

ADOPTING AND REJECTING LOGIC

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Abstract

It is well known that there are, surprisingly enough, alternative logics. Not all logics obey classical logic. One or the other basic laws of classical logic – like excluded middle - can always be challenged and a different logic can be developed. Sometimes this revision takes place because of developments in science. Putnam (1968) argued that classical logic cannot be accepted for quantum mechanics. This implies that we can adopt a different logic when it comes to quantum mechanics. Putnam's claim supports Quine's notion that nothing is exempt from revision under empirical pressure. Contrary to this, Kripke (2023) argues that we cannot adopt a logic which deviates from a basic principle like the law of excluded middle. Since, we cannot adopt a logic we cannot change our reasoning because of pressure from empirical sciences. In this paper, I will raise the issue of whether we can reject a logic or not and what implications this can have for logic, reasoning and Quinean anti-exceptionalism about logic. In short, I will argue that we cannot reject a logic, but we can revise classical logic and develop a different formal system but this does not imply that the original logic was somehow just like the sciences, open to rejection. In this sense, logical systems are not like Ptolemaic models of the solar system. I will also maintain that it is hard to say what logic our reasoning employs, and that revision is not the anvil on which the apriority of logic should be tested.

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1. Introduction

Saul Kripke (2023) has argued powerfully that we cannot adopt a logic. But then, it is well known that there are alternative logics. There are logics that employ more than two truth values. There are logics that reject the “law” of excluded middle. Putnam (1968) suggested that the law of distribution cannot be accepted for quantum mechanics. Hence we need a different logic for the same. These logics can be used by us, and indeed, should be used by us, or so their proponents would argue. When we use them, we adopt them. How can Kripke's notion that we cannot adopt a logic be squared with the existence of alternative logics? Surely, the alternative logics vie for our attention to be adopted. One has to see what best fits our reasoning, as schooled

by our adapting to various pressures, the pressures being empirical for Quine. Various accounts of the conditional suggest that we can have different logics related to different notions of the conditional and we face a choice amongst them as to which agrees with our reasoning best.

Kripke does have a way out. He helps himself to a distinction. He suggests that there is logic – our reasoning, which is whatever we do when we reason everyday – and there are formal systems of logic. One can have whatever formal system one wants to make, driven by one argument or the other towards such formal systems. These formal systems may depart from classical logic. But our reasoning is what is basic to us and this cannot suffer adoption of any formal system that we build with our ingenuity (and our reasoning!). The distinction, then, is between reasoning that we employ in our daily lives using the language we speak and the formal systems that we *construct*, with much labor, to codify portions of our reasoning. In this paper I will develop the implications of this distinction. The implications of this distinction between our reasoning and formal logics in the shape of alternative logics will be brought out by asking: What does the existence of different formal systems tell us about our reasoning? What consequences do these implications have for Quine’s anti-exceptionalism about logic? If Kripke is right that we cannot adopt a logic, then are we in a position to reject a logic?

In the first section of the paper, I will bring out Quine’s (1951) anti-exceptionalism and Kripke’s reply to Putnam and his apparent defense of our reasoning against any empirical pressures to change the way we reason. In the second section I will develop my view as to whether, if we cannot adopt a logic, then whether we are in a position to reject one. In this section, I will also discuss the nature of normativity of logic and reasoning in light of Kripke’s stand on adoption and whether there can be alternative forms of reasoning that a reading of Wittgenstein might suggest. In the third section, I will develop the implications of the difference between formal logics and our reasoning against the backdrop of revision and rejection. Here, I will also discuss the effect of Kripke’s position on Quine’s naturalization of logic and the stand on ontological commitments¹. I will conclude that it is not necessary to think that a formal system’s “analytic” nature is to be given up because of alternative systems being developed under various pressures, even empirical. And I will argue that our reasoning is not to be described as apriori or analytic because we cannot adopt any logic. These

¹ I thank an anonymous reviewer for raising the concerns that I have tried to address in this section and for making the discussion in the paper more nuanced and responsive to various interacting threads of thought.

positions appear rather unusual, but hopefully the reasons I will give will add some weight to them.

1.2 Kripke on Adoption

Quine's rejection of the analytic-synthetic distinction led to the view that there was nothing exceptional about logic as compared to the sciences. The sciences are open to revision, given recalcitrant evidence. So is logic. We may reject the most cherished laws of logic if that is what our experience dictates. Whether this view is justifiable in itself is not something I will address here. Putnam, in a Quinean spirit, suggested that a consideration of results from quantum mechanics suggests strongly that classical logic cannot be accepted as the logic applicable to quantum mechanical discourse. This apparently implies that we have to *adopt* a different logic from classical logic. The implication has some force. After all, why would anyone develop a different logic unless they wanted it to be adopted?

But Kripke (2023) argues that a logic cannot be adopted. This means that if some formal system exists that, say, rejects Excluded Middle or Modus Ponens or Modus Tollens, then we cannot adopt it. Of course we have to ask: what does it mean to adopt a logic? I think what Kripke has in mind is a case where we are told about a particular rule in logic and then told to adopt it, that is, as an addition to the repertoire of rules of reasoning that we already possess. It is an *addition* to our reasoning apparatus.

The point against adoption is made by wondering whether we can adopt Modus Ponens (MPP) and Universal Instantiation (UI), let alone any system that rejects it. So, the point is general. It depends on whether we can adopt *any* system at all, even classical logic. What does it take to adopt Modus Ponens? We are told the rule and then we are asked to apply it. We are told that if one encounters a structure like "If p then q, and p" then we are to infer "q" with appropriate propositions filled for "p" and "q". Same for Universal Instantiation. The student are taught that whenever they encounter "All As are Bs" and they find something that is an A, then that something is also a B.

Kripke presents his objection to adoption or MPP or UI in the following form:

"This is the problem. If he did not already reason in accordance with the pattern of inference we call 'Universal Instantiation', telling him that it was true would do him no good: he couldn't 'adopt' it as a hypothesis, he couldn't use it as an auxiliary to derive further statements. If he was not able to make the simple inference, 'All ravens are black, therefore, this raven is black', then giving him some 'super premise' like 'Every

universal statement implies each instance' as another premise won't help him either" (Kripke, 2023, p. 17)

And, later, clarifying, Kripke writes,

"The point is that logic, even if one tries to throw intuitions to the wind, cannot be just like geometry because one cannot adopt the logical laws as hypotheses and draw the consequences. You need logic in order to draw these consequences. There could be no neutral ground in which to discuss the drawing of consequences independently of logic itself. This is the basic point that I want to make." (Ibid., p. 19)

The idea appears to be that if one did not already have the capacity to reason then how one would know how to apply MPP or UI. There are two distinct versions of the problem in the quotations above.

One is specific to the rule being adopted. The other is general to the rule being adopted. The specific point is that if one has to use MPP, then being given the rule of MPP is of no help. One would not know what to do with it unless one *already understood* MPP. That is because to apply the rule one has to *use* MPP. One has to know how to reason *with MPP* to understand MPP in the first place. Otherwise one can keep wondering what it meant to apply the rule to specific cases. Nothing in the rule of MPP tells you how to use MPP.

The general point is there in the second quote above: you have to use your *reasoning* to figure out how to apply MPP or UI. If you were not a reasoning creature, or had never used reasoning before, you would not know what to do with MPP or UI. So, we have a basic reasoning process in place. Rather, we just reason, when faced with various situations. Or we reason for fun. But we do *reason*. And that reason gives is the go-ahead to understand how to use MPP and UI. The general point leads to the specific one. Since we reason, we are already using what we are being asked to adopt, or we might be. If we are *not* using it, we cannot adopt it for we are epistemologically locked out; if we are already using MPP or UI, then we cannot adopt it either because it is no addition to what we do in any case.

Now, if we have logics that defy some aspect of classical logic, then we cannot adopt that logic because we simply don't reason that way. So if quantum mechanics dictates that the law of distribution cannot be obeyed, we cannot understand that, because we don't reason that way. To us the whole of quantum mechanics would appear weird, or contradictory.

How does this show that Quine's anti-exceptionalism is wrong? Well, we cannot change our logic – our reasoning - if experience to the contrary is admitted. We cannot change *our* logic because we cannot adopt any new logic. We can only understand our logic better. Maybe the change is needed, but that recognition does not require us to wait for new experience. Our reason should itself guide us to the change. There are limits to this change. The limit is our intuitive acceptability of the change that we want our reason to “adopt”. Of course, there is much to be said about Kripke's argument but I want to pursue a different route here (see Birman (2023) and Boghossian and Wright (2023) for clarifying discussions of Kripke's argument).

2. Rejecting a Logic

Assuming all this is correct, if we cannot adopt a logic, can we reject one? One remembers a statement of Wittgenstein here. Wittgenstein expressed the thought that you can only doubt something if you already possess knowledge. Applying that thought to the dialectic here, it seems that if one cannot adopt a logic, then one cannot reject one either. How would one reject a logic? We would have to understand the rules that it wants us to follow before we reject it. Once we understand it, and realize that it does not agree with our reasoning then we can reject such a logic. But that is precisely what we cannot do *even for MPP and UI*. If we cannot do that for classical logic, does that mean we should abandon classical logic? No. That would be contrary to the spirit of Kripke's argument. Thus, if we cannot adopt a logic, we cannot reject it either. It does not really matter whether it is classical logic we are considering or not.

We could find grounds to develop different logics. This can happen in different ways. We can extend a logic. We have the modal system K. We can prove many theorems in it. But we cannot prove that if something is necessarily so then it is so. That is, we cannot conclude from necessarily p to the fact that it entails p. One has to add reflexivity to K to get that result. This new logic with reflexivity added is an extension of K. Whatever can be proved in K can be proved in the new system, but those theorems that need reflexivity in their proof procedures cannot be proved in K (see Priest, 2001, Chapter 3). Theorems of K are respected in the extended system.

We can also develop logics where aspects of classical logic are kept and some aspects are abandoned. We can introduce a third truth value, as is sometimes done in dealing with cases of future contingents. We can accept that contradictions are true, but block the consequence that if a contradiction is true then everything follows from it. Various stratagems can be developed to do so. When we face such logics, we have to labor to learn them. We make frequent mistakes and everyone suffers from the problem of “how to go on in a new case”. We are just not used to reasoning like this. But that, as we have just seen, is no reason to reject the logic.

There is some reason to develop such logics. One reason is that such logics *can* be developed, simply as different formal systems, with properties of being sound or complete or not. The other, weightier reason is that we face problems in our own reasoning as we face new counterexamples. Surely, something has to be done in the face of the fact that the standard truth table for conditionals shows that all counterfactuals are true. Or that in any case it seems very peculiar that the standard truth table for conditionals says that if the antecedent and consequent are false, then the conditional is true. Or we have to do something about whether there are other truth values than the standard True and False given the fact that our thinking about future contingents or the sorites paradox force us towards accepting other truth values. Kripke says that we had to abandon Aristotelian logic because it made the fallacy of thinking that we draw an existential instantiation from a universal statement. We know we cannot do this because we can have statements like “All unicorns have horns” from which we cannot conclude that there is an unicorn. Kripke’s point is that he is not saying that we cannot find problems with the reasoning that we use. The Aristotelian *representation* of our reasoning is not accurate.

There is no doubt that our intuitions feel stretched and we face constant problems of interpreting the alternative logics in the right way. This suggests that either we had never thought about the problems that one faces if one sticks to classical logic or that we simply do not reason in certain ways.

Suppose that there is a logic which twists classical logic in many ways, so many that it is hard to understand what is going on it. Here, in learning how to work with it, we adopt a plodding approach. We look at the rules of the new logic and apply them blindly, replacing one symbol with another. An experience with dealing with non-normal modal logics will give you this idea. It is not as if one adopts S 0.5 or S 2 or understands the rationale for the systems. One just follows the tree rules, say, of the system without really wondering whether this is the way our reasoning works. Kripke is right when he maintains that if we give up classical logic, then we are not thinking at all. I would like to add here that when we are dealing with formal systems that employ more truth values than two or abandon various classical notions, we look at the rules and simply follow their consequences, replacing the symbols with other symbols where necessary. The only thinking or reasoning involved is knowing when to replace one symbol with another. And for this replacement, we use our standard reasoning, the one we are used to. Learning a new formal system does not mean that I abandon my reasoning and learn the new system. I use my reason that I already have and learn the formal system.

Now, it may be objected that this is what adopting a logic means, that one knows when to replace one symbol with another. But that is not reasoning at all. If I just use MPP or UI, that is reasoning, but if I just did MPP by replacing one symbol with another each time I faced the symbols arranged in a particular order, then the only reasoning involved is learning to play with the symbols. No reasoning is going on beyond that.

Let me return to the idea of whether we can reject any logic. Should we reject quantum logic because it violates classical logic? It seems that would be rash. We learn to handle the symbols as Putnam wants us to. We replace one symbol with another. That is all our reasoning amounts to in dealing with quantum logic. One can say that we adopt the rules of symbol manipulation as presented by those who develop quantum logic. We are not doing any thinking there. We are trying to develop a form of symbolization that best suits the descriptive purposes of the language of quantum mechanics. It is precisely because these descriptive purposes are so foreign to us that we have to labor to learn the symbolization. But adopting the symbolization need not mean that we adopt the logic. We say, we cannot adopt quantum logic, which means that we cannot both reason according to the law of distribution and not according to the law of distribution. But we cannot reject it either, for if we have to reject it, we would have to reject classical logic too, for we cannot adopt *that* too.

It is possible that it turns out that we were gravely mistaken about quantum mechanics. All the calculations and observations were just off the mark. There was some undetected fault in our instruments that were measuring the phenomena. In that case, would we reject quantum logic? No. We would have no use for it, that is all. One might say: that is just a fancy way of saying that we did reject it. But that is not the case. It is as with artefacts. Some artefacts are better suited to our purposes, some not. The ones that we do not use are discarded, kept away, kept in abeyance. Quantum logic would be another way in which we could have constructed a formal system. We cannot use it to describe our results in quantum mechanics better as we turned out to be wrong in the first place.

To reject a logic based on a change in experience would suit Quine's idea but not Kripke's. Quantum logic is a formal system. There is nothing to adopt or reject. It may fall in disuse. Many tautologies of classical logic may be very complex and hence never used in reasoning by us. But that does not make those theorems candidates for rejection. They are just not used.

2.1 Reasoning and Logic This raises the uncomfortable question: what is the relation between formal systems and reasoning? Now, if we could adopt various logics that we

construct, then the relation is one of gradual progress and improvement over earlier forms of reasoning. The relation would be one of clarification, improvement, progress and enhancement of our reasoning powers. Formal systems would be clarifying what abstract rules underlie our reasoning. Formal systems would improve upon our reasoning by considering better and more intuitive accounts of our natural reasoning, as we often do in the study of conditionals. Our reasoning would progress with the adoption of new rules and also improve by learning rules that we were completely unaware of before.

But Kripke says that we cannot adopt any logic. What does this imply about the relation of reasoning to formal systems of logic? At best one can say that certain formal systems can bring out background rules by which our reasoning works. Formal systems do not make our reasoning make progress, or improve our reasoning in any way. They, at times, provide us structures which make the reasoning we use clearer to us. Sometimes they do not do this, but adopt certain rules and procedures that are foreign to the way we reason. There are formal systems that don't take contradictions to entail that everything is true. Whether our reasoning works like this is doubtful. In certain domains we may have to give up our ordinary reasoning and "adopt" such systems.

The idea usually advanced is that it is as if our reasoning is outmoded and we have to adopt a new form of reasoning. But in Kripke's conception, there is no such thing as adopting a logic. We use the same reasoning to understand the complex formal systems we develop as we use to understand classical logic. If we follow Kripke's ideas, our reasoning can agree with certain formal systems of logic, and disagree with some, and stare in wonder at others. Our reasoning is privileged in being the judge, the formal system is not. The formal systems can only raise their hands to be attended to in the school of reasoning, but whether they are recognized as having revealed anything about ordinary reasoning depends on whether our reasoning judges that any revelation has been made.

2.2 The normativity of Logic and Reasoning Logic is usually considered a normative discipline. It tells us not only how we *do* reason, but also how we *should* reason. If we don't apply the rules of logic, then we are doing something wrong. Since our reasoning, that is the way we reason in our daily lives, is being revealed, in an abstract manner, in formal systems of logic, and these formal systems are normative, it follows that reasoning too must be normative. The direction of the entailment may be wrong. The opposite might be true. It might be thought that since our reasoning is normative, it follows that the logic we develop is normative. The logic is after all dependent on our reasoning. It is our reasoning that guides us to build what logic we

do. Various pressures on our reasoning tend to make us develop alternative logics. But if our reasoning is not convinced of the pressures – conceptual or empirical or both – that leads to these alternative logics, then these alternative logics cannot be said to be normative in nature. Formal systems are normative only because our reasoning takes them to be intuitively close to the way we reason. I suspect that the existence of alternative logics argues for degrees of normativity, with certain laws of classical logic enjoying a high degree of normativity and certain laws of alternative logics not enjoying that high a degree. Formal systems do reveal to us that our reasoning does contain elements – the laws of logic – that are to be “followed” while we reason. The fact that we debate these rules – of MPP, or Hypothetical Syllogism, using our ordinary reasoning – suggests that formal systems have only degrees of normativity, some more, some less, and it can get unclear which have a higher degree and which a lesser degree. Only further reasoning can tell us which formal systems are more revealing of normativity and which not.

2.3 Wittgenstein and Alternative Reasoning. Wittgenstein appears to suggest in *Philosophical Investigations* that a form of life will determine what reasoning we accept and what we reject. Hence, there can be alternative forms of reasoning, not *just* alternative formal systems. The implication is that humans can actually employ different forms of reasoning corresponding to different forms of life. It is not the case that different forms of life are necessarily associated with the same form of reasoning. I think this does not really deter Kripke’s point about adoption. Whatever form of reasoning one employs, Kripke’s point about adoption holds. We cannot adopt any logic, even the formalized one that represents our reasoning. But surely, it can be said, at least this proves that there are alternative forms of *reasoning*. Suppose we encounter some humans who explicitly do not follow MPP or Hypothetical Syllogism. We would not think that they are reasoning and nor would they think that we are reasoning or thinking. We would not understand what they are doing and they would not understand us. Different forms of life will pass each other by. At least with our bedrock reasoning we understand what formal systems there are and we understand how to manipulate symbols in them. But if forms of life differed, then since they employ alternative forms of reasoning, and not formal systems, we, with a different form of life, cannot even understand what symbols they are manipulating, since to understand that we need to understand their form of life. If the form of life is so different that a different sort of reasoning is going on, then we simply cannot comprehend it. Even if there are alternative systems of reasoning, this does not affect Kripke’s idea of adoption, and it does not affect the point that our form of reasoning is the benchmark for understanding any other form of reasoning or formal system. There is no other viewpoint we can *adopt*.

3. Revision and Rejection

To remind ourselves, Kripke makes a distinction between logic – reasoning – and formal systems. We cannot adopt any formal system. We cannot even adopt classical logic. So, if Quinean revision has any force, it cannot be against the *reasoning* that we employ. For, no revision can be adopted, and if we indeed thought the revision was fine in itself, it is because our reasoning already employs that “revision”. It is just that we did not notice it before.

The remaining candidates for Quinean revisionism are formal systems. We do have a dizzying array of alternative logics. What does it mean to have them, to study them, to advocate them? It means that we sometimes find reason – that is, we use our ordinary reasoning capacities – to realize that the logic we made in a classical formal system is not adequate to handle some problem. We change our logic keeping various influencing factors in mind. We just *supplant* the original formal system with another formal system.

We make the new logic answer to our new needs. This may involve a sacrifice of some favorite of classical logic, either there being two truth values, or some other aspect of it. The change may be brought about because of empirical observations or thinking about how to meet creeping incoherence in beliefs or problems that we encounter when we apply our logic to various epistemological and metaphysical intuitions. Certain formal systems, like classical logic, seem very close to our reasoning (*seem* being the operative word here). Certain formal systems appear far away from anything we can even recognize as our own reasoning process. We explore the alternative logics since we think that the problems we face may be resolved by taking our reasoning beyond classical boundaries.

Adoption and rejection take place – or, to express it better – do *not* take place, keeping our reasoning process in mind, keeping our basic “logical” practices in mind. Revision or supplanting our earlier logics takes place against other formal systems. These revisions are understood by us because we use our reasoning to make the revisions. The revision does not mean that the earlier logic has been rejected. It is simply considered inadequate to deal with certain aspects of our beliefs that we did not think of before as affecting our logic. The revisions may well reflect our actual reasoning process or not. This is up for grabs and it seems will be forever up for grabs. We are able to create various logics and our ordinary reasoning powers – what else? – help us to do so. Which of these alternatives are really representative of the reasoning we employ or the rules we follow while reasoning is quite unclear. Should we follow Edgington’s (1986) powerful arguments against the conditional of classical logic and realize that the proposal made by Edgington is the right one or should we rather think

that Stalnaker's (1971) notion of the conditional is the right one, even though Hypothetical Syllogism falls by the wayside in his system? The choices are hard.

Maybe our reasoning has no clear logic to it, a logic that is at least consciously known to us. Indeed our decisions are not necessarily logical at all. Increasing prices of bakery items may not drive us away from a bakery which we are used to shopping at. Harman (1984) has suggested that formal logic is of no use to reasoning, because reasoning is really used to change beliefs and logic does not dictate change of belief, not on its own at least. Indeed, both Harman and Kripke are thinking about how logic is related to reasoning, that is our natural logic as we use it in daily life. Harman is hard pressed to find any use for formal logic in our natural reasoning process. Kripke finds that we cannot adopt any logic however useful and natural it appears. The arguments presented by both are very different: Kripke's are epistemological and Harman's are related to practical use of logic. But the point is similar: formal systems do not seem to improve our natural reasoning.

So, yes, formal systems can be supplanted without any implication that they are to be discarded forever, precisely for the reason that we do not know which system represents our reasoning process. A formal system can be supplanted for empirical reasons, as Putnam did. We cannot adopt the formal system supplanted nor adopt the formal system that replaces the earlier one. We cannot reject any of these systems either, for adoption and rejection are both not possible. Each of the alternative logics may tell us something about our reasoning, if our reasoning so informs us.

If we do not know what our natural reasoning looks like in detail then it is not right to call it apriori or analytic even though it is not open to revision through adoption. And if formal systems are indeed open to being supplanted then it would be idle to describe them as apriori. I do not mean to say that they should automatically be described as a posteriori. I think more argument is needed and more clarification is needed regarding the status of logical truths. Revision is an indicator of the nature of logical truths, but more is involved in making a logical truth a priori or a posteriori.

3.1 Naturalism and the Adoption Problem Quine was a naturalist about logic, and clearly thought that logic could suffer revision if empirical pressure was high enough for the same. But if that is the case, then it appears that Kripke's position that we cannot adopt any logic goes against naturalism. That may seem so at first sight. But I don't think this implication is correct. We are reasoning creatures, produced by nature. If we cannot reason the way some formal system asks us to reason, then that is as much a part of nature as our reasoning itself is. Kripke's position on adoption of alternative logics or classical logic is as much a piece of nature as Quinean naturalism. I have

argued above that formal systems can be revised under Quinean pressures, but it need not put enough pressure on us to revise our reasoning. This nuanced position does not go against Quinean naturalism but is very much coeval with it. There is nothing non-naturalistic about having a bedrock of reasoning on which other aspects of reasoning are built, agreeing with the bedrock, just as there is nothing non-natural about there being the bedrock of evolution on which all of the species that exist today owe their being. If there were a piece of reasoning that has nothing to do with the bedrock of reasoning, then that is an unusual creature, just like we would find it strange if there were a creature which had no genes or DNA or cells or had no traceable history of evolution.

3.2 Ontological Commitment and the Adoption Problem Quine is famous for the slogan that “to be is to the value of a variable”. This means that when we translate the sentences of our theory of the world into logical language, the entities that the variables of the logical language range over tell us what is there in the world, filling out the ontology of the world in a reliable and satisfactory manner. Kripke’s idea that we cannot adopt a logic is orthogonal to this picture of the use of logic. Kripke can easily accept Quine’s slogan and continue to hold his position that we cannot adopt any logic, since his adoption problem has to do with rules of logic, and not variables employed in logic. As an aside, Kripke actually is fellow traveler with Quine as far as possible worlds are concerned. Neither of them believe that there are possible worlds or denizens thereof. Kripke differs from Quine in thinking that contingency and necessity are properties of entities and not propositions. But this does not affect the present debate about whether a logic can be adopted by our reasoning or not. Kripke would definitely be very much in favor of regimenting ontology through logic. His implementation would differ from Quine. Even if Kripke came to a very different ontology from that of Quine, that would not suggest that this was due to his criticism of the idea that any logic can be adopted.

4. Conclusion

Kripke argues that there are formal systems and logic, the latter being what we bring to the table with our natural resource of reasoning. Quinean revisionism and hence adoption of a new logic do not apply to logic. I have argued that if we cannot adopt a logic, we cannot reject it either. Revisionism does apply to formal systems. Thus while Quinean revisionism is incorrect for our natural reasoning, it is appropriate for formal systems. Given that sometimes the development of alternative logics does have a revealing impact on the nature of our reasoning apparatus, it would follow that the nature of our reasoning is not clear to us as of now. Being open to revision does

not have any clear role to play in the debate between the a priori or the a posteriori nature of logic.

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