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Model-Based Semantics: Doing Without Meaning Constitution

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Abstract

This paper introduces a model-based account of meaning, arguing that meaning properties reside in models rather than in the external world. Building on this view, it explores how such an instrumentalist framework can engage critically with various concerns raised by Wittgenstein, Quine, and Kripke[nstein]—each of whom voiced scepticism toward certain conceptions of semantic theorising and, in some cases, the reification of meaning. While the scope and nature of their respective criticisms may differ, the paper suggests they share a broadly deflationary attitude toward semantic metaphysics. Twentieth-century challenges to mainstream truth-conditional semantics, from verificationism, inferentialism, and other alternatives, have further complicated the semantic landscape, prompting a reconsideration of metaphysical assumptions in theories of meaning. In light of both scepticism about meaning and explanatory disagreement in semantics, the paper questions the metaphysical interpretation of theories of meaning and proposes a reoriented understanding of semantic theorising—one that is formally tractable yet philosophically restrained.

KEYWORDS

meaning, meaning scepticism, model-based semantics, models, semantic theorising, theories of meaning

1 | INTRODUCTION

A theory of meaning seeks to explain the meaning of a linguistic expression through some primitive concept. For instance, a statement S can be elucidated by considering what would be true in the world if S were accurate: if S is "the cat is on the mat," its meaning could be understood as the existence of a cat on the mat. After establishing this explanatory connection, semantic theories apply this to sentences and subsentential expressions like names and predicates. These theories have often been developed under a metaphysical interpretation, suggesting that a unique primitive capable of explaining linguistic meaning would also provide a metaphysical account of meaning itself. Consequently, we can view the various theories of meaning that emerged in the twentieth century as distinct metaphysical perspectives. A more recent and explicit way to capture this idea revolves around the concept of metasemantics: "Basic metasemantics aspires to uncover non-semantic facts in virtue of which such semantic facts obtain" (Burgess and Sherman 2014, 12).[1]

Authors who adopt some sceptical stance towards meaning or semantic theorising may appear to withdraw from metaphysical inquiry. Yet such scepticism arguably presupposes—and thus indirectly sustains—the metaphysical framing it resists. It is precisely the metaphysical language surrounding meaning that provokes these authors' sceptical engagement.

There are, however, notable characteristics of semantic theorising as a metaphysical endeavour. Theories of meaning have achieved a high level of sophistication, with even minority alternatives demonstrating significant formal and material adequacy in recent decades. This is particularly relevant given that, in the past, technical results were primarily associated with the truth-conditional view. Setting aside the simplistic hypothesis that one theory may be true while others are false, we can focus on a more pertinent observation: different theories illustrate varying relationships in meaning constitution, pairing distinct explanatory strategies with divergent metaphysical views on the nature of linguistic meaning. Moreover, these metaphysical perspectives often conflict, adding another layer of complexity. If we maintain a metaphysical interpretation of semantic theories, we may need to dismiss certain views. Yet, this situation can also serve as a foundation for developing an alternative approach to semantic theorising.

We might identify an alternative explanation that resonates with the sceptical perspectives of influential theorists while addressing the divergence in metaphysical outcomes. The central hypothesis is that theories of meaning share similarities with scientific models. Just as logical systems can be seen as frameworks for modelling our reasoning behaviour (Shapiro 2006, 51), we can interpret semantic theorising as a means to model our linguistic behaviour.[2] If this hypothesis holds, then the meanings invoked in philosophical theories would reside more within the model than in the external world, thereby demystifying the metaphysical view of meaning. This aligns well with Willard Van Orman Quine's scepticism about meaning, and even more with his view that verbal behaviour is all the evidence that interpreters have. Furthermore, this perspective allows us to view various semantic theories as "distinct" models, each serving different purposes, thus clarifying the differences in explanation and the apparent metaphysical divergences. Ultimately, this

[1]Framing the issue in this way is crucial for distinguishing metaphysical and foundational questions about the nature of meaning from merely descriptive accounts of how certain expressions function within a given natural language. There are notorious issues in sharply separating semantics from metasemantics. See Burgess and Sherman 2014, 1–16. In what follows, when I talk of theories of meaning and of the metaphysics of semantic values, these are meant to properly belong to the metasemantic endeavour.

[2]This introductory parallel can be questioned: in virtue of what can semantics be considered a type of modelling, just like logic? Does it depend on the nature of the modelling or on the nature of the data to be modelled? These are relevant questions that deserve their proper space and further research. One intuitive answer is that behaviour is what we model in both cases; hence, at bottom, such modelling endeavours target behavioural patterns. This view aligns well with how patterns are treated as the subject matter of logic in works like Cook 2000 and 2002 and Peregrin 2024.

theoretical shift suggests that semantic theorising need not be a metaphysical endeavour, at least not in the most ambitious sense.

In what follows, section 2 introduces theories of meaning as a metaphysical endeavour; section 3 discusses meaning scepticism, which questions the metaphysical implications of semantic theorising; section 4 examines the proliferation of theories of meaning and the resulting mutually incompatible metaphysical conclusions; section 5 presents an alternative perspective on theories of meaning, suggesting they are primarily attempts to model aspects of linguistic behaviour, in line with the evidence for meaning scepticism and the existence of conflicting metaphysical commitments; section 6 highlights key insights that can help us effectively engage with this perspective; and section 7 then concludes the article.

2 | THEORIES OF MEANING (AND THE METAPHYSICS OF MEANING)

Theories of meaning were developed throughout the twentieth century by many philosophers of language, culminating in Michael Dummett's bold claim that they are first philosophy: issues in metaphysics and epistemology must be addressed from the vantage point of theorists of meaning.[3] Even without accepting such an ambitious programme, we can acknowledge that much progress was made during this period concerning semantic theorising.

Furthermore, this endeavour implicitly assumes that semantic theories will establish the constitutive traits of meaning. Very often, this tendency has brought about a trend in semantics that assigns explanatory roles to such traits. Theorists usually understand this progression as issuing in the metaphysics of meaning: such constitutive traits of meaning are the best candidates to account for meaning properties in a metaphysical sense.[4] Meaning properties are, in principle, out there for theorists to grasp; this makes theorists of meaning the best candidates to settle questions about the metaphysical nature of linguistic meaning.

Key concepts such as "truth," "truth conditions," and "reference," for example, are considered the hallmarks of meaning properties, particularly in the established context of truth-conditional accounts, where the semantic content of a sentence S is closely associated with the conditions under which S would be true. For instance, the sentence "snow is white" can be said to be true if snow is, in fact, white. Though such accounts vary in formal detail, this basic explanatory gesture recurs across many semantic theories. Philosophers have proposed that meaning might instead be fixed by inferential roles, sets of possible worlds, or patterns of use—each pairing distinct explanatory principles with potentially divergent metaphysical assumptions. As Dummett (1973, 360–61) observes, it is "common to philosophers to suppose that there is some one feature of a sentence which may be identified as determining its meaning." This tendency reflects a broader interpretive impulse: to treat semantic theorising as identifying the constitutive features of meaning and, in some cases, to ground those features in metaphysical terms.[5]

Furthermore, many efforts in semantic theorising have proceeded on the assumption—albeit with notable exceptions—that meanings can be treated as entities amenable to systematic

[3]Even though such a claim may sound a bit obsolete today, that was the climax in the development of the so-called linguistic turn in philosophy.

[4]Semantic facts form the supervenience base of linguistic meaning—that is, linguistic meaning supervenes on these facts.

[5]Burgess and Sherman (2014, 10) agree that theories of meaning in Dummett's sense properly belong to metasemantics: "With a nod to Dummett, we might call this part of the metasemantic project the theory of meaning itself." Such metaphysical understanding is not limited to theorists such as Dummett or to late metasemanticists but can be found also in authors such as Fodor and Lepore. See, for example, how they talk of meaning constitution in Fodor and Lepore 2002, chap. 1.

explanation via explanatory primitives, that is, semantic interpretants. This tendency aligns with the metaphysical interpretation of meaning explored above: semantic theories are often viewed as aiming, in some sense, to uncover the metaphysical properties or conditions that structure linguistic meaning.

3 | A FIRST CHALLENGE TO THE METAPHYSICAL INTERPRETATION OF THEORIES OF MEANING: VARIETIES OF MEANING SCEPTICISM

Notwithstanding the popularity of theories of meaning, a notable minority of key analytic philosophers have voiced doubts about meanings as legitimate entities and, in certain interpretations, about the legitimacy of semantic theorising more broadly. Ludwig Wittgenstein, in his *Philosophical Investigations*, expressed general reservations about semantic theorising (Wittgenstein 1953, § 18), opening his views to charges—albeit contested—of meaning nihilism (Brandom 2019).[6] Quine, in *Two Dogmas of Empiricism* and *Word and Object*, advanced explicit sceptical critiques of meaning, addressing foundational concepts such as "analytic truth," "reference," and the phenomenon of "translation" (Quine 1953, 1960; see also Ervas 2023). Saul Kripke, in *Wittgenstein on Rules and Private Language*, developed a subtler form of scepticism, suggesting that while meaning is expected to supervene on semantic facts, those facts turn out—under scrutiny—to be elusive and hard to fix. Together, these views represent influential critiques that question both the reification of meaning and the foundations of semantic theorising.

Wittgenstein wrote the *Investigations* in an attempt to amend the mistakes that he made in the *Tractatus* (Wittgenstein 1922), developing a theory of meaning that began with the powerful idea that language pictures the world. In a sense, he understood the failure of the *Tractatus* as a major failure of semantic theorising. This discovery comes along with the pragmatic dimension of language, epitomised by the emphasis on "use" rather than "meaning." Therefore, the philosopher who wants to investigate the nature of language should avoid semantic theorising—as Wittgenstein dismisses the idea that we can provide philosophical theories of anything—and instead embrace a different perspective: the theorist should merely describe our linguistic uses and understand the connections with our lives, rules, and practices. Perhaps Wittgenstein did not make the point too explicitly, but this attitude towards meaning and semantic theorising can be seriously taken as a sceptical one—or even a quietist one with a similar effect (see, e.g., Salis 2019, 497–98).

Quine's scepticism is by far more explicit and conscious. In his masterful investigation and assessment of analyticity in *Two Dogmas*, Quine (1953, 22) already asserted that admitting meanings to one's ontology presented controversial peculiarities. It was with *Word and Object*, however, that he fully developed these tendencies: notions like "reference," usually employed to capture the representational dimension of our statements in a noncontroversial way, were shown by Quine to be fundamentally inadequate for scientific purposes. Speakers' referential intentions and implicit ontological commitments always render "reference" a far more opaque notion than one might expect (Quine 1960, 73–142). Furthermore, Quine's thought experiment about radical translation was designed to show that there is no passage of meaning in translation, merely our making sense of someone's verbal behaviour. This has become the hallmark of Quine's scepticism about "meaning." There are no entities like meanings that pass from one who utters a statement to the one who hears, interprets, and translates it (Quine 1960, 23–71).[7]

[6]This view may sound controversial to certain interpreters, but Wittgenstein's texts undoubtedly open up much space for such concerns.

[7]"[It] is just … [in the case of translation] that the semantic indeterminacy makes clear empirical sense" (Quine 1960, 71). See Ervas 2023 for a recent assessment.

Kripke's scepticism is explicitly derived from his interpretation of Wittgensteinian views on rule-following, the views of so-called Kripkenstein, who is Wittgenstein according to Kripke. Kripke (1982) provided a sceptical interpretation of Wittgenstein's views on the problem of "going on in the same way" regarding rule-following. His argument, very generally, questions whether meaning can be grounded in objective facts. Kripke presents what is now called the sceptical paradox: when following a rule—such as performing arithmetic series—we assume there is a correct way to proceed (for example, adding 2 to each successive number in the sequence 2, 4, 6 …). Kripke argues, however, that past usage, in a very crucial way, does not uniquely determine future applications. For example, if someone were to interpret "plus" to mean a new function, quus, where numbers are added normally until a certain threshold (say, 59), after which they yield a different result, there is no factual criterion that dictates one interpretation over another. The central dilemma is: how can we justify the claim that one way of following a rule is correct, if it is, while others are incorrect, if they are?[8] But if one looks at meaning and the rules it is supposed to depend on, the situation is exactly the same. Given that past usage (plus any candidate explainer) does not uniquely determine future applications, what constrains us from following one specific pattern correctly rather than another? Therefore, according to this reading, there are no objective facts on which meaning depends (or supervenes). This conclusion can be interpreted as a straightforward sceptical challenge to theories of meaning.[9] Kripke (1982, 79, 89–113) famously opposes this scepticism with a communitarian view: facts about correctness depend on the practices of a linguistic community. This view, however, has been widely criticised and remains controversial. The most prominent alternative to Kripke's scepticism depends on dispositionalism: the idea that meaning is grounded in a speaker's dispositions to use words in certain ways. Yet, Kripke offers many reasons for rejecting dispositionalism (Kripke 1982, 22–37, 41, 48, 51, 53, 56–57, 108, 111). First, a person might be disposed to make errors, which means dispositions alone cannot provide a normative standard for correctness. Second, dispositions do not account for cases where speakers lack the ability to apply a rule (for example, large calculations they have never performed). Finally, meaning is intrinsically normative—it involves not just tendencies but "oughts," and dispositions merely describe patterns of use without explaining its standards of correctness. For these reasons, Kripke and Wittgenstein—according to Kripke's reading—show that dispositionalism fails as a foundation for meaning.

Thus, even in a context in which theories of meaning have been one of the main topics of twentieth-century philosophy, we must acknowledge notable concerns expressed by some of the pivotal actors. Is this ensemble of sceptical threats still something alive and relevant for theories of meaning? Does this mean that meanings are by far more elusive entities than they have been taken to be?[10]

4 | A SECOND CHALLENGE TO THE METAPHYSICAL INTERPRETATION OF THEORIES OF MEANING: DISAGREEMENT IN SEMANTICS

During a century of philosophy of language, we have also witnessed the impressive proliferation of theories of meaning. In addition to the mainstream varieties of truth-conditional

[8]"[O]ne may go on in another way no matter how many clarifications are added" (Kripke 1982, 83).

[9]"It seems that the entire idea of meaning vanishes into thin air" (Kripke 1982, 22). "There can be no such thing as meaning anything by any word" (55).

[10]Another relevant approach that aligns with such scruples is Diego Marconi's, which explicitly downgrades the theory of meaning to a less demanding theory of lexical competence. See Marconi 1997.

views, we have acknowledged the rise of nonstandard versions, like Donald Davidson's (Davidson 1967, 1984). Furthermore, the work of outstanding outsiders such as Michael Dummett has been pivotal in presenting a direct challenge to this truth-conditional majority: according to Dummett (1973, 1991), we can interpret Wittgenstein's remarks on meaning "as use" as a positive theoretical suggestion and, indeed, as a theory of use (Wittgenstein 1953, § 18). We can understand meaning as involved in what we do in the game of assertion, that is, in saying how things are; meaning can be grasped in terms of the justifications that we can exhibit for an act of assertion. The meaning of a declarative sentence uttered as an assertion is thus spelt out in terms of the justifications that we can provide for its truth.

The type of exercise displayed in Dummett's attempt has been pivotal in many areas of semantics, and not only in the provision of an alternative.[11] During the 1970s, Davidson and Dummett were followed by many other theorists who provided radically new approaches to semantics. For example, numerous theorists from Carnap to Kripke have developed a semantic approach, later popularised by Lewis's work in the metaphysics of modality, developed in terms of sets of possible worlds as semantic interpretants.[12] This programme has been very successful, especially in formal semantics, demonstrating a high level of proficiency in exploiting logical languages and formal tools for semantic theorising. An upshot of this success has been the progressive merging of truth-conditional and possible-worlds theories as variations of a single approach—since we can understand possible-worlds views as enabling the fixation of truth conditions in a modal way, exploiting accessibility relations among possible worlds (Menzel 2016).[13]

This merging of possible-worlds semantics with truth-conditional approaches, however, risks giving a misleading impression of an outright victory, since there are alternatives—such as Dummett's view—that do not fit with the mainstream truth-conditional scheme. This demonstrates that our ability to analyse and formalise bits of linguistic behaviour is not "bound to converge" towards noncontroversial properties. Brandom's inferentialism (Brandom 1994, 2001; Peregrin 2014) has played a pivotal role in highlighting the possibility of another exercise in Dummett's style, providing a theory of meaning that directly reverses the order of explanation, giving pride of place to inference instead of truth conditions. Understanding the meaning of a sentence S in terms of its inferential role, that is, the set of inferential transitions in which S is involved properly, means directly reversing the order of explanation. While the traditional view sought to exploit a representation relation to explain inference, Brandom has shown that we can successfully do the opposite. We can explain the representational dimension of our statements in terms of the inferences in which they are involved, that is, the premises from which they are asserted and the conclusions drawn from them (Brandom 2022; Salis 2020).

A relevant feature of Brandom's work is that we can appreciate the formal adequacy of the treatment; this means that one can successfully exploit inferentialism to explicate one's linguistic behaviour, even if it assumes explanatory primitives that are not permitted in the traditional mainstream view. In this sense, opening this possibility makes inferentialism a game changer. This is the special observation at the centre of the present paper. If we can admit the general adequacy of inferentialism, given its radical diversity in the explanatory primitives it admits and in the projected meaning constitution—inferential roles instead of truth conditions—we

[11]To be fair, neopositivist verificationist theory served as an early precursor to many of these alternative semantic frameworks. Its limitations have been widely discussed, however, and its plausibility is now commonly met with scepticism.

[12]Carnap 1947; Kripke 1963; Montague 1974; Lewis 1973, 1983; see also Menzel 2016.

[13]Furthermore, we recently testified to the range of proposals revolving around the so-called truthmaker semantics (Fine 2017). The concept of truthmaking refers to the idea that anything in the world, such as a fact, a state of affairs, or a condition of events, can verify or make true something in language or thought, such as an assertion or a proposition. This emerging trend, which revitalises foundational ideas of truth-conditional theories in novel ways, clearly demonstrates the dynamism of contemporary semantics.

can raise doubts about the legitimacy of such divergent outcomes or seek a possible explanation of this metaphysical divergence. Why exactly should one think that meaning is constituted in terms of truth conditions? Why exactly should one think that the meaning of the sentence S is constituted in terms of S's inferential role? In light of the availability of both options and lacking clear reasons to consider such theories as entirely wrong, such questions become pressing. This situation can, in principle, be the source of new sceptical challenges to theories of meaning. Indeed, a hypothesis surfaces quite easily: can we make sense of the metaphysical interpretation of the theory of meaning if different successful attempts project or determine such different and diverging views on meaning constitution? How should we understand such explanatory differences and metaphysical divergences? Is meaning a shape-shifting, perspective-relative entity? I think we have better alternatives to explain such differences and divergences.

We can soon identify direct ways to reply to such questions, initially exploiting a "strong" explanation: very simply, theory A is true whereas theory B is false, and this alone explains the differences and divergences highlighted. The problem with this straightforward strategy is that it is not available, for many reasons. We lack such straightforward falsifications of semantic theories.[14] There is no evident consensus on a verdict like this. We could, at the very least, register sociologically that there is a majority consensus regarding the mainstream view. This is not enough to make the point we need to make here. But if this straightforward solution to semantic disagreement cannot be reached, how can we address the questions raised above about explanatory differences and metaphysical divergences?

My suggestion is to look at semantic theorising from a quite different angle.

5 | A NEW APPROACH TO SEMANTIC THEORISING: MODELLING, EXPLANATION, AND EXPLICATION

If we understand semantic theories differently, we might find some intriguing hints and solutions to the previous problem. My intuitive hypothesis connects, in a sense, with Quine's work: perhaps we can understand the divergence in meaning constitution and the difference in explanatory primitives as simply a difference in ways of modelling our linguistic behaviour.[15] The progress in semantic theorising, and especially in formal semantics, allows us to understand Quine's interpretative hypotheses about a native speaker's utterance of "gavagai" as rough attempts to model verbal behaviour (Quine 1960, 26–79). I find this to be a suggestion that today is more relevant than ever. The fact that we can successfully model such behaviour in many different ways, exploiting different explanatory primitives, sheds new light on the relations of meaning constitution envisioned in different theories: according to this perspective, they are essentially "projections" from a particular model. That is, they exist as "constitutive properties" CPT revealed by our theory of meaning T, as far as we explain a bit of linguistic behaviour B according to T. If we switch to theory S, we see the meaning of the same bit of behaviour B as determined by different constitutive properties CPS. As Quine already partly observed, however, the bit of behaviour is always the same and is the only shared evidence we have. Given the availability of different modelling alternatives, this should make us suspicious about the collateral commitments that are no longer shared. These commitments include the different constitutive properties highlighted by

[14]Furthermore, we can raise many problems and troublesome implications about the standard truth-conditional view that are perfectly treatable within the minority inferentialist approach. See Gross et al. 2015 and Salis 2023.

[15]Timothy Williamson argues that model building is used in ethics, epistemology, and philosophy of language, citing Carnap's intensional semantics as a formal model (Williamson 2017, 163, 165; 2018, chap. 10). He denies that Frege, Russell, and Wittgenstein engaged in model building proper, though he concedes Wittgenstein's "language games" may be "partial" models (Williamson 2017, 166). His view is more restrictive than the one adopted here, which would treat Frege's "sense" and "reference" distinction as a basic modelling move.

many attempts at modelling such behaviour and attributed to meanings themselves. Hence, we could, and perhaps should, drop the putative constitutive properties of meanings as projections from within the models, just as Quine dropped meanings as evanescent and elusive entities. Indeed, perhaps disagreement in semantics is not due to empirical errors or to theoretical inadequacy/immaturity but due simply to the fact that semantic theories model, in different ways, bits of linguistic behaviour.[16] One potential explanation lies in the inherent character of linguistic data—their context dependence and pragmatic nuances—which render meaning inherently elusive in a Wittgensteinian sense.

Constitutive properties of meaning, in this sense, are "in the model" rather than "in the world," and this is the rationale behind the proposed demystification of the metaphysical interpretation of semantic theorising.[17] When I say that meanings reside in the model rather than in the world, this should not be mistaken for a denial of data or subject matter. Modelling is not a wholly arbitrary endeavour. The absence of meanings in a metaphysical or theoretical sense does not imply the absence of an underlying layer of social coordination—where agents strive to make sense of one another's behaviour, including linguistic behaviour. This coordination presupposes that speakers attribute meanings to utterances and intend their own utterances to be meaningful. That is, there exists a behavioural layer in which speakers mean what they say (at face value) and interpret others' speech as meaningful (also at face value). This pragmatic game of mutual interpretation is sufficient to sustain our theoretical inquiries into meaning—indeed, thought experiments like Quine's radical translation and Davidson's radical interpretation are grounded in precisely these dynamics.

In a sense, this approach is not new, and can be reminiscent of Carnap's "internal questions": in Carnap's view, ontological questions are sound and meaningful only within a theoretical or linguistic framework (Carnap 1950a).[18] If we understand theories of meaning as theoretical frameworks in Carnap's sense, we can understand their preferred and privileged relations of meaning constitution as something that "ontologically" depends on the framework and not on how the world independently is. This relativisation to theoretical frameworks and models can indeed be the first step of a systematic demystification of the metaphysics of meaning. But our story needs another preliminary step.

What should we do about the differences between theories of meaning? If they are attempts at modelling linguistic behaviour, why do we need "different" models? Why is one not enough? What are they different for? Another helpful idea from Carnap (1950b) comes to mind: theories of meaning are, in this sense, akin to processes of "explication" of the ways in which we use words and sentences. For Carnap (1950b, 3), "[t]he task of explication consists in transforming a given more or less inexact concept into an exact one.… We call the given concept (or the term used for it) the explicandum, and the exact concept proposed to take the place of the first (or the term proposed for it) the explicatum."[19] According to our view, we can explicate the meaning of the sentence S in many different ways, exploiting many different models for different theoretical and practical purposes. Certain models are

[16]Mark Schroeder's formal semantics for expressivism (Schroeder 2008) shows how metasemantic factors—like non-cognitive attitudes—shape semantic theory. From the present paper's perspective, such cases exemplify model building: theories are tailored to explanatory goals (for example, capturing the logic of non-cognitive attitudes). This supports an instrumentalist view, where semantic structure reflects theoretical aims rather than metaphysical commitments (see my section 6).

[17]I would use "deflation" in general here, but the term is overused and can be confusing. See section 6. By "metaphysical" here, I do not intend to deny the existence of a social and behavioural phenomenon through which meanings are collectively attributed, expressed, and negotiated. Rather, the metaphysical layer I refer to concerns the domain of philosophical theories of meaning—specifically, those that make substantive claims about the ontological nature or determination of linguistic meaning.

[18]Those who worry about the Quinean reservation concerning the analytic/synthetic distinction, which was indeed a necessary trait of Carnap's distinction between internal and external questions, could exploit Quine's safer distinction between "subclass" and "category" questions. See Quine 1951.

[19]See also Carnap 1947, 7–8. More informally, "an explication consists in transforming a *less* exact concept into a *more* exact one" (Dutilh Novaes and Reck 2017, 201).

to be preferred for spelling out the representational dimension of a sentence, while others are to be preferred for spelling out the role in reasoning of that very sentence, and so forth. Furthermore, the use of logical languages and formal tools to explicate the meaning of imprecise ordinary and common-sense expressions is perfectly compatible with the present idea: they could be understood as clarificatory or disambiguating models. In the case of theories of meaning, I feel quite comfortable thinking about them as explicative models in this sense.

Furthermore, just as formal languages can serve as models, we can extend and liberalise this view: not only can formal languages function as models, but, given that formal adequacy *is* a stringent requirement for theories of meaning, any formalisable conceptualisation can also be regarded as a model. I see this as a direct consequence of the formal adequacy requirement.

Are there any instances where modelling is applied to meaning within our semantic theories? A straightforward example, derived from Davidson's work, is surely Tarski's biconditionals:

(T) "snow is white" is true iff snow is white.

These biconditionals specify the truth conditions of the quoted sentence. They can be viewed as a model scheme for specifying the truth conditions of every declarative sentence. This allows for the explication of specific linguistic behaviour—namely, the act of assertion—in terms of truth conditions. But we can do something similar for different theories of meaning. An interesting scheme was recently exploited by inferentialist theorists like Jaroslav Peregrin and Matej Drobňák for representing inferential roles (Peregrin 2014; Drobňák 2024). According to this proposal, the (basic) inferential role of "dog" can be spelt out as follows:

a "X is a dog" → "X barks"

b "X is a dog" → "X is a mammal" (Drobňák 2024, 2; see also Peregrin 2014, 32)

According to this model scheme, we can explicate a bit of linguistic behaviour—the assertion stating "X is a dog"—in terms of certain inferential transitions. Since the relevant inferential transitions are many, this model scheme can be enriched with further inferential transitions and become less and less basic. Thus, it seems that much work is done in this fashion in semantic theorising, and perhaps the time is ripe to see this as sheer modelling.

So, we gain a perspective according to which semantic theories are explications of bits of linguistic behaviour that can be profitable from certain practical or theoretical points of view. Ultimately, this perspective would allow a kind of Carnapian relativisation or Quinean rejection of meaning as a legitimate part of the world's furniture. There are linguistic behavioural patterns to be modelled according to our theoretical and practical conveniences. This perspective would mark the end of the metaphysics of meaning. But how should we think, more generally, about this consequence? In what exact sense can we say that semantic theorising amounts to a kind of modelling?

There is a fundamental difficulty in answering this question: the nature of models is a controversial philosophical issue. Models are said to be, from a metaphysical point of view, physical objects, fictional objects, set-theoretic structures, and descriptions or equations about something. The possibility that they are indeed all these things is legitimately on the table. Furthermore, models are understood as playing different roles from an epistemological point of view; they facilitate learning and widen epistemic access to a phenomenon, they facilitate scientific explanation, they boost our understanding of a particular subject, and they play various cognitive functions (Frigg and Hartmann 2020; Weisberg 2013, chap. 3). Thus, there are clear problems in univocally exploiting models for our purpose. Does this difficulty hinder our main insight about understanding theories of meaning as models? Well, things are more

complicated, since we can find many explicit examples of models that behave exactly as we need them to behave and models that are defined in ways that we would find useful to define theories of meaning. I think such clues need to be analysed and checked.

For example, it is not incoherent to claim that there is some modelling almost always implicit in semantic theorising. Nancy Cartwright, for example, has defended a reasonable and influential view according to which models are always needed to help the explanatory functions of theories that are somehow incomplete or to help those theories that encompass some abstract or mathematical structure. This view goes by the name of "interpretative models." In Cartwright's estimation, such models are formulated in terms of interpretations that are based on abstract concepts (Cartwright 1983, 1999). This is perfectly in line with our insight about theories of meaning as modelling bits of linguistic behaviour by means of the exploitation of certain primitive explanatory notions—which are, in fact, abstract concepts such as "truth," "truth conditions," "inferential roles," and so on. Thus, here we observe views on models somewhat compatible with our main insight.

But that is not the only possible obstacle in the way of our main insight. As mentioned, we are using models to demystify the metaphysical reading of theories of meaning. Hence, we want to endorse some kind of scepticism about semantic realism, to the effect that meaning properties are not in the world but are just projections of our models. Consequently, we should grant that we can exploit some models that are at least compatible with some general anti-realism about models—that is, models are not to be understood as faithful representations of something (Frigg and Hartmann 2020, sec. 5). Luckily, we can see that anti-realism is quite widespread in the debate, at the very least because models always seem to involve some kind of idealisation or approximation, and such features are not easy to reconcile with fully-fledged realism or representationalism about models. For example, a strong and influential argument for anti-realism about models is perfectly parallel with our insight about semantic anti-realism: it is the so-called "incompatible-models argument" (Morrison 1999, 154–55; 2000, 38, 240–41).[20] According to this argument, scientists often successfully advance predictions about a certain system S or phenomenon P even if they exploit models that are incompatible with one another. This incompatibility can be understood as evidence for anti-realism about models, as they are all models of S (or of P); realism, in fact, typically holds that true predictions are evidence for the literal truth of models or theories. But if we can get true predictions by means of mutually incompatible models, it becomes very difficult to affirm that our models or theories are all true (since the truth of model A is incompatible with the truth of model B).[21]

This argument is exactly parallel with our observation about theories of meaning: we can model linguistic behaviour in many different ways by exploiting various mutually incompatible primitives, and this means that such theories cannot be all true and that we need to take a step back from semantic realism. In addition, the many different projections emerging from our theories should not be understood as admitting the corresponding meaning properties into our ontology. Thus, there is prima facie a conceptual space that is open for our main insight. Therefore, there is a sense in which theories of meaning can be legitimately understood as models of linguistic behaviour. To maintain this option, we need to endorse at least an interpretative view of models and a kind of anti-realism about them.

[20]Morrison draws these conclusions in the context of a wide theoretical reconsideration of unification in science. These findings aim to demonstrate the shortcomings of Friedman's account of scientific unification based on the model/submodel approach. Furthermore, another version of the "incompatible-models argument" has been presented in the context of logic-as-modelling views in the philosophy of logic: according to this view, different logics work as different models. See Shapiro 2006, 50.

[21]Critics might argue that certain scientific fields, such as astronomy, provide examples of more realist models. When, however, it comes to linguistic behaviour—where attributing abstract structures is a fundamental starting point—the need for a realist interpretation is far less apparent, particularly given the prevalence of sceptical perspectives. Thus, the anti-realism regarding models here aligns well with meaning scepticism and the persistence of semantic disagreement.

Moreover, a further noteworthy feature of this model-based framework is its straightforward compatibility with the implications of Hilary Putnam's model-theoretic argument (Putnam 1977, 1981; see also Khlentzos 2021). This argument challenges semantic realism (and more generally metaphysical realism) by showing that a consistent theory can be satisfied by multiple, unintended models. Yet this sceptical result aligns naturally with the model-based approach advanced here: if semantic theories are best understood as modelling strategies rather than metaphysical descriptions, the problem of unintended models is not an objection but an expected and legitimate feature of model pluralism (I discuss the pluralist interpretation of this framework below).

Before moving on, we need to address one last worry. A natural objection from traditional semantic frameworks concerns the principle of compositionality—the idea that the meaning of a complex expression is determined by the meanings of its parts and the rules used to combine them. This principle is usually understood as relying on a stable, realist view of meaning, where semantic values are fixed and compositional rules reflect linguistic meanings. From this angle, one might wonder whether the model-based approach presented here challenges or sidesteps the explanatory role of compositionality. Does the prevalence of compositional structure in natural language count as counterevidence to the view that semantic theories are merely models of linguistic behaviour, rather than metaphysical accounts of meaning? Jerry Fodor and Ernest Lepore (2002) often present compositionality as a non-negotiable requirement for a viable theory of meaning. These views suggest that if a theory of meaning fails to explain or even adhere to the principle of compositionality, it must be rejected as such. The same fate is thus expected for this view of semantic theories as models. This is prima facie a good point.

This objection can be countered in several ways. The rise of inferentialist approaches—many of which diverge from traditional compositional principles—challenges the idea that compositionality is an essential part of semantic theory. Robert Brandom's incompatibility semantics (Brandom 2008, 133–36) provides a fully holistic framework that moves away from conventional compositionality while still preserving the recursive features typically linked to it. So, there are counterexamples. Such cases suggest that compositionality may not be a universal necessity but rather just one of several modelling strategies designed for specific explanatory purposes. In fact, compositional analysis itself can be reinterpreted as a form of modelling in precisely the sense advocated in this paper: it models aspects of linguistic behaviour by attempting to explicate the contribution of subsentential expressions to the overall meaning of complex utterances. Finally, compositionality can be understood as internal to a particular model, and different models may explicate compositionality in different ways—pragmatically, inferentially, syntactically, and so on. Thus, whether the model-based view proposed here is incompatible with compositionality or whether it simply reframes it remains an open question.

6 | FAREWELL TO MEANING PROPERTIES: SIX MAIN INTERPRETATIONS

How should we interpret the hypothesis highlighted so far? Is the elimination or demystification of meaning properties a kind of direct path to meaning nihilism? Is this the idea that we can understand semantic theorising entirely as a variety of modelling of linguistic behaviour and that we should avoid committing ourselves to a kind of realism about modelling in general? Let us explore some possible ways to understand this view.

(a) *Fictionalism*. We can see, for example, projected meanings as mostly fictional entities. According to this hypothesis, linguistic behaviour is the objective fact of the matter—that is, utterances and inscriptions—and there are many ways to model it: the meaning properties are just

projections, not different from fictional entities in an important sense. We talk and behave as if there are meanings, but they are nothing more than fictional projections of our ways of talking about them, conceptualising them, or understanding them. This is surely an option on the table.

(b) *Instrumentalism*. Furthermore, we can opt for a fully instrumental view, according to which different types of modelling attempts serve different interests, purposes, and uses. So, can we see the projected semantic properties as instrumentally bound to certain explanatory interests and priorities, providing a different interpretation? We have some clues. For example, we can explicate a certain bit of linguistic behaviour in terms of truth conditions for particular uses, such as being interested in highlighting how the speaker is "representing" things around with their behaviour. This does not mean that we need to interpret the meaning of that utterance as metaphysically determined by truth conditions or representations. Or we can explicate the meaning of that bit of linguistic behaviour in terms of inferential transitions if we are interested in highlighting the reasoning pattern surrounding that utterance. But again, this does not mean that the meaning of the utterance is metaphysically determined by its inferential role. According to this instrumental interpretation, we should understand such modelling endeavours in terms of the pragmatic functions served by our explications, without any metaphysical interpretation of the meaning properties projected by our modelling attempts (see Price 2011, 2013).[22] We should dismiss realism about modelling here—that is, completely abandon the metaphysical interpretation of such explications.

(c) *Metalinguistic explication*. Another perspective draws on the Carnap-Sellars framework, suggesting that meaning statements serve a broad metalinguistic function. In Wilfrid Sellars's view, these statements operate within the metalanguage, clarifying the content of specific utterances based on their usage (Sellars 1968, 1974). This approach can be expanded in a Carnapian manner, categorising utterances through various semantic lenses, such as "truth," "reference," and "inference." Thus, meaning statements generally specify what is conveyed in theoretical terms, tailored to specific theoretical and practical objectives. Importantly, this perspective can be seen as a variation of the instrumental view previously discussed, interpreted through a metalinguistic lens. In addition, we can consider metalanguages as models, further supporting the view we have presented thus far.

(d) *Semantic pluralism*. Semantic pluralism offers another perspective for exploring this hypothesis. It is important, however, to distinguish between two main interpretations. The first interpretation posits that different expressions are best explained by distinct semantic theories. The second interpretation draws a parallel with logical pluralism: just as there is not a single correct logic but rather one that suits specific theoretical tasks (see Beall and Restall 2006 and Russell and Blake-Turner 2023), we can similarly argue that there is no definitive semantics. Instead, our semantic theories are attempts that may serve various theoretical purposes without any metaphysical implications beyond that. Clearly the second interpretation is particularly relevant here. This form of semantic pluralism aligns well with the instrumentalist view discussed earlier, as the differences between theories and models can be understood in instrumental or pragmatic terms. Thus, this perspective can also be seen as a pluralist version of the instrumentalism previously introduced. Furthermore, this view aligns with model-based views about logic and logical pluralism, especially the "logic-as-modelling" view advanced by Roy Cook (2000, 2002, 2010) and Stewart Shapiro (2006, 2014). Indeed, according to this approach, logical theories are understood as models—just like semantic theories in this context.

(e) *Nihilism*. Another perspective is sheer meaning nihilism. Influential critiques of the metaphysics of meaning, along with the metaphysical divergences and challenges associated with our best semantic theories, suggest that the notion of linguistic meaning as a legitimate entity is a myth. While we often speak as if meanings exist, they are merely useful abstractions

[22]Huw Price developed a notion of pragmatic function that he exploits to distinguish what we do by using different vocabularies.

lacking any real substance. According to this view, there is linguistic behaviour and our efforts to articulate it in various terms, but nothing substantial lies beneath this surface of explanation. This perspective strongly supports meaning scepticism: if semantic theorising is merely a form of modelling, we have an additional reason to embrace meaning nihilism universally. This view, more robustly than its alternatives, presents a metaphysical stance that denies the existence of meanings as entities, resembling a form of meaning eliminativism. In this framework, meanings are simply a *façon de parler*.

(f) *Agnosticism*. Lastly, an alternative interpretation suggests a form of agnosticism regarding meaning. This view could preserve the metaphysics of meaning by implicitly endorsing a kind of mysticism about meaning properties. It allows us to accept the various explications we offer while remaining fundamentally agnostic about the actual meaning properties due to inherent differences and divergences. Our attempts to explicate meaning may be insufficient to access its true dimensions, which could remain obscured in an inaccessible realm.[23] According to this perspective, there might indeed be metaphysical meaning properties, but our efforts merely highlight divergent and incompatible projected properties in our often misleading and unsatisfactory attempts. Thus, these properties could lie beyond our reach. Moreover, this implies that such properties might play a foundational role in meaning, even if our diverse explanatory efforts fail to access them. But I believe that this interpretation, while plausible, presents two significant issues: it does not fully account for what we achieve in semantic theorising and discussions about meaning, and it lacks explanatory relevance.

With all these options on the table, we can start expressing some general remarks. First of all, even though (f) is conceptually coherent, I am not especially attracted to it: while it is plausible and coherent that meanings transcend our efforts in semantic theorising, I think we would need more evidence for claims like this—and also that the putative strength of hypotheses like these usually lies in this lack of evidence. Option (e) is also a coherent view: a theorist with metaphysical ambitions could, in principle, endorse the bold claim that meanings are eliminable. Since I am not especially interested in putting forward metaphysical claims, I do not feel compelled to endorse this eliminative stance—but I could understand some theorists with different interests and sensitivities leaning towards some version of it. Option (a) is not only conceptually coherent but also in line with many views about the nature of models. Many views claim that models are fictions, and if meanings are "in the model and not in the world," then they too are fictions. So, meaning fictionalism is an option with a certain argumentative solidity. Options (b), (c), and (d) can be grouped together, as they are less concerned with the metaphysics of meaning and revolve around a common insight. We can view (c) and (d) as variations of (b): they propose an instrumental understanding both of models and of meanings, suggesting that meanings are instrumentally tied to the models we employ for specific tasks. To this instrumental insight, we can add (c), which offers a metalinguistic interpretation of this binding: semantic concepts are metalinguistic tools we use to clarify aspects of linguistic behaviour for particular purposes. Alternatively, in (d), we can approach semantic theories much as we approach logical pluralism: just as we navigate multiple logical systems without a "true" logic, we can develop various semantic theories or models without a definitive semantics in a metaphysical sense. From this pluralist perspective, meanings are seen as instrumental projections of a model or theory rather than independent entities, reinforcing the instrumentalist framework. Personally, I find the view that meanings are instrumentally bound particularly compelling, especially when we accept that theories of meaning can function as models. Determining which one of the options (b), (c), and (d) is superior remains an open question—considering also that they are all mutually compatible and that we can fruitfully combine them in many ways. While I recognise the merits of all three, I currently lack a decisive argument in favour of any one of them. It's important to note

[23]Kripke (1982, 52) presented a version of this option in his discussion of Wittgenstein's *Investigations*.

that favouring this family of options does not equate to endorsing meaning nihilism; from a metaphysical standpoint, theorists can comfortably assert that meanings "exist" as abstractions derived from linguistic behaviour or as projections from explicative models.

Ultimately, I see the dialectics as polarised between two main families of options: the fictionalist view of models and meanings and the instrumental view of models and meanings. From a metaphysical standpoint, such views would essentially suggest taking a step back from the metaphysical interpretation of semantic theorising. A noteworthy feature of this contraposition is that we can easily formulate versions of fictionalism that resemble instrumentalism and versions of instrumentalism that resemble fictionalism. We can, in fact, provide instrumental justifications for fiction, and this aspect can be expanded in both directions. Hence, there is flexibility in the categories and the phenomena. An easy moral to draw from this is that this dialectic would probably end up being parasitic on the debate concerning the nature of models in science.

Finally, an important consequence of this perspective deals with semantics as a philosophical and scientific discipline: does it mean that demystifying its metaphysical side entails its theoretical irrelevance? Not at all. On the contrary, once we stop considering semantic theories as a set of theories, one of which is true and the others false, we can envisage the possibility of more explorative approaches. Hence, in undermining the metaphysical dimension of theories of meaning, we are mostly facing a liberalisation of semantics. All our semantic approaches are illuminating in some respect, and perhaps, in a spirit akin to logical pluralism, our best achievements are yet to come.

7 | CONCLUSION

Theories of meaning have been regarded as a metaphysical endeavour by both semantic theorists and meaning sceptics. This perspective becomes problematic in light of the emergence of numerous mutually incompatible approaches. Moreover, various theories of meaning demonstrate high degrees of formal adequacy, challenging the intuitive notion that one theory must be metaphysically true at the expense of others.

This situation can be reinterpreted if we adopt a demystifying view of the metaphysical significance of these theories: they function similarly to models, elucidating aspects of linguistic behaviour for different purposes. Thus, different theories of meaning can be likened to distinct models of the same system or phenomenon, none of which treat meanings as metaphysical entities or as determined by some fundamental constitutive traits.

This perspective can be supported by considering models as "interpretative" frameworks and embracing a form of anti-realism about models. Theories of meaning can reasonably be categorised as interpretative models; the typical anti-realism regarding models—due to their approximations and idealisations—aligns well with this demystifying view of meaning properties.

Ultimately, when interpreting this perspective, we are faced with two main options regarding theories of meaning as models: they can be viewed either as fictional models or as instrumental models. This does not, however, diminish the full value and respectability of semantics, which can be appreciated in an explorative spirit like that of logical pluralism.

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