

# Translating Observation Sentences

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## **Abstract**

I argue that *pace* Quine, indeterminacy of translation affects observation sentences. I illustrate this indeterminacy with examples and show how it is tied to the indeterminacy affecting the analytical status of observation categoricals. I propose my own construal of the thesis of indeterminacy of translation, according to which indeterminacy is based on the inextricability of meaning and belief. I explain why this construal should be favored over Quine's.

## **Keywords**

analyticity; indeterminacy of translation; meaning; observation sentences; Quine

## **1 Introduction**

Observation sentences have a special status in Quine's semantic framework. He often remarks that they have determinate meanings and are thus immune to the indeterminacy that affects the translation of theoretical sentences. In this essay, I will challenge Quine's contention and argue that observation sentences lack determinate meanings. I will explain how this indeterminacy relates to the indeterminacy affecting the analytic status of observation categoricals. My argument rests of a particular construal of the thesis of indeterminacy of translation. One of my hopes is that my proposed construal of indeterminacy will demystify the thesis and make it more attractive than is commonly believed.

## 2 Observation sentences

Quine's views about meaning contrast what we may call the *traditionalist outlook*. According to traditionalists, the notion of meaning is explanatorily useful and can perform important philosophical tasks. For instance, meaning is thought to explain why some sentences, analytic ones, are true solely in virtue of what they mean. Meaning is also invoked to account for *a priori* knowledge and metaphysical necessity. Although he strongly objects to the traditionalist outlook, Quine claims to have no disagreement with traditionalists regarding observation sentences: these, according to him, have determinate meanings, which he equates with their stimulus meanings [1960: 68, 76, 1995: 81]. For this reason, Quine writes, observation sentences are "free of the indeterminacies that beset translation of theoretical sentences" [1993: 111; see also 1987: 6].

The stimulus meaning of a sentence is the ordered pair of its affirmative stimulus meaning and negative stimulus meaning. The affirmative stimulus meaning of a sentence for a speaker is the set of stimulations that would prompt her to accept the sentence. The negative stimulus meaning of a sentence for a speaker is the set of stimulations that would prompt her to reject the sentence. Quine distinguishes between *occasion* sentences and *standing* sentences [1960: 35–6]. An occasion sentence is a sentence a speaker is disposed to assent to or dissent from under some stimulations but not under all. 'This is red', 'Here's a bachelor' and 'There's a rabbit' are occasion sentences. A standing sentence is one that a speaker is disposed to assent to under all stimulations (or dissent from under all stimulations). Standing sentences include 'Rabbits are animals' and 'Bachelors are unmarried'.

Observation sentences form a special subset of occasion sentences. An observation sentence is a sentence whose stimulus meaning is (approximately) the same for all speakers of the community [1960: 42–4]. As Quine emphasizes, what counts as an observation sentence is relative to a community, and in cases involving "more recondite reports" [1992: 6] the relevant community may consist solely of scientific experts. 'This is red' is observational, since its stimulus meaning is roughly the same for everyone. 'Here's a bachelor' is not, since its stimulus meaning varies considerably from one speaker to another. Assent to this sentence depends on what Quine calls *collateral information*, in this case, the speaker's knowledge of the marital status of the person she encounters. For this reason, the stimulus meaning of 'Here's a bachelor' cannot be treated as its meaning [1960: 42]. Since the influence of collateral information is minimal with respect to observation sentences, "their stimulus meanings may without fear of contradiction be said to do full justice to their

meanings” [1960: 38].

Three clarificatory remarks are worth making. First, as Quine stresses, the notion of stimulus meaning is an idealization. We’re assuming that the signs for assent and dissent can be identified independently of a translation manual. As Quine grants, even these signs may be subject to indeterminacy [1975: 312]. Moreover, since speakers are sometimes insincere, or occasionally fail to pay sufficient attention to their surroundings, some of their responses should be disregarded [1960: 41]. The task of figuring out which responses should be included in a speaker’s stimulus meanings is far from straightforward. However, given my purposes here, I will set aside this problem and assume, like Quine typically does, that the stimulus meaning of a sentence for a speaker is well defined. (However, in section 5.1, I will distinguish between *unhesitating* and *tentative* assent.)

My second remark concerns the notion of stimulation. Quine [1960: 31] treats stimulations as physical events just outside the sensory organs. This implies that stimulations can be shared by different individuals. Given that, we may say that observation sentences have the same stimulus meaning for every speaker of the community. However, Quine later redefines ‘stimulations’ as patterns of firings of sensory receptors [1992: 2; 1995: 17]. Since different people don’t share receptors, they cannot be said to share stimulations either. Hence, an observation sentence cannot have the same stimulus meaning for different speakers.<sup>1</sup> Given the purposes of this essay, we may set aside the difficulties raised by this issue. In practice, Quine suggests, instead of relying on stimulus meaning, a translator would try to empathetically project herself into the speaker’s position and appreciate the situation from their perspective [1992: 61–7]. A sentence counts as observational for a whole community of speakers if all of them would agree about whether to accept or reject it in roughly the same observational circumstances [1992: 6, 1995: 44–5]. For convenience, I will sometimes talk of sentences having the same stimulus meaning for different speakers.

My third point concerns Quine’s distinction between taking an observation sentence *holophrastically* and taking it *analytically* (or *piecemeal*). Holophrastically, Quine writes, “observation sentences are anchored to sensory neural intake irrespective of their theoretical subject matter” [1993: 110; see also 1992: 7–8]. This is why he holds that they are “free of the indeterminacies that beset translation of theoretical sentences” [1993: 112]. By contrast, taken analytically, observation sentences are theory-laden: “Their terms recur in the theory to denote objects the very conception of which is pure theory” [1993: 110]. Because of

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<sup>1</sup> See Kemp [2022] for a useful discussion.

that, Quine holds that the translation of the words occurring in an observation sentence is indeterminate: more specifically, their reference is indeterminate. Quine's much-discussed example of 'gavagai' illustrates the indeterminacy of translation not of sentences but of terms [1987: 8]. Suppose that the observation sentence 'Gavagai' in the native language has the same stimulus meaning as our sentence 'Rabbit'. From this, we may conclude that 'Rabbit' is an adequate translation of 'Gavagai'. But this doesn't determine the reference of the term 'gavagai', since this term could still be translated by 'undetached rabbit part', 'temporal segment of rabbit', or 'the mereological sum of all rabbits' [1960: 51–4]. These alternative translations of 'gavagai' would all preserve the stimulus meaning of 'Gavagai', Quine notes. In this essay, I will be concerned not with the indeterminacy of reference, but with the indeterminacy of translation. And as Quine makes clear, his "thesis of indeterminacy of translation applies first and foremost to sentences, holophrastically conceived" [1987: 9].

### 3 Observation categoricals

In this section, I will examine Quine's notion of *observation categorical*. As I will show in the next section, the indeterminacy that affects observation sentences is tied to an indeterminacy regarding observation categoricals. Observation categoricals are sentences of the form 'Whenever  $S_1$ ,  $S_2$ ', where ' $S_1$ ' and ' $S_2$ ' are both observation sentences. Here's one of Quine's examples [1992: 10]:

- (1) When a willow grows at the water's edge, it leans over the water.

Quine calls (1) a *focal* observation categorical. Here, the pronoun 'it' is an anaphora whose antecedent is 'a willow'. We can reformulate (1) as 'Every willow that grows at the water's edge leans over the water'. An observation categorical may also be *free*, as in 'Whenever the sun comes up, the birds sing'.

Quine holds that the empirical content of a scientific theory consists in the observation categoricals it implies:

[(1)] suggests, in turn, a theoretical hypothesis: 'A willow root nourishes mainly its own side of the tree'. Taken together with prior bits of theory, such as that roots get more nourishment from wetter ground, and that nourishment promotes the growth of branches, the hypothesis is found to imply the observation categorical. [1992: 11]

However, Quine points out, not all observation categoricals can serve as tests for our

theories. Traditionalists would insist that a categorical such as ‘Whenever there’s a robin, it’s a bird’ is not part of the empirical content of science. Intuitively, this categorical is *analytic*. Quine acknowledges this intuition and proposes the following criterion: “Call an observation categorical analytic for a given speaker if, as in ‘Robins are birds’, the affirmative stimulus meaning for him of the one component is included in that of the other. Otherwise *synthetic*” [1992: 16]. The empirical content of a theory, Quine contends, is the set of all the synthetic observation categoricals it implies. He further claims that translation “does enjoy reasonable determinacy up through observation categoricals and into the logical connectives” [1992: 53].

To assess Quine’s proposal, we need to determine what stimulations are admissible in establishing the affirmative stimulus meaning of a sentence. Suppose first that the only admissible stimulations are those that would be generated by circumstances compatible with our best scientific theory. According to this proposal, ‘All ravens are birds’ would be analytic, because the affirmative stimulus meaning of ‘There’s a raven’ would be included in that of ‘There’s a bird’. The problem is that if we assume that our current science implies that all ravens are black and that there’s no smoke without fire, then ‘All ravens are black’ and ‘Whenever there’s smoke, there’s fire’ would also count as analytic.<sup>2</sup> In general, if our theory implies that whenever  $S_1, S_2$ , then the affirmative stimulus meaning of ‘ $S_1$ ’ for us is included in that of ‘ $S_1$ ’, in which case ‘Whenever  $S_1, S_2$ ’ counts as analytic according to the current proposal. If, on the other hand, the affirmative stimulus meaning of ‘ $S_1$ ’ for us is not included in that of ‘ $S_2$ ’, then the proposal entails that ‘Whenever  $S_1, S_2$ ’ is synthetic; however, in this case, our theory would deem the categorical ‘Whenever  $S_1, S_2$ ’ false, since it would imply that there are circumstances in which ‘ $S_1$ ’ is true but ‘ $S_2$ ’ is not. This proposal thus makes the notion of empirical content empty, since all observation categoricals implied by our theory would count as analytic.

These considerations suggest that in establishing the affirmative stimulus meaning of a sentence, we should admit a wider range of stimulations. In other words, we should admit stimulations generated by circumstances that would not be allowed, given our best

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<sup>2</sup> If a speaker accepts ‘When there’s smoke, there’s fire’, then she would assent to ‘There’s fire’ in the presence of smoke, even if no fire is visible. Hence, for this speaker the stimulations generated merely by smoke would be included in the affirmative stimulus meaning of ‘There’s fire’.

scientific theory. Such circumstances would include white ravens and smoke without fire.<sup>3</sup> According to this proposal, even though we accept ‘All ravens are black’, the affirmative stimulus meaning of ‘There’s a raven’ is *not* included in that of ‘There’s a black thing’. This is because some admissible stimulation would prompt assent to ‘There’s a raven’ and dissent from ‘There’s a black thing’. Similarly, although we accept ‘When there’s smoke, there’s fire’, the affirmative stimulus meaning of ‘There’s smoke’ is not included in that of ‘There’s fire’. Hence, according to this proposal, both ‘All ravens are black’ and ‘When there’s smoke, there’s fire’ would count as synthetic. The problem with is that there may well be stimulations that would prompt us to assent to ‘There’s a raven’ and dissent from ‘There’s a bird’, say, if we discovered that the creatures that prompt assent to ‘Raven’ are actually robots. (I will examine a scenario of this kind in section 5.3.) Given that, the proposal implies that ‘All ravens are birds’ is synthetic. The problem generalizes: for *any* intuitively analytic categorical ‘Whenever  $S_1$ ,  $S_2$ ’, there are stimulations that would lead speakers to accept ‘ $S_1$ ’ and reject ‘ $S_2$ ’. We thus have a dilemma: depending on what stimulations we deem admissible, then either all observation categoricals count as analytic or all count as synthetic.

Traditionalists may protest that given that ‘All ravens are birds’ is analytic, stimulations that would prompt us to accept ‘There’s a raven’ and reject ‘There’s a bird’ must involve a change in meaning. The problem is that we lack a criterion that would distinguish between meaning changes and changes in factual belief. Note, though, that these considerations do not support the view that ‘All ravens are birds’ is synthetic. Such a view presupposes that no change in meaning would occur if speakers were to reject ‘All ravens are birds’, and thus rests on the same problematic assumption as traditionalism does. Both views assume that there is a precise, principled criterion that determines when a change in meaning occurs. I will revisit this issue at the end of section 5.

## 4 The meanings of observation sentences

In the previous section, I criticized Quine’s attempt to distinguish between analytic and synthetic observation categoricals by appealing to stimulus meaning. His contention that

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<sup>3</sup> Quine appears to favor this more inclusive option, since he writes that “there are stimulation patterns that would prompt assent to ‘Unicorn?’” [1960: 31]. In practice, to generate such stimulations, the linguist could make “papier mâché counterfeits” [1960: 37], paint a raven white, use dry ice to simulate smoke, and so on.

the stimulus meaning of an observation sentence does “full justice” to its meaning [1960: 38] is problematic for the same reason. Let me illustrate this point by means of two examples.

Consider ‘Rabbits are animals’, an observation categorical traditionalists would deem analytic. Is this position empirically supported? Suppose all speakers would accept ‘Rabbits are animals’, and in the presence of a rabbit, they would accept ‘There’s an animal’. Two explanations of these verdicts are possible. The first holds that ‘Rabbits are animals’ is analytic: given its meaning, ‘There’s an animal’ is true when a rabbit is present. The second treats ‘Rabbits are animals’ as synthetic: speakers’ assent to ‘There’s an animal’ in the presence of a rabbit depends on the collateral information that rabbits are animals. Since it is indeterminate whether ‘All rabbits are animals’ is analytic, there’s no fact of the matter about which explanation is correct. When speakers assent to ‘There’s an animal’ in the presence of a rabbit, it’s indeterminate whether their assent depends on collateral information. Hence, the meaning of ‘There’s an animal’ is indeterminate.

The same considerations would apply to observation categoricals traditionalists would deem synthetic, such as ‘All rabbits are food’. Suppose all speakers would accept this categorical, and in the presence of a rabbit, they would accept ‘There’s food’. This could be because ‘All rabbits are food’ is analytic: given its meaning, ‘There’s food’ is true when a rabbit is present. However, it could also be that ‘All rabbits are food’ is synthetic: speakers accept ‘There’s food’ in the presence of a rabbit because of their factual belief that rabbits are food. If the analytic status of ‘All rabbits are food’ is indeterminate, then so is the meaning of ‘There’s food’.

## 5 Synthetic observation categoricals

Despite the negative assessments of the previous sections, the situation isn’t hopeless. In my view, Quine has the resources to identify the synthetic character of *some* observation categoricals. In this section, I will consider three criteria he could invoke.

### 5.1 Tentative assent

Speakers don’t *unhesitatingly* assent to every observation categorical they support. Scientists understand that not every empirical implication of their theories has been thoroughly verified. They grant that some of their theoretical claims or auxiliary hypotheses may be wrong. For this reason, they may put forward an observation categorical merely as a conjecture rather than a commitment they firmly embrace. A scientist may thus *tentatively*

assent to, or even suspend judgment about, some of the observation categoricals entailed by her theory. This suggests a way to identify synthetic observation categoricals. An observation categorical is synthetic for a given speaker if she would tentatively assent to it or suspend judgment about it.

This proposal allows us to identify a good number of synthetic observation categoricals. It's worth noting its limits, though. First, as traditionalists would grant, scientists may unhesitatingly assent to some synthetic observation categoricals. Scientists would accept 'All rabbits weigh less than 500 pounds', 'All rabbits are unable to fly' and 'All rabbits are made up of atoms' as readily as they do 'All rabbits are animals'. Second, traditionalists would also concede that sometimes, speakers may not unhesitatingly assent to an analytic sentence. This can occur when a speaker does not fully master all the words the sentence contains. A speaker who has a fairly good understanding of the words 'nut' and 'fruit' may be unsure about the categorical 'All nuts are fruits'. This shouldn't necessarily be interpreted as entailing that the categorical is synthetic. Moreover, some truths, such as mathematical theorems, are too complex to elicit immediate assent. Such truths shouldn't automatically be classified as synthetic. Nevertheless, we can treat the fact that a speaker's assent to 'Whenever  $S_1$ ,  $S_2$ ' is tentative as *prima facie* evidence that the categorical is synthetic for her.

## 5.2 Publicity

Meaning, it's often claimed, is *public*: the speakers of a community tend to mean the same thing by a given sentence, even when they don't use the sentence exactly in the same way. The publicity of meaning could be invoked to reduce indeterminacy: comparing a speaker's verbal dispositions to those of the other speakers of her community can help separate meaning from collateral information. For example, the circumstances that would prompt assent to 'Here's a bachelor' vary wildly from one speaker to another. As we saw in section 2, Quine holds that the influence of collateral information in this case makes it highly implausible to equate the sentence's stimulus meaning to its meaning [1960: 42].

Here, Quine is invoking what we may call a *publicity constraint* on meaning: variations in verdicts about a sentence among the members of a community should, as much as possible, be attributed to differences in collateral information rather than differences in meaning. This constraint is based on the plausible assumption that members of the community speak the same language, and thus mean the same things by the same words.

The publicity constraint allows us to detect the influence of collateral information, at

least in some cases: an observation categorical should be deemed synthetic if not every member of the community would unhesitatingly assent to it. This is very plausibly the case with respect to the categorical ‘When a willow grows at the water’s edge, it leans over the water’: while some experts may unhesitatingly assent to this categorical, not every English speaker would. This is because experts have access to collateral information that not everyone is aware of. These considerations assume a publicity constraint: the variation in speakers’ speech dispositions regarding the categorical is due not to a variation in meaning but to the fact that some collateral information isn’t universally shared.

The publicity constraint allows us to identify synthetic observation categoricals and reduce the indeterminacy in the meaning of some observation sentences. However, just like the criterion discussed in 5.1, this criterion cannot determinately identify all synthetic observation categoricals. According to traditionalists, some synthetic observation categoricals may be unhesitatingly accepted by all, because all have access to the same relevant collateral information. Quine [1960: 37] imagines a scenario in which there exists a local rabbit-fly that native speakers can all recognize rather easily by its appearance. The speakers would all assent to ‘There’s a rabbit’ when noticing this rabbit-fly, even though no rabbit can be directly perceived. In this scenario, all the speakers of the community unhesitatingly accept ‘Whenever there’s a rabbit-fly, there’s a rabbit’. We can imagine less fanciful cases. For example, categoricals such as ‘All rabbits weigh less than 500 pounds’, ‘All rabbits are unable to fly’ and ‘All rabbits are made up of atoms’ would likely be universally accepted. The fact that a categorical is unhesitatingly accepted by all doesn’t guarantee that it’s analytic.

We should also allow for the possibility that in some cases, some speakers’ responses reflect a less than perfect understanding of what the sentence means. Many speakers aren’t able to tell yams from sweet potatoes, or crocodiles from alligators. One way the linguist can address this problem is by taking into consideration only the speech dispositions of experts. These speakers can be identified by the fact that others tend to defer to them, at least with respect to the use of some words. Although sensible, this move won’t eliminate the problem completely, since linguistic competence isn’t always separable from scientific expertise: experts may all accept a categorical simply because they’re clearer about what its words mean, or they may accept it because they all share a relevant piece of factual knowledge.

### 5.3 Stability

Meaning is *stable*: what a person means by a word or sentence doesn't constantly change. By contrast, a person's beliefs about the world or her surroundings are regularly updated. Given that, a *stability constraint* on meaning is plausible: variations in a speaker's verdicts about a sentence should, as much as possible, be attributed to differences in collateral information rather than differences in meaning.

Suppose a speaker goes from dissenting from 'It's raining' to assenting to this sentence every time she witnesses a sudden downpour. According to the stability constraint, we should hold that this change of verdict is due to a change in factual belief rather than a change in meaning. Another type of case is worth considering. Sometimes, the very same pattern of stimulations that in the past would have prompted a speaker to assent to a sentence no longer does. In other words, the stimulus meaning of a sentence for a speaker sometimes changes. According to the stability constraint, we should attribute this to a change in factual belief rather than to a change in meaning. For example, if a speaker learns about the marital status of a male acquaintance, the stimulus meaning of 'Here's a bachelor' for her will change, but this doesn't represent a change of meaning. Or suppose that after seeing a black swan, a speaker now rejects 'All swans are white', an observation categorical she used to accept. According to the stability constraint, this change is due not to a change in meaning, but to the acquisition of collateral information.

These considerations suggest another way of identifying synthetic observation categoricals. When a speaker changes her verdict regarding an observation categorical, this is because she has acquired new collateral information, and not because she attaches a new meaning to the categorical. Synthetic observation categoricals are thus categoricals a speaker or group of speakers would be disposed to change their mind about in light of new evidence. This is just another way of saying that synthetic categoricals are *a posteriori*. This criterion, like the ones proposed in 5.1 and 5.2, allows us to identify synthetic observation categoricals and beef up the notion of empirical content.

Unfortunately, like our other criteria, this one isn't always conclusive. As traditionalists would grant, sometimes exposition to new evidence may lead to a change in meaning. In some cases, it may be indeterminate whether a change of meaning actually occurs. (Here, I'm echoing a point I made at the end of section 3.) An example imagined by Hilary Putnam [1962] illustrates this point. Suppose that after dissecting a dead cat, a person discovers that it's not a living being but a robot. After further investigation, she comes to realize that all the creatures she calls 'cats' are actually robots built by some alien creatures. How

would she modify her speech dispositions regarding ‘That’s a cat’ and ‘That’s an animal’ following this discovery? Perhaps she would still accept ‘Cat’ in the presence of robot-cats, but would no longer accept ‘All cats are animals’. She would instead accept ‘All cats are robots’. However, Putnam writes, “Someone else may feel that the correct thing is to say is, ‘It’s turned out that there aren’t and never were any cats’. Someone else may feel that the correct thing to say is, ‘It’s turned out that some animals are robots’”. [1962: 661]. As Putnam emphasizes,

What is not clear is which of the available decisions should be described as the decision to keep the meaning of either word (‘cat’ or ‘animal’) unchanged, and which decision should be described as the decision to change the meaning. I agree with Donnellan that this question has no clear sense [1962: 660–1].<sup>4</sup>

Despite his contention that observation sentences have determinate meanings, I don’t see how Quine can disagree with Putnam here.

Traditionalists would grant that the stability constraint should sometimes be overridden. But the Putnam-scenario illustrates the fact that sometimes, it’s indeterminate whether stability should prevail or be overridden. In this case, the speakers’ evolving speech dispositions don’t settle what the sentences ‘There’s a cat’, ‘There’s an animal’ and ‘All cats are animals’ mean for them. Suppose that following the discovery, all the speakers now reject the categorical ‘All cats are animals’. According to the stability constraint, this new verdict doesn’t involve any change in meaning. ‘All cats are animals’ is synthetic and as such, it’s subject to refutation by evidence. The speakers have acquired a key piece of collateral information that has led them to hold that after all, cats aren’t animals. However, another explanation is plausible. We could say that the discovery has led to a change in meaning. Prior to it, the categorical ‘All cats are animals’ was an analytic truth. Because of that, a rejection of the categorical must involve a change in meaning. In this case, the meaning of ‘cat’ has changed: ‘Here’s a cat’ no longer semantically entails ‘Here’s an animal’. Does the revision in the speakers’ speech dispositions result from an empirical refutation of the categorical or from a change in its meaning? To answer this question, we would need to establish whether the categorical is analytic or synthetic. Putnam’s assessment is that this question has no determinate answer.

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<sup>4</sup> Donnellan [1962] reaches a similar conclusion regarding the sentence ‘Whales are mammals’. See Harman [1967] for similar examples.

Quine famously claims that “no statement is immune to revision” [1951: 43]. From this claim, it would be wrong to infer that for Quine, every sentence is synthetic. The lesson we should draw from the Putnam-scenario is not that ‘All cats are animals’ is synthetic. Such a position presupposes that the first of the two explanations presented in the previous paragraph is the correct one. Hence, it presupposes that the meanings the relevant words are specific enough to entail that ‘All cats are animals’ is true in virtue of meaning together with worldly facts rather than true in virtue of meaning alone. This is contrary to Quine’s oft-repeated thesis that there is no fact of the matter as to whether alleged analytic sentences (such as definitions and laws of logic) are true solely in virtue of meaning or owe their truth to features of the world [1951: 34, 1976: 113, 1986: 96].<sup>5</sup> One of my goals in this essay is to show that this thesis also applies to alleged analytic observation categoricals.

## 6 Taking stock

In the first part of this essay, I showed that Quine’s proposed criterion to distinguish between analytic and synthetic observation categorical fails. In section 5, I presented three criteria Quineans could invoke to identify synthetic observation categoricals. This means that with respect to many observation categoricals, Quine can coherently hold that there’s a fact of the matter about their being synthetic.

What about the other categoricals, those that almost everyone would unhesitatingly and lastingly accept? As I pointed out, some of these are intuitively analytic (‘All cats are animals’, ‘All willows are trees’) and some aren’t (‘All rabbits are unable to fly’ and ‘All rabbits are made up of atoms’). And as I argued, it’s indeterminate whether these categoricals are analytic or synthetic.

But recall the point made in sections 4 and 5.3 about how the indeterminacy regarding the analytic status of ‘Whenever  $S_1$ ,  $S_2$ ’ is tied to the indeterminacy regarding the meanings of ‘ $S_1$ ’ and ‘ $S_2$ ’. Any observation sentence, it seems, could figure in an intuitively analytic categorical. I thus conclude that no observation sentence has a determinate meaning.

Some readers may complaint that my claims about the indeterminacy affecting observation sentences is old news, since, as Quine often remarks, observationality is a matter of degree [1960: 38, 1992: 3, 1993: 108–9]. This complaint misconstrues the argument of

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<sup>5</sup> Quine’s rejection of analyticity should be understood not as the claim that no sentence is analytic, but as the claim that no sentence is determinately analytic. For more on this issue, see Montminy [forthcoming].

this essay. It's crucial to distinguish the factors which, Quine claims, affect observability from the source of indeterminacy I have identified. First, lighting conditions, lack of attentiveness and so on may affect a speaker's verdict on a given occasion, even with respect to paradigmatic observation sentences like 'Red'. I mentioned this phenomenon in section 2 and proposed to set it aside for simplicity's sake. Second, Quine writes that a speaker may at least temporarily withhold judgment when encountering an unexpected situation: "What had passed for an observation sentence, say 'That's a swan', may to the subject's own surprise leave him undecided when he encounters a black specimen" [1992: 3]. In section 5.1, I pointed out that a speaker's tentative or hesitant verdicts may be used to identify synthetic categoricals. Third, Quine remarks that "occasion sentences vary in degree of observability" [1993: 109], because relevant collateral information may be more or less shared among speakers. I gave a few illustrations of this point when I discussed the publicity of meaning in section 5.2.

My main point in this essay is different: although the criteria I presented can sometimes be invoked to conclude that a categorical is synthetic, they can *never* imply that a categorical is analytic. Therefore, no categorical is determinately analytic. Consider a categorical that everyone unhesitatingly accepts "no matter what". This could be because the categorical is true in virtue of meaning. But this consensus could also be due to some widely shared collateral information. The constraints I presented in section 5 don't settle which of these two interpretations is the correct one. Hence, every observation sentence that appears in an observation categorical that is unhesitatingly accepted by all lacks a determinate meaning.

Here's a way to describe this indeterminacy. Suppose 'Whenever  $S_1, S_2$ ' is an observation categorical that everyone unhesitatingly accepts "no matter what". Let's focus on ' $S_2$ ', the observation sentence in the consequent of this categorical. Suppose that  $A$  is the set of stimulations that would prompt unhesitating assent to the observation sentence ' $S_2$ ' by every speaker of a community. As I mentioned earlier, some speakers may suspend judgment about ' $S_2$ ', or even dissent from ' $S_2$ ', when prompted by some unusual stimulations. Hence, the degree of observability of ' $S_2$ ' may be more or less high. However, let's set aside these unusual occasions and focus solely on circumstances in which there would be strong consensus among speakers. Now, suppose that  $A$  is the union of two non-empty and non-intersecting subsets  $M$  and  $C$ . To make things vivid, we may imagine that ' $S_2$ ' is 'There's a fire',  $M$  are stimulations that would originate from a fire, while  $C$  are stimulations that would originate from smoke. Or ' $S_2$ ' is 'There's a raven',  $M$  are stimulations that would originate from a black raven, while  $C$  are stimulations that would originate from a white raven. Do speakers accept ' $S_2$ ' when prompted by stimulations in  $C$  thanks to some widely

shared collateral information, or is their assent simply based on what 'S<sub>2</sub>' means for them? The answer to this question is indeterminate. Hence, the meaning of 'S<sub>2</sub>' is indeterminate. The point generalizes: there's an indefinite number of ways we may divide the set *A* into two (non-empty and non-intersecting) subsets *M* and *C*. This is why the stimulus meaning of the observation sentence 'S<sub>2</sub>' cannot be equated with its meaning.<sup>6</sup>

Let's return to the observation categorical 'Whenever S<sub>1</sub>, S<sub>2</sub>' that everyone would unhesitatingly accept. Suppose *C* is the set of stimulations that would prompt unhesitating assent to 'S<sub>1</sub>' by everyone. But recall that stimulations in *C* would also prompt unhesitating assent to 'S<sub>2</sub>' by everyone. Holding that no collateral information plays a role in speakers' acceptance of 'S<sub>2</sub>' when prompted by stimulations in *C* is equivalent to holding that 'Whenever S<sub>1</sub>, S<sub>2</sub>' is analytic. If there's no basis for one of these two claims, then there's no basis for the other either.

## 7 Indeterminacy of translation

It's now time to examine what my argument implies regarding Quine's thesis of indeterminacy of translation. In my view, this thesis is best construed as a response to traditionalism about meaning. It's a way of expressing the view that traditionalists' claims about meaning and analyticity have no empirical support. The aim of translation, according to traditionalists, is to preserve meaning. However, Quine argues, meaning, as construed by traditionalists, is not determined. But if meaning is indeterminate, then so is translation. In this essay, I have extended this position to observation sentences: even such sentences lack determinate meanings. Hence, if observation sentences lack determinate meanings, then their translation is indeterminate. Here's my proposed statement of the indeterminacy of translation thesis (hereafter, *IT*):

*IT*. Between a foreign language *L* and ours, there are (at least) two manuals of translation that are empirically adequate but would respectively translate sentences of *L* into sentences of our language that we would not deem intuitively synonymous.

To be empirically adequate a manual must respect the speech dispositions of the speakers of *L* (this includes respecting the three criteria discussed in section 5). As I wrote at the

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<sup>6</sup> Quine [1960: 34], it's worth noting, makes a very similar point.

beginning of the essay, traditionalists take the fact that there's a reasonably strong intuition that two sentences are synonymous to entail that these sentences actually have the same meaning. Hence, according to traditionalists, if sentences ' $S_1$ ' and ' $S_2$ ' of our language are not intuitively synonymous, then it cannot be the case that a sentence of  $L$  may be correctly translated by either ' $S_1$ ' or ' $S_2$ '. *IT* implies that this traditionalist position is not empirically supported.

I will now illustrate *IT* with an example inspired by the Putnam-scenario. Suppose  $L$  is a dialect of English spoken by a particular community of speakers, whose speech dispositions are very much like those of ordinary English speakers. Speakers of  $L$  would all accept '**There's a cat**' and '**There's an animal**' in the presence of a cat, and they would all unhesitatingly accept the categorical '**All cats are animals**' (I'm using bold font for words and sentences of  $L$ ). However, speakers of  $L$  are such that if they found themselves in a Putnam-scenario, they would still assent to '**There's a cat**' in the presence of robot-cats. However, they would reject '**There's an animal**' in these circumstances, and would thus also reject '**All cats are animals**'.<sup>7</sup> As Putnam points out, it's indeterminate whether the meaning of '**There's a cat**' would change if this scenario were to occur. This implies some indeterminacy in the meaning of '**There's a cat**': the meaning of '**There's a cat**' doesn't settle whether this sentence would be true in circumstances where a robot-cat is present.

How should we translate  $L$  into English? (To be clear, the question is how to translate  $L$  given the way it's currently spoken, or more carefully, given the totality of its speakers' current speech dispositions. The question isn't how to translate  $L$  if its speakers found themselves in the Putnam-scenario). One straightforward option, manual  $M_1$ , is to translate '**There's a cat**' by 'There's a cat', '**There's an animal**' by 'There's an animal', and '**All cats are animals**' by 'All cats are animals'. Traditionalists favoring  $M_1$  would hold that given its current meaning, '**There's a cat**' cannot be correctly accepted in the presence of robot-cats. Hence, they would add, the meaning of '**There's a cat**' would change if the Putnam-scenario were actualized and speakers started to accept '**There's a cat**' in the presence of robot-cats. Traditionalists favoring  $M_1$  would also hold that '**All cats are animals**' is analytic and can thus not be rejected without a change in meaning of the kind that would occur if the Putnam-scenario were actualized.

An alternative option, manual  $M_2$ , is to translate '**There's a cat**' by 'There's a cat or

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<sup>7</sup> As suggested in section 3, linguists could discover these dispositions by means of some elaborate trickery involving a team of crafty robotics engineers.

robot-cat', '**There's an animal**' by 'There's an animal', and '**All cats are animals**' by 'All cats or robot-cats are animals'. (Here, I'm using 'robot-cat' to designate a very sophisticated artificial cat replica of the kind imagined by Putnam, and not just any robot that vaguely looks like a cat.) Traditionalists favoring  $M_2$  would hold that given its current meaning, '**There's a cat**' could be correctly accepted in the presence of robot-cats. Hence, no change in meaning would occur if the Putnam-scenario were actualized and speakers started to accept '**There's a cat**' in the presence of robot-cats. Traditionalists favoring  $M_2$  would also hold that '**All cats are animals**' is a true synthetic categorical: speakers accept it thanks to the factual belief (collateral information) that there are no such things as robot-cats. In other words, everything that's either a cat or robot-cat must be an animal. But of course, if the speakers made the astounding discovery described by Putnam, they would reject '**All cats are animals**'. Such a rejection would involve no change in meaning.

Traditionalists would insist that because meaning is determinate,  $M_1$  and  $M_2$  cannot both be acceptable. 'There's a cat' and 'There's a cat or robot-cat' are not intuitively synonymous, and neither are 'All cats are animals' and 'All cats or robot-cats are animals'. Hence, at most one of the two translations preserves meaning. According to *IT*, this position is groundless. Given that the meaning of '**There's a cat**' and the analytic status of '**All cats are animals**' are indeterminate,  $M_1$  and  $M_2$  are both adequate translation manuals.

I'm well aware that my construal of the indeterminacy thesis differs from Quine's. I will now explain why it should be favored over Quine's various statements of the thesis, making four related points in support of *IT*. First, *IT* better captures the philosophical significance of the indeterminacy thesis. Quine writes,

The point of my thought experiment in radical translations was philosophical: a critique of the uncritical notion of meanings and, therewith, of introspective semantics. I was concerned to expose its empirical limits. A sentence has a meaning, people thought, and another sentence is its translation if it has the same meaning. This, we see, will not do. [1987: 9]

Construing the indeterminacy thesis as an explicit rejection of the traditionalist conception of meaning and thus as a "critique of the uncritical notion of meanings", as *IT* does, conforms to Quine's remarks. By contrast, as many commentators have complained, it's hard to see what philosophical significance the thesis has, if we rely on Quine's various statements of the thesis. (I will examine one such statement shortly.)

My second point concerns the relationship between the indeterminacy thesis and

Quine's rejection of the analytic-synthetic distinction. I won't rehash the various objections Quine raises against this distinction. Instead, I will quote a passage that, in my view, captures his outlook:

It is obvious that truth in general depends on both language and extralinguistic fact. The statement 'Brutus killed Caesar' would be false if the world had been different in certain ways, but it would also be false if the word 'killed' happened rather to have the sense of 'begat'. Hence the temptation to suppose in general that the truth of a statement is somehow analyzable into a linguistic component and a factual component. Given this supposition, it next seems reasonable that in some statements the factual component should be null; and these are the analytic statements. But, for all its a priori reasonableness, a boundary between analytic and synthetic statement simply has not been drawn. That there is such a distinction to be drawn at all is an unempirical dogma of empiricists, a metaphysical article of faith. [1951: 34]

According to what we may call the *inextricability thesis*, there's no clear demarcation between the semantic (or linguistic) contribution and the factual contribution to the truth-value of any sentence.<sup>8</sup> Quine grants that a speaker may accept a sentence partly because of what the sentence means for her and partly because of what she believes about the world (her collateral information); however, he adds, these two factors are in principle impossible to disentangle precisely.<sup>9</sup> The inextricability thesis is key to understanding Quine's views about analyticity, meaning and translation. This thesis is ultimately a claim about the indeterminacy of meaning. If the contribution meaning makes to the truth of a sentence cannot be precisely separated from the contribution of the world, then the sentence's meaning is indeterminate: the sentence's meaning doesn't determine exactly in which circumstances the sentence would be true. The case discussed at the beginning of this section illustrates this point. The meaning of '**There's a cat**' doesn't determine whether it could be correctly accepted in the presence of robot-cats. It's thus indeterminate whether a change in meaning would occur if speakers of *L* were to accept this observation sentence in circumstances of this kind. Similar considerations imply that the analytic status of '**All cats are animals**' is indeterminate. The inextricability thesis entails that it's indeterminate

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<sup>8</sup> Quine [1976: 139] uses the term 'inextricably'. See also Dummett [1978: 387–8].

<sup>9</sup> Føllesdal [1973: 290–1] uses the locution 'inseparability thesis' to capture the same idea. His construal of the indeterminacy thesis is also similar to mine.

whether the factual component in the truth of this categorical, or in the truth of any intuitively analytic sentence, is null. Hence, it's indeterminate whether the truth of the categorical '**All cats are animals**' depends on features of the world.

My third point is that an adequate statement of the indeterminacy thesis should inform us about how to recognize instances of indeterminacy. Consider one of Quine's first statements of the thesis: "The thesis is this: manuals for translating one language into another can be set up in divergent ways, all compatible with the totality of speech dispositions, yet incompatible with one another" [1960: 27]. One of Quine's challenges has been to elucidate what makes two translation manuals *incompatible*. He has proposed a few ways to do so. Since I lack the space to examine all of his attempts, I will consider only his latest one.

In *Pursuit of Truth*, Quine writes:

A manual of Jungle-to-English translation constitutes a recursive, or inductive, definition of a translation relation together with a claim that it correlates sentences compatibly with the behavior of all concerned. The thesis of indeterminacy of translation is that these claims on the part of two manuals might both be true and yet the two translation relations might not be usable in alternation, from sentence to sentence, without issuing in incoherent sequences. Or, to put it another way, the English sentences prescribed as translation of a given Jungle sentence by two rival manuals might not be interchangeable in English contexts. [1992: 48]

As Peter Pagin notes, this proposal is

difficult of use. We would need an account of coherence of sequences of utterances, and it is very unclear what should go into such an account; how much psychological theory, and what psychological theory, what formal ideas of coherence. [2008: 8]

Hence, Quine's latest statement does clearly inform us about how to recognize instances of indeterminacy. Moreover, this statement makes it hard to appreciate the philosophical significance of the indeterminacy thesis. What philosophical lesson about meaning should we draw from the fact two adequate manuals "might not be interchangeable in English contexts"?

Finally, we should place Quine's discussion of radical translation and indeterminacy in its historical context, more particularly Quine's debate with Carnap.<sup>10</sup> In "Two Dogmas of

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<sup>10</sup> Some of my remarks here are inspired by Pagin [2014: 236].

Empiricism”, Quine complains that the concept of meaning has not been given an adequate empirical treatment. According to him, providing such a treatment would require an account of how meaning (as well as synonymy and analyticity) can be explained, “presumably in terms relating to linguistic behavior” [1951: 24]. A few years later, Rudolf Carnap takes up this challenge in “Meaning and Synonymy in Natural Language”. As he remarks, “The purpose of this paper is to defend the thesis that the analysis of intension for a natural language is a scientific procedure, methodologically just as sound as the analysis of extension” [1955: 36]. According to Carnap, “the assignment of an intension is an empirical hypothesis which, like any other hypothesis in linguistics, can be tested by observations of language behavior” [1955: 37]. In his essay, Carnap attempts to show how semantics can be empirically tested by a linguist asking speakers how they would apply their words in various circumstances. Quine’s thought experiment of radical translation can be regarded as a direct response to Carnap. As a matter of fact, Quine [1960: 35] explicitly compares his approach to Carnap’s, and argues that the method of questioning native speakers about their words and sentences does not yield the determinate meanings that Carnap claims to be able to ascertain. The central aim of Quine’s endeavor is thus to figure out how empirically well-grounded semantic concepts are. The evidence that is in principle available to a linguist doesn’t suffice to warrant the kind of claims Carnap is making about meaning. The indeterminacy thesis is Quine’s way of expressing the view that Carnap’s traditionalist approach cannot succeed.<sup>11</sup> *IT* expresses this position clearly and succinctly: *pace* Carnap, *IT* holds that a sentence of *L* may be correctly translated by either ‘*S*<sub>1</sub>’ or ‘*S*<sub>2</sub>’, even if ‘*S*<sub>1</sub>’ and ‘*S*<sub>2</sub>’ are not intuitively synonymous.

## 8 Conclusion

Quine’s views about meaning have a positive and a negative side. The positive side includes his notion of stimulus meaning and the various constraints on translation I have presented here, for instance, Quine’s insistence that translation should preserve agreement as much as possible, and respect the publicity and stability of meaning. However, Quine’s positive account of meaning also reveals the limits of the traditionalists’ ambitions. The inextricability thesis captures Quine’s negative conclusion: there’s no clear demarcation between the semantic contribution and the factual contribution

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<sup>11</sup> See Hylton [2007: 228] for similar remarks.

to the truth-value of any sentence. Another negative component of Quine's account is the indeterminacy thesis. Unfortunately, Quine's various statements of this thesis fail to highlight its philosophical significance. I have offered a construal of the thesis that does. If the inextricability thesis is true, then no sentence has a determinate meaning. Since the aim of translation is to preserve meaning, translation is also indeterminate. This is how I have proposed to construe the indeterminacy thesis: meaning and translation, as they are understood by traditionalists, are not determined. I have illustrated these points by focusing on observation sentences and categoricals, and shown that pace Quine, these don't escape the indeterminacy that affects other sentences.<sup>12</sup>

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<sup>12</sup> Thanks to an anonymous referee and Elia Zardini for their valuable comments.

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