

Quine and Logical Truth

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Abstract It is a consequence of Quine's confirmation holism that the logical laws are in principle revisable. Some have worried this is at odds with another dictum in Quine, viz., that any translation which construes speakers as systematically illogical is ipso facto inadequate. In this paper, I try to formulate exactly what the problem is here, and offer a solution to it by (1) disambiguating the term 'logic,' and (2) appealing to a Quinean understanding of 'necessity.' The result is that the different theses in Quine's philosophy of logic are to be situated within different contexts of inquiry.

In Quine's philosophy of logic, there are two doctrines often felt to be in conflict. The first doctrine, which I will call the Revisability Doctrine, says roughly that the laws of logic are revisable, and arises from Quine's considerations on logical truth and philosophy of science. The second doctrine, the Principle of Logical Charity as I shall call it, claims it is nonsensical to hold that an adequate translation of a language would have speakers regularly violating basic laws of logic in their assertions. The tension between these doctrines arises from the thought that if the laws of logic are revisable, then there seems to be sense to the idea that speakers of a language might accept principles of inference which deviate from basic logical laws. Other writers, e.g., Levin (1979) and Berger (1990), have addressed this conflict; however, these attempts strike me as problematic for reasons I shall

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relegate to a footnote.¹ My primary aim is to offer my own account of the relationship between the Revisability Doctrine and the Principle of Logical Charity, and argue that the tension between the two is more apparent than real.

1 Revisability and Charity

The Revisability Doctrine is a consequence of Quine's confirmation holism.² This is the view that experiences do not confirm or disconfirm statements individually; rather, they only confirm or disconfirm a theory as a whole. The holist stresses that an individual statement will rarely imply, in itself, a set of observational consequences—typically, to derive observational predictions, an entire theoretical network of statements must be assumed. Thus on the holist picture, when an experience conflicts with an observational prediction the conflict does not in itself indicate *which* statement ought to be revised; it only indicates that *at least one* statement ought to be so revised. So in principle, recalcitrant experiences can prompt a rationally-motivated³ revision of *any* belief in the system, or more specifically, any belief used to derive observational predictions. (Still, for Quine some of these revisions will be more rational than others, depending on the pragmatic constraints in theory-choice, e.g., simplicity, conservativeness, etc.)⁴

Importantly, however, some of the beliefs needed to derive predictions are beliefs about what may be logically derived from the system. Accordingly, such beliefs are *also* vulnerable to revision in light of experience. Thus, Quine remarks that “no statement is immune to revision,” and makes clear that this includes logic: “Revision even of the logical law of the excluded middle has been proposed as a means of simplifying quantum mechanics; and what difference is there in principle

¹ Berger essentially uses this conflict as a way of criticizing Quine's “dispositional account” of linguistic meaning. However, Berger does not consider the sort of interpretation I hold on the matter, and for this reason his criticism of Quine strikes me as hasty.

Levin, on the other hand, sympathetically tries to solve the conflict in Quine, in ways different from my own solution. Levin's idea is that, for Quine, the laws of classical logic *strictly speaking* are unrevisable, although the logic we *use* in practice may undergo variation over time (see p. 57). I am somewhat amenable to this idea if ‘classical logic’ is understood as Symbolic Deductive Logic (see Sect. 2 above). Yet the distinction between Symbolic Logic and the logic we *use* does not, in itself, resolve the conflict in Quine. For the conflict can be located merely in what Quine says about the logic we *use* in practice: In practice, our current logic might deviate from what it is, yet apparently the current logic is a logic that *must* be respected in the translation of a language.

² An anonymous referee has reminded me that Quine eventually rejected holism in favor of “moderate holism.” The moderate holist grants that individual statements are not dis/confirmed by experience, yet she does not think experiences bear on one's theory *as a whole*. Instead, she says (roughly) that experiences dis/confirm “chunks” (proper parts) of a theory (see, e.g., Quine 1991). Thus, the present discussion should be understood as just addressing the earlier holist Quine.

³ It is too weak just to say that experience can, as a matter of psychology, prompt someone to revise logic. The interesting claim is that logical laws can be revised as a *rational response* to recalcitrant experiences. An anonymous referee has asked, however, if a rational revision of logic is even possible, since respecting the laws of logic would seem critical to the rationality of a revision. The question is a good one, but since the matter is rather involved I shall not pursue an answer here.

⁴ Presumably Quine's constraints here are also subject to revision, as part of the theory of theory-choice.

between such a shift, and the shift whereby Kepler superseded Ptolemy...?” (1953, p. 43).⁵

However, if there is nothing sacrosanct about the logic that currently governs our language,⁶ it appears there could be a language whose logic is radically different from our own. Yet at various moments, Quine seems to deny the possibility of such a language. For he declares that any translation which construes a language as regularly illogical is ipso facto inadequate.

[L]et us suppose it claimed that [some class of] natives accept as true...a certain heathen sentence of the form ‘*q ka bu q*’ the English translation of which has the form ‘*p* and not *p*.’ But now just how good a translation is this?...If any evidence can count against a lexicographer’s adoption of ‘and’ and ‘not’ as translation of ‘ka’ and ‘bu’, certainly the natives’ acceptance of ‘*q ka bu q*’ as true counts overwhelmingly. (1963, p. 109)

Thus we arrive at the Principle of Logical Charity: There can be no adequate translation which sees the speakers of the language as commonly violating basic logic.

Yet what exactly is the tension between the Principle of Logical Charity and the Revisability Doctrine? The former states that basic logical laws must be respected in an adequate *translation* of a language, whereas the latter suggests that such laws do not necessarily govern the language. But there is not yet a contradiction; one can maintain that any adequate translation should respect basic logic, while acknowledging that some languages might not be governed by such a logic. One only needs to stomach the consequence that the logic of some languages may escape our best translations.

Yet perhaps this is too much to stomach. But in any case, it seems Quine must deny that the logic of a language might elude any adequate translation.⁷ Consider that he often conceives language acquisition on the model of radical translation (see Bar-On 1992 for further discussion of this point). For Quine, a child born into a linguistic community must play the radical translator to learn the language *L* of her community; she must construct adequate interpretations of what strings in the

⁵ The rationale for the Revisability Doctrine is buttressed further by the demise of the conventionalist view of logical truth, i.e., the view that sees logical truths as true by convention. See his (1968) and (1936).

⁶ Joe Ullian has objected that talk of logic “governing” a language is not a very Quinean way of talking. He suggests instead that we talk of our linguistic behavior as conditioned by our inferential practices and logical intuitions. This is in fact what I had in mind when I spoke (shorthandedly) of logic “governing” a language. I believe one could simply replace my talk of logic “governing” a language with Ullian’s way of talking, without affecting the main thrust of this paper.

⁷ Here ‘adequate translation’ is meant to indicate a translation which is, minimally, (1) empirically adequate, and (2) in line with various Principles of Charity, including the Principle of Logical Charity. On a sympathetic reading, Quine did not intend this notion of “adequate translation” for translations of *formal* languages (after all, we can *stipulate* a formal language with a deviant logic). But I assume formal languages are not at issue here.

language mean.⁸ But suppose no adequate translation construes speakers as regularly obeying the logic of L—for short, suppose no adequate translation “reveals” its logic. Then, assuming she has no other recourse, she will not come to know this logic. But naturally such a logic could not be sustained in the language, if members of the linguistic community cannot acquire it.

The tension in Quine, then, can best be seen as an incompatibility between the following three statements:

- (1) It is possible for there to be a language L such that the principles of inference governing L are principles that deviate from basic logic. [from The Revisability Doctrine]
- (2) For any language L, an adequate translation of L must construe L as governed by the basic laws of logic. [The Principle of Logical Charity]
- (3) For any given language L, the principles of inference governing L are the principles of inference revealed by at least one adequate translation of L (viz., the child’s translation of L in the acquisition process). [from Quine’s Theory of Language Acquisition]

From (2) and (3) it follows that, for any language L, the principles of inference for L must conform to the laws of basic logic; yet (1) affirms the possibility of a language whose inferences do not conform to basic logic.

It may seem strange to think that Logical Charity guides the child’s translation of L in the acquisition process. It is as if the child will presuppose that L is governed by basic logic, in the manner of the professional translator. Yet without some such presupposition, it would be mysterious how children regularly settle on one particular logic as *the* logic of a language, given that translation is always “underdetermined”—i.e., given that the evidence might suggest any number of logics as governing the language. But since children do settle on a logic, it is not unwarranted to think the Principle of Logical Charity (or something like it) guides their translations.

⁸ The contemporary analog of this idea is found in “theory-theory” accounts of language acquisition, including the Language of Thought hypothesis (see Fodor 1975). Such accounts are debatable of course, but it is not my intent to debate them here. Suffice it to say that Quine espoused such an account. Yet notably, Quine also thinks of language acquisition in *behavioristic* terms—language acquisition is a process of conditioning verbal responses in relation to certain stimuli (see, e.g., Chap. 1 of his 1973). Nonetheless, Quine seems to think that radical translation provides a model of what occurs when the child is thus conditioned (see especially his 1968). Of course it may seem strange for a *behaviorist* to adopt such a model. For on this model, radical translation would presumably occur “in the mind” of the child—and such “mental processing” seems incompatible with behaviorism. But as Quine (1968) stresses, his behaviorism is in no way committed to denying “internal mechanisms.” Indeed, one would naturally look to such mechanisms in explaining how conditioned responses take root in the child. Yet there are further questions on the issue, but I shall not address them here. For present purposes, we only need observe that Quine does deploy the radical translation model. Whether his behaviorism allows such a model is another matter.

2 The Logic of ‘Logic’

In resolving the tension, one task is to disambiguate the term ‘logic’ and associated terms like ‘logical laws.’ Indeed there seem to be at least five different senses of the term ‘logic’ which are worth separating out:

- (a) *LOGIC*: Any set of inferential principles.
- (b) *Logic**: The LOGIC governing the language we currently use. The Logic* of our language includes Deductive Logic (see below), although it also includes principles of inductive inference, probabilistic inference, etc.
- (c) *Deductive Logic*: The LOGIC of deductive, or truth-preserving inference. In our language, it is a LOGIC which governs those arguments utilizing the particles ‘and,’ ‘or,’ ‘not,’ ‘if...then,’ etc.
- (d) *Symbolic Logic*: Any formal system whose formation and transformation rules are stipulated (Quine’s 1963a) term is “legislatively postulated,” see p. 118. Symbolic Logic includes Symbolic Deductive Logic, as well as Symbolic Modal Logic, Symbolic Relevance Logics, etc.
- (e) *Symbolic Deductive Logic*: A Symbolic Logic whose formulas are recursively defined using the particles ‘&,’ ‘v,’ ‘~,’ etc, and whose inferential principles include &-introduction, &-elimination, v-introduction, v-elimination, etc. Deductive Logic is seen as the LOGIC which we attempt to model in Symbolic Deductive Logic.

I mention (c), (d) and (e) only to put them aside. Yet (a) and (b) will be important, for we can appeal to these to clarify the Revisability Doctrine, the Principle of Logical Charity, and the apparent tension between the two. To this end, it will also be useful to separate out certain principles of Logic*:

*Basic Logic**: Those principles of Logic* we currently find obvious.⁹ Basic Logic* includes such laws as modus ponens, elementary laws of probability theory, and so on.

With these distinctions in hand, we may now propose a more careful formulation of the statements in question:

[Revisability Doctrine’] The LOGIC of our language is in principle revisable. Since Logic* is the LOGIC of our language, it follows that Logic* is in principle revisable.

[Principle of Logical Charity’] For any language L, an adequate translation of L must construe L as governed by Basic Logic*.

⁹ For Quine, ‘obvious’ does not indicate some special epistemic property of logical laws; rather, the term ‘obvious’ just indicates that a statement is one which, by and large, speakers assent to unhesitatingly (1970, p. 82). It would seem, however, that speakers’ hesitation to assent may come in degrees; if so, obviousness and ultimately acceptability of a translation would also come in degrees. (Thanks to Jim Baillie for drawing my attention to this point.)

Accordingly, we may replace (1)–(3) with the following:

- (1.1) It is possible for there to be a language L such that the LOGIC of L is a LOGIC that deviates from Basic Logic*. [from The Revisability Doctrine']
- (2.1) For any language L, all adequate translations of L must construe L as governed by Basic Logic*. [The Principle of Logical Charity']
- (3.1) For any language L, the LOGIC of L is the LOGIC revealed by at least one adequate translation of L. [from Quine's Theory of Language Acquisition]

From (2.1) and (3.1) it follows that, for any language L, L must be governed by Basic Logic*. But (1.1) is equivalent to the denial of this.

There is a difficulty in defending (1.1)–(3.1) as a piece of Quine exegesis since the distinctions concerning 'logic' are nowhere explicit in Quine.¹⁰ Still, *if* we understand the tension in Quine's philosophy of logic thus, it is possible to make sense of it. This, I take it, would be a reason for thinking (1.1)–(3.1) are faithful to what Quine believed.

3 Quine and Necessity

It is important to note that, *prima facie*, Quine's claims here are all modal claims. The corollary from the Revisability Doctrine' asserts what *can* be the case with respect to the LOGIC of a language, whereas the Principle of Logical Charity' states what *must* be the case. Accordingly, the resulting inconsistency turns out to be a *modal* inconsistency, for one asserts the possibility of what the other says is impossible. Yet such modal discourse is a bit odd coming from a modal skeptic such as Quine.¹¹ How are we to understand it? The following passage from Quine (1977) is helpful here:

Relative to a particular inquiry, some predicates may play a more basic role than others, or may apply more fixedly; and these may be treated as essential... [S]imilarly dependent on context [is]... the whole quantified modal logic of necessity; for it collapses if essence is withdrawn. For that matter, the very notion of necessity makes sense to me only relative to context. Typically it is applied to what is assumed in an inquiry, as against what has yet to transpire. (p. 121)

From these remarks it seems that, according to Quine, to say "a is F' is necessary" is to say that 'a is F' is assumed true, where what is assumed true is relative to a context of inquiry. Consequently, for Quine, "'a is F' is possible" is read as "'a is not-F' is not assumed true, relative to the context of inquiry." *Mutatis mutandis* for the terms 'might' and 'must.'

This should not be confused with Quine's view of *nomological* necessity, which Quine sees as reducible to regularities in nature (see his 1963b, especially

¹⁰ However, Quine (1990) may hint at a distinction between Basic Logic* and Symbolic Deductive Logic.

¹¹ Cf. Quine (1953), pp. 29–30.

pp. 69–71). Also, in *Word and Object* §41, Quine identifies other uses of modals—‘possibly’ sometimes expresses uncertainty, whereas ‘necessarily’ occasionally expresses resolve (p. 195). But I shall assume these uses are not our concern. I want to focus instead on the use articulated in “Intensions Revisited,” which incidentally, also seems to appear in the section from *Word and Object*: “Sometimes...‘necessarily’ and ‘possibly’ provide a condensed way of saying that a sentence follows from or is compatible with some fixed premises understood as background” (ibid).

What does it mean to say that a statement *S* is a “fixed premise understood as background” or that it is “assumed relative to a context of inquiry?” A plausible hypothesis is that, for Quine, *S* is assumed relative to a context of inquiry if *S* is the sort of statement which is immune to revision *relative to that inquiry*.¹² This would be the sense in which the statement is “necessary” for Quine, even if traditional logicians categorize the statement as “logically contingent” (a category that Quine rejects).¹³ So for Quine, the statement ‘in order to survive, it is necessary that wild squirrels forage for the winter’ will be *true* in certain inquiries, even if other logicians are able to dream up a “possible world” where wild squirrels survive without foraging. (Still, for Quine no statement is *absolutely* immune to revision, which means, I suppose, that we are able to question any of our assumptions in some other inquiry.)

Still, many will find the Quinean gloss of ‘necessary’ patently at odds with how ‘necessary’ is used in the language. It is coherent to say in the same breath “wild squirrels must forage for the winter, though this is not a *necessary* truth about the world.” Quine may have the resources for responding to this, but it is not my aim here to defend him on this point. Instead, I just want to point out that Quine held such a view (doubtful as it may seem), and that this view may allow him to escape the tension at (1.1)–(3.1).

If all this is congenial, we may revise the Revisability Doctrine’ and the Principle of Logical Charity’ to dispel their status as modal claims.

[Revisability Doctrine’] It is not assumed relative to the context of inquiry that our language will be governed by Logic*.

[Principle of Logical Charity’] For any language *L*, it is assumed, relative to the context of inquiry, that an adequate translation of *L* will construe *L* as governed by Basic Logic*.

¹² Here, biconditionals, conditionals, and other apparently modal statements are to be read in the material mode rather than formally. Thus, “If *p* then *q*” is read as “Not (*p* and not-*q*)” rather than “Necessarily, not (*p* and not-*q*)”.

¹³ See, e.g., Quine (1963b), pp. 74–76. In this region of the text, it is easy to misconstrue Quine as genuinely committed to particular modal truths. One can also misread Quine (1960), §41, and Quine (1953) in this way. However, in each case I take it that Quine is arguing by *reductio* on the modal logician’s assumptions. In (1963b), Quine reasons from these assumptions to the claim that the logical/mathematical notion of necessity “has no relevance” (p. 75). In (1960) §41, the *reductio* is completed by the so-called “slingshot” argument (the label comes from Barwise and Perry 1981). That argument is also key in his (1953), though in that paper, it is only the first wave of attack.

Let us also update our statement of the apparent inconsistency here.

- (1.2) For some language L, it is not assumed relative to the context of inquiry that the LOGIC of L will be compatible with Basic Logic*. [from The Revisability Doctrine"]
- (2.2) For any language L, it is assumed relative to the context of inquiry that an adequate translation of L will construe L as governed by Basic Logic*. [The Principle of Logical Charity"]
- (3.2) For any language L, the LOGIC of L is the LOGIC revealed by at least one adequate translation of L. [from Quine's Theory of Language Acquisition]

Note that (3.2) is identical to (3.1). But when we add (1.2) and (2.2), the resulting inconsistency will be understood as an inconsistency in what is assumed relative to the context of inquiry. According to (1.2), we are not assuming that some L will conform to Basic Logic*, although by (2.2), we are assuming that an adequate translation of L *will* conform to Basic Logic*. So once we add (3.2), we are both assuming and not assuming that L will conform to Basic Logic*, relative to the context of inquiry—this is the tension we face as Quineans about logic.

4 Translation, Revision, and Basic Logic*

A remedy to the situation is to say that the contexts of inquiry are *different* in (1.2) and (2.2). If so, then plausibly, what we do and do not assume shifts between these contexts, so that inconsistency does not arise in any *particular* inquiry, though it will still exist between the two inquiries. On this point, it is notable that (1.2) appears situated within an inquiry into Logic*, while (2.2) concerns an inquiry into translation. Given the different subject matters, it is reasonable to say that they are part of different inquiries; thus, it is also reasonable to say they are parts of different *contexts* of inquiry. This allows us to posit two distinct, internally consistent, lists of what we do and do not assume with respect to these inquiries: In one kind of context, we do not assume that our language will be governed by Basic Logic*—whereas in the other kind of context, it is assumed that any language will be governed by Basic Logic*. If suspicion arises regarding our vacillation between inquiries, one should be reassured by the fact that inquirers commonly, and knowingly, switch assumptions between inquiries due to differing pragmatic concerns. The physicist, for example, commonly vacillates between Quantum Mechanics, Relativity Theory, and Newtonian Mechanics, depending on her purposes, in spite of the well-known incompatibilities between these theories.

This is not to say that the various inquiries are completely independent. If Quantum Mechanics eventually discredits the Law of Excluded Middle, then plausibly, the Law will be excluded from (at least some) other inquiries. So even though the assumptions between certain inquiries will be incompatible, one inquiry will sometimes bear on the assumptions of another, regardless.

Our reading of Quine seems to fit his (1990) remarks, which are apparently the only occasion where Quine addresses the conflict we have been discussing (though his remarks here are woefully brief):

[T]he premium put on preservation of logical truth in radical translation applies to obvious truths generally. But...[this] conflicts none with my claim—illustrated by the logics proposed for quantum mechanics—that logic is integral to our system of the world and accessible to change in the same way as the rest. Obviousness resists change but does not preclude it. (p. 36)

Here Quine reasserts that obvious truths are to be preserved under translation. However, what counts as an obvious truth is “accessible to change” with the development of the sciences (although these statements “resist” change). The sciences, after all, have occasionally decreed false what was once thought obviously true. (Euclidean geometry, in its application, is another example of this.)

But on a first read, Quine’s remark just looks like a restatement of the inconsistency: Sometimes we assume Basic Logic*; sometimes we do not. It is important to note, then, that our assumptions legitimately vary *because of the different contexts of inquiry involved*. Thus, since it presently counts as obvious, Basic Logic* is generally assumed to be the LOGIC of a language under translation. But as a rule, we are able to put obvious truths in question, including those of Basic Logic*—thus we sometimes do not assume Basic Logic* in an inquiry. Yet as I have suggested, we should not be attacked on grounds of inconsistency, as long as the differing assumptions are separated into different contexts of inquiry.

But what exactly is the relation between what is obvious and what is assumed?¹⁴ Is obviousness *sufficient* for being assumed in an inquiry? If so, then it may seem incoherent for an inquiry to “put an obvious truth in question.” There are two ways to reply here, and either way is fine for my purposes. One option is to say that obviousness *is* sufficient, though obviousness is relativized to a context. Thus if an inquiry challenges an “obvious” statement, it will be *nonobvious* in that context. (Such an inquiry, then, puts an obvious statement in question, in the sense that it challenges something we *usually* count as obvious.) Alternatively, one could say that obviousness is sufficient for being a *default assumption* for any given inquiry. That is, an obvious truth will be assumed in a given inquiry, unless some legitimate challenge to it arises, in which case it is not assumed. Thus, obviousness would not be sufficient for being assumed, though it would be sufficient for being assumed *ceteris paribus*. Perhaps this is more in the spirit of Quine’s quip “Obviousness resists change but does not preclude it.”

One difficulty remains however. Namely, in some of our inquiries, there will be reason to include *and* exclude Basic Logic* from our assumption set. In these cases, the same inconsistency arises again—just as the physicist sometimes runs up against the incompatibility of Quantum Mechanics and Relativity Theory in her researches. For instance, if the relation between Basic Logic* and our language is under investigation, then there will be some pressure to maintain each of (1.2)–(3.2). Apparently, in such an inquiry, all of these statements will be relevant to the Quinean. Yet it is desirable to avoid the inconsistency which (1.2)–(3.2) present.

¹⁴ Thanks to an anonymous referee for raising this question. On either answer I propose, the referee’s concern is that Quine’s view will entail that (at least in some inquiries) some contingent obvious truths will be counted as *necessary*, e.g., ‘some dogs are black.’ This is indeed a weighty problem, though it seems rooted in the problems with Quine’s notion of necessity, see Sect. 3 above.

In these special cases, should we or should we not assume that our language will conform to Basic Logic*? I think, for the Quinean, it depends on the pragmatics of the situation. Suppose, for example, a researcher is interested in whether people accept the Law of Excluded Middle, when stated explicitly. And suppose her purpose is to investigate *whether* the language is *in fact* governed by Basic Logic*. In this kind of case, it is absurd to *assume* the language is governed by Basic Logic*, even though the topic concerns Basic Logic* and our language. But still, in different contexts, it is best to assume the governance of Basic Logic* in our language, e.g., if the aim is to test someone's ability in translating languages. I doubt, then, that the Quinean will ever have to deal seriously with the inconsistency in (1.2)–(3.2); the concerns of a particular inquiry ought to make clear whether or not Basic Logic* should be assumed in the investigation.

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