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# THE ADOPTION PROBLEM AND RELATIVISM ABOUT LOGIC

## El problema de la adopción y el relativismo sobre la lógica

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### Abstract

The adoption problem was originally raised by Saul Kripke. It is supposed to present a difficulty for Willard Van Orman Quine's view that statements of logical law are empirically confirmable. I want to argue for two things in relation to the adoption problem. The first is that the adoption problem does not really undermine the idea that statements of logical law are empirically confirmable. The second is that an analogue of the adoption problem can be developed in order to criticize a form of relativism about logic.

**Key words:** Logic; Metaphysics; Epistemology; Relativism; Confirmation; A priori; A posteriori.

### Resumen

El problema de la adopción fue originalmente planteado por Saul Kripke. Se supone que presenta una dificultad al punto de vista de Willard Van Orman Quine de que los enunciados de la ley lógica son empíricamente confirmables. Quiero presentar dos argumentos en relación al problema de la adopción. El primero es que el problema de la adopción no socava realmente la idea de que los enunciados de la ley lógica son empíricamente confirmables. El segundo es que se puede desarrollar un análogo del problema de la adopción para criticar una forma de relativismo sobre la lógica.

**Palabras clave:** Lógica; Metafísica; Epistemología; Relativismo; Confirmación; A priori; A posteriori.

### Introduction

The late Saul Kripke's adoption problem was inspired by an idea in Lewis Carroll's note "What the Tortoise said to Achilles" (1895). Kripke cites the problem as a reason for resisting a certain viewpoint in the epistemology of logic that was developed by Willard Van Orman Quine in "Two Dogmas of Empiricism" (1951). Quine's view is that statements

of logical law, like “All universal claims imply each of their instances”<sup>1</sup>, are empirically confirmable, and his view is therefore radically different from traditional conceptions in the epistemology of logic that are given in terms of a notion of the *a priori*.

I want to argue for two main points in relation to the adoption problem. The first point is that Kripke’s puzzle does not really pose a threat to Quine’s epistemological views about logic. The second point is that a structurally analogous puzzle can be developed to criticize a form of relativism about logical validity.<sup>2</sup> The form of relativism involves a “non-factualist” component. According to the view, when people disagree about whether certain argument patterns are logically valid, neither answer can be more objectively right than the other.<sup>3</sup> Nonetheless, it is also part of the form of relativism that there are objective answers for questions regarding the logical validity of argument patterns *when those answers are understood as being somehow relativized to a further parameter*.

To say more about how I see the relationship between these two points, I want to consider an example of the sort of dispute over logical validity that I have in mind. The following is a version of Curry’s paradox which starts out with an assumption for conditional proof, where K is a sentence equivalent to “If T(⟨K⟩) then Santa Claus exists”.

1. T(⟨K⟩) (assumption for conditional proof)
2. K (by T-elimination)
3. If T(⟨K⟩), then Santa Claus exists (by definition of K)
4. Santa Claus exists (by modus ponens)

That suffices for a conditional proof of the following:

5. If T(⟨K⟩), then Santa Claus exists

<sup>1</sup> “UI” from here on.

<sup>2</sup> My aim is to criticize this relativist attitude, only when it is applied to the case of UI. That is enough to show that global versions of the view are wrong.

<sup>3</sup> The notion of non-objectivity is somewhat tricky to pin down. What I have in mind is comparable to “anti-realist” frameworks developed by Allan Gibbard (1990, Chapter 5), Hartry Field (2009, 2015), and John MacFarlane (2014). I think it’s fair to talk about this notion of objectivity in terms of independence from a parameter, but this has to be understood in a specific sense. There is a sense in which sentences like “I’m hungry” don’t have parameter independent truth values. But that’s not enough to make claims that are framed with those sentences non-objective in the relevant sense. Even if there is some sense in which those sentences have parameter dependent truth values, it won’t typically be the case that disagreements about the truth value of those sentences are such that neither side is privileged over the other in terms of more accurately capturing the truth. I go into more detail on how precisely to understand this kind of idea in Boyd (2020, Chapter 5).

But then, via the application of a few more simple rules, we can derive that Santa Claus exists.

6. K (by definition of K)
7. T( $\langle$ K $\rangle$ ) (by T-introduction)
8. Santa Claus exists (by modus ponens)

This is an intolerable result, and in order to avoid it, logicians have proposed all manner of revisions. Notably, some logicians accept MP, but not CP, while others accept CP, but not MP.<sup>4</sup> So there seems to be a genuine disagreement between theorists about what the laws of logic actually are.

While some may want to suppose that disputes like this are not cases of genuine disagreement, I want to set that perspective to the side. I'm more interested to criticize the idea that, while theorists are not talking past each other, they are nonetheless disagreeing over something for which there are no objective answers. The argument against relativism provides a reason for resisting the idea that disagreements about logical laws are comparable to disputes over things that are merely a matter of opinion.

Why care about defending a Quinean epistemological perspective? Even if we grant that disputes about the logical laws are genuine disagreements over objective matters of fact, that doesn't tell us anything about how to resolve those disagreements. If the adoption problem is successful, it places pressure on the idea that our logical and scientific methodology can be seen as analogous. But we shouldn't want to give up on that Quinean idea too quickly because it's a potentially powerful tool for dealing with controversies over the logical laws. Especially since, in the case of logical laws, there is considerable disagreement among logicians, it is desirable to have a methodological strategy for resolution. In effect, the two points I'm arguing for can be seen as opening up space for a view where we can see the metaphysics of logic as an objective matter while simultaneously letting go of an *a priori* involving epistemological perspective on logic.

What I have to say is ordered in the following way. In section 1.1, I'll discuss the relevant features of Quine's view regarding the empirical confirmability of statements of logical law. In section 1.2, I'll discuss Kripke's interpretation of Quine, and, in section 1.3, I will discuss the adoption problem, as it presents a puzzle for Quine's view.<sup>5</sup>

<sup>4</sup> By "MP" and "CP", I mean to be referring to modus ponens and conditional proof respectively.

<sup>5</sup> The discussion of Kripke is based on citations in Romina Padró's dissertation (2015). It's important to quote her on the nature of these citations.

In section 2, I'll present two separate reasons for why we should see Quine's view as largely unscathed. In 2.1, I'll argue that Kripke's criticism depends on a specific interpretation of Quine that isn't clearly warranted. According to the interpretation of Quine I am challenging, an agent could not draw a UI inference without antecedently formulating and accepting UI as a principle. I challenge this reading of Quine on the grounds that it is uncharitable (since it would force us to read Quine in a way where he was cast as overintellectualizing the nature of deductive inference). In 2.2, I'll argue that Kripke's reasoning depends on an auxiliary hypothesis that is not supported by the thought experiment he introduces. The thought experiment involves a character that is very much like the tortoise in Lewis Carroll's dialogue. But instead of failing to draw MP conclusions, they fail to draw UI conclusions. The key question is about how acceptance of a UI principle could help the agent draw UI inferences. I'll argue that in order for the adoption problem to work, we would need to assume that acceptance of UI could only be helpful in virtue of UI operating as a premise in an instance of UI reasoning. I think the burden of proof is on defenders of the adoption problem to show that acceptance of UI can only be helpful in this way. If there are other ways that UI can help, then Kripke's reasoning does not go through.

In section 3, I will discuss the form of relativism about logic that I want to criticize, and in section 4, I will develop an analogue of the adoption problem with the aim of showing that these relativist conceptions of logic are wrong. So part of the upshot of my argument is that, contrary to the relativist, we cannot allow for these failures of objectivity in our conception of logical validity. In section 5, I will discuss what I take to be the general consequences of what I have to

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"Unfortunately, Kripke's material on the nature of logic is unpublished. I have had access to the tapes and a transcription of the first two lectures of his 1974 Princeton seminar (the first, as far as I know, comprehensive presentation of the material) and to a transcription of the lecture "The Question of Logic," given at Pittsburgh in 1974. I also attended a seminar at the Graduate Center in the fall of 2006 where some of the material was presented." "Writing about unpublished material is a tricky business for both the reader and the writer. The reader may wonder whether the presentation of the original views is accurate and fair. The writer must be careful not to step in too much without saying so, since the reader will have no way of comparing her account with the original views. I have tried to explicitly say which points are solely my own and to reconstruct Kripke's main arguments as accurately as I could (Padró, 2015, p. 21, fn. 32)".

My attributions to Kripke are based on my own understanding of these citations, and should be qualified relative to the kinds of considerations mentioned by Padró.

say, and I will conclude with a comment about how the conjunction of views I defend allows for a useful way of thinking about key details in the adoption problem.

## 1. The Adoption Problem Kripke Develops for Quine

The following is an example of a statement of a logical law.

(UI) All universal claims imply each of their instances.

Quine's idea is that *statements* of logical law are empirically confirmable. These statements get to be confirmed because of some relation they stand in to statements of observation and empirical generalization. To understand the puzzle that Kripke raises for Quine's view that logical hypotheses are not significantly different from empirical hypotheses, it will be important to say more about Quine's view.

### 1.1. The relevant features of Quine's view

For Quine, all statements are on an equal footing, in the sense that they are all amenable to the vicissitudes of experience. No statement is true wholly as a matter of convention; not even statements of logical law. In "Two Dogmas of Empiricism", Quine says

[a]ny statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system. Even a statement very close to the periphery can be held true in the face of recalcitrant experience by pleading hallucination or by amending certain statements of the kind called logical laws. Conversely, by the same token, no statement is immune to revision. 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 between such a shift and the shift whereby Kepler superseded Ptolemy, or Einstein Newton, or Darwin Aristotle? (Quine, 1951, p. 40)

This passage exhibits two features of Quine's view:

- Any statement can be maintained as long as sufficient changes elsewhere are made.
- Any statement can be revised (even statements of logical law).

Quine grants that there is a difference between logical and empirical hypotheses that can be spelled out in terms of a notion of proximity to experience. Observation statements make a kind of immediate contact with experience. More theoretical statements (e.g., Newton's laws) will make contact with experience in an indirect way due to a kind of logical relationship they bear to observation statements. This talk of proximity shows up in the following passage.

The totality of our so-called knowledge or beliefs, from the most casual matters of geography and history to the profoundest laws of atomic physics or even of pure mathematics and logic, is a man-made fabric which impinges on experience only along the edges. Or, to change the figure, total science is like a field of force whose boundary conditions are experience. A conflict with experience at the periphery occasions readjustments in the interior of the field. Truth-values have to be redistributed over some of our statements. Re-evaluation of some statements entails re-evaluation of others, because of their logical interconnections — the logical laws being in turn simply certain further statements of the system, certain further elements of the field. (Quine, 1951, pp. 42-43.)

For Quine, statements of logical law are understood as being furthest from the periphery. An important element of the passage is the reference to “logical interconnections” towards the end. In the passage, Quine says that re-evaluation of some statements will entail (in some sense) re-evaluation of others. He says this holds because of “logical interconnections” between statements. Presumably Quine is talking about causal relations that are somehow relevant to the mental life (and/or linguistic behavior) of an agent.<sup>6</sup> And he goes on to describe logical laws as being “simply further statements of the system”. This is in keeping with his attitude about logical hypotheses not having any special status.

Consider Quine's idea that “a statement very close to the periphery can be held true in the face of recalcitrant experience by pleading hallucination or by amending certain statements of the kind called logical laws.” Presumably the converse holds as well. By accepting

<sup>6</sup> It's not clear how these relations could be relevant in an account of recalcitrance if they did not involve some sort of causal efficacy. The details might be spelled out in terms of psychological or linguistic dispositions (which might include dispositions to accept statements of one type, given that certain statements of another type are accepted).

certain statements of logic, the recalcitrance can re-emerge. There is a natural way of thinking about why Quine would assume the existence of a relationship between recalcitrance and statements of logic. He thinks the statements of logic can (in some sense) provide connections between other statements. He describes a connection providing role for statements of logic in the following passage from *Word and Object*.

In an obvious way this structure of interconnected sentences is a single connected fabric including all sciences, and indeed everything we ever say about the world; for the logical truths, at least, and no doubt many more commonplace sentences too, are germane to all topics and thus provide connections. (Quine, 1960, pp. 12-13.)<sup>7</sup>

This would explain Quine's view about the relationship between statements of logical law and recalcitrance. If we think of statements of logic as providing connections between statements, then this helps to explain why amending statements of logical law would have something to do with recalcitrance. The existence of recalcitrance will depend on the logical relationships between statements. So if revising statements of logic has an impact on the logical relationships between statements, this can therefore have an impact on the presence of recalcitrance. But precisely how Quine understands this relation between statements of logical law and "logical connections" between statements will be of importance in Kripke's criticism. I will turn to Kripke's interpretation of Quine now.

### 1.2. Kripke's interpretation of Quine

When discussing Quine's view, Kripke invites us to imagine a hypothetical individual who (a) accepts that all crows are black, (b) accepts that some particular thing is a crow, but (c) is somehow unable to conclude that it is black. He says

<sup>7</sup> This passage may seem confusing seeing as how Quine uses the phrase "logical truths" to describe statements that provide connections between the things we say about the world. In this passage, I don't think the expression "logical truth" is meant to describe claims like "I'm hungry or not". The passage occurs in the context of a discussion about "occasion" sentences (like "There was copper in it") and "eternal" sentences (like "Copper oxide is green"). Presumably, the statements of interest are more like the latter category and would therefore need to be more general than "I'm hungry or not".

let's try to think of someone [...] who somehow just doesn't see that from a universal statement each instance follows. (Kripke, 1974b, cited in Padró, 2015, p. 35)

Kripke says that on the Quinean view, the individual would, merely by accepting UI, thereby be able to conclude that the crow is black. Kripke's way of describing the scenario can be seen in the following passage.

Just because we believe all crows are black, that doesn't in itself commit us to believing that this crow is black. It's only if we believe that all crows are black plus universal instantiation, that we are committed to believing that this particular crow is black. All we have to do to reject this conclusion is to deny, or doubt, or at least hold in suspended judgment, the law of universal instantiation; and then it will be doubtful whether this conclusion really follows, and we will certainly not be committed to it.

[...] if we just believe all crows are black, we are not ipso facto committed to concluding that this crow is black. We have a choice: to either go and deduce this or revise our logic so that this conclusion doesn't follow. This means that, in the absence of this particular statement in the system of interconnecting statements, one would not be able to conclude this crow is black. (Kripke, in Padró, 2015, p. 108)

The passage shows that Kripke also discusses the issue in terms of what a person is "committed" to believing. On Kripke's interpretation of Quine, Quine holds the view that for someone who accepts "all crows are black", the acceptance of a logical hypothesis like UI, will in some way generate a commitment to accept that a particular crow is black. For someone who accepts that all crows are black, but doesn't accept UI, there needn't be any recalcitrance in the face of an apparently white crow. In the same way, acceptance of "all crows are black" won't be useful for generating a prediction (or drawing the conclusion) that the next observed crow will be black (unless UI is accepted).

### *1.3. Kripke's critique of Quine*

If Kripke's interpretation of Quine is right, Quine holds the view that acceptance of UI will provide a kind of connection between statements. But Kripke argues that accepting UI would be useless for this purpose. He says

I want on the contrary to hold that, so regarded, the law of universal instantiation is completely useless. It has never led to a single prediction, or been of any use to us whatsoever, and so it cannot be said to be confirmed. Moreover, we cannot be thought of as having adopted it. If we did adopt it, it would have done us absolutely no good. (Princeton Seminar) (Kripke, in Padró, 2015, p. 112)

What exactly is the problem? Suppose accepting the statement “all crows are black” didn’t commit you to accepting that a particular crow was black. If it didn’t, then why would the state of play be changed by your acceptance of a logical law like “all universal claims imply each of their instances”? If your acceptance of the statement “all crows are black” didn’t commit you to accepting that a particular crow was black, then why would your acceptance of the statement “all universal claims imply each of their instances” commit you to thinking that a particular universal claim implied each of its instances? The statement of the logical law is a universal claim, just like the statement “all crows are black”. So if the latter statement didn’t generate any commitment, it’s not clear why the former one would generate a commitment either. They are, after all, both just universal claims.

In other words, the idea is that, if there is no significant difference between logical hypotheses and empirical hypotheses, then there won’t be a significant difference between the logical hypothesis “all universal claims imply each of their instances”, and the empirical hypothesis “all crows are black”. To put the point in terms of reasoning, if you didn’t already reason from the universal claim “all crows are black” to one of its particular instances, then adding “all universal claims imply each of their instances” to your belief set isn’t going to help you draw the inference. If you didn’t infer anything from the claim that “all crows are black”, then there’s no reason to think you will infer anything from the claim that “all universal claims imply each of their instances” either because they are both just universal claims.

Given what has been said up to this point, it should be clear that Kripke’s point can be put in a way that doesn’t overtly concern matters of infinite regress. We might see it as a point about treating similar cases similarly, or as a point about a kind of arbitrariness. It would be arbitrary to say that accepting UI might help someone draw the key inference (if they weren’t already helped by the fact that they accepted “all crows are black”). Before I move on to critical discussion, I want to first regiment Kripke’s argument (as I understand it). The argument aims to draw out an inconsistency in Quine’s view. It starts

out by focusing on a claim that Quine is supposedly committed to:

1. Without accepting UI, the individual wouldn't be able to conclude that the crow is black.

Given the point about how it would be arbitrary for Quine to draw a distinction between UI and "All crows are black", Kripke argues that 2 would also have to be true.

2. If [without accepting UI, the individual wouldn't be able to conclude that the crow is black], then accepting UI isn't going to help them conclude that the crow is black.

Then by modus ponens, 3 would be true.

3. Accepting UI isn't going to help them conclude that the crow is black.

But Quine is supposedly committed to the negation of 3.

## 2. Registering Skepticism about the Adoption Problem

I want to make two critical points. The first is that Kripke's criticism depends on an interpretation of Quine that is not clearly charitable. The second is that we should also be skeptical of an auxiliary hypothesis that would be needed for Kripke's reasoning to go through.

### 2.1. *Exegetical matters*

When describing Quine's view, Kripke says, regarding UI, that "in the absence of this particular statement in the system of interconnecting statements, one would not be able to conclude this crow is black." So Kripke thinks Quine is assuming that someone must accept UI in order to be able to draw a UI inference. But whether one needs to accept UI in order to draw a UI inference is controversial. Children engage in UI reasoning, and it's arguably the case that they do this without formulating UI.<sup>8</sup> So the interpretation risks construing Quine as though he were overintellectualizing the nature of deductive inference.

<sup>8</sup> Boghossian (2001) mentions a point like this in relation to "internalism" about warranted reasoning.

I think we should be wary of interpreting Quine in this way. In “Truth by Convention” (1936), he indicates awareness of a distinction between statements that someone might accept as laws of logic and inferential habits they might have. He distinguishes between the possibility of a convention being explicit vs. pre-verbally formulated.

It may be held that we can adopt conventions through behavior, without first announcing them in words; and that we can return and formulate our conventions verbally afterward, if we choose, when a full language is at our disposal. It may be held that the verbal formulation of conventions is no more a prerequisite of the adoption of the conventions than the writing of a grammar is a prerequisite of speech [...] Inference from general conventions is no longer demanded initially, but remains to the subsequent sophisticated stage where we frame general statements of the conventions and show how various specific conventional truths, used all along, fit into the general conventions as thus formulated. (Quine, 1936, p. 272)

Also, much later, in “Methodological Reflections on Current Linguistic Theory” (1970), Quine distinguishes between behavior fitting, as opposed to being guided by a rule.

Behavior fits a rule whenever it conforms to it; whenever the rule truly describes the behavior. But the behavior is not guided by the rule unless the behavior knows the rule and can state it. (Quine, 1970, p. 386)

He also says, in the case of grammatical rules

[c]ertainly I have no quarrel with dispositions. Nor do I question the notion of implicit and unconscious conformity to a rule, when this is merely a question of fitting. Bodies obey, in this sense, the law of falling bodies, and English speakers obey, in this sense, any and all of the extensionally equivalent systems of grammar that demarcate the right totality of well-formed English sentences. (Quine, 1970, p. 388)

So why interpret Quine in this way? In “Two Dogmas of Empiricism” Quine does say that amending statements of logical law can eliminate recalcitrance. But this is not tantamount to saying that the recalcitrance couldn’t exist without antecedent acceptance of the relevant statement of logical law. Nor need we understand this as an

endorsement of the view that the *mere* revision of UI would eliminate recalcitrance. Revising UI might eliminate recalcitrance only in specific circumstances where certain background conditions are satisfied (namely where the revision has an impact on a person's dispositions to infer by UI).

In the previous "Word and Object" passage, Quine says connections are provided by what he calls "logical truths". But this passage needn't be read as a statement of the view that the connections couldn't exist without an antecedent formulation of a logical law. And, analogously to what was said about the relation between amendment and recalcitrance, we needn't understand Quine as holding the view that the mere acceptance of a logical law is in and of itself sufficient to generate the relevant connections (or enable the key inference). Accepting a UI principle might result in the subsequent establishment of a connection (or ability to infer) only when certain background conditions are met.<sup>9</sup>

Given the existence of interpretations where Quine is not cast as overintellectualizing the nature of deductive inference, I think we should resist the interpretation needed for Kripke's criticism of Quine to go through. I would agree if someone claimed that Quine failed to laboriously clarify relevant distinctions in these contexts, but I don't think the texts support the claim that he didn't see the distinctions, or that he thought acceptance of UI would be necessary for an individual to draw the relevant UI inference and conclude that the crow is black. It's also the case that much of the discussion in "Two Dogmas" is metaphorical. Quine speaks of the "tribunal" of experience and the "web" of belief. Perhaps this is evidence that he was not aiming to engage in rigorously specific psychological description. If so, we shouldn't read these passages as though they are an extremely precise theory of how confirmation of logical theories would work in practice.

## 2.2. *A needed auxiliary hypothesis*

Why should we accept the second premise in the previous argument? The premise concerns a hypothetical individual, and it may seem motivated if we are antecedently inclined to accept the following auxiliary hypothesis, (AUX):

<sup>9</sup> It may also be the case that in the "Word and Object" passage, Quine merely had in mind the idea that inferential dispositions (that accord with statements of logical law) provide the relevant connective tissue between claims.

(AUX) Acceptance of UI could only be helpful in virtue of UI operating as a premise.

If (AUX) were true, it would be natural to wonder how the individual in Kripke's thought experiment could be helped by their acceptance of UI. Given (AUX), if accepting UI helped, the only way it could help is by operating as a premise in an instance of UI reasoning. But we already know the individual couldn't treat "All crows are black" as a premise in an instance of UI reasoning. So why would they be able to treat UI as a premise in an instance of UI reasoning when UI is just another universal claim?

Even though (AUX) would help to support the second premise, I don't think (AUX) is supported by Kripke's thought experiment. While the individual in the thought experiment isn't helped by their acceptance of UI, that doesn't show that there aren't other ways that acceptance of UI might help, where UI isn't operating as a premise.

Someone might object that it doesn't matter if there are other ways UI might help. If there were, that would make UI significantly different from "All crows are black", and that is inconsistent with Quine's view that statements of logical law are not significantly different from empirical hypotheses. But this objection moves too fast. While laws of logic will not, for Quine, have any special status of being analytically true, this still leaves room for there to be psychologically significant differences between UI and other universal generalizations in the mind of an agent.

Quine also talks about revisions to "total science". So, when thinking about his view, we would presumably need to think about how acceptance of UI would impact the psychology of a theorist with a rich set of beliefs and dispositions. If the imagined individual is supposed to be unable to draw UI inferences across the board, they would be radically impoverished in matters of their psychology. So, for this reason also, it's not clear how these considerations contribute to a refutation of Quine's view.

Should we accept or reject (AUX)? It may seem plausible if someone has certain background beliefs. For example, suppose the epistemic significance of a universal claim could only be a matter of how its content guides an agent in their reasoning. Then suppose further that UI can only guide an agent if it's being used as a premise. Then I think (AUX) would seem motivated. But we must consider the possibility that UI can guide non-inferentially, as well as the possibility that UI helps without guiding at all.

Even if (AUX) should be rejected, there is still a question about what it would mean for UI to help when not operating as a premise. It is easy to imagine cases where acceptance of UI results in an agent acquiring an ability to infer by UI, but where this doesn't happen in a way that preserves the agent's status as an autonomous reasoner. For example, suppose there is a powerful wizard who stands ready to cast a spell on an agent *once they accept UI*. If the spell causes the agent to acquire a UI inference ability, the acquisition shouldn't count as autonomous. Or, suppose that unbeknownst to the agent, someone has implanted a microchip in their brain, so that when the agent accepts the UI principle, the microchip goes off, and causes the agent to be disposed to infer by UI. This would also be a case where the agent doesn't count as responsible for their newly acquired disposition.

A question we should ask is whether acceptance of UI could impact a person so that (A) this results in them acquiring the relevant UI inference ability and (B) where the acquisition of this ability counts as autonomous. What I have in mind is the case of a logician with sophisticated views about the merits of various theories of logical validity. Let's say that, after having spent some time thinking about the Curry paradox, their overall assessment is that MP should be rejected. Let's also say that, when confronted with a Curry derivation, they resist the initial MP step. Even further, let's say they have a view on what counts as a theoretical virtue, how these virtues should be weighted, and how various theories compare on their overall virtue.

Could such a logician have an overall change in perspective that counts as fully autonomous? For example, what if they were persuaded to think that rejection of MP radically complicates other views they hold about mathematics? Then they may come to no longer see the rejection of MP as something that results in the most overall theoretical virtue. On the basis of that, they might then come to accept MP. And could they not, as a result of accepting the validity of MP (and given all their nuanced background beliefs and dispositions), come to a place where they are no longer disposed to resist that very same MP step in the Curry derivation? I have the impression that this sort of thing can happen, and I don't get the feeling that it would be analogous to the wizard or microchip case. Presumably this is because we would expect there to be, in the mind of an expert theorist, systematic relations between things like (a) their views on which theories of logical validity have the most overall virtue, (b) their views on what the laws of logic are, and (c) their inferential dispositions.

I think if we want to say more about how acceptance of UI could help, we will have to start talking about theories of deductive inference. On some views, drawing UI inferences is purely a matter of having certain kinds of dispositions to manage one's attitudes towards universal claims and their instances. So, on those views, the acceptance of UI would need to result in the person acquiring those dispositions. In the case of certain logicians, we might expect changes in their view about what the logical laws are to have an impact on their inferential dispositions. Even if a logician is not disposed to draw certain UI inferences, they may still have a conditional disposition to draw those inferences upon acceptance of a UI principle. While someone else might have that same conditional disposition because of a microchip implant, the logician can have it because of their sophisticated theoretical perspective. The main point is that, once we spell out a view of what deductive inference is, it's not clear that autonomous acquisition of a UI inference ability could not happen on the basis of accepting a UI principle (even when UI doesn't operate as a premise).<sup>10</sup>

It's useful to think about this issue in terms of the idea of appropriate causal connections. Consider the following passage from Donald Davidson where he discusses *wayward* causal chains in the case of intentional action.

<sup>10</sup> According to other theories, the activity of inference is explained in terms of the possession of non-doxastic intuition states. In that case, acceptance of UI would need to result in acquisition (or strengthening) of the intuitions that underlie an agent's inferences. Sinan Dogramaci (2013) defends an intuition based view of inference where drawing an inference is a matter of having a certain kind of conditional intuition. While I don't have space to go into the details of Dogramaci's view, it is interesting because it allows for a non-dispositionalist story where an agent can draw a UI inference without having to antecedently represent a UI principle. Dogramaci's view may be especially wieldy for someone with an intuition based view of inference, who also wants to resist the adoption problem puzzle. On a view like this, in order for acceptance of UI to be helpful, it would need to have an impact on the strength of a person's conditional intuitions. Why would it do that? One possibility is that for some agents who accept UI, contained within their acceptance of UI, is a powerful (non-conditional) intuition that the UI argument form is logically valid. In that case, it would be an intuition about one and the same logical form that is possessed by each UI argument instance. While the devil is always in the details, the idea would be that, because of this connection in logical form, between the content of the non-conditional intuition that the UI argument form is logically valid, and the logical form of individual UI argument instances, acceptance of UI, when it is underpinned by a powerful intuition of the logical validity of UI, could result in the relevant conditional intuitions becoming stronger. Admittedly, this is just a quick sketch, but I think it is worth mentioning because it is one way of trying to spell out how a non-inferential guidance picture might work.

A climber might want to rid himself of the weight and danger of holding another man on a rope, and he might know that by loosening his hold on the rope he could rid himself of the weight and danger. This belief and want might so unnerve him as to cause him to loosen his hold, and yet it might be the case that he never *chose* to loosen his hold, nor did he do it intentionally. It will not help, I think, to add that the belief and the want must combine to cause him to want to loosen his hold, for there will remain the *two* questions of *how* the belief and the want caused the second want, and *how* wanting to loosen his hold caused him to loosen his hold.

Some distance back, I tried analysing, 'A is free to do *x* (or can do *x*)' in terms of the conditional, 'He would do *x* intentionally if he had attitudes that rationalized his doing *x*'. Even if we read this subjunctive conditional as implying a causal relation, we can see now that it is not adequate. If the agent does *x* intentionally, then his doing *x* is caused by his attitudes that rationalize *x*. But since there may be wayward causal chains, we cannot say that if attitudes that would rationalize *x* cause an agent to do *x*, then he does *x* intentionally. (Davidson, 1973, p. 79)

I think this is comparable to the case of the adoption problem. In order for an agent to autonomously transition between a prior stage where they fail to infer by UI, and a later stage where, as a result of accepting a UI principle, they come to infer by UI, the causal relations must occur *in the right way*. Some will want to say that, in the case of the adoption problem, the relevant transitions could only be properly autonomous if they are the result of one's being guided by acceptance of UI (and in particular where this guidance is a matter of UI being used as a premise). I want to say that this is an unargued assumption. Perhaps these transitions can happen autonomously in spite of there being no inferential guidance. In the case of the logician who comes to accept a previously doubted logical principle, their new perspective should rationalize the previously resisted inference that accords with the principle. So, as long as the acceptance of UI, in conjunction with other features of the logician's overall theoretical perspective, causes them, in the right way, to draw the UI inference, there is no clear reason for thinking that the autonomy of the logician has been compromised. We cannot just stipulate that the right kind of causation requires inferential guidance, or even that it requires guidance at all.

### 2.3. *Objection and reply*

Suppose acceptance of UI is not a necessary condition for drawing a UI inference. Could we not reformulate the adoption problem in a way where Quine isn't cast as overintellectualizing the nature of deductive inference? I think it's useful to attend to a formulation of the adoption problem from Padró (that involves a hypothetical individual named 'Harry'). According to the way the puzzle is set up, the issue is about how acceptance of a UI principle can impact a person who has no antecedent disposition to reason by UI.

By 'adopt' here we mean that the subject, Harry in this case, picks up a way of inferring according to, say, UI, something he wasn't able to do before, *on the basis of the acceptance* of the corresponding logical principle. [...] (Keep in mind that 'adoption' as it will be understood here does not simply consist in picking up a basic inferential practice, but doing so by means of the acceptance of a logical principle.) (Padró, 2015, p. 31)

Here, Padró explicitly characterizes the issue in terms of acceptance of a logical principle. But someone might think the puzzle could be reformulated in terms of what would result from a person's acceptance of a disposition to infer by UI.

I don't think the idea of accepting a disposition will lead us towards any interesting reformulation of the problem. On the one hand, the terminology of "accepting" a disposition is somewhat tricky. I might acquire a disposition without having any beliefs about the disposition. So given that acceptance of a disposition is just a different way of talking about having a disposition, there would be no puzzle. Since the agent has the disposition, that should be enough to help them draw a UI inference.

But what about the following worry? If we say acceptance of a UI principle is not a necessary condition for drawing a UI inference, hasn't the UI principle become an idle wheel in the machinery of scientific practice? I don't think so. Just because acceptance of a logical law isn't a necessary condition for someone to be able to draw inferences in accordance with it, that doesn't mean that acceptance of a logical law can't play a role in the story of how a theorist might come to draw a previously resisted UI inference.

### 3. Relativism about Logic

I want to make an argument that is structurally similar to the one in Kripke's criticism of Quine. But I have a different target. I want to criticize a specific *relativist* attitude about logic where, for certain argument patterns  $x$ , the following two claims hold:

- (i) Independently of a parameter there is no fact of the matter about whether  $x$  is logically valid.
- (ii) Relative to certain parameters there are facts about whether  $x$  is logically valid.

How are we to understand phrases like “no fact of the matter”, “relative to”, or “parameter”? Different theorists will flesh out these ideas in different ways, and while I will veer into some of the minutia on these matters, I want to develop my points in a general way. That being said, I will look at some specific objections from parties claiming that my argument can be rejected as long as the notion of a parameter is properly understood.

The parameters of interest will have to be something like a logic (which we can think of in terms of formal systems like classical, or non-classical logics). There is a slight complication because there are different ways to articulate the details of these systems. There are choice points about how things like sentences and proof systems are defined. Nonetheless, I think there are some things we might focus on as representative. Within a system, we might look at things like axioms, but also things that might be better understood as rules. Someone might also think about parameters in a way that isn't tied so closely to the details of a formal system. They might have in mind inferential practices (and more generally reasoning habits) of groups or individuals. But whatever someone focuses on, I'm intending sections 4.1, 4.2, and 4.3, as cases that will cover all the relevant options for how we might think of a parameter.

Notice that this form of relativism maintains an asymmetry between certain attributions of logical validity and their explicitly relativized counterparts. On the view, the former will not have parameter independent truth values, but the latter will. Before I go on to argue that this asymmetry cannot be maintained, I want to note that I do not think I've defined the relativist conception of logic in a way that is too specific to be of theoretical interest. A few philosophers have described their views (or suspicions) about logic in ways that, at least superficially,

fit the specifications I've set out. For example, Stewart Shapiro (2014) says<sup>11</sup>

in the slogan of folk-relativism, there is no such thing as “simply being valid.” Rather there is validity-in-classical-theories, validity-in-intuitionistic-theories, etc. (Shapiro, 2014, p. 115)

In relation to matters concerning the semantic paradoxes, Harty Field (2015) has said

the impossibility of an actual reduction of validity to logically necessary truth preservation is a sign that there may be some degree of non-objectivity in the choice of logic (Field, 2015, p. 60)

Field thinks that this may occur in disputes over Curry's paradox regarding the validity of *modus ponens* (although he is careful to clarify that he is unsure whether this is actually the case).

It may be, for instance, that a view that locates the failure of the Curry argument in *modus ponens* and a view that locates it in conditional proof can't be distinguished in terms of how closely validity corresponds to truth preservation. I don't say that this is the actual situation, but suppose it is. In that case, the difference between the views is irreducibly a matter of normative policy. The proponent of unrestricted *modus ponens* will say that we ought to conform our degrees of belief to it, in the sense I've described, and the proponent of unrestricted conditional proof will say that we ought to conform our degrees of belief to a different standard. And each will take their 'oughts' to be non-subjective, in the sense that they aren't merely claims about what we ought to do given our logical theory. (Field, 2015, p. 61)

#### 4. The Argument against Relativism about Logic

Consider the following instance of a universal instantiation argument (D):

<sup>11</sup> Shapiro (2014) is invoking a notion of relativism from Crispin Wright (2008). Shapiro (2014, p. 7) says “Our first and primary sense [of] “relativism” about a given subject matter (or word)  $\Phi$  is what Crispin Wright (2008, p. 158) calls folk relativism. Its primary slogan is: “There is no such thing as simply being  $\Phi$ .” (The bracket is not in the original text, but I've added it to make the passage grammatical.)

(D1) Every dish is washed

(DC) This dish is washed

The relativist attitude about (D) would amount to the following two claims:

- 1: Independently of a parameter, there's no fact of the matter about whether (D1) logically implies (DC)
- 2: Relative to parameters, there are facts about whether (D1) logically implies (DC)

The details of the argument depend on how the notion of a parameter is understood. I'll first consider a case where parameters are understood in terms of propositions (or truth-evaluable entities). After that, I'll go on to argue that the problem will not disappear when parameters are understood in non-propositional terms or even purely dispositional terms.

#### 4.1. *The propositional construal of parameters*

Given the relativism, (D1) won't logically imply (DC) *independently of a parameter*. In other words, (D1) won't by itself logically imply (DC). But if (D1) does not by itself logically imply (DC), it would be arbitrary to say (D1) logically implied (DC) when relativized to a parameter. On a propositional construal of parameters, the relevant parameter might be understood as follows:

(UI-prop) All universal claims imply each of their instances.

But if (D1) didn't logically imply anything by itself, then (UI-prop) wouldn't logically imply anything by itself either (because (D1) and (UI-prop) are both just universal claims). And if (UI-prop) doesn't logically imply anything by itself, then (D1) isn't going to logically imply anything relative to (UI-prop) either. In other words, if there aren't facts about what (D1) simply logically implies (independently of a parameter), there won't be facts about what (D1) logically implies relative to a parameter either.

#### 4.2. *Non-propositional characterizations of parameters*

What about non-propositional characterizations of parameters? Field discusses a way of thinking about parameters where they are like imperatives (and hence not truth-evaluable).

Policies are sometimes stated in normative language (“You shouldn’t believe a conjunction without believing the conjuncts”), but here the normative claims are generated by the policy: in the example, the policy is something like an imperative (“Don’t believe a conjunction without believing the conjuncts”), and the “shouldn’t” formulation just means that if you act in the way suggested you are violating the policy. (Field, 2009, p. 259)

So we might formulate an imperatival analogue of (UI-prop):

(UI-com) Close your beliefs under all relevant instances of UI.<sup>12</sup>

To make the argument, I want to first consider a less complicated command:

(D-com) Wash all the dishes.

Would following this command require you to wash a particular dirty dish? Presumably it should, but the relativist claims that (D1) won’t by itself logically imply (DC). More explicitly, the claim that every dish is washed won’t by itself logically imply that a particular dish is washed. So even if one of the dishes isn’t washed, that won’t by itself constitute a counterexample to the claim that every dish is washed. But if a dirty dish doesn’t by itself constitute a counterexample to the claim that every dish is washed, then I should be able to follow the command even when I’ve left one dish dirty. In other words, if claims don’t by themselves have any logical implications, then commands by themselves won’t have any requirements for what it takes to follow them.

<sup>12</sup> I say close under “relevant” instances of UI because of computational limitations and practical considerations. Since there are infinitely many universal claims, and each has infinitely many instances, only some relevant subset of UI instances will matter for meeting the requirements of the command at issue. This is related to issues about norms that would purportedly be based in logical consequence. For examples of how such norms might be formulated, see MacFarlane (2004).

Exactly the same points will apply to more complicated commands like (UI-com). To see this, it will be helpful to look at an instance of a UI argument that is related to (UI-com).

(B1) All relevant instances of UI are such that my beliefs are closed under them.

(BC) (D) is such that my beliefs are closed under it.

Would following (UI-com) require that I close my beliefs under (D)? It *seems* like it should. (D) is a relevant instance of UI, and (UI-com) says that I need to close my beliefs under all relevant instances of (UI). But on the relativist view, (B1) won't by itself logically imply (BC). More explicitly, the claim that all relevant instances of UI are such that my beliefs are closed under them won't by itself logically imply that (D) is such that my beliefs are closed under it. In other words, my beliefs not being closed under (D) won't by itself constitute a counterexample to the claim that all relevant instances of UI are such that my beliefs are closed under them. But if that's not enough for a counterexample, I should be able to meet the requirements of (UI-com) even when my beliefs aren't closed under (D).

So thinking of parameters in terms of commands won't help to make sense of the idea that an argument is logically valid relative to a parameter. For (D) to be logically valid relative to a command like (UI-com), following (UI-com) should require me to close my beliefs under (D). But we've just seen that (UI-com) by itself won't require this on the relativist view.

#### 4.3. *Non-representational characterizations of parameters*

Someone might object that the previous problems arise only because a *representational* conception of parameters is being assumed. A parameter (or policy) is representational when following the policy implies that an agent is acting under some kind of verbal or mental formulation of the policy. Field articulates this sort of idea in the following passage.

[W]hen I speak of rule-following I *don't* mean to suggest that the person has the rule 'written into his head'. There may be rules 'written into the head', but for those to be of use some part of the brain has to read them, and reading them is done by following rules;

obviously these needn't be written in the head, on pain of regress.  
(Field, 2001, p. 388)

One way of thinking about this is in terms of dispositions, where following a UI policy would be nothing over and above certain facts about the way someone is disposed to manage their acceptance (and rejection) of universal claims and their instances.

I don't think this changes the main point. Going back to the dishwashing example, we might suppose that a policy for washing all the dishes is understood in purely dispositional terms. Nonetheless, there will still be a question about what logically follows from the fact that I have the requisite dispositions. Consider the following instance of UI:

(D1\*) All dishes are such that I'm disposed to wash them.

(DC\*) This dish is such that I'm disposed to wash it.

As before, on the relativist view, (D1\*) won't by itself logically imply (DC\*). More explicitly, even if I follow the policy, i.e., even if I am disposed to wash all the dishes, this won't by itself logically imply that I am disposed to wash a particular dish. But if that is the case, then my lack of disposition to wash a particular dish won't by itself constitute a counterexample to the claim that I'm disposed to wash all the dishes.

The same points should apply to logical policies construed in purely dispositional terms. Consider the following instance of UI:

(B1\*) All relevant UI instances are such that I'm disposed to close my beliefs under them.

(BC\*) (D) is such that I'm disposed to close my beliefs under it.

Again, on the relativist view, (B1\*) by itself will not logically imply (BC\*). But if (B1\*) does not by itself logically imply (BC\*), then my not being disposed to close my beliefs under (D) won't by itself constitute a counterexample to the claim that I'm disposed to close my beliefs under all relevant instances of UI.

So there's still no explanation of how arguments can be logically valid relative to parameters. If a UI parameter is understood in terms of a purely dispositional notion of a policy, then under what conditions will an argument like (D) be logically valid relative to the policy?

Presumably, (D) would be logically valid relative to the policy when it's part of following the policy that you are disposed to close your beliefs under (D). But we have just seen that this is something that doesn't hold. Even if you follow the policy, i.e., even if all relevant instances of UI are such that you are disposed to close your beliefs under them, this won't by itself logically imply that you are disposed to close your beliefs under (D).

#### 4.4. *Objection and reply*

I've claimed the adoption problem is epistemological in nature, and that the conclusion of the previous argument against relativism about logic is not. One of the main differences concerns subject matter. The conclusion of the adoption problem concerns agents and their inferential abilities, as this pertains to the matter of statements of logical law being empirically confirmable. The conclusion of the argument against relativism concerns the objectivity of logical validity attributions and makes no overt reference to agents or their reasoning abilities. While there are notions of a parameter that can be understood in terms of things like inferential practices (rather than a formal logic), this conception of parameters is not essential to the relativist view. And even if the relativist did think about parameters in terms of something like a reasoning practice, their thesis will still be a conjunction of claims like: (i) independently of a reasoning practice, there's no fact of the matter about whether UI is logically valid, and (ii) relative to a reasoning practice, there are facts about whether UI is logically valid. This is not, on the face of it, an epistemological thesis.

There is a general issue about how *any* non-factuality thesis (and hence any form of relativism defined in terms of non-factuality) can be distinguished from an epistemic thesis. For example, some theorists make non-factuality claims when dealing with borderline cases of vague predicates, and there is a well known issue about how non-factuality claims in this context can be distinguished from mere expressions of agnosticism. I think defenders of non-factuality theses in the literature on vagueness have gone a pretty good way towards addressing some of these types of objections, and I don't want to press the relativist about logic on the task of distinguishing their view from an expression of agnosticism about the logical laws.

In any case, I've tried to emphasize that there is a structural similarity between the adoption problem and the critique of relativism that I offer here. In spite of this, the differences in content allow for a

place where we can respond to the adoption problem, but not the puzzle developed for relativism. The motivation for P2 (in my regimentation of Kripke's argument) has something to do with arbitrariness. The idea is that it would be arbitrary to say that accepting UI would help when accepting "All crows are black" didn't help. But since there can be psychologically significant distinctions between an agent's acceptance of UI and "All crows are black", we can resist this accusation of arbitrariness. The argument against relativism about logic cannot be resisted in this way. It actually would be arbitrary to say that UI had logical consequences by itself if some run of the mill universal generalization did not.

## 5. Morals

As mentioned, I think what I have to say opens up space for a certain viewpoint where facts about logical validity are understood as thoroughly objective, but the epistemology of logic is divorced from more traditional conceptions of *a priori* justification. I've suggested that this viewpoint is desirable because it gives us answers to metaphysical questions regarding the objectivity of disputes over what the laws of logic are, as well as answers to methodological questions about how to resolve those disputes. I think this perspective also allows for a useful way of thinking about passages like

Just because we believe all crows are black, that doesn't in itself commit us to believing that this crow is black. It's only if we believe that all crows are black plus universal instantiation, that we are committed to believing that this particular crow is black. (Kripke, in Padró, 2015, p. 108)

When Kripke says that, on Quine's view, "all crows are black" wouldn't *in itself* commit an agent to "this crow is black", we can note that there are different ways to clarify the understanding of "commitment". If all we mean by "commitment" is that the person is committed to whatever logically follows from their assumptions, then as long as UI is objectively logically valid, accepting "all crows are black" will commit an agent to "this crow is black". But if by "commitment" we mean something more like "enables us to conclude", then even if the mere acceptance of UI wouldn't be enough to help, that doesn't mean that acceptance of UI could not change the state of play in the case of theorists with sophisticated background beliefs.

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