Naturalized Epistemology, Normativity and the Argument Against the A Priori[1]*

Introduction: Pragmatism, Quine, and Naturalized Epistemology

A characteristic feature of pragmatism, since its Peircean beginnings, has been the repudiation of the dualism of thought, as experienced by the isolated Cartesian subject, and world. Thought, on a pragmatist conception, arises out of the interaction between the human subject and his environment, and those beliefs which pass our best test for truth, we accept as knowledge. As our best test for truth is *our* best test for truth, the search for incorrigibility must give way to fallibilistic conceptions of truth and knowledge. This attempt to take thought and knowledge out of the Cartesian stove and locate them in the sphere of human action represents an early attempt to naturalize epistemology.

Of the early pragmatists, it was Dewey who paid most attention to providing the details of thus naturalizing epistemology. For Dewey, knowledge is produced by human activity directed towards the goal of the fulfillment of human needs and purposes. A problematic situation encountered moves us to isolate that information which might be thought relevant to a successful reconceptualization of the situation. There ensues a reflective stage where candidate hypothetical solutions are considered, and the final test of adequacy for any given belief is the employment of that belief in action. Those hypotheses which pass the test of experience, we accept, and they constitute our knowledge. Since, however, any given belief might fail future tests, this knowledge is provisional, contingent upon it continuing to facilitate both our understanding of the world, and our ability to act in it. The approach is a naturalistic one since it sees knowledge as an evolutionarily advantageous response to obtaining environmental conditions.[2]

Many of the elements of Quine's pragmatism are thus anticipated in Dewey. The opposition to the dualism of thinking subject and world, found in Dewey, has its counterpart in Quine's rejection of the distinction between those truths grounded in meanings, and those grounded in matters of fact. The fallibilism championed by Dewey is eagerly embraced by Quine, for whom even the most warranted beliefs are fallible, and thus subject to rational revision.[3] Facing the test of experience, in Quine's more scientistic outlook, becomes passing the hypothetico-deductive test of science. The pragmatist of a Quinean bent thus provisionally accepts as true those beliefs which pass this, our best test of truth, and counts those beliefs as knowledge.[4]

Another, more radical, common theme between the two is the pragmatic status of logic. Both reject the conception of logical warrant as deriving from rationalist intuition. For Dewey, logic owes its warrant to its usefulness in managing evidence relevant to the problematic situation, and to

conceptualizing the relationship between this evidence, the problematic situation, and candidate solutions.[5] As Quine sees things, the warrant possessed by logic derives from its usefulness in theory formation, and if, in practice, logic avoids revision, this is only due to the centrality of logic in the web of belief, together with Quine's highly pragmatic maxim of minimum mutilation [Quine, 1961, 42-4].

In order for Quine to complete the case for a pragmatism that holds that all propositions, including those of logic, are both rationally revisable, and experientially justified, it is incumbent upon him to provide a viable epistemology. This epistemology not only must show how we relate evidence to theory, and how we revise our beliefs in the face of recalcitrant experience, it must also do this in a way which captures those normative concepts essential to any epistemology. The main concern for Quine's brand of pragmatism thus becomes that of providing a naturalistic epistemology.

As I have thus far laid out the ground, what such a naturalized epistemology would offer is an alternative to an epistemology which makes room for the *a priori*, not a refutation of such an epistemology. However, some commentators have seen in Quine an argument against the *a priori* stemming from his naturalized epistemology itself.[6] Bonjour identifies the case against the *a priori* stemming from a naturalized epistemology as follows: once we have settled for a naturalized epistemology, there is "no reputable cognitive endeavor that requires any sort of *a priori* appeal" [Bonjour, 1988, 82]. Showing that this is so would require showing that epistemology (or, at least, whatever part of it that can be shown to be reputable) can be done without such an appeal. And this, of course, is the task Quine sets himself in "Epistemology Naturalized."[7] The central claim there is that we should stop dreaming of a first philosophy, one which provides a foundation for science, and settle instead for an account which explains how we *in fact* arrive at our theories of the world, given only the meager sensory input. We should settle, that is, for psychology rather than epistemology as traditionally conceived. This new enterprise will be thoroughly empiricist, and if it can in fact provide a satisfactory link between evidence and theory, it will have rendered otiose any appeal to *a priori* knowledge.

This, then, is the argument against *a priori* knowledge, from naturalized epistemology. The main business of the present paper is to argue that it fails, and thus to show that in providing a pragmatist naturalized epistemology, one does not thereby refute apriorism. I shall here be concerned only with the argument from naturalized epistemology, and not with any of Quine's other arguments against the *a priori*. Unlike Bonjour and Kim,[8] however, I will not contend that a Quinean naturalized epistemology leaves out normative concepts essential to epistemology, and thus is not properly an epistemology. To the contrary, I shall attempt to show that there is no quick rejection of the argument from naturalized epistemology along such lines. To this end, in the first part of this paper, I shall show how a Quinean naturalized epistemology makes room for the normative notions of truth and justification, and how his pragmatic understanding of these concepts enables him to withstand the criticisms of Bonjour and Kim. Following this, in the second part of the paper, I shall argue that, even allowing that Quine's epistemology can accommodate the normative, the argument from a naturalized epistemology does not succeed.

Naturalized Epistemology and Justification

Kim's [1993] is perhaps the best-known criticism of Quine's project. Psychology, according to Kim,

is a descriptive science. Epistemology, on the other hand, is fundamentally a normative enterprise. Quine, Kim [1993, 333] contends, is asking us to give up the entire framework of justification-centred epistemology, and to put in its place a purely descriptive, causal-nomological science of human cognition. Kim responds that due to the fact that our concept of knowledge is inseparably tied to that of justification, if justification drops out of epistemology, so too does knowledge. For the epistemologist to drop both justification and knowledge is for him to go out of business.

Kim considers a possible line of defence for the naturalized epistemologist along the following lines. Contrary to first appearances, justification does not drop out of a naturalized epistemology. This is because Quine's conception of the role of the new epistemologist has him investigating how evidence relates to theory, and this relationship is a justificatory one. Thus, the response concludes, the naturalized epistemologist has his own brand of justification, and the objection is misplaced. However, Kim argues that the only relation between sensory input and theoretical output to which the naturalized epistemologist is entitled is a causal one, and not an evidential one. The causal relation cannot be an evidential one because the causal mechanisms connecting input and output will vary across species. A truly evidential relation abstracts from such species-dependent features, concerning itself only with the degree to which evidence supports theory – and this is a relation holding between contents, rather than between causes and effects. But, since this is exactly what the naturalized epistemologist cannot have, he cannot capture justification, and the initial objection stands.

The claim, then, is that in becoming part of natural science, epistemology loses all claim to normativity, and thus to justification. But how true is this? Certainly Quine himself has denied jettisoning the normative. In his "Comment on Lauener,"[9] he writes that "The normative is naturalized, not dropped." Normative epistemology, we are told a few lines later simply is scientific method. In the Hahn-Schilpp volume, Quine, in reply to White, writes:

> Naturalized epistemology does not jettison the normative and settle for the indiscriminate description of ongoing processes. For me normative epistemology is a branch of engineering. It is the technology of truth-seeking, or, in more cautious epistemic terms, prediction.[10]

But just how is descriptive science normative? One possible answer to this question makes appeal to natural selection.[11] Since natural selection selects belief-forming processes that generally lead to true beliefs, so this answer goes, the beliefs we actually have are the ones we ought to have. The appeal to natural selection thus captures the normative. Further, since the theory of evolution is part of our naturalized scientific picture of the world, appeal to it is sanctioned by a Quinean naturalized epistemology. So, it would appear, there is no problem for a naturalized epistemology.

The above response, however, relies on a tendentious account of what natural selection does. Natural selection selects belief-forming processes which have survival value. Such processes need not coincide with processes which generally lead to true beliefs. A more cost-effective method of enhancing prospects of survival might involve selecting for a fairly high number of mistaken beliefs (for example, that any moving object over a certain size is likely to be a predator), rather than selecting for all or mostly true beliefs. Granted this view of natural selection, the claim that it ensures that the beliefs we have are the ones we ought to have is a dubious one.

A further problem with the suggestion that the normative can be captured by appeal to natural selection arises from consideration of highly theoretical beliefs. What survival value do our beliefs about trans-finite sets have, for example? If, as seems likely, such beliefs have little or no survival value, how do we account for their normativity on the evolutionary picture? It would appear that the naturalizer of epistemology will have to look elsewhere in his attempt to capture the normative.

Quine's own answer to the problem of normativity, however, runs in a different direction to the evolutionary one. We find the beginnings of his answer in the reply to White:

> [Naturalized Epistemology] draws upon psychology in exposing perceptual illusions, and upon cognitive psychology in scouting wishful thinking. It draws upon neurology and physics, in a general way, in discounting testimony from occult or parapsychological sources [in Hahn and Schilpp, 1986, 664-5].

Similarly, in the "Comment on Lauener," natural science is described as "conspicuously normative" in its counsel to mistrust soothsayers and telepathists [Quine, 1990a, 229]. So, natural science is normative, at least to the extent that it rules out certain avenues which might be thought to help us in our dealings with the physical world. But there is more to the normativity of science than just this. As we ought to expect from a pragmatist philosopher like Quine, the normativity of natural science is a matter of how successful its predictions turn out. Science, Gibson [88,75] tells us "is justified in Quine's eyes by its measuring up to observation and prediction." In other words, science, or any part thereof, is justified to the extent that it successfully enables us to control and/or predict the workings of the physical world. The point is underscored in Quine's "Comment on Quinton."[12] Writing on the status of the law of non-contradiction, Quine explains that the reason we do not, in practice, revise this law is that "without it we would be left making mutually contrary predictions indiscriminately, thus scoring a poor ration of successes over failures" [Quine, 1990b, 309] .

We have then, the outline of a Quinean response to Kim's objection, one which relies on a pragmatic understanding of justification. Empirical science indeed has room for normative concepts such as justification. Sentences, or theories, are justified to the extent that their part in our overall science facilitates successful observation and prediction. Our beliefs are thus pragmatically justified to the extent that they enable us to deal with, or theorize about, the world. The claims of clairvoyants are unjustified because their ratio of success over failure is poor. The case is just the opposite with quantum physics, or with the law of non-contradiction.

Moreover, for Quine, there is no further question about how scientific principles and methodology are justified. Once the goal of a first philosophy has been abandoned natural science is

> not answerable to any supra-scientific tribunal, and not in need of any justification beyond observation and the hypothetico-deductive method [Quine, 1981, 72].

And the reason that it is not is that

> The naturalistic philosopher begins his reasoning within the inherited world theory as a going concern. He tentatively believes all of it, but believes also that some unidentified portions are wrong [Quine, 1981, 72 emphasis added].[13]

Since, on Quine's conception, philosophy is a part of the inherited world theory, it cannot assume the role of a "supra-scientific tribunal." Science, then, is a self-justifying process, which neither has, nor needs the *a priori* justification of a first philosophy. It would appear, then, that Kim's criticism is off the mark. Quine's naturalized epistemology can indeed make room for the normative conception of justification.

One might respond in Kim's defence along the following lines. The foregoing accommodation of justification within naturalized epistemology works by equating the justification for a claim (or body of claims) with the success of the predictions which can be made on the basis of that claim (or body of claims). However, it is, as the history of science shows, possible to obtain a high degree of predictive accuracy from a body of statements which are in fact false. This being so, justification conceived of as high predictive success fails to be truth conducive. But the main reason for caring about justification is to try to order our beliefs in such a way as to have as many true beliefs, and as few false ones, as possible. So, if predictive accuracy is not truth conducive, then it would appear that the Quinean ersatz justification does not give us what we want from justification. It thus remains to be shown that a naturalized epistemology can make room for the normative.

The response, however, fails. In the first place, the relationship between predictive accuracy and truth is, in the relevant respect, identical to the one between justification and truth. Just as we can come to believe a body of false claims to be true because they yield accurate predictions, so we can come to believe false statements to be true because, in our imperfect knowledge situation, the beliefs we already have (apparently) justify them. In both cases it is possible to have a body of true beliefs (correct predictions in the one, and the true beliefs apparently justifying the false claim in the other) which offer reason to think that another (false) statement is true. Thus, if the above response sufficed to show that predictive accuracy is not truth-conducive, a similar move would show that neither is justification.

In the second place, the claim that predictive accuracy is not truth conducive is mistaken. Although false theory can, in the short run, yield accurate predictions, the probability of a hypothesis increases with its predictive success. Since the probability of a hypothesis is the probability of that hypothesis being true, predictive accuracy is, over the long run, truth conducive.[14] The response made on behalf of Kim thus fails, and there seems little wrong with Quine's claim to be able to capture the normativity of justification in a naturalized epistemology.

Naturalized Epistemology and Truth

The second criticism of the argument Bonjour attributes to Quine is due to Bonjour himself. He [1998] presents an argument based on the nature of the relationship between truth and justification. Psychology, he writes, concerns itself with causal relations. It has no place for the concept of a reason for thinking some claim is true [1998, 85]. A few pages later [1998, 87], in the context of a discussion of Quine's ability to deal with scepticism, Bonjour describes what he takes to be one of the fundamental questions of epistemology: Is the justification that is available for the belief in question genuinely adequate to show that it is (at least) likely to be true? Since, in Quine's naturalized epistemology, justification is a matter of how a belief is situated in the web, Bonjour sees Quine as having nothing whatever to say in answer to this question. Naturalized epistemology, then, fails to address a fundamental question of epistemology, and thus is inadequate as

epistemology. Although Bonjour does not elaborate, the point seems to rest on the assumption that how a given belief is situated with respect to other beliefs is merely a matter of individual psychology, and hence has no bearing at all on whether the belief is likely to be true.[15]

But Bonjour is mistaken to think that the position of a given belief within the Quinean web of belief has nothing to do with the probability of that belief being true. For Quine, the only good reason we can have for including a given belief in our web of beliefs is the pragmatic reason that it has passed the hypothetico-deductive test of science. And, passing this test increases the probability of that belief being true. Thus, the position of a given belief, properly included in the web of belief, indeed does offer a pragmatic reason for believing that that belief is (at least likely to be) true, and the objection is misplaced.

I have thus far argued that, contra Kim and Bonjour, there is room within Quine's naturalized epistemology for such normative concepts as truth and justification. The argument against the *a priori* discussed in the introduction to this paper, then, cannot be dismissed on the grounds that the epistemology which underwrites it is essentially misguided. But can Quine's naturalized epistemology fund an argument against the *a priori*?

Naturalized Epistemology and the A Priori

The argument from naturalized epistemology is simply that such an epistemology can give you all you could fairly ask from epistemology, and do so without leaving any reputable work for the *a priori*. The question, then, is what reasons does the Quine of "Epistemology Naturalized" offer for thinking that there is no reputable work for the *a priori* to do?

One possible answer to this question is that naturalized epistemology by definition rules out the *a priori*, and that to accept such an epistemology is *ipso facto* to reject the *a priori*. This, however, will not do. One can of course, simply refuse, without argument, to accept any notion of *a priori* knowledge into one's epistemology. However, if one takes this road, one merely asserts one's aesthetic preferences. A 'victory' so gained over the apriorist is a hollow one indeed. Moreover, this is not the route taken by Quine.

Consider the following, which occurs in a discussion of what Quine sees as the goals of traditional epistemology:

> The old tendency was due to the drive to base science on something firmer and prior in the subject's experience; but we dropped that project [Quine, 1969, 87].

Consider also the following remarks, from a passage where Quine is defending the methods of naturalized epistemology from the charge of circularity:

> If the epistemologist's goal is validation of the grounds of empirical science, he defeats his purpose by using psychology or other empirical science in the validation. However such scruples have little point once we have stopped dreaming of deducing science from observations [Quine, 1969, 75-6]

Traditional epistemology, with it's *a priori* methodology, Quine contends, had the goal of providing

a priori and firm (i.e., certain) foundations for science. There are good inductive reasons for thinking that this cannot be done. Thus, Quine's suggestion that we give up the traditional epistemological project, so conceived, and settle for psychology.

But this is too quick. If one's understanding of the *a priori* requires, along Cartesian or Carnapian lines, that it provide foundational, and certain knowledge, and one is also persuaded by the failure to provide any such foundations, one might well think that in providing a naturalized epistemology, one which is conspicuously normative, one had thereby provided an argument against the *a priori*. But to show that a naturalized epistemology can make room for the normative is not to show that there is no reputable cognitive endeavour left for the *a priori*, and this is for two reasons.

Firstly, In showing that a naturalized epistemology can lead to beliefs which are likely to be true and justified, one does not thereby show that passing the hypothetico-deductive test of the physical sciences is the *only* method which can lead to such beliefs. The possibility remains that there are, in addition to the test of physical science, *a priori* methods of arriving at true and justified beliefs. Secondly, the apriorist does not necessarily concern himself solely, or even at all, with the foundational project described by Quine. If there are other, more attainable goals for the apriorist, then to reject traditional epistemology on the grounds that it cannot offer firm foundations for science is to throw the baby out with the bathwater. Even if we cannot have any *a priori* knowledge which is foundational in this sense, this has no tendency to show that there can be no *a priori* knowledge whatever. And, as I shall contend, when one restricts oneself to a more moderate conception of the *a priori*, there are more attainable goals.

According to the conception of the *a priori* on which Quine set his sights in "Epistemology Naturalized," *a priori* knowledge is thought to lead, infallibly, to certainty. On a more moderate conception, *a priori* knowledge is simply knowledge which does not depend on experience. Thus, for there to be *a priori* knowledge on this conception, it is enough if there are processes which yield beliefs without the warrant for those beliefs depending on any particular characteristic of experience.[16] The most conspicuous example of such knowledge is mathematical knowledge. For sure, some experience is required, in order to acquire the requisite concepts, but beyond concept acquisition, the warranting of mathematical beliefs requires no particular experience. It requires only intellectual understanding. Although one may encounter a mathematical proof by reading it from a chalkboard, or by seeing it in a textbook, or by hearing it uttered, these causal origins of the belief are not justification for believing it. One comes to have justification for believing in the truth of the conclusion not through any such experience, but through understanding the proof, and thereby coming to understand that the conclusion must be true. This kind of intellectual understanding is not dependent upon any particular characteristic of anything properly called experience, and thus, on a moderate conception of the *a priori*, mathematical knowledge is knowledge *a priori*.

Of course, Quine would disagree with this characterization of mathematical knowledge, seeing it as part of our empirically justified web of belief, no different in kind from the paradigmatically a posteriori knowledge yielded by physics. My contention here, however, is just that there is no sound argument from naturalized epistemology against the *a priori*, not that Quine does not have other reasons for thinking as he does. It suffices, in order to show this, to show that Quine is working with an unnecessarily strong notion of the *a priori*, and that nothing he says in

"Epistemology Naturalized" rules out a more moderate conception, one which does not tie its fate to the attempt to provide absolutely certain, *a priori*, foundations for the physical sciences. And this is done by offering both the moderate account of the *a priori* sketched above, and the prima facie plausible claim that mathematical knowledge is *a priori* on this conception.

There is, however, a suggestion of Gibson's,[17] which, if sound, would provide a way of resurrecting the argument from naturalized epistemology. The suggestion is that traditional epistemology is in fact incoherent, because epistemology presupposes ontology. Epistemology presupposes ontology since it presupposes the existence of both the external world and physical nerve endings which yield information about it [Gibson 1988, 66; Quine 1981, 72, 24; Quine 1969, 82-3]. Building on this, the case against the *a priori* would run something like the following:

1. Traditional, *a priori*, epistemology seeks knowledge which makes no ontological assumptions.

2. In fact, epistemology presupposes ontology.

3. Thus traditional, *a priori*, epistemology is incoherent.

4. Therefore, naturalized epistemology is the only coherent epistemology we have.

5. Naturalized epistemology rejects the possibility of *a priori* knowledge.

6. Therefore, our only coherent epistemology rejects the possibility of *a priori* knowledge.

But as an argument against the *a priori*, this clearly cannot work. For not all epistemology presupposes the existence of the external world. Quine's naturalized epistemology does, it is true, but the fact that naturalized epistemology presupposes the ontology of natural science is not to say that epistemology presupposes ontology. Reliabilism, for example, does not presuppose ontology. To see this, consider the reliabilist's answer to the sceptic. That answer is simply that if our beliefs are true and reliably caused, then we have knowledge of the external world. The reliabilist does not go the further step and claim that we can know that these beliefs are true and reliably caused. He does not hold that we can know that we know that there is an external world. He thus does not hold that we can know that we know that we have nerve endings or that there is an external world. That is, his epistemology does not make ontological assumptions.

Further, to assume the truth of (2) is to assume the truth of naturalized epistemology in an argument against the *a priori*. This of course, would beg the question against the apriorist. For both these reasons, then, premise (2) has not been established, it thus cannot be used to support either premise (3) or (4), or the conclusion, (6).

Moreover, premise (1) is false too. Much realist philosophy of mathematics proceeds on the assumptions that the objects of mathematical knowledge exist, and do so abstractly. Making such assumptions is quite consistent with the realist's claim to be discovering truths *a priori*. Of course, the realist might go on to give arguments for his assumptions. Doing this, however, is a separate exercise, and it does not at all undermine the claim that one can discover truths about abstract objects while only assuming, as opposed to establishing, that they exist. Such knowledge would be

conditional, but it would be knowledge. Contra Gibson, then, traditional *a priori* epistemology is quite consistent with the presence of ontological assumptions. Thus, the attempt to resurrect the argument from naturalized epistemology on Gibson's suggestion fails.

I have argued in this paper that the argument from a naturalized epistemology to a rejection of the *a priori* is not a sound one. Quine's pragmatic understanding of truth and justification allows his naturalized epistemology to escape the criticisms made by Bonjour and Kim, but his pragmatic epistemology on its own does not provide an argument against the *a priori*. Nor does the attempt to resurrect the argument along Gibsonian lines succeed. One might, as Quine does, offer other arguments against the *a priori*, and thus seek to clear the ground for a naturalized, pragmatic, epistemology. I have not argued against these other arguments here, though for my money, they are not successful when used against the moderate conception of the *a priori* sketched above. My point has been merely that the argument from Quine's naturalized epistemology to the rejection of the *a priori* has not been made.

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Notes

1. Thanks to Michael Levin and Jerrold Katz for their helpful and copious comments on an earlier draft of this paper. Thanks are due also to an anonymous referee at Essays in Philosophy for his/her helpful comments.

2. See Dewey's *Studies in Logical Theory*, 1903, reprinted in *The Collected Works of John Dewey*, 1882 – 1953, The Middle Works, V.2, Carbondale and Edwardsville: Southern Illinois University Press, 1969-91, ed. by Jo Ann Boydston.

3. See, inter alia, "Five Milestones of Empiricism," in Quine's *Theories and Things*, Cambridge, MA.: Belknap/Harvard, 1981, 67-72. See especially 72.

4. See, *inter alia*, Quine's "Two Dogmas of Empiricism," reprinted in his *From a Logical Point of View*, Cambridge, Mass.: Harvard University Press, 2cd. ed., 1961, 22-46.

5. See Dewey's *Logic: The Theory of Inquiry*, 1938, reprinted in *The Collected Works of John Dewey*, 1882-1953, The Later Works, V12, Carbondale and Edwardsville: Southern Illinois University Press, 1969-91, ed. by Jo Ann Boydston.

6. See, for example, Lawrence Bonjour's (1998) *In Defense of Pure Reason*, Cambridge, MA.: Cambridge University Press, 1998, and Roger Gibson's (1988) *Enlightened Empiricism*, Tampa: University of South Florida Press.

7. Quine, "Epistemology Naturalized," in *Ontological Relativity and other Essays*; New York; Columbia University Press, 1969, 69-90.

8. Jaegwon Kim, "What is "Epistemology Naturalized?"" Reprinted in Pojman, Louis (1993),(ed.) *The Theory of Knowledge -- Classical and Contemporary Readings*; Belmont, Ca.: Wadsworth. All page references to Kim's article refer to this reprint.

9. Quine, (1990a), "Comment on Lauener," in *Perspectives on Quine*, edited by Robert Barrett and Roger Gibson, Cambridge, MA.: Bradford MIT, 1990, 229.

10. Quine, "Reply to White," *The Philosophy of W.V. Quine*, edited by Hahn, L., and Schilpp, P.; La Salle, Ill.: Open Court. 1986, 664-5.

11. See, for example, Hilary Kornblith, (1987), "What is Naturalistic Epistemology?" in Kornblith (ed.), *Naturalizing Epistemology*; Cambridge, MA.:MIT.

12. Quine (1990b), "Comment on Quinton," in Barrett and Gibson, 1990, 309.

13. Thanks to Michael Levin for pointing out this response to me.

14. Kim [1993, 329] also sees the question of "what conditions must a belief meet if we are justified in accepting it as true?" as one of the two fundamental questions of epistemology. However, unlike Bonjour, he does not go on to make much of this in connection with Quine's naturalized epistemology.

15. I take this characterization of the *a priori* from Paul Boghossian and Christopher Peacocke, in their introduction to *New Essays on the* A Priori, New York: Oxford University Press, 2000, 1-2.

16. Roger Gibson, *Enlightened Empiricism*; Tampa: University of South Florida Press, 1988.

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