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ORIGINAL RESEARCH

Quine's Intuition: Why Quine's Early Nominalism is Naturalistic

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Abstract
According to a growing consensus in the secondary literature on Quine, the judgment Quine makes in favor of the nominalism outlined in "Steps Toward a Constructive Nominalism" (Goodman and Quine (1947)) is in tension with the naturalism he later adopts. In this paper, I show the consensus view is mistaken by showing that Quine's judgment is rooted in a naturalistic standard of clarity. Moreover, I argue that Quine late in his career is committed to accepting one plausible reading of his judgment in 1947. In making these arguments, I draw attention to a version of naturalism that misreadings of Quine have prevented philosophers from appreciating, and thereby articulate and clarify a version of naturalism I recommend philosophers investigate today.

1 Introduction

W.V. Quine's 1947 paper "Steps Toward a Constructive Nominalism," co-written with Nelson Goodman, has made a sizeable impact on current philosophical debates. The same goes for Quine's naturalism, the view on which the only way to judge truth is within our best current scientific theories. But according to a growing consensus in the secondary literature on Quine, the judgment Quine makes in favor of the nominalism outlined in "Steps Toward a Constructive Nominalism" is in tension with the naturalism he later adopts. On this view, Quine in that paper appeals to a philosophical intuition that has no basis in Quine's naturalistic conception of scientific methodology. In this paper, I show the consensus view is mistaken by showing that Quine's judgment is rooted in a naturalistic standard of clarity. Moreover, I argue that Quine late in his career is committed to accepting one plausible reading of his judgment in 1947. In making these arguments, I draw attention to a version of naturalism that misreadings of Quine have prevented philosophers from

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appreciating, and thereby articulate and clarify a version of naturalism I recommend philosophers investigate today.

2 Quine's Early Views on Nominalism

In this section, I investigate Quine's views on nominalism from "Steps Toward a Constructive Nominalism"—hereafter "Steps"—as well as similar remarks Quine makes in lectures and letters in the same time period. Let us first understand how Quine defines nominalism and Platonism in the 1940s.[1] Ontological theses for Quine are theses about what kinds of theories are true. Let us say that a theory is *nominalistic* if, when that theory is formulated in the notation of first-order classical logic, none of the variables of the sentences of that theory range over abstract objects—that is, classes (i.e., sets), relations, or attributes (i.e., properties). *Nominalism* according to Quine is the view that only nominalistic theories are true. Let us call a theory *platonistic* if, when that theory is formulated in the notation of first-order classical logic, some of the variables of the sentences of that theory range over abstract objects. *Platonism* according to Quine is the view that some platonistic theories are true. Quine accepts these definitions of nominalism and Platonism throughout his career.[2]

Let us now look at "Steps" in more detail. Early in the paper, Quine and Goodman say the following:

> Why do we refuse to admit the abstract objects that mathematics needs? Fundamentally this refusal is based on a philosophical intuition that cannot be justified by appeal to anything more ultimate. It is fortified, however, by certain a posteriori considerations. What seems to be the most natural principle for abstracting classes or properties leads to paradoxes. Escape from these paradoxes can apparently be effected only by recourse to alternative rules whose artificiality and arbitrariness arouse suspicion that we are lost in a world of make-believe. (1947, p. 105)

Quine and Goodman go on to sketch a nominalistic version of proof theory, in which claims about syntax and proofs are formulated only in terms of claims about concrete physical inscriptions. They propose to use this version of proof theory to support a formalist version of nominalism. On this version of nominalism, sentences of platonistic mathematics are replaced with sentences in

[1] See, for example, Quine (1939a). In Quine (1939a), he says: "nominalism can be formulated thus: it is possible to set up a nominalistic language in which all of natural science can be expressed" (1939a, p. 708). I take this formulation to be a consequence of the more neutral formulation I provide plus Quine's recommendation to formulate what we take to be true in a language that can meet the purposes of natural science.

[2] Quine accepts other positions one might call "nominalism" throughout his career; see Parsons (2014). I also will not discuss the finitism Quine, Tarski, and Carnap pursued, as documented in Frost-Arnold (2013), since my aim is to clarify Quine's remarks about nominalism in "Steps" and (1946) that have led many authors to judge his views are un-naturalistic.

nominalistic proof theory about the proof of sentences of platonistic mathematics. The sentences of platonistic mathematics are treated in turn "as strings of marks without meaning" (p. 111) and "like the beads of an abacus, convenient computational aids which need involve no question of truth" (p. 122).

Consider also Quine's remarks in his 1946 lecture entitled "Nominalism" (1946). He starts by saying that he "should like to accept nominalism" (1946, p. 6). He later says:

> Now surely classical mathematics is part of science; and I have said that universals have to be admitted as values of its variables; so it follows that the thesis of nominalism is false. What has the nominalist to say to this? He need not give up yet; not if he loves his nominalism more than his mathematics. He can make his adjustment by repudiating as philosophically unsound those parts of science which resist his tenets; and his position remains strong so long as he can persuade us that these rejected parts of science are neither intrinsically desirable as ends nor necessary as means to other parts which are intrinsically desirable. (1946, p. 14)

Quine says the nominalist believes parts of science that presuppose the existence of abstract objects are for that reason "philosophically unsound." Further, he thinks the nominalist's belief "remains strong so long as" the parts of science the nominalist rejects are not necessary as means toward the "intrinsically desirable" ends or themselves are "intrinsically desirable" ends. Multiple readers of Quine see Quine's views on nominalism expressed in this passage and the one from "Steps" above as in tension with his later naturalism, the view that "it is within science itself, and not in some prior philosophy, that reality is to be identified and described" (Quine 1981a, p. 21). According to these readers, Quine's appeal to a "philosophical intuition that cannot be justified by appeal to anything more ultimate" and his suggestion that one can repudiate mathematics as "philosophically unsound" have no basis in his later naturalistic conception of scientific methodology.

Before addressing these readers, we must first clarify Quine's judgments in "Steps" and (1946). Our first question is: what does Quine mean by "philosophical intuition" and "philosophically unsound"? Let us start with a letter from Quine to Carnap in 1947. Quine says that, when choices of ontology are under dispute, "the basic features of the language or languages in which the dispute takes place are themselves at stake" Quine and Carnap (1990, p. 410). In addition, he says:

> I am not ready to say, though, that when we so fix the basic features of our language as to decide such statements in one way or another our guiding consideration is normally convenience exclusively. In my own predilection for an exclusively concrete ontology there is something which does not reduce in any obvious way to considerations of mere convenience; viz., some vague but seemingly ultimate standard of intelligibility or clarity. (p. 410)

Quine believes there is some standard of intelligibility or clarity that provides a reason for accepting nominalism. This standard is "ultimate" in that it cannot be

reduced to other kinds of considerations such as mere convenience. It is for this reason Quine says that he is "not ready to say" that the consideration which guides us in choosing basic features of a language such as its ontology is "convenience exclusively." I submit this letter shows that when Quine says with Goodman in "Steps" that a philosophical intuition "cannot be justified by appeal to anything more ultimate," he means what he mentions to Carnap—a "standard of intelligibility or clarity" that cannot be reduced to mere convenience. I also submit that Quine's use of the phrase "intelligibility or clarity" shows that he uses "intelligibility" and "clarity" as two different words for the same standard.[3]

To understand more about this standard and how he applies it, let us return to (1946). In a section of the lecture entitled "Motives for nominalism," Quine says that the motives of a nominalist should be divided between the nominalist who accepts only mental particulars and the nominalist who accepts only physical particulars. Quine suggests the nominalist who accepts only physical particulars "likely" has the "mentality" of Lord Kelvin:

> [Lord Kelvin] insisted that he did not understand a process until it was reduced to terms of impact of bodies like billiard balls. The nominalist would out-Kelvin Kelvin in avoiding also the universals which Kelvin no doubt accepted without giving them a thought. (1946, p. 15)

Quine claims that "modern physics may seem to have cut the ground from under this physical type of nominalist, in abandoning even Kelvin's billiard balls. Tangibility is abandoned as a standard of reality even of particulars" (1946, p. 15). After explaining how a nominalist might go about out-Kelvining Kelvin in light of modern physics, he makes a claim which he virtually repeats in "Steps" the next year: "Besides this initial impetus to nominalism, there are a posteriori considerations which confirm the nominalist in his prejudices." (1946, p. 16). Quine follows this claim up by putting in other words what he says with Goodman in "Steps": that the "most natural principle for abstracting classes or properties leads to paradoxes" and that alternative principles are artificial and arbitrary (1947, p. 105).[4]

Given this parallel between the lecture and "Steps," there is good reason to think that any "prejudice" Quine endorses is the "philosophical intuition" mentioned in "Steps." Further, it is in the section just before "Motives for nominalism" where Quine makes the claim I quoted above: that the nominalist "can make his adjustment by repudiating as philosophically unsound those parts of science which resist his tenets." Given this, Quine is saying that nominalists such as

[3] Frost-Arnold comes to the same conclusions in (2013, p. 34).

[4] Here and in "Steps" I do not read Quine as using "a posteriori consideration" in the philosophical sense of a consideration justified by sensory experience. Quine is saying that our experience in working in set theory shows that the paradoxes of set theory require artificial solutions; hence, our experience with set theory provides a consideration in favor of rejecting Platonism. He thus uses "a posteriori consideration" in the sense of a consideration arising from our experience with something, in an ordinary sense of 'experience'. Another reason to doubt he uses it in a philosophical sense is that Quine would have realized that paradoxes of set theory and their solutions would according to philosophical tradition be a priori, not a posteriori.

himself can appeal to their "prejudice" by rejecting parts of science as philosophically unsound if they entail the existence of abstract objects. So, Quine believes he can reject "parts of science" as philosophically unsound because of his "philosophical intuition" mentioned in "Steps"; that is, on account of the standard of "intelligibility or clarity" mentioned in his letter to Carnap.

However, Quine does not think that he can reject the existence of abstract objects *simply* on the basis of "intelligibility or clarity." To see why, let us look at how Quine clarifies his talk of "intrinsic desirability" of parts of science we saw above:

> One reasonable touchstone of intrinsic desirability of a part of science, as an end rather than merely as a means to other parts, is efficacy in predicting experience. By this standard, math. has no intrinsic desirability; so that the defense of nominalism, so far as its incompatibility with math. is concerned, must consist in showing that the portions of math. which go by the board are dispensable as a means to those parts of science which are effective in prediction. It must consist in showing how the service of classical math. as an auxiliary to the natural sciences could be performed, adequately though more clumsily, by those fragments of math. or logic which are still constructible from a nominalistic point of view. (1946, pp. 14–15)

To understand this passage, let us take some of the concepts Quine employs one by one. First, I take it that a "part of science" is a scientific theory. Second, I take it that for Quine a scientific theory is efficacious in predicting experience insofar as it is effective in entailing or explaining correct predictions of experience. Third, Quine distinguishes between theories that are "intrinsically desirable" and other scientific theories which are "merely means" to them to distinguish between two kinds of theories that are to be produced in scientific inquiry. On Quine's view of science articulated above, scientific inquiries are only to produce theories which are efficacious at entailing or explaining correct predictions of experience (the ends) or theories which help other theories to entail or explain correct predictions of experience (the means). Thus, our scientific theories taken together as a whole must be efficacious at entailing or explaining correct predictions of experience, with some parts of the whole (such as mathematics) merely helping other parts be efficacious at doing so. As Quine notes, this view places a constraint on our having reason to adopt nominalism. If we replace our current platonistic theories with nominalistic ones, our scientific theories on the whole must be as efficacious at entailing or explaining correct predictions of experience as before. Thus, Quine holds that it is a *necessary* condition on our having reason to accept nominalism that what I will call *the Predictive Constraint* is met:

> The Predictive Constraint: The overall collection of scientific theories resulting from replacing platonistic theories with nominalistic theories is as effective at entailing or explaining correct predictions of experience as the overall collection before the replacement.

The quote from Quine (1946) in Sect. 1 above shows that Quine believes the "prejudice" of the nominalist "remains strong so long as" the Predictive Constraint is met, and the nominalist "rejects" platonistic theories on account of this prejudice. Since this "prejudice" is based on the standard of "intelligibility or clarity," Quine thus also believes we have reason to accept nominalism on account of its "intelligibility or clarity" *given* the Predictive Constraint is met. But what is the strength of this reason? "Steps" and Quine (1946) suggest it is rather strong: Quine and Goodman say that "we do not believe in abstract entities" and that they *refuse* to believe in them; Quine in his lecture says that the nominalist's "prejudice" "remains strong." However, perhaps the reason is not very strong. In his letter to Carnap, he describes his view as a "predilection." I thus see two possible positions in Quine's early period, which I will call the *Sufficient Clarity View* and the *Modest Clarity View:*

> Sufficient Clarity View: Given that the Predictive Constraint is met, the "intelligibility or clarity" of nominalism provides sufficient justification for accepting it.
> Modest Clarity View: Given that the Predictive Constraint is met, the "intelligibility or clarity" of nominalism provides one reason for accepting it, although that reason may be outweighed by others.

Note that, given either view and given the Predictive Constraint is met, Quine does not count "intelligibility or clarity" (that is, "philosophical intuition") as providing the *only* reason in favor of nominalism. Even if the Sufficient Clarity View is Quine's view, "philosophical intuition" *suffices* for nominalism, but other considerations might exist as well. Quine in "Steps" as well as (1946) notes two reasons for accepting nominalism: philosophical intuition, and "a posteriori considerations" due to the paradoxes of set theory. Since my main goal in this paper is to explain how Quine's "philosophical intuition" is naturalistic, I will not discuss this second reason. I also will not attempt to decide which view is Quine's in the 1940s. For one, the textual evidence points both ways. Moreover, having both views in front of us will be useful later in the paper for investigating the relation between Quine's naturalism and his views on nominalism both early and late.

Before moving on to Quine's later views on nominalism, we need to say more about the *version of* nominalism Quine takes the standard of "intelligibility or clarity" to support. As I argued above, the "prejudice" in favor of nominalism Quine mentions in (1946) is based on the standard of "intelligibility or clarity." As we saw above, Quine associates the "prejudice" of the nominalist accepting only physical particulars with Lord Kelvin's preference for *tangible* things such as billiard balls—recall Quine says modern physics abandons the "tangibility" of such objects as a "standard of reality." I take it that something is "tangible" for Quine at least if it is a physical object of everyday experience like Lord Kelvin's billiard ball—a physical object which is readily observable and which enters into causal relations with ourselves and other readily observable physical objects. The nominalistic theories Quine with Goodman in "Steps" aims to construct mention only token inscriptions, and hence mention tangible things. So, Quine thinks "intelligibility or clarity" support accepting nominalistic theories whose variables range over tangible things.

This indicates that Quine finds something clear about tangible things in particular. This is supported by Quine's lecture on nominalism in 1937. Quine's notes for this lecture are contained in the Houghton Library and are currently unpublished—Mancosu in (2008, pp. 26–29) describes and quotes portions of them. Quine there outlines a procedure for constructing nominalistic theories which replaces mention of classes with mention of physical inscriptions of common nouns. (He deems it unsuccessful—see Mancosu (2008)). On the purposes of nominalism, he says:

> 1) To avoid metaphysical questions as to the connection between the realm of universals and the realm of particulars; how universals enter into particulars, or particulars into universals. 2) To provide for reduction to statements ultimately about tangible things, matters of fact. This by way of keeping our feet on the ground— avoiding empty theorizing. (Quoted in Mancosu 2008 p. 28)

As the second purpose of nominalism shows, nominalism allows us to keep "our feet on the ground" by allowing us to replace mention of abstract objects with "tangible things"—objects of everyday experience. Quine thus thinks there is something beneficial about nominalism which "provides reduction to statements ultimately about tangible things." His work in the 1940s shows that benefit to be the clarity of tangible things. Thus, I will read the Sufficient Clarity View and the Modest Clarity View above as about any version of nominalism that replaces platonistic theories with theories whose variables range only over tangible things—as about *tangible nominalism,* for short.[5]

3 Quine's Later Views on Nominalism

Even with the clarifications of Quine's judgments from "Steps" and (1946) we have seen, the standard of "intelligibility or clarity" to which Quine appeals is still not entirely clear. Quine himself admits as much in his letter to Carnap by saying that the standard is "vague." Moreover, it is unclear how the clarity of tangible things keeps "our feet on the ground." As I will now argue, we can explain these things by looking at some of Quine's later works.

Let us first note that Quine comes to judge that the nominalistic proof theory from "Steps" did not work as a replacement for platonistic proof theory.[6] Hence, Quine thinks the nominalism there does not meet the Predictive Constraint, since we cannot replace platonistic mathematics with a nominalistic proof theory. However, we can still ask what Quine would think of tangible nominalism were the Predictive Constraint met. To answer this, let us examine Quine (1977). There, Quine says: "If clarity can be ascribed to things as well as to words, then bodies are things at their clearest. If inquiry is to being with what is clear, then let us begin as physicalists"

[5] Because Quine only seriously investigates physical versions of nominalism, I will not go into what reasons, if any, Quine gave in favor of mental versions of nominalism.

[6] "We settled for a formalistic account of mathematics, but still had the problem of making do with an inscriptional proof theory in a presumably finite universe" (1986, p. 26).

(1977, p. 275). He further says: "Bodies are basic to our way of thought, as objects go. They are the paradigmatic objects, clearer and more perspicuous than others" (1977, p. 276). Quine takes the basicness and paradigmatic nature of bodies to explain why they are "clearer and more perspicuous than others." As Quine puts it in (1955):

> Common-sense bodies…are conceptually fundamental: it is by reference to them that the very notions of reality and evidence are acquired, and that the concepts which have to do with physical particles or even with sense data tend to be framed and phrased. (1955, p. 252)

Common-sense bodies are *conceptually fundamental* in that they play a key role in our acquisition and understanding of language integral both to ordinary inquiry and sophisticated scientific theorizing. We thus are quite familiar with common-sense bodies, since they play this key role only if we are adept at recognizing and referring to them. Given this familiarity, we have a firm understanding of what we are talking about when we make claims about them. Moreover, as Quine explains on (1955 p. 251), this key role common-sense bodies play shows we are initially committed to their existence and continue to be committed to their existence unless and until we come up with reasons in sophisticated scientific theorizing to reject them.[7] We thus also have a firm understanding of bodies because they play an integral role in the *content* of our ordinary and scientific commitments. We here see an instance of Quine's view that there is no sharp distinction between learning a language and learning a theory.

I submit that Quine believes in (1977) that common-sense bodies are clear to us in the sense that we have a firm understanding of them due to their conceptual fundamentality. As we saw above, Quine believes common-sense bodies are also "clearer and more perspicuous than" other kinds of objects. I submit that this is because Quine believes that our understanding of these objects is firmer than our understanding of other kinds of object—abstract objects included.[8] It is reasonable to assume that everything Quine would call a "tangible thing" in the 1930s and 1940s Quine would call a "common-sense body" in (1955) and a "body" in (1977)—I take it Quine thinks tangible things are the common-sense bodies of everyday experience. Quine thus believes in (1977) that tangible things are clear and in fact clearer than other kinds of things. Given this, Quine is committed to thinking that the clarity of tangible things provides one reason for accepting tangible nominalism.

Moreover, Quine thinks the clarity of tangible things provides such a reason *given* the Predictive Constraint is met. For Quine throughout his career ascribes to the views on science he puts forward in (1946). In Quine (1992), he says that "predictions are the checkpoints of science" (1992, p. 20). He continues:

[7] See also (1960 pp. 3–4).

[8] As quoted above, Quine says that "if clarity can be ascribed to things as well as to words, then bodies are things at their clearest." While his claim here is conditional, his claim on the next page that they are "the paradigmatic objects, clearer and more perspicuous than others" shows that he is endorsing the clarity of things.

> I see [predictions as the checkpoints of science] as defining a language game, in Wittgenstein's phrase: the game of science …. A sentence's claim to scientific status rests on what it contributes to a theory whose checkpoints are in prediction. (*Ibid.*)

It is reasonable to see Quine in (1992) as clarifying his view as stated in (1946). As I argued above, Quine in (1946) thinks scientific inquiries are only to produce theories which are efficacious at entailing or explaining correct predictions of experience (the "end" of science) or theories which help other theories to entail or explain correct predictions of experience (the "means"). In saying in (1992) that it is definitive of scientific inquiry that "a sentence's claim to scientific status rests on what it contributes to a theory whose checkpoints are in prediction," Quine is saying it is *definitive* of science that scientific inquiries produce theories which are efficacious at entailing or explaining correct predictions of experience or which help other theories to entail or explain correct predictions of experience. Since Quine's views in (1946) entail it is a necessary condition on our having reason to accept nominalism that the Predictive Constraint is met, Quine both early and late in his career accepts that it is a necessary condition on our having reason to accept nominalism that the Predictive Constraint is met.

As Quine notes in (1977), our best current physical theories do not appeal to tangible things, or even to objects analogous to them. Given wave-particle duality and the positing of fields in physics, "bodies themselves go by the board" in physics—"bodies that were the primordial posits, the paradigmatic objects most clearly and perspicuously beheld. *Sic transit gloria mundi*" (p. 281). We saw Quine make a similar point in (1946) when he says that "[t]angibility is abandoned as a standard of reality even of particulars" in modern physics. But my reading of Quine does not entail that Quine *requires* science to appeal only to tangible things. The fact that tangible things are conceptually fundamental is a fact about our acquisition of concepts, and not a requirement that every conceptual scheme must appeal only to them. Further, the clarity Quine judges tangible things to have does not count against appealing to non-tangible physical objects in physics if they are needed to predict and explain physical phenomena. His position is that clarity is gained in science any time we can appeal to tangible things rather than non-tangible things without sacrificing the predictive power of our overall theory. Relatedly, Quine's view in (1977) does not entail that *abstract* objects are unintelligible or completely obscure; rather, tangible things are only "clearer and more perspicuous than" abstract objects.

I conclude that Quine by (1977) is committed to the Modest Clarity View: given that the Predictive Constraint is met, the "intelligibility or clarity" of tangible nominalism provides *one* reason for accepting it, although that reason may be outweighed by others. This may explain a remark of Quine's from (1986). When discussing "Steps" in his intellectual autobiography, Quine says: "Nominalism would still be my position if I could make a go of it" (1986, p. 26). It is plausible that to "make a go of it" would be at least to show that the formalist reconstruction of mathematics in "Steps" succeeds, and thereby to show that the nominalism of "Steps" meets the Predictive Constraint. Since Quine after "Steps" judges that he cannot "make a go of it," nominalism is *not* his position, although it *would* be if he could "make a go of

it." This suggests Quine thinks there is *some* reason for accepting nominalism give the Predictive Constraint is met. My reading of Quine in (1977) indicates that this reason is provided by the clarity of tangible things.

I will raise doubts about whether Quine holds the Sufficient Clarity View when I investigate whether the Modest and Sufficient Clarity View cohere with Quine's naturalism in the next section. Let us first see how Quine's commitment to the Modest Clarity View sheds light on his views on nominalism before (1977).

My reading of Quine's commitment in (1977) suggests a plausible explanation of how Quine in the 1930s and 1940s thinks the standard of "intelligibility or clarity" relates to nominalism. According to Quine in (1977), our understanding of tangible things is firmer than our understanding of other objects we might presuppose to exist in addition. Given this view, it seems plausible that the "intelligibility or clarity" of objects that we presuppose to exist increases by accepting the nominalism of "Steps." This suggests Quine's commitment in (1977) just is his commitment from the 1930s and 1940s.

But Quine does not avail himself of this explanation in his 1930s or 1940s remarks about nominalism. The fact that Quine believes in 1947 that the standard of intelligibility or clarity is "vague" suggests that Quine did not then recognize the connection between the conceptual fundamentality of tangible things and his application of the standard of "intelligibility or clarity" to tangible nominalism in "Steps." I submit he also did not recognize this judgment after 1947 and before 1977. In Quine (1955), he does not conclude that physical objects are clear because they are conceptually fundamental. The same is true of his extensive discussion of nominalism in Chapter 7 of (1960). He there says:

> In a contest for sheer systematic utility to science, the notion of physical object still leads the field. On this score alone, therefore, one might still put a premium on explanations that appeal to physical objects and not to abstract ones, even if abstract objects be grudgingly admitted too for their efficacy elsewhere in the theory. (1960, p. 238)

In a footnote to the first sentence of this passage, Quine says: "Cf. Strawson, *Individuals,* pp. 38–58" (1960, p. 238, fn. 6). Strawson argues on those pages of *Individuals* that material bodies are one of two categories of particulars which are (as he puts it in the book's introduction) "the basic or fundamental particulars, that the concepts of other types of particular must be seen as secondary in relation to the concepts of these" (1959, p. 11). Quine therefore compares the "sheer systematic utility to science" of the notion of physical object to Strawson's claim that material bodies are a fundamental category of particular. Strawson's claim is similar to Quine's claim in (1955) and (1977) that bodies are conceptually fundamental. This strongly suggests that Quine in the footnote in (1960) is affirming his claim in (1955) that physical objects are conceptually fundamental, and further affirming that this conceptual fundamentality bears on the topic of nominalism. However, "sheer systematic utility" is different from clarity. Hence, Quine does not conclude in (1960) that the conceptual fundamentality of physical objects makes them clear.

Quine thus did not make any explicit comment after the 1940s and before 1977 relating the conceptual fundamentality of tangible things to their clarity. In fact, the

lack of explicit mention suggests he gave his judgment from "Steps" up during this stretch of time. Nevertheless, I suggest that the conceptual fundamentality of physical objects is what drives him to favor nominalism on account of its clarity early in his career. This explains two remarks Quine makes in 1930s. First, it explains why Quine in 1937 says that we "[keep] our feet on the ground, [avoid] empty theorizing" by reducing statements about abstract objects to statements about tangible things. We keep our feet on the ground by referring to objects that ground the language and theory basic to our ordinary inquiries. Second, it explains his claim in Quine (1939b) that nominalism contravenes common sense. Quine there calls any universe of objects assumed by set theories a "transcendent universe," saying that a "transcendent universe transcends the controls of common sense" (Quine 1939b, p. 201). Quine also there argues that rejecting nominalism requires accepting some set theory or another. Hence, rejecting nominalism requires "transcend[ing] the controls of common sense." Accepting nominalism on account of the clarity of common-sense bodies keeps us closer to the controls of common sense.

I thus agree with Gary Ebbs, who connects Quine's remarks about clarity from his 1947 letter to Carnap to the "controls of common sense": "According to Quine, a finitistic ontology, being closer to common sense, is clearer, less puzzling, and hence also more explanatory than the infinitary ontology of classical mathematics" (2016, p. 35). On my reading, the conceptual fundamentality of common sense bodies is what makes them less puzzling. But my reading also provides some needed supplementation to Ebbs' reading. In a 1943 letter to Carnap, Quine says that "universals"—that is, abstract objects—are "admi[tted]" by "common sense" Quine and Carnap (1990, p. 295). Hence, Quine does not take his preference for nominalism to be supported *unequivocally* by common sense. His preference stems from one *aspect* of our common-sense inquiries—the conceptual fundamentality of common-sense bodies.

4 Nominalism and Quine's Naturalistic Methodology

Let us now consider the relationship between Quine's views nominalism and his naturalism. A growing consensus has emerged that Quine's early judgments on nominalism and his naturalism are in tension with each other. In Burgess and Rosen (1997), John Burgess and Gideon Rosen consider whether those who accept what they call "naturalized epistemology"—a version of naturalism inspired by Quine's—should believe that nominalism has merit. Alluding to the passage from "Steps" we have seen, they say naturalists should reject any nominalistic proposals

> from a standpoint prepared to appeal outside, above, and beyond scientific standards … - appeals to the Oracle of Philosophy or to occult faculties of 'philosophical intuition that cannot be justified by appeal to anything more fundamental' – will not concern us. (1997, p. 205)

Given the way they describe what Quine and Goodman say, Burgess and Rosen view Quine's favorable view of nominalism in the 1940s as in tension with Quine's naturalism. Discussing the passage from Quine (1946) quoted above, Burgess in (2008) says that Quine is "light-years away" from his later naturalism (2008, p. 61).

Other authors have come to share Burgess and Rosen's view. Sander Verhaegh shares Burgess' assessment of Quine (1946), citing the passage from Burgess (2008) just mentioned approvingly (2017, p. 335, footnote 63). Quoting another passage from (1946), Verhaegh says:

> Clearly, Quine here has not yet fully rejected first philosophy. Even though our best scientific theories quantify over abstract objects, there are philosophical reasons for either dismissing entities beyond our primary sense experiences or for refurbishing the physicist's conceptual scheme in nominalistically acceptable terms. (2017, p. 335)

Verhaegh thus believes Quine's description of why nominalism "remains strong" indicates he "[c]learly" has not fully "rejected first philosophy" and hence has not adopted naturalism. Alexander Paseau says: "Goodman and Quine (in his pre-naturalist phase) once began an article by declaring that the basis for their nominalism was a fundamental philosophical intuition irreducible to scientific grounds" (2013, Sect. 3.2). So, Paseau thinks the way Quine and Goodman open "Steps" shows Quine does not yet think that "it is within science itself, and not in some prior philosophy, that reality is to be identified and described" (1981a p. 21).

In Parsons (2014), Charles Parsons suggests Quine's early judgments about nominalism are in tension with his mature naturalistic epistemology, and so are in tension with his naturalism. He says that "what may have been most influential" in leading Quine to abandon the nominalistic project in "Steps" "is the abandonment of the analytic-synthetic distinction, and with it the idea of the a priori, and the holistic epistemology sketched in the last section of 'Two Dogmas'" (2014, p. 218). He continues:

> At that point Quine evidently had the outline of an empiricist epistemology of mathematics that makes it a perfectly meaningful part of science rather than a meaningless calculating device. (2014 pp. 218–219)

Parsons thus suggests that, even were Quine to judge the nominalism of "Steps" meets the Predictive Constraint, the nominalism of "Steps" is in tension with his empiricist, naturalistic epistemology from "Two Dogmas."

Burgess, Rosen, Verhaegh, and Paseau accept, and Parsons suggests, what I will call the *Consensus View:*

> Consensus View: Quine's naturalism and Quine's judgments in favor of nominalism in "Steps" and (1946) are in tension with each other.

I will now argue that the Consensus View is incorrect. The reasons I offer for rejecting the Consensus View also suggest that in the 1940s Quine was already committed to an early version of the naturalism he espoused from the mid-1950s

on. My goal is not to settle this question, however, but to highlight misunderstandings of Quine's naturalism by explaining why the Consensus View is false.

In the course of highlighting these misunderstandings, I will draw attention to four important features of Quine's naturalism. These misunderstandings are thus not mere historical inaccuracies about the early views of a famous philosopher. They have prevented philosophers of mathematics—even those who are influenced by and sympathetic with Quine's views—from fully appreciating a version of philosophical naturalism that I here begin to articulate and which I recommend philosophers investigate further.

Before addressing the Consensus View itself, I start by noting that Verhaegh's motivation for accepting the Consensus View is mistaken. Verhaegh says:

> When Quine later specifies that the 'intrinsically desirable end' of science is effective prediction, it becomes clear that his position here is still compatible with the first-philosophical instrumentalist's view that theoretical posits beyond those needed for effective prediction are merely useful fictions. (2017, p. 335)

Verhaegh thus accepts the Consensus View because he believes Quine's remarks on the ends of science in (1946) are evidence Quine's judgments in favor of nominalism in the 1940s are based on instrumentalist and hence anti-naturalistic views. But, as I explained above, Quine's views on the definition of science in (1992) shows that Quine throughout his career accepts his views on science from (1946), views that entail the Predictive Constraint must be met in order for us to have reason to accept nominalism. As I argued above, Quine believes it is *definitive* of science that scientific inquiries produce theories which are efficacious at entailing or explaining correct predictions of experience or which help other theories to entail or explain correct predictions of experience. This is the first feature of Quine's naturalism I wish to note.

It is well known that Quine's naturalism ties scientific inquiry to prediction of experience, although perhaps less well known that he thinks this tie is definitive of science. To articulate features of Quine's naturalism that are less appreciated and understood, let us address the Consensus View and therefore consider whether the Modest Clarity View and the Sufficient Clarity View are naturalistic. On either the Modest Clarity View or the Sufficient Clarity View, the standard of clarity provides a reason in favor of nominalism *given* the Predictive Constraint is met. So, let us suppose that Quine thinks the Predictive Constraint is met, and let us consider how Quine recommends the naturalistic philosopher assess nominalism. Quine's views on philosophical methodology throughout his career entail that we employ standards such as elegance, convenience, and simplicity in assessing philosophical positions and thus nominalism in particular. We saw above that "sheer systematic utility" of physical objects provides some reason "to put a premium on explanations to physical objects and not to abstract ones." Moreover, Quine believes simplicity in the number of ontological categories counts in favor of ontological theses that reduce

one kind of entity to another.[9] Since nominalism reduces abstract objects to other kinds of objects, simplicity of ontological categories counts in favor of nominalism.

But Quine believes another sort of simplicity counts *against* nominalism. Quine makes this point as early as a 1948 letter to John Henry Woodger:

> I suppose the question what ontology to accept is in principle similar to the question what system of physics or biology to accept: it turns finally on the relative elegance and simplicity with which the theory serves to group and correlate our sense data…. Now the positing of abstract entities (as values of variables) is the same kind of thing. As an adjunct to natural science, classical mathematics is probably unnecessary; still it is simpler and more convenient than any fragmentary substitute that could be given meaning in nominalistic terms. Hence the motive—and a good one—for positing abstract entities (which classical mathematics) needs. (Quoted in Verhaegh (2017, p. 336))

On Quine's view, platonistic theories are simpler than nominalistic ones in that the axioms, rules, and notations of theories assuming abstract objects are simpler than possible nominalistic replacements.

What, then, about the standard of clarity? I submit the standard of clarity Quine brings to bear in the 1940s and after 1977 is for Quine a legitimate, naturalistic standard. For one, Quine views clarification as one of the naturalistic philosopher's tasks:

> The naturalistic philosopher begins his reasoning within the inherited world theory as a going concern. … He tries to improve, clarify, and understand the system from within. (Quine 1981b, p. 72)

Quine takes clarification as one of the ontologist's tasks in particular. In (1960), Quine says that "what there is is a shared concern of philosophy and most other nonfiction genres" (1960, p. 275). After explaining the existence questions posed within these genres, he says that "what distinguishes between the ontological philosopher's concern and all this is only breadth of categories" (1960, p. 275). While, "the natural scientist is the man to decide about wombats and unicorns" and "it is for the mathematician to say whether in particular there are any even prime numbers or any cubic numbers that are sums of pairs of cubic numbers,

> it is the scrutiny of this uncritical acceptance of the realm of physical objects itself, or of classes, etc., that devolves upon ontology. Here is the task of making explicit what had been tacit, and precise what had been vague; of exposing and resolving paradoxes, smoothing kinks, lopping off vestigial growths, clearing ontological slums. (1960, p. 275)

Quine views the concern of the ontologist differing from the natural scientist and mathematician only in "breadth of categories." Three of the ontologist's tasks plausibly involve clarification: "making explicit what had been tacit," "[making] precise

[9] See Quine (1981a, p. 15).

what had been vague," and "clearing ontological slums."[10] Hence, Quine thinks the naturalistic philosopher and ontologist in particular appeal to clarity.

Since Quine says that what "distinguishes" the ontologists' task from the physicist and the mathematician is "*only* breadth of categories," this suggests Quine takes the standard of clarity to be employed in the other sciences as well. This is confirmed by his discussion in (1960) of *canonical notation*, the "framework" for our scientific theories Quine recommends:

> The same motives that impel scientists to seek ever simpler and clearer theories adequate to the subject matter of their special sciences are motives for simplification and clarification of the broader framework shared by all the sciences. Here the objective is called philosophical, because the breadth of the framework concerned; but the motivation is the same. (1960, p. 151)[11]

Although the philosopher's objective in providing a canonical notation is broader than the objectives of scientists in the "special sciences," all seek to simplify and clarify. We now see Paseau is incorrect to say that Quine in "Steps" cites a "fundamental philosophical intuition irreducible to scientific grounds" in favor of nominalism (2013, Sect. 3.2). The fact that Quine says that philosophical intuition counts in favor of nominalism is fully in line with the grounds for his judgment being reducible to scientific grounds. For the standard of clarity behind his "philosophical intuition" is for the naturalistic Quine a scientific standard shared in all the sciences, philosophy included. The second feature of Quine's naturalism I thus wish to note is that clarity plays an integral role in science.

My argument so far indicates that the Modest Clarity View is naturalistic on Quine's conception of naturalism. On my reading, a naturalistic standard of clarity provides a reason for nominalism that may be outweighed by other naturalistic standards in favor of either nominalism or Platonism.[12] But Parsons and Burgess and Rosen's views need to be addressed.

Here is what I take Parsons to be arguing. On Carnap's version of the analytic-synthetic distinction, likely the most important version of the distinction Quine considers in the 1940s and rejects in "Two Dogmas" (1953), the sentences of

[10] Quine's recommendation in (1948, p. 4) to "clear Wyman's slum" of possible objects shows "clearing ontological slums" appeals to a standard of clarity. As (1948) and other work indicates, Quine finds the notion of possible object to be unclear.

[11] Ebbs notes this passage in (2016, p. 35).

[12] I am now in a position to interpret Quine's remark in Quine (1960) that "For consistency with my general attitude early and late, [the opening sentence of "Steps"—"We do not believe in abstract entities"] needs demotion to the status of a mere statement of conditions for the construction at hand." (p. 243, fn. 5). His attitude "early and late" was that nominalism had *some* reason in favor of it given the Predictive Constraint is met; by (1977), one such reason is provided by the standard of clarity. Accepting such a view does not require failing to believe in abstract objects, since the Predictive Constraint must be met. I suggest he is saying in (1960) that he would re-write "Steps" in a more cautious way that talks about reasons one might give to accept the nominalism they outline. That is how he writes the 1946 lecture—he talks about the prejudices of "the nominalist" and how "the nominalist" must meet the Predictive Constraint. However, as his letter to Carnap in 1947, his 1937 lecture, and Quine (1977) show, that does not mean he does not hold the Modest Clarity View "early and late."

mathematics are meaningful but lack empirical content in a given scientific language because its sentences are analytic in that language.[13] Quine in 1947 doubts there is an analytic-synthetic distinction, and so did not then accept views such as Carnap's.[14] Quine thus is left without an explanation of what meaning, if any, mathematical sentences have. Given the nominalism of "Steps," mathematical sentences are meaning*less.* Quine on Parsons' reading thus was motivated to accept the nominalism in "Steps" in large part because it gave him an explanation of the meaning of mathematical sentences that he lacked. But in (1953), Quine meets this need instead by arguing that mathematical sentences are meaningful given the role of mathematical theories within empirical science.

While I agree that Quine's desire to explain mathematics' meaning motivates much of his early work, I see Quine's acceptance of either the Sufficient Clarity View or the Modest Clarity View as primarily motivated by methodological considerations that he thinks are at play in both mathematical and non-mathematical contexts. This is confirmed in part by Quine's remarks to the Harvard Logic Group in 1940, remarks of which Carnap took notes. Quine says that objects such as "centimeters, distances, temperatures, electric charges, energy, lines, points, classes" are "not things" Frost-Arnold (p. 149). He continues:

> …I do not demand that classes or other objects which are not things should be eliminated; perhaps they are necessary for science. In each case, if we do reduce, it is in order to reduce the obscure to the clearer. (*Ibid.*)

The standard of clarity that motivates Quine's pursuit of nominalism—that motivates the elimination of classes—also motivates the pursuit to eliminate entities outside of mathematics. Quine does not "demand" eliminating these entities if the entities are necessary for science, but finds that such eliminations increase the clarity of our science. So nothing in particular about mathematics or its meaning is what motivates Quine's project in "Steps"—a standard of clarity he thinks is applicable throughout science is what motivates it instead. This shows that the second feature of Quine's naturalism noted above is present in Quine's views in the 1940s.

We should see Quine's views on the meaning of mathematics in "Steps" as a consequence of adopting the nominalism of "Steps" rather than a solution to a problem that motivates pursuing that nominalism. Were Quine to have adopted the nominalism of "Steps," then sentences of platonistic mathematics cannot be fully translated into scientific language. Quine would conclude in such a case that sentences of platonistic mathematics are meaningless with respect to scientific language. The following passage from "Steps" shows why Quine would make this conclusion:

> Since, however, we have not as yet discovered how to translate all statements that we are unwilling to discard as meaningless, we describe in following sections a course that enables us - strictly within the limitations of our language

[13] See e.g. Carnap (1937).

[14] In his 1947 letter to Carnap quoted above, he says: "As you know, I am not satisfied that a clear general distinction has yet been drawn between analytic and synthetic" Quine and Carnap (1990, p. 409).

> and without any retreat from our position - to talk about certain statements without being able to translate them. (p. 111)

Quine here presupposes that any sentence that cannot be translated into scientific language is meaningless with respect to that language. Thus, adopting the nominalism of "Steps" has the simple consequence that sentences of mathematics are meaningless with respect to scientific language. There is nothing un-naturalistic about this consequence: the naturalistic Quine says that expressions that cannot be translated into a scientific language are meaningless with respect to scientific language.[15]

Let us turn to Burgess and Rosen's views. Contrary to what they suggest, Quine's appeal "philosophical intuition" is not an appeal to mysterious unscientific sources like "the Oracle of Philosophy" or to "occult faculties" (1997, p. 205). Rather, Quine appeals to our firm understanding of tangible things which stems from their fundamental role in language acquisition. Moreover, the fact that this firm understanding extends from common sense does not entail that appeal to it is unscientific—as Quine says, science "is a continuation of common sense" Quine (1953, p. 45).[16] Hence, if we judge that the place of physical objects in our common-sense inquiries affords them clarity, Quine's naturalism does not demand we ignore this judgment. All it asks us to do is to submit this judgment to critical evaluation as we move from common sense to sophisticated scientific theorizing. This highlights a third feature of Quine's naturalism: judgments closely tied to common sense can have a place in science and naturalistic philosophy.

One might point to Burgess and Rosen's views in (1997) on naturalistic philosophy and its consequences for nominalism to show that either the Sufficient Clarity View or the Modest Clarity View is un-naturalistic. At the beginning of Burgess and Rosen (1997), they present a version of naturalism inspired by Quine's views. They say that Quine "advocates a novel naturalized conception of epistemology, on which the epistemologist becomes a citizen of the scientific community, seeking only to describe its methods and standards, even while adhering to them" (1997, p. 33). As their book shows, by the 'scientific community' they mean community of scientific researchers as well as professors and researchers employed in science departments but excluding philosophy departments. They believe philosophers can contribute to the scientific community by applying the standards of that community.[17] They thus believe that naturalism entails it is in the theories licensed by the standards the scientific community that, as Quine would put it, "reality is to be identified and described." They argue that a description of the standards of the scientific community shows that, according to those standards, nominalism is not justified for acceptance even if (as I would put it) the Predictive Constraint is met.[18]

[15] See Hylton (2014) for examples. Hylton there argues that Quine has no philosophically interesting explication of 'nonsense' or 'meaningless'. Whether or not Hylton is right, Hylton would agree with me that Quine sometimes says that a word or sentence not translatable into a language for science is meaningless with respect to that language—see Hylton (2014, p. 128).

[16] Ebbs also notes this passage in (2016, p. 33).

[17] See (1997, p. 65).

[18] See (1997, pp. 205–238).

Burgess and Rosen cite "perspicuity of the basic notions and assumptions" as a naturalistic standard for theory choice (1997, p. 209). So, given Burgess and Rosen's conception of naturalism, it is unclear if the *Modest* Clarity View is un-naturalistic. But if we suppose it *is* un-naturalistic given their conception of naturalism, Quine would disagree with Burgess and Rosen's conception of naturalism and thereby on the role of naturalistic philosophy. Quine's conception of science from (1992) shows that Quine primarily conceives of scientific theories not in terms of what is licensed by the standards of the scientific community, but in terms of whether and how they contribute to a collection of theories "whose checkpoints are in prediction." Thus, while the standards Quine accepts have significant overlap with the standards of the scientific community, the naturalistic philosopher can in principle make recommendations for science that differ from those licensed by the standards of the scientific community. Moreover, Quine conceives of the role of the philosopher and the ontologist in particular as continuous with the tasks of other scientists yet different from them in virtue of asking broader questions—recall Quine's claim in (1960, p. 275) that the ontologist places the "uncritical acceptance" of physical and abstract objects under "scrutiny." Answers to such questions seek to "improve and clarify… the system from within" (1981b, p. 72). Thus, naturalistic philosopher does not mainly defer to the contributions of non-philosophical scientists; instead, she makes her own contributions by improving and clarifying the broader contents of our overall scientific system. This is the fourth feature of Quine's naturalism I wish to note.

I conclude that the Modest Clarity View is naturalistic on Quine's conception of naturalism. Even so, I concede that there is a sense in which Burgess and Rosen are right that Quine's standard of "intelligibility or clarity" is mysterious: Quine was unable to articulate in the 1940s the standard of clarity he applied, judging the standard to be "vague." As I argued, it took him until (1977) to articulate it. Hence, even if *what Quine judges*, once properly understood, is not at fault, Quine's *judging* might very well be criticized. Even so, I submit he does not contravene his naturalism. Once we see that his appeal to clarity is driven by our firm grip on tangible things, we should see Quine's judgment in the 1940s as an inchoate expression of a naturalistic judgment rather than an un-naturalistic stab in the dark.

But what about the Sufficient Clarity View? There is some reason to think Quine rejects it late in his career. Given the other standards Quine brings to bear in ontology later in his career, it seems unlikely he would later think that tangible nominalism's clarity suffices to justify it given the Predictive Constraint is met. Quine in effect notes this in his letter to Woodger. After the portion of the letter quoted above, he writes:

> These very relativistic and tolerant remarks differ in tone from passages in my paper with Goodman and even in my last letter, I expect. My ontological attitude seems to be evolving rather rapidly at the moment. (2017, p. 336)

Quine notes that the tone of "Steps" differs from his "relativistic and tolerant remarks" in his letter in favor of the elegance and simplicity of axioms, theories, and assumptions of Platonism. Quine thus recognizes that something like the Sufficient Clarity View comes across from the "tone" of his paper, and comes to realize he

rejects such a view. This suggests Quine late in his career thinks the Sufficient Clarity View overrates clarity's importance and ignores other pertinent standards.[19]

But even if Quine judges the Sufficient Clarity View to be erroneous in this way, and even if he holds the Sufficient Clarity View early in his career, I submit this shows only that the early Quine makes a scientific error by the late Quine's lights. As I have argued, clarity is for Quine a naturalistic standard. To accept the Sufficient Clarity View is thus to weigh a naturalistic standard too heavily. This indicates Quine's acceptance of the Sufficient Clarity View early in his career is an error of a piece with the scientific endeavor, and not unscientific speculation issuing from a "supra-scientific tribunal." I conclude that neither what Quine's judges nor the way Quine judges in the 1940s is in tension with his naturalism, and thus that the Consensus View is false.

5 Conclusion

I have argued that Quine's judgments from "Steps" and (1946) are not in tension with his naturalism. Quine's judgments stem from a naturalistic standard of clarity, a standard he applies to nominalism due to the conceptual fundamentality that Quine judges tangible things to possess. My reading highlights a version of naturalism that I recommend philosophers investigate today. On that version, theories are scientific insofar as they "contribute to a theory whose checkpoints are in prediction." The naturalistic philosopher's theories thus must make such a contribution. In so contributing, they do not merely defer to scientists who are not philosophers, but provide improvements and clarifications of the broader contents of science, clarifications which can even stem from science's common-sense roots. While this version of naturalism requires further clarification, I have in this paper begun to articulate and clarify it, thereby making it available for future investigation.

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[19] This shows that a simpler version of Parsons' argument is plausible. Setting aside his views on Quine's desire to explain the meaning of mathematics, Parsons could be read simply as arguing as follows: given the rejection of the analytic-synthetic distinction, the standards we can use to justify accepting abstract objects are no different from the standards we can use to justify accepting any other kind of object; thus, Quine's rejection of the analytic-synthetic distinction entails rejecting his view in "Steps." This argument is plausible if we read Quine's view in "Steps" as the Sufficient Clarity View, since it seems to require Quine to ignore the role that other standards applicable throughout the sciences play. As the next paragraph above shows, I do not think this shows the Sufficient Clarity View is un-naturalistic. Moreover, one cannot run the same argument against the Modest Clarity View, since Quine thinks the standard of clarity also provides us *some* reason to accept certain theories in all the sciences.

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