# On Quine

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Language is the most interesting and complex of all artefacts; it is the task of philosophy to understand its nature. It is an astonishing fact that you can glance at a sequence of ink marks on a page and thereby learn something about Julius Caesar or the Andromeda Galaxy. Our astonishment is naturally dimmed by familiarity. But familiarity is not an explanation. How can marks on a page somehow be connected to objects distant in space and time? Language shares this ironic situation with money: that we humans have invented it, and yet we don't understand how it works.

Quine's article "Two Dogmas of Empiricism" gives us an elaborate, ingenious and surprising solution to the problem. Here I aim to give a brief account of Quine's leading thesis, preceded by an introduction to its philosophical context and followed by an account of some of its consequences. The latter will relate not merely to the nature of language but also to that of man and his place in the world.

## *1. Words and their Meanings*

If you asked somebody in the street how language works the answer would run like this. "Language is made up of words. Every word stands for something. When we read or hear a word we think of the thing that the word stands for e.g. when I hear "Julius Caesar" I think of that man. That is how words get their meanings."—But this rather natural account is mistaken on almost every point.

First of all, is it true that every word stands for something? You might be thinking of words like "Julius Caesar"; but language contains more than just proper names. What about words like "if" or "why"—is there anything that they stand for? You can point to Julius Caesar in some sense, I suppose—but you can't in that sense point to if.

Second, it just isn't true that whenever I hear a word I think of the thing, if there is one, that it stands for. If in the everyday flow of conversation I said something like "I'm going to London tomorrow", there is unlikely to be an isolable mental event describable as the having of a thought about London. You might reply that there was, but it went by so quickly that I didn't notice it. But the motivation to make that reply is only this: that the explanation of how "London" means something must have something to do with what I'm thinking about when I say London—what else could explain it? But when an alternative account is available we shall no longer feel a need to say such things.

Third, saying that you "think about" e.g. London doesn't help anyway. What is probably meant is that one forms a mental picture of London. But pictures are a kind of language too, and now the problem arises again: what is the connection between a picture of e.g. Big Ben and the city, London? The problem is the same whether the picture is on paper or "in" the head so saying that the picture is "mental" doesn't help a bit.

## *2. Sentences as the unit of meaning*

How are we to replace this rather naïve and, more importantly, false account? Think of the French word "ne". There is no single English word that translates this. For in the context ne…rien it translates as "nothing" whereas in ne…que it translates as "only". And yet English speakers can still learn the meaning of the word.

**How can this be?**

The answer is obvious. What English speakers learn is primarily a rule for translating whole French sentences containing "ne" into English sentences. It isn't that the word "ne" has meaning on its own but rather that it has meaning in the context of a sentence. Its meaning is exhausted by its contribution to the meaning of sentences containing it.

Suppose we said the same about all words, English and French (or whatever). It isn't that each word stands for its own object: it is rather that words play a role in determining the meanings of sentences, and it is the meaning of sentences that is primary.

This approach solves the first problem; the other two do not yet arise. We are no longer under any compulsion to say that every word stands for something. But we are faced with a new difficulty: what is it for a *sentence* to mean what it does?

## *3. Meaning and Empiricism*

I said at the beginning that language is a human creation. On the one hand this makes it perplexing that there is a general problem about how language works; on the other it provides the wherewithal for its solution. It is we who associate sentences with their meanings, whatever these are; therefore it must be something that we, collectively or individually, *do* with sentences that endows them with the meanings they have. (Just as it is something that we collectively do with pound coins that endows each of them with the value it has.)

Indeed, the naïve account was along these lines, though it spoke of words and not sentences. It said that what we do is associate the words with the objects they denote, the association being effected by one's having thoughts about an object concurrently with hearing a word that stands for it. Historically associated with this account, though detachable from it, was an empiricist theory of mental content which I shall now outline.

Empiricism is essentially the doctrine that the objects of our knowledge and indeed of our thought are simply the objects of our senses. You would never e.g. be able even to think of the colour blue unless you had seen a blue thing. "But surely we can think of things we have never seen e.g. unicorns?" Yes, but you *have* seen the parts of a unicorn: you have seen the horn on a rhinoceros and the rest of it on a horse. Early empiricists e.g. Locke elaborated this picture with a kind of inverted Platonic imagery: the mind is a darkened chamber and the sense-organs windows through which we receive ideas[1]. The image is a natural one, and, if we accept the naïve account, so is the consequence that the meanings of our words – the thoughts we associate with them – are sensory objects.

There are now three doctrines in play: empiricism, the sentential conception of meaning, and the idea that it is something *we* do with linguistic items that gives them meaning. Taken together, these lead naturally to the following picture. A sentence, if it expresses a thought, must be about some situation to which we have sensory access. We endow sentences with meaning by associating them with sensory impressions, or sequences of sensory impressions; the sensory sequences associated with a sentence are those that would bring a speaker to assert, or at least be prepared to assert, the sentence in question. For example, the meaning of the sentence "there is a dog in the room" is that sensory sequence which would bring you or me to say "there is a dog in the room": typically, the experience of seeing the right kind of animal, or hearing a bark etc.

This simple empiricist account is an approximation to the "verification principle", for which A.J. Ayer gave no justification, but from which he drew many entertaining consequences, in his famous book *Language, Truth and Logic*. I have indeed not given an argument for the account: but we can at least see the pressures that make it seem plausible. And the consequences are entertaining indeed. Much of what we say has to be ruled devoid of literal meaning. The statement that God exists, for example, is not false but meaningless, at least if you think that God's existence isn't something we can settle with our sense organs. Statements of mathematics are also meaningless and for the same reason: for we tell that they are true by proof and not by some empirical i.e. sensory method.

Finally, much of traditional metaphysics is meaningless: for what sequence of sensory impressions could tell you e.g. whether the mind was different from the brain, or whether time has a direction? Far from rejecting these consequences Ayer drew them. But they are incredible; so, therefore, is the verificationism from which they follow.

It was Quine who saw that there is something deeply wrong with this picture. In "Two Dogmas of Empiricism" he manages to extricate empiricism, and the empiricist conception of meaning, from all these difficulties.

## *4. The Quine-Duhem Thesis*

Suppose you are doing an experiment to test a certain theory. Suppose e.g. that the theory predicts the following: whenever you drop a ball from a height of 60ft it will hit the ground at a speed of about 40mph. You drop the ball and measure the speed; you find that it is about 25mph. Should you conclude that the theory is mistaken? It is unlikely that you will. What is more likely is that you will think that your measuring instruments were faulty or that you made an error in setting up the experiment or in taking the readings. This is especially so in the case of a well-confirmed theory like Newtonian Mechanics.

We modify our beliefs about the world in response to our observations. But the point I want to make is that for any given observation there is no unique way to modify our beliefs. We are always in the position of having to choose which belief to modify in the face of any given observation. And nothing in the observation itself tells us what modification to make. For example in the case above, nothing in the observation you made tells you whether to reject Newtonian mechanics or the hypothesis that your measuring instruments were working correctly.

You might say that in the example given, we could decide what modifications to make by making further experimental observations e.g. by testing the measuring apparatus in a variety of other situations. But these observations too will yield no unique verdict: for in each case, and whatever the observation, we could retain any hypothesis simply by dropping others.

Suppose, to give another example, that I was determined to cling to the Ptolemaic view of the Solar System viz that the Earth was at the centre and the Sun and all the planets orbited it. Then I could account for apparently contrary observations by elaborating my picture to include epicycles and backward motion. It wasn't that this view of the Universe, which was once popular, was ever refuted directly by observation; it was considerations of simplicity that were decisive in the shift from one world-view to another. This is the point of Quine's remark that "[a]ny statement may be held true come what may, if we make drastic enough adjustments elsewhere in the system."

This point, that we can modify our beliefs in any number of ways in the face of any given sensory input, is known as the Quine-Duhem thesis. In the next section we shall consider its relevance to the problem at hand, namely, the difficulty with the verificationist account considered above.

## *5. Holism*

According to the account in section 3, the meaning of a sentence is that sensory experience or possible sequence of sensory experiences that confirm it. But what the Quine-Duhem thesis tells us is that there is no way to assign such sequences to any particular sentence. For it all depends on what *other* sentences you believe at the time. We said e.g. that the sentence "there is a dog in the room" was to be associated with certain canine appearances and sounds, because those are the experiences that lead me to assent to the sentence "there is a dog in the room". But suppose I also believed that there was a very good dog impersonator in the room. In that case, the sensory experience of hearing a bark would *not* lead me to believe that there was a dog in the room. More generally, for any given experience or sequence of experiences, there is no answer to the question: what sentence will this lead me to assent to? It all depends on what else you believe at the time.

It follows that what was wrong with the verificationist account was its assumption that each sentence has its own sensory meaning, independently of what other sentences are accepted at the time. Instead, we should say that meaning attaches, not to individual sentences, but to the entire body of one's beliefs at any given time ("belief" meaning a sentence that you are disposed to accept.). Saying "What sentence corresponds to such and such sensory experience?" is like saying "In what part of a man's body is he happy?" Meaning is a holistic feature of language, just as happiness is a holistic feature of a man's body.

Thus we have moved beyond the position advocated in section 2. There, it was urged that sentences are the units of meaning: a word has meaning only in the context of a sentence. In the light of the Quine-Duhem we must go one step further. The unit of meaning is the totality of sentences one accepts: only in this context does any

individual sentence have meaning. This position is known as semantic holism and it represents the refined empiricist conception of meaning that we find at the end of "Two Dogmas of Empiricism" (ss. V-VI).

The position can be expressed using Quine's metaphor of the web. A web is secured at its periphery; strain at some point on its edge will lead to an adjustment of tensions within the web, but it isn't a simple matter to say what that distribution is. The edge of the web corresponds to those sentences that have the most direct confrontation with experience; that is, sentences whose method of experiential verification has the smallest dependence on the other beliefs you hold at the time. "There is a dog in the room" is not peripheral, for its method of verification depends on what other beliefs you hold (e.g. that there is no dog-impersonator in the room). "There is a barking noise nearby" is peripheral: its method of sensory verification will be pretty much uniform whatever other beliefs you hold at the time. As we travel deeper and deeper into the web, we find statements that have a more and more tenuous connection with any particular sensory impression. They do, nevertheless, have some empirical meaning; it is just that this meaning is highly sensitive to whatever other beliefs you hold at the time.

Deep within that web are those statements that Ayer thought had no literal meaning: logic, mathematics and philosophy. Statements like "2+2=4" have no direct connection with experience; Quine differs from Ayer, however, by saying that they do have an indirect connection. For in combination with other sentences they will yield empirically testable consequences. For example: if we take the sentences "There are two coins in my left pocket", "There are two coins in my right pocket" and "2+2=4" we get the empirically testable prediction that there are 4 coins in my trousers. If I find that there are in fact three coins, I shall have to drop one of those statements: but nothing in the observation tells me which to drop: it might even be "2+2=4". Thus Quine summarises his position like this:

If this view is right, it is misleading to speak of the empirical content of an individual statement – especially if it be a statement at all remote from the experiential periphery of the field… Any statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system. Even a statement very close to the periphery can be held true in the face of recalcitrant experience by pleading hallucination or by amending certain statements of the kind called logical laws. Conversely, by the same token, no statement is immune to revision. Revision even of the logical law of the excluded middle has been proposed as a means of simplifying quantum mechanics, and what difference is there in principle between such a shift and the shift whereby Kepler superseded Ptolemy or Einstein Newton, or Darwin Aristotle?[2]

We can now see that Quine has extirpated the weakness of verificationism. Remember that the difficulty, as we saw at the end of section 3, was that a large swathe of language would have to be declared literally meaningless, on the grounds that the sentences involved had no sensory meaning. But on Quine's view, *no* sentence has its own sensory meaning: it is only a large body of sentences taken together that we can test empirically. If so, then even "metaphysical" sentences like "God exists" or "Time flows" stand a chance of having sensory meaning: and they will be true if they form part of a body of sentences which, taken together, yield a

sufficiently simple and empirically correct account of things. Thus Quine's view is rather more tolerant than Ayer's is, for it admits meaning to many more sentences, albeit in a more attenuated sense.

By the same token, even those sentences that we hold most dear, such as laws of logic and mathematics, might be given up in the face of sufficiently disturbing sensory inputs. We find this difficult to accept on the grounds that we cannot imagine experiences that would lead us to say e.g. "2+2=5". But those grounds rely on the assumption that the sensory conditions that would lead us to drop a statement are fixed and independent of what else we believe; and, as we have seen from the Quine-Duhem thesis, this simply isn't so. The disturbing idea that logic itself (sentences like "Either the particle has gone through the left slit or it hasn't") might be amended has indeed been borne out in the light of the sensory experiences of scientists investigating the quantum world.[3]

## 6. An Objection

This view of language raises a rather interesting difficulty. I said that according to the Quine-Duhem thesis there is no single way to adjust our beliefs in the light of any given experience: how then do we choose among the options? One desideratum, as illustrated by the Ptolemy-Copernicus example in section 4, is that we choose the adjustments that yield the simplest account. Another is that we choose the adjustments that yield the fewest changes in our beliefs. To illustrate this: suppose I count five coins in my left pocket and five coins in my right pocket, but on emptying my trousers discover that I have only nine coins altogether. You *might* draw the conclusion that 5+5=9; and it is part of Quine's position that there is nothing in principle wrong about this. Why then do we not draw that conclusion, why do we instead infer that I must have miscounted? The reason is essentially one of conservativeness: if I were to believe that 5+7=11 that would require revisions among many of my other beliefs e.g. that I have 5 fingers on each hand and ten altogether. Instead, I make the adjustment in my beliefs that involve no drastic revision elsewhere in the system. This, Quine says, is what contributes to the air of necessity in logic and mathematics: we are reluctant to give them up because to do so would change a huge number of our other beliefs. And that is the only reason. It isn't that they are somehow sewn into the fabric of the universe.

So we have two considerations: simplicity and conservativeness. They are however stated in a rather imprecise way: how are we to measure the "simplicity" of a theory; how are we to determine the number and relative importance of belief changes attendant upon a given belief change? The difficulty is that, on Quine's own principles, it appears that we cannot precisely state, in any given language, the rules for reassigning one's beliefs among the sentences of that language.

For suppose that we could. In that case, the principles would themselves be in the form of sentences, forming part of the total web of our beliefs: these sentences could also, in principle, be given up—in response to the very considerations of simplicity and conservativeness that they themselves codify. But if we can give them up, then they cannot describe our belief changing behaviour, for to give them up would be no longer to adhere to them. Thus it seems that on the Quinean picture, humans are incapable of stating the most basic laws governing their own policies of belief change.

As Dummett says—we are part of the mechanism and cannot have a clear understanding of it as workings. The metaphor of the web ought to be replaced with something like that of a black hole, for your own web of beliefs is dark at the centre.

That Quine's views have this consequence might be thought to constitute an objection to them, for together with his holism it completes a rather depressing view of humanity. Science, far from providing an insightful depiction of the world, is a mere calculus for the prediction and manipulation of experience, and we who operate the calculus are in principle unable to achieve a full understanding of how we do so.

But that a view is depressing is in no way an objection to it. And even if Quine's views ultimately prove mistaken, this conception of language, and of ourselves, at least serves the dialectical purpose of showing an alternative to another more ancient picture. —That according to which we men are created in the image of God, and like God, can achieve insight into the operation of reality through the operation of reason. For it is salutary to be reminded that we are more like animals than was once thought. And it is liberating to think that scientific "insight" into the essence of the world is not just wholly unachieved but in fact chimerical.

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[1] Locke, *Essay Concerning Human Understanding* II, xi, 17; the cave image appears in Plato, *Republic* vii.
[2] "Two Dogmas of Empiricism", in Hart, ed., *The Philosophy of Mathematics, Oxford:* Oxford University Press 1996: p. 48.
[3] For an interesting but rather technical discussion of this point see M. A. E. Dummett, "Is Logic Empirical?" in his *Truth and Other Enigmas, London:* Duckworth 1978: pp. 269-289.