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PUTNAM'S VIEWS ABOUT *A PRIORI* KNOWLEDGE AND REVISION

IVETTE FRED

The focus of this paper is Putnam's various views about the connection between the notion of *a priori* knowledge and the issue of revisability/unrevisability. Since Putnam changes his view frequently I have found it useful to present his views in chronological order. Also following the chronological order of the papers permits us to deal with important topics on *a priori* knowledge.

The first section shall discuss the development of Putnam's views on *a priori* knowledge in the articles "Possibility and Necessity", "Two Dogmas Revisited", "There is at least one *a priori* truth", and "Analyticity and *A prioricity*: Beyond Wittgenstein and Quine".[1] Section two is devoted to a critical examination of Putnam's views in each of the papers. In the concluding section I evaluate Putnam's views as a whole.

Section 1: Putnam in "Possibility and Necessity"

According to Putnam, Kripke[2] is responsible for introducing a notion of necessity that completely reopens the issue of *a priori* knowledge. For those who interpret necessity epistemically, something is necessary if and only if it is knowable *a priori*. This is certainly Kant's conception of necessary and *a priori* truths.[3] Kripke tries to defend a non-epistemic notion of necessity: the notion of metaphysical necessity or

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[1] These four articles appear in *Realism and Reason*. Cambridge, Mass: Cambridge University Press, 1983, vol. 3.

[2] Kripke, Saul. *Naming and Necessity*. Cambridge, Mass: Harvard University Press, 1980.

[3] Kant, Immanuel. *Critique of Pure Reason*. Translated by Norman Kemp Smith. New York: St. Martin's, 1956.

truth in all possible worlds. Kripke's notion is a way of responding to Quine's criticisms of the traditional notion of necessity (as *a prioricity*).[4] There are supposedly necessities that are not known *a priori*, so the Kantian doctrine that every necessary truth can be knowable *a priori* is allegedly false.

For Putnam, Kripke's emphasis on the notion of metaphysical necessity as a non-epistemic notion has been very illuminating for a phenomenon that occurs in the acquisition of our knowledge of pure mathematical truths. Sometimes our mathematical knowledge involves relying on empirical assumptions. Putnam offers the example of knowledge obtained via a very long proof and observes that some of the empirical assumptions involved are connected with memory, such as our memory of what has been shown in previous steps in order to know how the proof hangs together. On the other hand, Putnam affirms that this situation does not affect the metaphysical status of the truths known: they are metaphysically necessary, true in all possible worlds, even though our knowledge of them may involve empirical assumptions. That the metaphysical status of the truths known is not affected is taken as a consequence of Kripke's having separated the epistemological distinction between *a priori* and *a posteriori* from the metaphysical one between necessity and contingency of the truths known.[5]

Traditionally, mathematics and logic are considered disciplines that yield *a priori* knowledge. Now there is a problem: quantum mechanics sees logic as logic of the physical world and as a non-classical logic. Normally, a non-classical logic means that negation is not classical (that is, not not P does not imply P). In quantum logic, negation is classical, but the law of distribution fails. So quantum logic is non-classical in that sense. For Putnam, the discussion of quantum logic seems to posit serious difficulties to the traditional conception of logic (and mathematics too) as *a priori*. It is possible that even logic can turn out to be empirical and the notion of necessity may have to be scrapped.[6]

The notion of *a prioricity* that is at issue entails unrevisability: for Putnam, an item of *a priori* knowledge cannot be revisable.[7] Since, for

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[4] Quine, W. V. O. "Two Dogmas of Empiricism" in *From a Logical Point Of View*. Cambridge, Mass.: Harvard University Press, 1980.

[5] "Possibility and Necessity", pp. 54-55.

[6] Ibid., p. 47.

[7] I am not aware whether this is Kripke's notion of *a prioricity* too.

Quine, "no statement is immune to revision in the face of recalcitrant experience",[8] this destroys the claim that there can be *a priori* truths understood as unrevisable. Quine asks: how would a revision of logic in response to quantum mechanical evidence be different from the revolution in which Copernicus replaced Ptolemy or Newton Einstein? The answer is that it would not. It is implied that logical laws and geometrical laws are empirical for this reason. They can both be open to revision, though logical laws are more protected in the sense that they would be revised only after revising or giving up other "laws" less entrenched in our system of beliefs.

> ... changing one's geometry for the sake of simplifying physical theory, as we did when we adopted Einstein's theory of general relativity, and changing our logic for the sake of simplifying physical theory, as proposed by Reichenbach (of course, Quine was not commenting on whether the proposal really would simplify physical theory to a worthwhile extent), are changes of the same kind. Neither is forbidden by scientific methodology. The laws of logic, on this perspective, are as empirical as the laws of geometry, only more abstract and better protected. Logic is the last thing we may revise, on Quine's view, but it is not immune from revision.
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> If Quine is right, 'necessary truth' is another famous subject that has no object.[9]

As things stand, I observe that the last sentence of the quote sits oddly next to the preceding discussion, in the light of which someone might wonder why the necessity of mathematical truths -conceived as not requiring their *a prioricity* - is supposed to be under threat.

For Putnam, even if we have to concede to Quine the claim that some logical laws are empirical (or have empirical presuppositions), it does not follow that all logical laws are of this kind. One example of a logical law - which is not empirical - is the principle of non-contradiction. "The scope of the *a priori* is indeed shrinking; but the claim that every truth is empirical is still far from being an acceptable or even a coherent thesis."[10]

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[8] Quine, ibid., p. 43.

[9] "Possibility and Necessity", p. 51.

[10] Ibid., p. 51.

Nevertheless, Putnam recognizes that the discussion about revising the laws of classical logic has a strong "*a priori* component".[11] He seems to accept that a revision of logic can be appropriate for logical or philosophical reasons when he offers the example of intuitionistic logic as a revision of classical logic.

Furthermore, even if we did decide to accept quantum logic, we might be led to do so partly for *a priori* reasons.[12] This suggests again, for Putnam, that the claim that "All truths are empirical" is not forced upon us from the fact that we may have to revise our logic for empirical reasons.

> Now, someone who feels that truth should be linked to verifiability (or at least to idealized verifiability), might well be led on *a priori* grounds to consider quantum logic once they realized that propositions might be 'incompatible' in the sense that the verification of one might in principle interfere with the verification of another. I don't mean that this is the only way in which one can be led to consider or even accept quantum logic; and it is certainly empirical that there is such a relation of incompatibility in our world. But the possibility just envisaged illustrates the fact that even if we did decide to accept quantum logic, we might be led to do so partly for *a priori* reasons, a fact which suggests once again that 'all truth is empirical' is not the appropriate conclusion from the fact that we may have to revise our logic for empirical reasons. (p. 53)

As I understand it, the point seems to be that there might be falsifiability by experience, but because our acceptance of a consequent revision is partly guided by *a priori* reasons (or considerations), then the conclusion that all truth is empirical is false. Nonetheless, Putnam cannot still show that merely from the fact that our acceptance of a revision of logic is partly guided by *a priori* reasons, it follows that there are *a priori* truths. It is clear that "partly for *a priori* reasons" would not be enough to ensure non-empirical status.

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[11] Ibid., p. 51.

[12] Dummett suggests a stronger view of the role of *a priori* reasons in "Is Logic Empirical?". *Truth and Other Enigmas*. Cambridge, Mass: Harvard University Press, 1980, pp. 288-89. According to Dummett, neither a mathematical discovery nor a discovery in quantum mechanics will settle the question whether classical logic ought to be replaced by quantum logic. That question is a philosophical one, and will have to be resolved by philosophical reasons, which are presumably *a priori*.

But what are "*a priori* reasons"? Are they just methodological principles governing any kind of investigation? According to Putnam, Quine himself has insisted on the difference between denying that there are *a priori* statements and denying that there is an *a priori* factor in scientific decision making.

> The point just made is one that Quine himself has long insisted on: denying that there are *a priori* statements is not the same as denying that there is an *a priori* factor in scientific decision making. Quine himself has suggested that '*a priori*' and '*a posteriori*' may be names of factors present in the acceptance of all statements, rather than the names of classes of statements. And the theory of these two factors would be nothing other than normative epistemology: the theory of what makes statements worthy of rational acceptance. (p. 53)

What is an *a priori* factor? Is this *a priori* factor "contextually *a priori*" or "absolutely *a priori*" in the sense of unrevisable? As I interpret Putnam, an *a priori* factor is compounded by statements which have to be accepted for certain purposes of investigation as contextually *a priori*. What does "contextual" mean in this connection? I think that, for Putnam,[13] a statement is contextual when its acceptance is needed in a certain context of investigation: its truth is accepted as a matter of the context.

But what about being also *a priori*? Something can be left fixed for certain purposes, but this simply does not make it knowable *a priori*. Perhaps what Putnam means by "contextual *a prioricity*" is that these statements are held unrevisable for a specific period of time, without committing himself to a particular way to know them *a priori*; to a particular way to characterize the sense in which they are known *a priori*.

Section 1.1: Putnam in "Two Dogmas Revisited"

According to Putnam, Quine attacks several notions of analyticity. One notion of an analytic truth is that which is confirmed come what may or no matter what.[14] Putnam thinks in this paper that Quine's attack on this notion is correct.[15] As Putnam observes, "on the face of it, then, the concept of a truth which is confirmed no matter what is not a con-

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[13] pp. 95-6.

[14] "Two Dogmas Revisited", p. 87.

[15] Ibid.

cept of analyticity but a concept of *a priority*" (p. 90). Nonetheless, both Quine and the positivists did take this to be a concept of analyticity. Putnam considers[16] that Quine's confusion does not invalidate his methodological argument against the notion of *a prioricity*.

Putnam asks whether there are statements which always have the maximum degree of confirmation. If so, he continues, "these are simply truths which it is always rational to believe, nay, more, truths which it is never rational to even begin to doubt".[17]

Quine's methodological attack on this notion of *a prioricity* is based on the fact that the possibility of revision should be accepted even of logical laws.[18] Putnam considers that the appropriate conclusion to draw from Quine's remarks on revision is that some statements can only be overthrown by a rival theory, and not only by observational findings, and that there is not an absolutely unrevisable statement (p. 94). For Putnam, statements which can only be overthrown by a rival theory are "contextually *a priori*", that is, they enjoy a certain *a prioricity* before a new theory appears on the scene which questions them. Putnam introduces the notion of "contextual *a prioricity*" to account for the fact that some statements are so entrenched in our system of beliefs that only a rival theory, sometimes even only a revolutionary one, can overthrow them.[19]

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[16] Ibid., p. 92.

[17] Ibid., p. 90. Putnam must mean something else by "maximum degree of confirmation". Normally, the maximum of a degree of confirmation is 1. From this it does not follow that such statements are true.

[18] Ibid.

[19] pp. 95-6. Putnam adds:

> The obvious way to try to counter Quine's oblique reference to the fact that scientific revolutions have overthrown propositions once thought to be *a priori* is to say that the seeming *a priority* of those propositions was 'merely psychological'. But the stunning case is geometry. Unless one accepts the ridiculous claim that what seemed *a priori* was only the conditional statement that if Euclid's axioms, then Euclid's theorems (I think that this is what Quine calls 'disinterpreting' geometry in 'Carnap and Logical Truth'), then one must admit that the key propositions of Euclidean geometry were interpreted propositions ('about form and void', as Quine says), and these interpreted propositions were methodologically immune from revision (prior to the invention of rival theory) as Boolean logic was prior to the proposal of the quantum logical interpretation of quantum mechanics. The correct moral - the one Quine draws - is

Putnam affirms:

> ... there are statements in science which can only be overthrown by a new theory - sometimes by a revolutionary new theory - and not by observation alone. Such statements have a sort of '*a priority*' prior to the invention of the new theory which challenges or replace them: they are contextually *a priori*. Giving up the idea that there are any absolutely *a priori* statements requires us to also give up the correlate idea (at least it was correlative for the empiricists) that *a posteriori* statements (and to the empiricists this meant all revisable statements and also meant all synthetic statements, all statements 'about the world') are always and at all times empirical' in the sense that they have specifiable confirming experiences and specifiable disconfirming experiences. Euclidean geometry was always revisable in the sense that no justifiable canon of scientific inquiry forbade the construction of an alternative geometry but it was not always 'empirical' in the sense of having an alternative that good scientists could actually conceive. The special status of logical laws is similar, in my view; they are contextually *a priori*. (p. 95)

For Putnam, it is consistent to hold both that there are no *a priori* (unrevisable) truths and that there are analytic truths. It is alleged that the notion of analyticity in question is the one that Quine attacks: "a statement is analytic if it can be obtained from (or equivalently turned into) a truth of logic by substituting synonyms for synonyms".[20] Putnam explains that this definition is "linguistic" because the notion of synonymy belongs to the field of linguistics.

According to Putnam, even a statement that really is analytic is not immune from revision, for even if a statement is a logical law, we are not forbidden by any methodological principle from revising it. We will just be making a mistake if we do (p. 96). (This is close to his later notion: we may reject an absolutely *a priori* truth, but then it is not rational to do so though we may think it is.) Putnam continues: even if we arrive at the correct geometry for space-time, still our geometry will not be unrevisable. It is just that we will -as a matter of fact- be making a mistake if we revise it. "'Fallibilism' does not become an incorrect doctrine when one reaches the truth in a scientific inquiry." (p. 96)

that some statements can be only be overthrown by rival theory; but that there is no such thing as an absolutely unrevisable statement." (pp. 93-4)

[20] Ibid., p. 94.

Analogously, "a really analytic statement is not *a priori*, because even when we happen to be right about logic, fallibilism still holds good. We never have an absolute guarantee that we are right, even when we are" (p. 96). No truth is unrevisable.[21]

In the important passage below, Putnam talks about what he considers a "sane fallibilism", and distinguishes it from a very strong and implausible fallibilism, he thinks, that is in clear tension with the existence of *a priori* truths in his sense.

> Of course, if fallibilism requires us to be sure that for every statement s we accept there is an epistemologically possible world in which it is rational to deny s, then fallibilism is identical with the rejection of *a priori* truth; but surely this is an unreasonable conception of fallibilism. If what fallibilism requires, on the other hand, is that we never be totally sure that s is true (even when s is *a priori*), or, even more weakly, that we never be totally sure that the reasons we give for holding s true are final and contain no element of error or conceptual vagueness or confusion (even when s is 'Not every sentence is true'), then there is nothing in such a modest and sane fallibilism to prejudge the question we have been discussing". ("Two Dogmas Revisited", p. 136)

The question Putnam refers to here seems to be the possibility of knowledge of unrevisable statements, even when we don't know for sure that we possess such knowledge. He accepts this sane fallibilism because he accepts that our knowledge claims are defeasible even when the statement involved is "Not every sentence is true" (this is a version of his weaker principle of non-contradiction: "Not every sentence is both true and false").

Section 1.2: Putnam in "There is at least one *a priori* truth"

What Putnam wants to argue in this paper is that there is at least one *a priori* truth in exactly the sense that Quine denied and he himself before: i.e., "at least one truth that it would never be rational to give up".[22] Putnam argued before that the laws of logic are revisable. For instance, quantum mechanics requires us to give up the distributive laws. It is alleged that nothing he will say in this occasion will contradict this position. Putnam explains that it is possible that not all the traditional laws of logic are *a priori* in the sense of unrevisable, but that only some of them

[21] Ibid., p. 96.

[22] "There is at least one *a priori* truth", p. 100.

are. It would be a mistake to try to understand the epistemology of all of logic and mathematics in terms of a single notion of *a priori* truth (p. 100). In "Possibility and Necessity", Putnam suggested that not all logical laws are revisable. His position now is a return to this original suggestion. Though he will revive the notion of *a prioricity*, he warns us that that does not mean that we should go back to the old confident way of using it, that is, to think that there are many more *a priori* truths than what there are really.

Putnam says that it is not old fashioned *a prioricity*, but he has to mean not that it is not the same concept or quite similar; since it seems it is quite similar, but rather that the use of this notion cannot be the old one. There are fewer *a priori* truths in the absolute traditional sense of the notion, but there are these truths.

Putnam asks: is it possible that the minimal principle of contradiction, that is, "Not every statement is both true and false", is then only a contextually *a priori* truth instead of an absolutely *a priori* truth?[23] Quine explains part of the epistemic status of traditional *a priori* truths by what he calls their centrality. (p. 110) Putnam specifies:

> But we should be clear about what the centrality argument does not show. It does not show that a putative law of logic, for instance, the principle of contradiction, could not be overthrown by direct observation. Presumably I would give up the principle of contradiction if I ever had a sense datum which was both red and not red, for example. And the centrality argument sheds no light on how we know that this could never happen. (p. 110)

The point Putnam is making is that the centrality argument only can explain the special status of certain truths up to now; there is no explanation of this special status holding indefinitely. Another way of expressing the same point is that Quine's centrality argument cannot explain the necessity of these truths, leaving in this way always open the possibility that even experiences, direct observations of the physical world, could falsify them.

In a note,[24] Putnam distinguishes between two kinds of revision: (a) when a revision consists of negating a statement that we took originally to be true, (b) when we revise some of the concepts of the statement in question. He thinks that revision in the first sense is not always possible,

[23] Ibid., p. 101.

[24] Ibid., p. 110.

but that every statement is revisable in the second sense. Even the minimal principle of non-contradiction can suffer from a conceptual revision but it cannot be shown to be false. "Every statement is subject to revision; but not in every way" (p. 111). A conceptual revision of the minimal principle of non-contradiction is proposed by mathematical intuitionists. They deny the applicability of the classical concepts of truth and falsity.

In a further note[25], Putnam changes this view. Before he tried to argue for a 'moderate Quinean' view by claiming that 'every statement is revisable but not in every way'. Putnam affirms here that this move won't work. Consider the statement: 'Not every statement is both true and false.' To give up that statement, the notions of truth and falsity would have to be understood in a nonclassical sense.

Section 1.3: Putnam in "Analyticity and *A priority*"

Putnam thinks that unlike "2 + 2 = 4", which certainly seems *a priori*, there are mathematical facts that have a quasi-empirical character. An example he gives of such a statement is: "Peano arithmetic is $10^{(20)}$ consistent". We can conceive of these quasi-empirical statements as their being false, whereas we doubt we can conceive of "2 + 2= 4" being false.

For Putnam, although all mathematical truths are metaphysically necessary, our knowledge of some mathematical truths is epistemically contingent. He explains:

> there may be no way in which we can know that certain abstract structure is consistent other than by seeing it instantiated either in mental images or in some physical representation.[26]

Let's remember that Putnam thinks we need empirical statements obtaining not only when we know the truth of a mathematical statement by seeing it instantiated in physical figures, but also in the case of infer-

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[25] Putnam explains:

> In the previous Note, I said we might give this up by giving up the classical notions of truth and falsity: for example by going over to intuitionist logic and metatheory. But surely if we did that we wouldn't view it as giving up the concepts of truth and falsity themselves; rather we would view it as giving up an incorrect analysis of them. (p. 112)

[26] "Analyticity and Apriority", p. 124.

ential mathematical knowledge, that is, when our knowledge of a mathematical statement consists of following a proof. He adds:

> If this point has not been very much appreciated in the past (although Descartes was clearly aware of this problem) it is because of the tendency to think that a fully rational, ' ideally rational', being should be mathematically omniscient: should be able to just know all mathematical truths without proof (perhaps surveying all the integers, all the real numbers, etc. in his head). This is just forgetting that we understand mathematical language through being able to recognize proofs (plus certain empirical applications like counting). (p. 125)

Putnam makes an important distinction between what is "epistemologically impossible" and what is "metaphysically impossible".

> *Yet there are still circumstances under which I would abandon my belief that Peano arithmetic is consistent: I would abandon that belief if I discovered a contradiction.*
>
> Many philosophers will feel that this remark is 'cheating'. They would say 'But you could not discover a contradiction'. True, it is mathematically impossible (and even 'metaphysically impossible'...) that there should be a contradiction in Peano arithmetic. But,... it is not epistemically impossible. We can conceive of finding a contradiction in Peano arithmetic, and we can make sense of the question 'What would you do if you came across a contradiction in Peano arithmetic?' ('Restrict squema', would be my answer.)
>
> *As a matter of fact, there are circumstances in which it would be rational to believe that Peano arithmetic was inconsistent even though it was not.*
>
> Thus suppose I am caused to hallucinate by some marvelous process (say, by making me a 'brain in a vat' without my knowing it, and controlling all my sensory inputs superscientifically), and the content of the hallucination is that the whole logical community learns of a contradiction in Peano arithmetic... And this shows that even 'Peano arithmetic is consistent is not a fully rational unrevisable statement.' (my emphasis)[27]

Putnam appears to accept that all claims to knowledge are defeasible[28] even when we claim to know an *a priori* truth in his sense. The ex-

[27] Ibid., p. 126.

[28] A claim to knowledge, for example, "I know that p", is defeasible in my sense if either it may be shown that some of the evidence which makes it up is not really in good standing, or new evidence may be added to it in such a way that the resulting body of evidence no longer supports the belief in question.

planation seems to be that one thing is our access to *a priori* truths - the epistemological situation we are in with respect to these truths - and quite another is the metaphysical status of these truths being metaphysically necessary or true in all possible worlds. This again seems to be a lesson Putnam puts forward as a consequence of Kripke's having distinguished between the epistemological status and the metaphysical status of truths.

Putnam is willing to accept that some basic arithmetical statements like "2 + 2 = 4" are *a priori*. The rest of arithmetical statements and, in general, mathematical and logical statements, are not considered *a priori* at all. Also the only logical law that he defends as *a priori* is a weak principle of non-contradiction. He is not even prepared to defend the *a prioricity* of the principle of non-contradiction. Then, we have an analogous situation in both mathematics and logic. In both disciplines, we find few *a priori* truths, and the majority of the truths in both fields are not *a priori*. That is why he does not defend the *a prioricity* either of logic or mathematics; and that the old-fashioned notion of *a prioricity* is not terribly important to philosophy (p. 99).

Section 2: Some remarks on "Possibility and Necessity"

I understand that what Putnam calls "knowledge based on empirically contingent grounds" is knowledge based on empirical assumptions of some sort.

I observe that two cases (at least) seem to be conflated here: one thing is relying on empirical assumptions when, for example, we follow a long proof and we consider that our knowledge is *a priori* nonetheless; and another is mathematical knowledge obtained by a computer proof. Putnam does not specify if he considers knowledge by computer proofs *a priori*, "partly *a priori*", or *a posteriori*. To my understanding, it will be knowledge *a posteriori* at best.

Furthermore, we must distinguish between roles empirical statements (or assumptions) can have, for example, in our acquisition of inferential mathematical knowledge: One of the roles is:

(1) In justifying the conclusion of a proof in the reasoning: The proof of p, for the claim that p.

A second role is:

(2) The role they have in the reasoning for the conclusion that "I have a proof": that is, the role they have for the claim "I have a proof that p".

In the first role, empirical assumptions function as collateral beliefs about the ability of the knower to follow a proof that p. They are presupposed in our inferential knowledge that p as background conditions and do not appear within the reasoning itself. That is why we can talk about this inferential knowledge that p being *a priori* despite relying on empirical assumptions. In contrast, in the second role, the same or related empirical assumptions appear within the reasoning –what is totally understandable since the claim known is not "p" itself, "p" mathematical– but rather "I have a proof that p".

My knowledge that "I have a proof that p" depends on the empirical assumption that I am intelligent enough to follow the proof, for example. My knowledge is probabilistic in that sense. The statement "I have a proof that p" is empirically defeasible; moreover, it is an empirical statement. I can abandon it if I discover that I made a mistake in carrying out the proof.

There is a corresponding distinction between essential mistakes and incidental mistakes. The first are those that show that there can be no proof. The others are those which show that there is a mistake in the proof but do not show that there is no proof. There might be a proof, it is just that I carry out the reasoning incorrectly.

At first glance, it seems that Putnam equates mere "revisability" with "empiricalness", so whatever is revisable has to be empirical in character. This is quite questionable, and Hale[29] is right in questioning this implication since revisability is not per se incompatible with *a prioricity*. More is needed in order to obtain this conclusion. One should distinguish here between the sort of grounds for revisability on which one might hold that revisability does not carry empirical status with it - there is a difference between revising a statement because it is found to lead to a contradiction, say, and revising a statement because it conflicts with experimental or observational findings.

On the issue of necessity, I consider Putnam's interpretation of Kripke quite uncritical. Kripke is presumably presenting a necessity that is not *a priori*. Now neither Putnam nor Kripke say anything about

[29] Hale, Bob. *Abstract Objects*. Oxford: Basil Blackwell Ltd., 1987, p. 143. Dummett makes the same point in "Is Logic Empirical?".

whether general principles of the sort "If P, then necessarily P" are *a priori* or not.

To clarify the issue whether there are necessities that can be known completely empirically, let's examine the following argument:

(1) If Water consists of H_2O, then it is necessary that it is. (Necessarily [Water = H_2O]).

(2) Water is constituted of H_2O.

(This is an empirical premise in Chemistry).

(3) It is necessary that water consists of H_2O.

(1) is an instance of a general principle. Our acceptance of (1) involves the acceptance of a general principle like the following:

(0) Stuffs have their constitution by necessity.

What (0) expresses is that part of the concept of a substance is to be just that. This is a conceptual truth. So, the argument is not entirely empirical because it relies on a premise that is *a priori*. Now it is not entirely *a priori* either. The argument is "partly *a priori*". Then, neither Putnam nor Kripke have shown that there is a necessity which is entirely empirical.

Section 2.1: Some remarks on "Two Dogmas Revisited"

According to Putnam, giving up the idea that there are any absolutely *a priori* statements requires us to also give up the correlate idea that *a posteriori* statements are always and at all times 'empirical' in the sense that they have "specifiable confirming experiences and specifiable disconfirming experiences".[30] Let's examine what this supposed implication entails.

A Quinean thesis is:

(A) There are no unrevisable statements.

By parity of reasoning,

(B) There are no synthetic statements.

[30] "Two Dogmas Revisited", p. 95.

Synthetic statements are such that they are associated with other statements, and if these latter obtain, we must reject them. Since there are no synthetic statements, there are no statements that we must let go in certain circumstances. Another way of expressing the same point is as follows:

(I) Everything is revisable.

(II) Everything can be true come what may if we make the necessary adjustments, by parity of reason.

For Quine, analytic statements and synthetic statements are empty classes. The following question arises: do these two statements, (I) and (II), have to go together? I don't think so. What does Putnam think about this? It seems that for Putnam they have to go together.

The problem with (B), as I see it, is that it entails that everything will go. This is too dangerous. Let's illustrate the situation at the linguistic level, at the level of rules. There has to be some rules that state what is permissible. They are regulative principles, that could be revised, but they have a determinate meaning.

I will make a couple of comments about Putnam's claim that "No truth is unrevisable". First, I think that it is important to note that the mere possibility of revision, for example, of an alternative logic, is not alone a threat to its alleged *a prioricity*. It has to be the possibility of a revision that we can take seriously. The proposed revision has to have some merit in order for us to take it seriously.

Second, a distinction should be drawn between a statement or set of statements being *revisable for us* because we simply are fallible creatures and cannot be completely certain when we know or not. In this sense, everything is revisable. But there is also a notion of revisability that relates objectively to the subject matter. This means that a correct geometry is (itself) unrevisable; and that is why it ought not to be revised; so if we revise it -even when we think it is rational to do so - we are making a mistake. After we have achieved all knowledge in a discipline, it seems that it cannot be revised any more (disregarding, of course, minor revisions for the purpose of more simplicity, clarity or elegance). So when one reaches truth in a discipline, the latter becomes *objectively unrevisable*, and only *revisable for us* as fallible creatures who cannot know for certain when we have achieved truth.

Section 2.2: Some remarks on "There is at least one *a priori* truth"

Putnam asks: "how do we know that a direct observation might not in the future contradict the principle of contradiction?" (p. 110). The principle of non-contradiction cannot be only contextually *a priori* but it is, for Putnam, an absolutely *a priori* (unrevisable) statement. Presumably, Putnam means that there could not be a direct observational falsification of the law (or I add *a priori* reasons to reject it) and that is why it is absolutely and not merely contextually *a priori*. If it were only contextually *a priori* - or "central" in Quine's terminology - then the possibility of being falsified directly by experience cannot be ruled out. But since this principle cannot be falsified at all, it has to be absolutely *a priori*.

The claim that *a priori* statements could be falsifiable directly by experience is a very strong claim. Quine himself does not make it. Quine does not say that all statements may be falsified directly by observation. Again we see that Putnam goes back and forth from the mere possibility of something (without consideration of how probable is, and therefore how rational is to accept such a possibility) to a possibility that really is meritorious of being taken seriously, without argument connecting the two possibilities.

It is very important to understand that Quine is not claiming that, for example, mathematical statements can be falsifiable -individually- directly by experience, as in the case of strong revisions, where there is a change of truth-value, from truth to falsity, but rather that we can change the truth-value of even mathematical statements and logical ones given holistic considerations of our body of knowledge. For systematic reasons, it can turn out that some mathematical statements we took to be true, are taken as false, if this is a reasonable move for the preservation of our body of knowledge. It is like a decision in a way.

I think that what is behind Putnam's notion of *a prioricity* (as unrevisability), being such a strong notion, is his attempt to rescue part of the traditional conception of *a priori* knowledge as knowledge which cannot be falsifiable by experience (surprisingly, he thinks also that the notion of *a prioricity* cannot play the traditional role it had; we cannot go on using the old-fashioned notion of *a prioricity*). Since Putnam himself, like Quine, presents the case of a revision of logic allegedly for empirical reasons, not all logical truths come up as *a priori* according to his definition.

Putnam does not reject the notion of contextual *a prioricity* when he adopts his stronger notion of *a prioricity* in "There is at least one *a priori* truth". These two notions coexist in his philosophy. He says that some of the logical laws are revisable, and that is why they are only contextually *a priori*, and that some are not: they are absolutely unrevisable *a priori* truths. It seems also that he equates actual revision with empiricalness, and just the possibility of revision of these "truths" with the fact that they are merely contextually *a priori*. I will argue that the fact that there is actual revision does not imply that there is empiricalness involved and that the possibility of revision does not make these truths contextually *a priori* either.

Let me illustrate the revisions that Putnam talks about[31] and why I think there is a problem with them. To simplify things, let's say that 'S' is a sentence and that we talk of revision in connection with sentences. A weak revision of 'S' would involve that at time t^1 we accept 'S' is true. At another time, t^2, we reject 'S' is true. (Obviously, it could be just the other way around: we don't accept at a previous time that 'S' is true but at a later time we do accept it.) Why? Because we no longer accept something of that form; we no longer accept than 'S' says that P. There is a change of beliefs about the constituents of the sentence.

A strong revision of 'S' consists of the following: at time t1 we accept 'S' is true. At a later time t2 we reject 'S' is true. Why? Because we continue to accept that 'S' says that P, but we no longer accept P.

But what about the case when we come to believe that our prior understanding of 'S' was somewhat defective or confused? This case does not belong to any of the two cases of revisions that Putnam proposes. In this case, it is neither that we have changed the meanings of at least one constituent of 'S' and believe something else, or that we believe the negation of 'S' is true. This is a third case of revision: when we reject the understanding of 'S': there is repudiation of understanding.

Putnam appears to have this case of revision in mind but fails to recognize it as a separate case. The intuitionistic revision of logic is not a case of weak revision, as he understands it, but rather it is a revision of the third sort. Furthermore, the intuitionistic revision is proposed for the excluded middle, and not for the principle of non-contradiction.

31 "There is at least one *a priori* truth", p. 112.

I ask: does Putnam mean to imply that if one went over to intuitionistic logic, you could give up the weak law of non-contradiction? It is not clear that going intuitionistic makes this any easier at all.

Section 2.3: Some remarks on "Analyticity and *A priority*"

Putnam considers the status of '2 + 2 = 4' to be quite different because our knowledge of it is immediate or basic.[32] As a consequence, it may seem that, for Putnam, basic mathematical knowledge does not need the truth of any empirical statement.

I don't agree with Putnam - if that is what he is actually saying- in rejecting the need of the truth of empirical statements or presuppositions in the case of non-inferential knowledge. Basic empirical assumptions or presuppositions concerning the respectability of the knower's state of mind, for example, would have to obtain in order for us to possess any knowledge. Of course, I accept that Putnam's intuition is that in the case of inferential knowledge obtained via long proofs, the necessary empirical assumptions are more numerous - there are more chances to make mistakes - given the difficulties involved. These presuppositions have to be taken into account in what he calls knowledge obtained by "epistemologically contingent grounds". Actually, he seems to distinguish between ways in which a belief may be epistemologically contingent. But I think that the matter is one of degree and not of total rejection of empirical presuppositions in the case of non-inferential knowledge. Furthermore, something basic can be confused.

The sort of empirical assumptions that Putnam has in mind in connection with inferential knowledge do not play a justificatory role for *a priori* truths. They are rather assumptions that concern the respectability of the knower's state of mind.

We have an analogous situation in both mathematics and logic. In both disciplines, we find few *a priori* truths. The majority of the truths in both fields are not *a priori*.

[32] Basic *a priori* knowledge is knowledge which is not obtained by any inference from other premises. For example, elementary arithmetical truths like "2 + 2 = 4" and trivially analytic truths like "All bachelors are unmarried men" are considered items of basic *a priori* knowledge. In contrast; inferential *a priori* knowledge is knowledge obtain by inference from premises already known *a priori*. For example, the conclusion of an argument constitutes inferential *a priori* knowledge given that the premises in the inference are already known *a priori*.

Then, what is the epistemic status that Putnam confers upon the vast majority of mathematical and logical truths? They are not *a priori* in his sense. Are they quasi-empirical? Some of them are, like "Peano arithmetic is $10^{(20)}$ consistent" since they involve empirical presuppositions. Putnam thinks that our beliefs in the consistency of PA and on induction are not epistemologically contingent - or at least that they are not epistemologically contingent in the same way as "Peano $10^{(20)}$ is consistent". Later he affirms that we could envisage epistemic circumstances under which we could reject the consistency of PA, though we would be mistaken since that is mathematically impossible. Perhaps, they are only contextually *a priori* (nothing quite clear indeed; the notion of contextual *a prioricity* is very obscure). If so, then it seems unsatisfactory to explain the fact that many mathematical and logical truths have been kept intact for millennia given that they are only contextually *a priori*. The problem with Putnam's preferred notion of *a prioricity* is that it does not include the majority of what are usually considered *a priori* truths, in other words, it is too strong; and; conversely, it is also too weak since the notion of "contextual *a prioricity*" does not seem able to capture - let alone account for - the alleged special certainty that traditionally has been associated with mathematical and logical truths (i.e., *a priori* truths).

Conclusion

Putnam's position is very interesting because it is dialectical. He is in a middle position. He is very critical of the traditional notion of the *a priori* as entailing unrevisability. However he also recognizes that there is at least one *a priori* truth; a weak formulation of the principle of non–contradiction ('Not every statement is both true and false'), taken as a principle which operates as a norm for any conceivable rationality.

Putnam affirms that even though he recognizes the existence of at least one *a priori* truth, the notion of *a prioricity* is not terribly important to philosophy. For Putnam. the notion is not terribly important to philosophy because it can no longer play the traditional role it had. We don't gain much by having a notion of *a prioricity* which entail unrevisability since there is few *a priori* knowledge. The majority of truths traditionally considered *a priori* are not included under his notion. Putnam ultimately thinks that the notion of *a prioricity* is important because of what indicates about rationality.

In the end, Putnam thinks that *a priori* truths are unrevisable. What about the relative and absolute *a priori* distinction? This distinction is used by Putnam to clarify which truths are *a priori* in his strong sense of absolutely *a priori* or unrevisable, and those which are *a priori* but only in a weak sense, contextually *a priori.*

The situation with the "*a priori/ a posteriori*" distinction is analogous to the one with the "analytic -synthetic" distinction. There is such a distinction. Quine is wrong to deny this. But Quine is right in the sense that the distinction is a trivial one.

A problem with Putnam's views is that he does not take the predicate "*a priori*" as primarily characterizing a particular way of knowing. He does not clarify the sense in which *a priori* truths are *a priori,* that is, because they are known in a particular way. So, his account does not illuminate the issue of the "independence of experience" characteristic of *a priori* knowledge but only concentrates on the supposed properties that *a priori* truths have: for instance, unrevisability allegedly.

The mistake I attribute to Putnam is that of supposing that in order for something - a statement?, knowledge claim?, belief?, - to count as *a priori,* it has to be unrevisable. Let us take it that it is beliefs that are revisable or not. Then Putnam's thought is that in order to be possible to know a statement to be true *a priori,* there have to be grounds for believing it to be true such that, once we are apprised of those grounds, no possible improvement in our state of information could destroy the warrant which they confer.

In the *basic* case it is statements - declarative sentences -which are analytic or not (true in virtue of meaning or not); *ways of knowing,* or justifying, which are *a priori* or not; and beliefs which are revisable or not. Since these three concepts apply to different kinds of thing, there is no question of anyone's clearheadedly "equating" them.

Revision is consistent with *a prioricity.* Revisions in mathematics, for instance, are conducted via rational reflections on mathematical concepts –for example, the concepts of number, set or the differentials in the beginning of analysis– and proofs. These are *a priori* ways of knowing.

Now, what is very useful about Putnam's "final" view on *a prioricity* is that it is sensitive to the issue of revisability/ unrevisability in connection with *a priori* knowledge.

Universidad de Puerto Rico, Recinto de Río Piedras