attitudes toward logical sentences " ϕ " and " ψ " respectively, without either A or B speaking a stylistic variant of the other's language. In essence, the new translation argument showed that in real logical disagreements there is non-trivial meaning variance in the logical terms.

However, this doesn't mean that logical disputes in the philosophy of logic must come to an end. To see this, we have to turn to (b) disagreements about logic. Disagreements about logic are most naturally engaged in by semantically ascending to discuss particular logics L and L^* in relation to each other. Disagreements about logic though, come in a variety of forms, including:

- (b1) Disagreements about which logic is the logic used in some particular natural language (call these *descriptive disputes*)
- (b2) Disagreements about which logic should be used in some particular natural language (call these *normative disputes*)
- (b3) Disagreements about which logic is objectively correct in a language independent sense (call these *metaphysical disputes*)

Advocates of the CLCM thesis are well-placed to engage in (b1)-style descriptive disputes, but adjudicating such disputes is, in part, a matter of empirical linguistics. In addition to adopting particular metasemantic and interpretive principles, such as those above, we need to know whether or not, e.g., English speakers really do reason according to *modus ponens* in a clearheaded fashion in order to decide whether *modus ponens* is valid in English. The dispute in the philosophy of logic between classical and relevant logicians often seems to be of the (b1) form; the relevantists point to the oddity of classically valid arguments when presented in English as seeming evidence that the logic of English is not classical. Proponents of the CLCM thesis can coherently engage in this debate (and others like it) on either or neither side.

Advocates of the CLCM thesis are also well-placed to engage in (b2)-style normative disputes concerning which logic we *should* use. This is because the advocate of the CLCM thinks that if we clearheadedly adopt some particular logic L then the rules and principles of L will be valid in our language. Deciding whether we should adopt some logic L at the expense of our current logic depends on many factors. We need to know both our goals and interests and the properties of L in order to make a fair assessment of whether adopting Lwill better serve our interests than our current logic. And we must also factor in whether we would be able to use L and the "cost" of switching from our current logic to L. The dispute in mathematics between classical logicians and intuitionists often seems to be of the (b2) form; the intuitionists admit that most mathematicians use classically valid but intuitionistically invalid forms of inference, but urge that they stop doing so for various reasons (the threat of inconsistency, the uninformativeness of non-constructive proofs, etc.). Proponents of the CLCM thesis can coherently engage in this debate (and others like it) on either or neither side.

(b3)-style metaphysical disputes are perhaps what disputants in the philosophy of logic most often take themselves to be engaged in. But advocates of the *CLCM* thesis are unlikely to find this type of dispute intelligible. The charity-heavy metasemantics that led to the new translation argument ties the correctness of the logical principles in our language very closely to our use of language. Against this background, what could it possibly mean to say that, e.g., the law of excluded middle (*LEM*) was a logical truth in our language but that it wasn't *really* a logical truth? There are several recent theories in metaontology and substantive metaphysics aimed at making sense of ideas like this, but the heavily metaphysical flavor of metaphysical disputes and the metaphysical notions needed to make sense of them against the backdrop of the *CLCM* are unlikely to be endorsed by proponents of the *CLCM* thesis.³⁰

The *CLCM* thesis, while eliminating the possibility of real logical disagreements, promises to help clarify disagreements about logic by allowing us to make sense of and clearly distinguish each of (b1), (b2), and (b3). No clarity is served when an advocate of a particular logic *L* moves freely between considerations about the argument forms accepted by English speakers and the practical virtues of *L* in a supposed quest to establish *L* as The One True Logic.

6 Coda: Quine's Shadow

It is somewhat odd to find Quine arguing for the CLCM thesis given his other views in the philosophy of logic. In the closing section of his famous paper "Two Dogmas of Empiricism", Quine denied that logic was known *a priori*, arguing instead that logical laws are known in the same manner as scientific laws, viz., by generalizing from our experiences.³¹ Let's call this *the empirical theory of logic*.

 $^{^{30}}$ See Fine (2001) and Sider (2011) for examples of the kind of heavyweight metaphysics needed to make sense of (b3) disputes.

 $^{^{31}}$ Quine (1951).

Although some pre-Quinean philosophers seemed to accept this type of view (e.g. Mill), Quine is the empirical theory's most sophisticated and staunchest advocate.³²

The empirical theory of logic contrasts with views that take logical truths to be analytic, conventionally true, true in virtue of meaning, etc. On all such views, logic is not empirical, and there is no way to reject a logical law without somehow changing the meaning of the logical notions involved in the law. This type of view of logic was pursued by Carnap and other logical positivists and was influentially criticized by Quine.³³ It can't escape attention that these views to which Quine and his empirical theory of logic stand so opposed are very closely aligned with the *CLCM* thesis. Given this, how can Quine coherently endorse both the empirical theory of logic and the *CLCM* thesis?

My impression is that many philosophers think that Quine either changed his mind between "Two Dogmas of Empiricism" in 1951 and *Philosophy of Logic* in 1970 or, more likely, doesn't have a coherent global position in the philosophy of logic. The way out of the incoherence, it is widely thought, is to keep the empirical theory of Two Dogmas and reject the later translation argument and the *CLCM* thesis. Against this, I've argued here that the *CLCM* thesis is true. In addition, I don't think that Quine himself was incoherent in combining the empirical theory with the *CLCM* thesis, at least in any straightforward sense. Let's try to make out the charge of incoherence more carefully: given Quine's commitments concerning the translation of logic, we can define a Quine-friendly notion of analyticity as follows:

Quine Analytic : a sentence ϕ in our language is *Quine analytic* just in case changing our attitude toward it, clearheadedly, involves altering our language so that ϕ before our change in attitude and ϕ after our change in attitude can no longer be translated into each other³⁴

The new translation argument shows that logical claims are Quine analytic, and if we accept the straightforward **Translation and Meaning** principle, then true statements that are Quine analytic are, in a sense, true in virtue of meaning. This takes Quine-analyticity perilously close to allowing the definition of a notion of truth in virtue of meaning, but I don't think Quine himself would

³²In Mill (1843).

 $^{^{33}}$ See Ayer (1946) and Carnap (1934) for defenses of analytic views of logic and Quine (1936), (1951), and (1960a) for criticism.

 $^{^{34}}$ See Burgess (2004) for a related definition.

accept the **Translation and Meaning** principle, given his famous arguments concerning the indeterminacy of meaning and the inscrutability of reference.³⁵

Because of his skeptical views on linguistic meaning and translation, Quine can coherently be insouciant about how canons of correct translation interact with the notion of meaning. And he can also shrug off questions about whether a clearheaded change in our attitude to some sentence ϕ , whether logical or otherwise, managed to change the meaning of ϕ . So I think that Quine is able to coherently endorse both the empirical theory of logic and his translation argument, because he doesn't really accept the *CLCM* thesis—he demurs as soon as his "change of logic, change of subject" claims get transformed into claims about meaning proper. Obviously I have not (and will not) trace the various changes in Quine's attitudes toward logic, translation, and meaning in his later works, but I do think there is a master reason for thinking that the canonical Quinian views (empirical theory of logic, rejection of analyticity, the translation argument, and meaning skepticism) are coherent if taken together.

Quine has cast a large shadow over philosophy in general and the philosophy of logic in particular. While his meaning skepticism seems generally ignored or largely muted, the Quinian rejection of analyticity and conventionalism in logic together with acceptance of universal revisability in our logical attitudes has become something like a new dogma, not of empiricism, but of the philosophy of logic. This leaves modern-day followers of Quine in a bind. If you think there are facts about meanings, then there will be facts about what alterations in our attitudes force a change of meaning and which do not.³⁶ This means that the CLCM thesis is, if not in outright contradiction, at least in serious tension with the empirical theory of logic. So the arguments I have given here should make meaning-friendly followers of Quine uncomfortable.

If the empirical theory of logic does come into conflict with the *CLCM* thesis, I think it is the former and not the latter which must go. In addition to the arguments and discussion above in support of this, there is an intuitive difference in kind between scientific disagreements and logical disagreements. We do ourselves a disservice when we collapse the two. In science and everyday life, there is a type of causal feedback from the world that doesn't exit in the logical case. Saying this doesn't require that the line between these two kinds of disputes be firm and fully determinate, but vague distinctions can often do useful theoretical work. To throw out the intuitive, felt, and obvious difference

 $^{^{35}}$ In Quine (1960b).

 $^{^{36}\}mathrm{In}$ effect, Carnap (1963) notes this in response to Quine (1960a).

in kind between these disputes is to risk losing sight of the fact that disjunction, conjunction, negation and the other logical notions are *our* notions. They aren't—in any sense—out there, like electrons, football teams, and oreo cookies. And if we have an inadequate logical theory, then the fault, dear friends, is not in our stars, but in ourselves.³⁷

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³⁷Thanks to several referees.

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