

**QUINE, ONTOLOGY, AND PHYSICALISM
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**1. INTRODUCTION. QUINEAN NATURALISM, ONTOLOGICAL COMMITMENT, AND
PHYSICALISM**

W.V. Quine, though one of the giants of twentieth-century analytic philosophy, remains an enigmatic figure. All students of analytic philosophy must meditate upon his naturalism, his ontology, his epistemic and semantic holism. Yet the connections between these different doctrines and their wider applications are often misunderstood. Quine's highly systematic approach to philosophy and well-crafted prose have not always stood him in good stead. Read in isolation, his gracefully concise pronouncements take on an oracular quality. Philosophers often repeat them almost like incantations, without considering their place in an explanatory structure. His ontological apothegms — ‘to be is to be the value of a variable’, ‘no entity without identity’ — have suffered this treatment, as have his doctrine of the inscrutability of reference—‘gavagai!’— and his naturalism and holism — ‘no statement is immune to revision’, ‘maxim of minimum mutilation’, ‘naturalised epistemology’. His theory of ontological commitment and his naturalism are much discussed, but generally without regard for their relation to each other, and to their connection with inscrutability. Most philosophers overlook the centrality of Quine’s naturalistic outlook to his conception of ontology. This is why the new wave of historical-philosophical Quine scholarship to which this book belongs is a welcome development: situating Quine’s famous lines in their context of his large, systematic body of work and the historical forces that shaped it help us appreciate what is worth while about his philosophy. Previous historical investigation of Quine has yielded a deep understanding of the genesis of semantic and epistemic holism in his early work. But the historical literature on the roots of his much-misunderstood views on ontology, or on the continuity between early, middle, and later Quine, remains small (Janssen-Lauret 2017, 249–250). This paper is a contribution to the latter kind of Quine scholarship, drawing upon the novel resource provided by Quine’s 1980 Immanuel Kant lectures to confirm a hypothesis in my interpretation of Quine as a global epistemic structuralist.

According to my interpretation of Quine (Janssen-Lauret 2015, Janssen-Lauret 2016), both Quinean naturalism and ontological commitment are more interesting and fruitful when they are considered in tandem, as mutually reinforcing and complementary. I have urged that Quine’s conviction that we only ever know objects *qua* solutions to puzzles about significant intersections in our observations is vital to his systematic philosophy.

From the point of view of Quinean naturalism and ontology, our only access to objects is through descriptions, by considering the object's role in our best theory. Quine's later works (Quine 1990/1992, Quine 1995) provide the clearest expressions of this perspective, which in a joint paper I have called Quine's global epistemic structuralism (Janssen-Lauret and MacBride forthcoming). Quine's 1980 Immanuel Kant lectures, the subject of this volume, provide an early version of Quine's epistemically structuralist line which weaves together his naturalism and his views on ontology. Quine's structuralism was not ontological, not the kind which identifies objects with structures or relations. Instead Quine held on naturalistic grounds that what is key to a theory's ontology is its structure, not the individuals satisfying roles in the structure. Science and naturalistic philosophy aim for knowledge of objects through their contributions to the distinctive patterns of regularity described by some best theory.

A vital question arises: Where does global epistemic structuralism leave introspective access to our own mental states? That question is one which Quine had generally charged past without, apparently, giving it much thought in previously published works. In *Word & Object*, for example, he briefly alludes to introspection as 'witnessing to one's own bodily condition, as in introspecting an acid stomach' (Quine 1960, 264); such odd remarks raise more questions than they answer. A rare exception is found in the early version of Quine's epistemic-structuralist approach to ontology in his Immanuel Kant lectures. There, Quine endorsed a version of 'introspection as a source of privileged data', and contended that it suggests physicalistic hypotheses if 'prudently used' (Quine 1980, 9). Later versions of the view abandoned introspection. Why? I argue that my interpretation of Quine's intertwined views on naturalism and ontology explains why Quine dropped his attempt to explain introspection physicalistically. Introspection sits uncomfortably with his global epistemic structuralism. Neither Quinean naturalism nor Quinean ontological commitment, I argue, are in themselves incompatible with introspection (or with anti-physicalism). It is specifically global epistemic structuralism, the position that we only ever have knowledge of the external world insofar as its denizens collectively exhibit the structure of our best theories, which is difficult to square with introspective knowledge of our own minds or mental states. Introspective knowledge is a kind of knowledge by acquaintance, direct epistemic access to ourselves or our mental states. Introspective privileged access implies direct, unique reference to mental states, something which is at odds with the inscrutability of reference mandated by Quine's global epistemic holism. Unique or direct reference is not compatible with Quine's view that scientific knowledge is always general knowledge, that objects cannot be singled out qua individuals but are known only through their fulfilling the law-like roles of some global, general theory.

My paper has a history of philosophy component and a more purely philosophical component. The section entitled 'Global Ontological Structuralism Arising out of Naturalism and Ontological Commitment' outlines Quine's mature global epistemic holism and its connection with inscrutability. The section entitled 'Ontological Commitment vs. Quine's Own Ontology' traces the historical origins of the Quinean doctrines which came together to yield the mature view, namely, ontological commitment, from early in his career, then

naturalism. Jointly, those two sections explain how Quine's naturalism, historically developed a little later, became deeply integrated with his theory of ontological commitment via the epistemic-structuralist approach. In doing so I pin down the philosophical roots of the late Quinean line which excludes introspectively accessed mental posits. The section entitled 'Quine's Own Ontology and His Physicalism' details why neither Quinean ontological commitment nor Quinean naturalism compels assent to physicalism or the renunciation of introspective knowledge. Mental or otherwise non-physical objects can be readily accommodated by Quinean ontological commitment. While Quine's own ontology is physicalistic, his method of determining ontological commitment allows for the description of ontologies quite different from his own, including non-physical ones. Naturalism, too, is compatible with the denial of physicalism. Quinean naturalism renounces Cartesian first philosophy about the mind, and takes perceptual states with a physical manifestation as a point of departure, but whether everything is physical remains an open, empirical question for the naturalist. To think otherwise would be to elevate physicalism to a piece of first philosophy. But global epistemic structuralism, while still compatible with anti-physicalism, is ill-equipped to account for direct cognitive access of the kind presupposed by direct reference or introspective methods. I analyse the early version of global epistemic structuralism presented in Quine's 1980 Kant lectures, noting how Quine's attitude towards the mental in these lectures differs from later versions of the epistemic-structural line. The section entitled 'Quine's Own Ontology and His Physicalism' then charts the historical development of the shifting forms of Quine's own physicalism, the position expressed in the 1980s lectures, and the influence of his mentor Rudolf Carnap and his students Donald Davidson and David Lewis. Drawn to the concrete ontology of nominalism in the forties, leaving some room for a Carnapian phenomenalist language in 'On What There Is', wavering between eliminative and non-reductive materialism in the fifties and sixties, Quine eventually came down in favour of non-reductive physicalism. He had expressed, as early as the late fifties, certain theses now associated with the works of Lewis – physicalistic descriptions of mental states – and Davidson – anomalous monism. By the time of *Pursuit of Truth* Quine had firmly tied his colours to the Davidsonian mast. He then embraced anomalous monism, according to which the mental and the physical have incommensurate theoretical roles, guided by different norms, but are ascribed to the same substance. But in the 1980 Kant lectures, he expressed a mitigated anomalous monism, making an exception for the perceptual states which get science off the ground. Most mental states, he claimed, were governed by anomalous monism, but perceptual ones still had univocal physicalistic criteria of identity specifiable at least by a Gödel number. That distinction had disappeared by *Pursuit of Truth*. I argue that it is likely that Quine gave up the Lewisian aspect to his view and the appeal to introspection because they are difficult to square with global epistemic structuralism. In the final section I briefly turn to the purely philosophical. I raise a philosophical challenge arising from a tension between anomalous monism and Quinean meta-ontology. If objects are, as Quine would have it, posited qua fillers of given theoretical roles, how could he ever have good reason to identify posits with explicitly incommensurate theoretical roles? I consider this question in relation to Quine's old bugbear, Carnapian tolerance, and conclude that it is not obvious that Quine has a good answer to it.

2. GLOBAL ONTOLOGICAL STRUCTURALISM ARISING OUT OF NATURALISM AND ONTOLOGICAL COMMITMENT

In Quine's 1980 Kant Lectures, we encounter a forerunner of his global epistemic structuralism according to which scientific knowledge of objects is general knowledge, knowledge that the law-like roles for objects described by our best theories are occupied. The epistemic-structuralist view resulted from the union of Quine's approach to ontological commitment and his naturalism, his thesis that philosophy must begin, not from a priori first principles, but from the deliverances of the sciences. Considering Quine's approach to ontology from the point of view of his global epistemic structuralism reveals the deep philosophical motivations behind Quinean ontological commitment. Ontological commitment allows us to answer crucial questions which arise where logic, metaphysics, and epistemology come together. A focus on out-of-context apothegms and controversial examples has led philosophers to overlook what is central to Quine's project: his attempts to pin down what it means for us to have good reason to believe in some entity. What objects, or what kinds of objects, do my views licence me to believe in? What other theories are available, and what kinds of objects do they give their proponents good reason to believe in? How do we make ontological debates perspicuous, and on what grounds can we favour one side of an ontological debate over another? Quine's holism drove him towards the view that good reasons to believe in something always flow from the role that object plays within an overall best theory. With his doctrine of ontological commitment, he aimed to give us a criterion, applicable to a wide range of theories of the world, of where theories give us reason to believe in an entity of some description – namely, where an entity of that description is posited as indispensable given the truth of the theory.

As a naturalist, Quine contended that our best theories, even on topics as vast as the existence and nature of the world around us and the minds of others, do not grow out of first philosophy. We cannot have any useful recourse to a priori theorising from the armchair next to the fire. We must begin from a remarkably limited evidence base: our observations of the world around us. Middle and late Quine emphasise the question how something as small as stimulation of our senses leads to workable theorising about the external world. According to Quine's account, theorising first gets off the ground via a kind of sentence which we can use to label features in the world around us based on our sensory experience. Such sentences may also be learned by other means, but it is crucial to Quine's story that they may be keyed directly to sensory stimuli, and that their link to sensory stimulation is as whole sentences, not parts of sentences, i.e holophrastically. They are known as 'observation sentences': 'Rain', 'Dog', 'Furry', 'Black', etcetera (Quine 1960, 40-46). Logical links between sentences are not yet established at this stage. It does not follow from 'Dog' as an observation sentence that there is some individual who is a dog, even though we find it natural to think so, and fall unreflectively into what Quine in these lectures calls 'body-mindedness' (Quine 1980, 24). The nascent theorist's next move is to volunteer observation sentences in her social use of language and note other speakers' responses. She then adds some equivalent of 'yes' and 'no', based on the responses of assent and dissent, to her

theory. Having learnt those, she is on her way towards learning and understanding truth-functions (Quine, 1960, 57-59). Up to this point of theory formation, Quine maintained, the theory is both radically translatable and devoid of ontology (Quine 1979). In the lectures he alluded to this fact by calling the observation language ‘a signal language, a language for heralding’ (Quine 1980, 25). A language with observations and other whole, atomic sentences plus truth-functions to connect them has the structure of sentential logic, and is empirically conditioned, each sentence being potentially holophrastically linked to sense experience. Reification and reference have not yet been introduced, and there is therefore neither ontology nor inscrutability.

Although theorising might stop at this stage, introducing the apparatus of reference is explanatorily useful. In the first instance, we can begin to identify the bodies we find it natural to talk about. The apparatus of reification, initially names or pronouns and predicates, allows us to begin thinking of our sentences not holophrastically, but as divisible into a name or pronoun and a predicate. Observation sentences just label features. They do not ascribe characteristics. As they are holophrastic, they are not divisible into a part which purports to denote an object and a part which purports to attribute something to the object. But once split into a pronoun and a predicate, they are found to contain an expression which aims to say what there is and an expression which aims to say something true of it. The first kind of expressions are used to speak of the theory’s ontology. The second kind comprise the theory’s ideology. In both the 1980 lectures and his mature global epistemic structuralism, Quine laid the boundary between a feature-placing, holophrastic observation language and a richer one at the ‘advent of predication’ (Quine 1980, 29), the point where the difference between individuative words and feature-placing ones begins to matter, and where reference is introduced. Reifying language has some utility in distinguishing the looser connection given by ‘when there is milk there is white’ from the tighter connection presupposed by ‘milk is white’, where, he says, “‘milk’ becomes a name” (Quine 1980, 30). By contrast to the mature view of the reification of bodies as marking significant intersections in observations, in 1980 Quine’s main argument for why the apparatus of reification is explanatorily useful is where the objects to be discussed cannot all be given individual names. ‘When we cut things loose from names ... the time is ripe for recognizing reference unequivocally ... To be is to be denoted by a general term’ (Quine 1980, 31). It is only when we complete our apparatus of reification with the addition of universal and existential quantifiers that ‘objective reference emerges full-blown and unmistakeable’ (Quine 1980, 32), because we are now in a position to talk about any bodies, whether or not they do, or are able to, all bear individual names. We have arrived at a language with the expressive strength of first-order logic without individual constants, Quine’s canonical language.

In Quine’s later works on the same theme, his argument for proceeding from a feature-placing, holophrastic observation language to a first-order canonical language is different. Later Quine presented pronouns as vehicles for marking significant intersections in our observations, claiming that we begin to posit bodies ‘as ideal nodes at the foci of intersecting observation sentences’ (Quine 1990/2, 24). When our budding theorist has built up a collection of observations and learnt truth-functions like the conditional, she begins

to expect certain regular patterns which occur within the observations. She will formulate conditionals of the form ‘If S, then T’, or ‘Whenever this, that’ when she’s become accustomed to observing T whenever she observes S. Such conditionals allow her to make and test predictions, because they are her first venture into law-like statements. But at this point she is likely to want to distinguish more fine-grained kinds of evidence than the holophrastic sort she has been trafficking in so far. She begins to feel a need for units of language more restricted than the whole sentence. ‘Whenever dog, furry’ might be true if every dog, furry or hairless, is followed around by another furry creature; but she intends to claim that whenever something is a dog, it is furry. The apparatus of reification allows her to pinpoint such more fine-grained cases of observational overlap and apply law-like generalisations to objects, not mere phenomena. Bodies enter her ontology when she begins to use her pronouns to posit such bodies as likely explanations of patterns of intersecting observations. Again, the theorist has managed to turn observations into predicates, and expanded her language to one with pronominal vocabulary and quantifiers to bind the variables. She has arrived at a first-order canonical language in order to be able to state her law-like generalisations about objects.

This second style of argument makes the connection between global epistemic structuralism and inscrutability (Quine 1968) more prominent. For both arguments, it is true that the only units of language linked immediately to empirical evidence are the observation sentences. As the link between sensory experience and observation sentences is holophrastic, it can sustain a range of different interpretations of the pronouns and predicates they can be divided into. We saw that the holophrastic stage of theorising dictates no ontology at all. Once observation sentences have been spliced into expressions for ontology and ideology, we will use them to draw conclusions about the existence of objects and what is true of those objects. But a variety of interpretations are empirically adequate. Our evidence does not dictate a single privileged interpretation of the values of the pronouns or the extensions of the predicates. All it fixed determinately is the law-like patterns of intersection from which we begin to hypothesise about the existence of objects. It follows that empirical evidence derived from observations is not evidence for the existence of some unique collection of objects, but general evidence for the existence of some collection of objects which behave in accordance with the law-like regularities observed. Our apparatus of reification, and hence reference, is general and inscrutable rather than direct and unique.

3. ONTOLOGICAL COMMITMENT VS. QUINE’S OWN ONTOLOGY

Quine’s mature global epistemic structuralism thus confirms his opposition to direct reference and to knowledge of objects via direct means such as acquaintance. It does not seem to leave space for introspection, an epistemic process which yields immediate knowledge of the subject’s own psychological state by means of privileged access. In his Kant lectures Quine saw no contradiction between his approach to reification and his claim that ‘Prudently used, introspection suggests hypotheses that can be given substantial physicalistic sense and can subsequently be investigated experimentally’ (Quine 1980, 9).

But these are in the end incompatible, and we see the later Quine moving towards a purer version of epistemic structural holism by 1990.

First of all I will show that physicalism is not mandated either by Quinean ontological commitment or by Quinean naturalism. Separating out the strands of ontological commitment, naturalism, inscrutability, and global epistemic structuralism helps us see why Quine eventually gave up on first-personal or introspective knowledge of objects, even of our own mental states. All through his career, Quine adhered to some form of physicalism for his own ontology. Yet advocates of Quinean ontological commitment need not be physicalists, because Quinean ontological commitment is a doctrine distinct from Quine's own ontology. Ontological commitment can be applied to any theory which can be regimented into first-order logic, whether physicalist or non-physicalist. The physicalism of Quine's own ontology does not affect his position on how to ascribe, compare, and assess ontological statements, nowadays often called Quine's 'meta-ontology', but called 'ontological commitment', 'ontic commitment', or 'imputations of existence' by Quine himself. Quinean ontological commitment is engaged in answering the question what it is to have a good reason to believe in something based upon a theory. It does not dictate any specific choice of best theory, as long as the candidate best theory can be given the form of first-order logic – or, in middle to later Quine, first-order logic without constants and with an unusual interpretation of the identity predicate (Janssen-Lauret 2015, 156–158).

Quine formulated his criterion of ontological commitment early in his career. The famous phrase 'to be is to be the value of a variable' dates from 'Designation and Existence' (Quine 1939, 708). Early Quine's approach to imputations of existence was almost the same as his mature doctrine of ontological commitment, with only minor modifications. One such modification was that in the late '30s, Quine allowed for proper names as variable substituends to play a role in ontological commitment, a point on which he changed his mind a few years later (Janssen-Lauret 2018a, xxxii). As he moved towards a clearer expression of his epistemic-structural approach to ontology, as we saw, only definite descriptions which capture theoretical roles could carry ontological commitment. By contrast, Quine's own ontology, the range of things he himself counted within the range of the values of his variables, was not as stable as his meta-ontology, and changed significantly over the years. Early Quine, up to 1947, remained hopeful that a nominalist ontology might be within reach (Goodman and Quine 1947). Later Quine abjured nominalism in the sense of a wholly concrete ontology, and admitted quantification over sets in physics, as he did in his fourth Immanuel Kant lecture.

Although Quine did not explicitly develop naturalism in the sense of second philosophy until his middle period, the early Quine already indicates that application to theories of natural science, especially a unified natural science, is a goal of ontological commitment. 'As a thesis in the philosophy of science, nominalism can be formulated thus: it is possible to set up a nominalistic language in which all of natural science can be expressed' (Quine 1939, 708). But the criterion can be readily applied to theories which are not naturalistic as well. From his earliest ventures into meta-ontology, Quine made clear that ontological commitments to abstract objects, God, propositions and other entities he himself abjured are perfectly expressible. Thus he said in 1943, before he had come round to positing

numbers, ‘The prefix [‘ $\exists x$ ’] is no less suited to the context: $\exists x(x \text{ is a prime number} \wedge x \text{ is between } 5 \text{ and } 11)$ ’ (Quine 1943, 116). And, though a firm atheist, he stated, ‘Monotheists and atheists now need disagree only on the truth values of statements such as [‘ $(\exists y)(x)(x = y \equiv \text{god } x)$ ’], not on questions of meaningfulness’ (Quine, 1940, 150). Part of the point of discussing imputations of existence made by others is to compare and contrast alternative ontologies, as Quine did for nominalism and realism in 1939, remarking ‘In realistic languages, variables admit abstract entities as values; in nominalistic languages they do not’ (Quine 1939, 709). A theory of ontological commitment which cannot express false theories is obviously ill-suited to that purpose. So it is incorrect to assume, as some contemporary philosophers whose reading of Quine relies too much on out-of-context apothegms are wont to do, that ‘the Quinean method … regiments physics into first-order classical logic … One will certainly not have [ontological commitment to] any people and horses’ (Schaffer 2009, 372). It is worth noting here that Quine did make an explicit ontological commitment to the existence of horses: ‘In the tenseless sense of “is,” to which I shall adhere, there is such a thing as Bucephalus; namely, a spatio-temporally remote spatio-temporal body’ (Quine 1939, p. 701). While the question of ontological commitment to people is arguably a vexed one for Quine if we take people to be psychological beings, it is wrong to describe Quine’s ontological method as formalising physics in first-order notation and deriving its existentially quantified consequences. (Of course a first-order formalisation of physics – of which there is at present no one unified theory – is far from a trivial or unphilosophical project anyway. The philosopher of physics to pull it off ought to be very proud of herself.) In the Kant lectures, Quine dismissed mentalistic ontology. But he did so based on a philosophical argument, not because a regimentation of physics into first-order logic fails to imply mentalistic existence claims. He notes that naturalism requires that some physical states, namely perception of the external world, are accounted for, and then argues for physicalism over dualism by appeal to parsimony.

But Quinean naturalism, too, is compatible with the negation of physicalism, though not with as wide a range of non-physicalist positions as ontological commitment is. Opposition to first philosophy and basing philosophical investigation of reality on the empirical findings of the sciences as a point of departure does not entail physicalism. Those naturalistic doctrines imply only the weaker claim that certain events which have at least some physical characteristics – perceptual events or observations – should be accounted for by any naturalist theory. Whether all scientific theories will posit only physical entities becomes itself an *a posteriori* question to be answered within the empirical sciences. Although Quine claims at the beginning of his 1980 Kant lectures that by starting ‘with man as an animal in the physical world’ his ‘ontology is physicalist, rather than mentalist, from the start’, his naturalism made his physicalism seem plausible to him, but did not mandate it. Beginning with embodied creatures experiencing perceptual states with a physical component need not mean that everything is physical. Quine knew he had to argue for his physicalism. In the Kant lectures, he defended it based on the importance to naturalism of the at least partly physical perceptual states we start from, plus parsimony (Quine 1980, 1-3).

4. QUINE'S OWN ONTOLOGY AND HIS PHYSICALISM

All through his philosophical career, Quine's own ontology was physicalistic, not admitting any purely mental objects or states. While he always affirmed physicalism, his motivations for that position varied over the years. In his early period, Quine's physicalism appears to have been connected to nominalistic sympathies. Middle and later Quine's ontological motivations were more driven by considerations of naturalism and parsimony. Yet he took a surprisingly long time to settle on a determinate physicalistic view. By the time of his mature global epistemic structuralism, in 1990, he had definitively allied himself with his student Davidson's anomalous monism – really an authentically Quinean view suggested by brief passages in his work as early as the '50s. In the 1980 lectures we find Quine making remarks on the mental which appear out of character for him. Besides his appeal to introspective privileged access, he also put forward a modified anomalous monism with a Lewisian exception for perceptual states, which he then regarded as univocally specifiable (by a Gödel number if not by us) physicalistic criteria of identity. By 1990 Quine had dropped both introspection and the Lewisian view of perceptual states. My interpretation of Quine makes it easy to see why he opted to dispense with them: doing so yields a smoother global epistemic holism.

Early Quine's physicalism appears to have been driven by his nominalistic leanings. The young Quine was not a gung-ho nominalist. He tended to express himself tentatively (except in his joint paper with Goodman) as someone who 'should like to be able to accept nominalism' (Quine 2008 [1946], 9). Still, he continued to make attempts to make nominalism work until 1947. According to the early Quine, a nominalist is a person who 'claims that a language adequate to all scientific purposes can be framed in such a way that its variables admit only concrete objects, individuals, as values' (Quine 1939, 708). At times he connected his nominalist leanings explicitly with physicalistic principles. For example, in his 1944 book *The Significance of the New Logic*, he suggested that one possible good reason to reject the existence of a large finite number is the consideration that 'the total number of smallest particles in the universe is less than' that number (Quine 2018 [1944], 96; see also Janssen-Lauret 2018a, xxvi-xxix, and Quine 1960, 233-234).

As Quine began to move away from nominalism, he made an uncharacteristic move in 'On What There Is', appearing to recommend an attitude of Carnapian tolerance towards a choice between a mentalistic and a physicalistic ontology. 'My present suggestion is that an attitude of formalism may with equal justice be adopted towards the physical scheme, in turn, by the pure aesthete or phenomenalist' (Quine 1948, 37). Quine's remarks here are especially surprising because ten years earlier he had decried Carnapian tolerance in the strongest possible terms: 'your principle of tolerance may finally lead you even to tolerate Hitler' (Quine to Carnap 4 Feb. 1938, in Creath 1990, 241). Quine's opposition to Carnapian tolerance and endorsement of nominalism represent an early, partial break with Carnap. Even while Quine was still almost wholly under Carnap's sway, his nominalism was incompatible with Carnap's view that all ontological statements, no matter how modest, were pseudo-statements to be sidestepped via acceptance of the principle of tolerance

(Janssen-Lauret 2018a, xxvi-xxix). As in the late forties Quine took increasing steps towards distinctively Quinean views and reconsidering previous Carnapian allegiances, his thinking on physicalism appears to have been in flux as well.

By the 1950s, Quine was on-message again, advocating physicalism. In ‘The Scope and Language of Science’ he claimed that while a reductive physicalism identifying mental states with specifiable physical states would be ideal, he did not expect it to be discovered, nor did he need it to be. ‘This facile physicalisation of states of mind rests in no way on a theory of parallelism between nerve impulses, say, or chemical concentrations, and the recurrence of predetermined species of mental state... Discovery of the suggested parallelism would be a splendid scientific achievement, but the physicalisation here talked of does not require it’ (Quine 1957, 15). This passage suggests a version of the position made famous by Davidson, that mental and physical explanations may sit side by side, as mutually irreducible. Anomalous monism, then, can be thought of as an authentically Quinean view, given these early glimmerings of it in Quine’s writings near the beginning of his middle period. Yet there are other lines by middle Quine which could plausibly be read as suggesting quite different physicalisms. *Word & Object*, for instance, contains passages which might be read, rather, as suggesting the eliminativist variety. Here he appears, for example, to abjure a mentalistic psychology: ‘One may accept the Brentano thesis [that intentionality is the mark of the mental] either as showing the indispensability of intentional idioms and the importance of an autonomous science of intention, or as showing the baselessness of intentional idioms and the emptiness of a science of intention. My attitude, unlike Brentano’s, is the second’ (Quine 1960, 221). Although middle Quine proves hard to pin down on the issue, the anomalous monist reading remains viable even here. Later on in *Word & Object* Quine also asks ‘Is physicalism a repudiation of mental objects after all, or a theory of them? Does it repudiate the mental state of pain or anger in favor of its physical concomitant, or does it identify the mental state with a state of the physical organism ...?’ and concludes that ‘The distinction between an eliminative and an explicative physicalism is unreal’ because it is coherent to take a non-reductive physicalist line according to which mental vocabulary cannot be reduced to, or defined in terms of, antecedently recognised physiology (Quine 1960, 265-6).

One Carnapian line of influence persists through Quine’s middle and later periods. He held on to the position, championed by Carnap in the *Aufbau*, which equates imposing a wholly third-personal form on a theory with scientific objectivity. Carnap argued that even though ‘subjective’ first-personal form may provide us with useful additional expressive power, the ‘objective’ impersonal logical form was always preferable (Carnap 1967 [1928], 25-27). Behaviouristic psychologists like Quine’s friend B.F. Skinner shared this conviction, and put it into practice in their psychological methodology. They substituted methods which relied only on third-personally observable behaviour for methods which relied on first-personal, ‘subjective’ self-reports in the interests of objectivity. Quine was enthusiastic about applying behaviouristic insights to his naturalistically oriented philosophy, embracing, for example, a behaviouristic account of language learning in *Word & Object* (Quine 1960, 80-82). By the time of the 1980 lectures, he had abjured behaviouristic identifications of mental states with behaviour – ‘a mental state itself is not a pattern of

behavior but if anything a state of nerves' (Quine 1980, 5) – but still recommended some behaviouristic methodology. Late Quine continued to insist that all scientific theories, including psychological ones, be regimented into third-personal form. I have previously argued that his canonical language, first-order logic without individual constants, embedded this commitment into his ontological method and eventually his global epistemic structuralism (Janssen-Lauret 2016, 601; Janssen-Lauret 2018b, 246–251). First-personal vocabulary would need to be regimented in the form of constants or logically proper names. As we have seen, Quine's canonical language excludes constants or any form of directly referential vocabulary.

If Quine expressed some kernel of the anomalous monism we now associate with Davidson, he did the same for a different position now associated with another well-known student of his, David Lewis. Lewis is famous for a doctrine he called 'Humean supervenience' (Lewis 1994). Quine had already affirmed the same doctrine seventeen years before: 'where there are no such atomic differences there are no differences in matters of fact—and in particular no mental differences' (Quine 1977, 281). Lewis's appears to have owed his Humeanism in the more general sense to Quine, too (Janssen-Lauret 2017, 254–258). Quine had already endorsed a Humean regularity analysis of all necessity, including logical necessity, in 1963, while Lewis was a newly minted postgraduate student: 'the point is, in all cases, to seek the necessity not in the separate matters of fact but in the connections between them' (Quine 1976 [1963], 70). He had also endorsed the thesis now usually attributed to Lewis under the name 'modal inconstancy', namely the idea that there are no stable essences, that 'the respectable vestige of essentialism [which] consists in picking out those minimum distinctive traits of a chemical, or a species, or whatever, that link it most directly to the central laws of the science' is 'of a piece rather with the chemical or biological theory itself' (Quine 1976 [1972], 52). Both resurface in the 1980 Kant lectures (Quine 1980, 56–57). 'Humean' is the operative word in 'Humean supervenience' to separate the Lewisian line from the Davidsonian. Supervenience without qualification is not merely a Lewisian doctrine; Davidson had defended a version of it even before Quine's version quoted above (Davidson 1970). But according to Davidson's conception of supervenience, it is compatible with anomalous monism. Humean supervenience is a different approach, which unlike anomalous monism does not imply that mental and physical explanations have radically divergent laws or are couched in terms of mutually incommensurate vocabulary. Lewis was not a reductive physicalist, but he proposed a different flavour of physicalism from Davidson and late Quine. Lewis affirmed the thesis of mind-brain identity. He also held that a complete description of the physical facts about a person, if available, would yield an explanation of the mental and psychological facts about her (Lewis 1974, 334).

In his 1980 Kant lectures, Quine expressed a mitigated anomalous monism, Davidsonian in most respects but with one element which looks Lewisian. Most mental states, Quine claimed, are governed by anomalous monism, but not the perceptual ones upon which the naturalist relies to get science off the ground (Quine 1980, 10). Besides Quine's remark discussed above that 'introspection as a source of privileged data' suggests physicalistically testable hypotheses – a claim already a little difficult to square with anomalous monism, according to which mental and physical explanations are incommensurate – we find him

affirming in these lectures that perceptual states admit of some univocally specifiable physicalistic criteria of identity. ‘A supposed mental state or event qualifies as physicalistically genuine if it is specifiable strictly by physiological description, presumably neurological, without recourse to mentalistic terms’, Quine claimed, clarifying that ‘specifiable’ means, not that neurologists can ‘describe the neural mechanism of the mental state’ but ‘merely that there exists, all unwritten and uncontemplated, in the manner of a mathematical sequence of words or a Gödel number, a paragraph of physiological language that specifies this unknown mechanism’ (Quine 1980, 6-7). He then stated, ‘I think the term “perceptual event” is physicalistically meaningful: that the perceptual events can all be assembled under a neurological formulation’ (Quine 1980, 10). His position in the 1980 Kant lectures can be read as an amalgam of Lewis and Davidson, or rather, an amalgam of two Quinean lines of thought later crystallised by Davidson and Lewis.

Ten years later, in *Pursuit of Truth*, Quine had fully allied himself with Davidsonian anomalous monism, stating, ‘there is no mental substance, but there are irreducibly mental ways of grouping physical states and events’ (Quine 1990, 72). By then he explicitly extended the thesis of anomalous monism to perceptions as well as more theoretically involved mental states like beliefs: ‘What are irreducibly mental are ways of grouping them: grouping a lot of respectably physical perceptions as perceptions that *p*, and grouping a lot of respectably physical belief instance as the belief that *p*’ (Quine 1990, 72). Nor did Quine continue to admit the utility of introspection as a source of privileged data. What had changed? My hypothesis is that introspection as a source of privileged data, and the Lewisian remnant of neurologically specifiable perceptual states, fell by the wayside as Quine further developed his mature global epistemic structuralism. Quine’s mature view posits objects qua fillers of given theoretical roles. Our knowledge of them is general knowledge, knowledge that the law-like roles for objects described by our best theories are occupied. For any posit whatsoever, we have reason to believe in it only insofar as we have reason to believe a theory in which it is quantified over under some full description of what work it does for the theory. Any posit is, as Quine puts it in the 1980s lectures, ‘anonymised’, specified only by some structural Ramsey sentence stating its theoretical role (Quine 1980, 68). Perhaps Quine came to see that the neurological Ramsey sentence for a perceptual event, even considered as a merely ideal Gödel number, is very unlikely to capture the folk-psychological characteristics which we employ to describe our own or other people’s states as perceptual mental states. We probably could not infer such psychological properties from the neurological Ramsey sentence, or use it to confirm psychological hypotheses by empirical tests, even in the unlikely event that we did know it. Lewis had insisted that we could (Lewis 1974, 336-7) but, as Davidson pointed out, Lewis did not supply much of an argument for that claim (Davidson 1974, 347). Certainly the Ramsification which results from global epistemic structuralism is very difficult to square with introspective access to our mental states. Our mental states’ defining characteristic is often thought to be simply that we can know them immediately, by direct introspective access. And introspection is taken to be the process whereby we gain direct, immediate knowledge of states private to us, our own psychological states, through a means of privileged access which is available only first-personally. So introspection, or privileged access, is a kind

of knowledge by acquaintance, a direct cognitive link to certain things presented directly to us. The Ramsey-sentence approach which is key to global epistemic structuralism, by contrast, is a paradigm case of knowledge by description; we may allow that we sometimes know our own mental states via a Ramsey sentence (for instance, I may remember that I know something because I re-read a long-forgotten draft paper I wrote), but where we do so our knowledge of them is not introspective. Quine's global epistemic structuralism, the position that we can only have knowledge of the external world insofar as its denizens collectively exhibit the structure of our best theories, leaves no room for introspection as privileged access. Quine was wise to give up on it.

5. A TENSION IN QUINE'S LATE VIEW

Still, the resulting cocktail of anomalous monism, global epistemic structuralism, Quinean ontological commitment and naturalism is also unstable. The late Quine wholeheartedly embraced an anomalous monism which maintained that a single state or event may be described in two mutually irreducible and incommensurate ways, guided by different norms. Suppose a neural event is posited under a Ramsified, anonymised description of its physical role. It also has a mental or psychological role, described by means of irreducibly different vocabulary. We have no directly referential vocabulary by which to identify the state description-independently. It is crucial to global epistemic structuralism that the logical form of our best theories is impersonal, maintaining the Carnapian line that impersonal logical form is closely linked to scientific objectivity. Objects are only known qua satisfiers of their Ramsey sentences. Adherents of global epistemic structuralism are not forced to accept physicalism, but first-personal theoretical statements are ruled out.

According to Quine's global epistemic structuralism, we only ever posit objects qua fillers of given theoretical roles. What happens if psychology supplies theoretical roles in good standing just as much as physics does, but those roles and those of physics are mutually incommensurate? Were that to happen, Quine appears to be thrown back on a version of Carnapian tolerance for the mental and the physical, a version of his 1948 suggestion that 'an attitude of formalism may with equal justice be adopted towards the physical scheme, in turn, by the pure aesthete or phenomenalist' (Quine 1948, 37). In 1948 he had proposed that either the physical scheme or the psychological may be taken as true, and the other merely formal, depending on our allegiance to physicalism or realism about the mental. But Tolerance does not tally well with Quine's approach to ontology. He repudiated an attitude of tolerance in the ontological realm, preferring to think of ontological hypotheses as, like scientific ones, potentially defeasible but answerable: 'Carnap maintains that ontological questions . . . are questions not of fact but of choosing a convenient scheme or framework for science; and with this I agree only if the same be conceded for every scientific hypothesis' (Quine 1951, 72). If mentalistic and physicalistic discourse are simply incommensurate sciences, the possibility arises that they might also have different ontologies.

Since anomalous monism introduces incommensurate descriptions of a given state, one mental or psychological and one physical, it opens the door for two incommensurate criteria of identity, both naturalistically viable, one given by the science of physics, and one by

psychology. Davidson takes his anomalous monism to imply that psychology cannot be a science, because it does not supply strict causal laws (Davidson 1970, 208). But excluding psychology from the realm of science appears at odds with other theoretical commitments of Quine's. He counted on the science of psychology to supply a naturalised epistemology (Quine 1969a). Quinean naturalism, too, militates against it. Naturalism draws the demarcating line between science and non-science based on methodological considerations like explanatory capacity and fecundity, not pre-existing philosophical convictions about a physical or concrete subject matter (Maddy 1997). Naturalists do not let philosophical or intuitive convictions dictate where the scientific method is allowed to lead us. Overturning first philosophy means choosing careful philosophical interpretation of recent scientific results over philosophical dogma. Psychology is a highly predictive, explanatory, and fruitful empirical enterprise. To exclude it from the realm of science sounds suspiciously like first philosophy (Janssen-Lauret 2018b, 240).

The science of psychology grows increasingly resistant to the wholly third-personal logical form Carnap, Quine, and the behaviourists demanded for it. Several of its branches, especially social psychology, make extensive use of first-personal theoretical statements derived from such methods as attitude surveys (Sirken et al. 1999). If psychology is formalised with irreducibly first-personal theoretical statements, the resulting regimented theory will have a richer logical form than Quine and Carnap's preferred impersonal one: a kind of logical form which can distinguish descriptively indiscernible posits (Janssen-Lauret 2016, 599-601). Distinctively first-personal posits, such as some social psychologists take the self to be (Baumeister 2010) are a possibility on such a model (Janssen-Lauret 2018b, 246-249). Such posits fall outside the scope of Quine's global epistemic structuralism. At present, it also remains unclear how they could be identified with physical posits, since all criteria of identity within physics are impersonal, and the proposed additional logical forms of psychology are first-personal (Janssen-Lauret 2018b, 249-2451). Physicalism, the philosophical view that everything is physical, must not itself be turned into a piece of first philosophy invoked to dismiss proposed first-personal methods or posits. Quine knew physicalism had to be defended with arguments; he based his case on the physical aspect of perception plus parsimony (Quine 1980, 1-3). Parsimony is indeed a reasonable argument, but a defeasible one. It does not rule out that at some points in the history of science, the best theories might be those which do not posit only physical entities. To insist independently of the deliverances of science that that is impossible, or that no such theory could be science, would run counter to the renunciation of first philosophy. I prefer to aim for a naturalistic unified science which attempts to include first-personal theoretical sentences in psychology (Janssen-Lauret 2018b, 250).

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