

# VENDLER'S PUZZLE ABOUT IMAGINATION

JUSTIN D'AMBROSIO

*Australian National University*

DANIEL STOLJAR

*Australian National University*

Vendler's [1979] puzzle about imagination is that the sentences 'Imagine swimming in that water' and 'Imagine yourself swimming in that water' seem at once semantically different and semantically the same. They seem semantically different, since the first requires you to imagine 'from the inside', while the second allows you to imagine 'from the outside.' They seem semantically the same, since despite superficial dissimilarity, there is good reason to think that they are syntactically and lexically identical. This paper sets out the puzzle and offers a novel solution. Our proposal is that, just as there is knowledge-wh (know-how, know-what etc), there is also imagining-wh (imagining-how, imagining-what etc) and that the inside/outside distinction Vendler points to is properly understood as a distinction within imagining-wh. In particular, to imagine swimming from the inside is to imagine what it feels like to swim, while to imagine swimming from the outside is to imagine what it looks like to swim. We show that this proposal is well grounded in both the semantics and syntax of 'imagine.' We also argue it makes better sense than its rivals of the data Vendler found so puzzling.

## 1. Introduction

In 1979, Zeno Vendler presented a puzzle about imagination in the following passage:

We are looking down upon the ocean from a cliff. The water is rough and cold, yet there are some swimmers riding the waves. "Just imagine swimming in that water" says my friend, and I know what to do. "Brr !" I say as I imagine the cold, the salty taste, the tug of the current, and so forth. Had he said "Just imagine yourself swimming in that

---

**Contact:** Justin D'Ambrosio <justin.d'ambrosio@anu.edu.au>, Daniel Stoljar <daniel.stoljar@anu.edu.au>

water", I could comply in another way too: by picturing myself being tossed about, a scrawny body bobbing up and down in the foamy waste. In this case, I do not have to leave the cliff in imagination: I may see myself, if I so choose, from the very same perspective. Not so in the previous case: if I indeed imagine being in the water, then I may see the cliff above me, but not myself from it. [Vendler, 1979, p. 161]

The puzzle contained in this passage is that, while (1) and (2) seem to be semantically different, they also seem to be semantically the same:

- (1) Imagine swimming in that water.
- (2) Imagine yourself swimming in that water.

The argument for semantic difference is as follows. (1) requires you to engage in what Vendler himself called 'subjective imagining', but which is often also called 'inside imagining' or 'imagining from the inside'—we will use these expressions interchangeably. Intuitively, to imagine swimming from the inside is, within imagination, to feel the cold and the tug of the current and to taste the salt; to put it differently, to imagine swimming from the inside is to imagine feeling the cold and the current, and to imagine tasting the salt. By contrast, while (2) permits you to do this, it does not require that you do so. It also permits you to engage in 'objective' or 'outside' imagining, or 'imagining from the outside'. Intuitively, to imagine swimming from the outside is, within imagination, to see or picture yourself, from a vantage point such as a cliff top, swimming in the foamy waste. Since (1) requires something that (2) does not, they are semantically different.<sup>1</sup>

The argument for semantic sameness is as follows. While there is a clear difference between the two sentences—(2) contains an overt pronoun that (1) does not—this difference is merely superficial. Both sentences contain an occurrence of 'imagine' whose complement is plausibly a clause—indeed, what seems to be the very same clause. Both complements involve the gerund 'swimming', and both are understood to have the same subject, namely, you. (2) simply articulates that you are the one doing the swimming while (1) does not. So even if they differ phonologically, (1) and (2) are in fact syntactically the same, and have constituents with the same semantic values. Hence, by compositionality, they are semantically the same.

How should we resolve the conflict over these sentences? Vendler's own solution was that, contrary to the argument for semantic sameness, the logical

---

<sup>1</sup>Here we will not attempt to review the extremely rich literature on inside and outside imagination. Some classic contributions are Williams [1973], Wollheim [1974], Vendler [1982] (a follow-up to his [1979]), and Walton [1990]. For an excellent introduction and further references, see Ninan [2008, 2016].

forms of (1) and (2) are in fact quite different. The form of (1) is very much as the argument for semantic sameness would have it, but (2), he said, is, or at least has a reading on which it is, an elliptical version of a sentence that contains extra material, namely, 'imagine seeing yourself swimming in that water.' If this is so, it is unsurprising that the two sentences behave quite differently.

A more common proposal in recent literature has been to follow James Higginbotham [2003], François Recanati [2007] and Dilip Ninan [2008, 2016] in emphasizing the *de se* or indexical elements in these sentences, or sentences like them. Just as, in John Perry's famous [1979] example, one can know that someone is making a mess without knowing that you yourself are making a mess—even when you are the someone in question—so too you can imagine someone who is in fact you swimming without imagining yourself swimming. On this 'indexical view', as we will call it, the difference between (1) and (2) is that (2) asks you to do something along the lines of the first, while (1) asks you to do something along the lines of the second.

This paper presents an altogether different approach to Vendler's puzzle. Our starting point is a proposal about how to understand the distinction between inside and outside imagination. On the view we will develop, this distinction is one within the category of imagination-wh: to imagine something from the inside is to imagine how it feels or what it feels like, while to imagine something from the outside is to imagine how it looks or what it looks like.

If this proposal is accepted, the semantic questions as regards (1) and (2) become, first, why both sentences involve imagination-wh, and, second, why they involve different instances of imagination-wh. Here our proposal combines two distinct ideas. The first is that (1) and (2) should be interpreted, in the first instance, as cases of non-propositional imagining in which you imagine an event or an object, rather than as cases of propositional imagining in which you imagine that such and such is the case. In (1) you are asked to imagine an event denoted by the gerund 'swimming'—an event of swimming. In the case of (2), while it can be interpreted like (1), it also has a different reading on which you are asked to imagine an object, namely yourself.

The second idea draws on the literature in semantics on concealed questions. The main idea of this literature is that a sentence such as 'Mary knows Bill's phone number' is semantically equivalent to a sentence that contains an embedded question, such as 'Mary knows what Bill's phone number is.' Something similar is true, we will suggest, in the case of sentences involving 'imagine.' In general, to imagine a thing is to imagine what it is like; hence, in particular, to imagine an event or an object is to imagine what that event or object is like. From this point of view, what (1) asks you to do is to imagine what swimming is like, and this in turn, we will argue, requires the inside reading. By contrast, what (2) asks you to do, at least on one reading, is to imagine what you are like, and this

in turn gives rise to the outside reading.

The paper is organized as follows. We will begin in §§2-3 by sketching a neo-Davidsonian account of the semantics of 'imagine' that forms the background to our discussion. We then turn to Vendler's puzzle and explain our approach to it (§§4-7). Finally, we contrast our approach with rivals, focusing on Vendler's ellipsis view and the indexical view of Higginbotham, Recanati and Ninan (§§8-9)

## 2. Semantics for 'imagine'

Like several other psychological verbs, the expression 'to imagine' may take different complements: that-clause complements, as in (3)-(4), NP complements as in (5)-(6), and *wh*-complements as in (7)-(8):

- (3) Sally is imagining that the world is flat.
- (4) Sally is imagining that she won a million dollars.
- (5) Sally is imagining her keys.
- (6) Sally is imagining a unicorn.
- (7) Sally is imagining where her keys are.
- (8) Sally is imagining how she will get home.<sup>2</sup>

An advantage of the neo-Davidsonian approach that we will adopt is that it permits a uniform treatment of such sentences.<sup>3</sup> In all these cases, the verb 'imagine' denotes a particular state of imagining, and the sentence is true only if there is such a state.<sup>4,5</sup> The difference between the sentences is explained by the fact

---

<sup>2</sup>A helpful reader points out that 'imagine' is constrained in which *wh*-complements it accepts. For instance, one cannot imagine *whether* it will rain tomorrow. In his well-known discussion of interrogatives, Karttunen [1977, p. 5] makes a similar point, noting a range of other verbs that are constrained in just this way. We will leave the question of what accounts for this restriction in the case of 'imagine' for future research.

<sup>3</sup>For an introduction to and defence of neo-Davidsonian semantics, see Parsons [1990].

<sup>4</sup>One may point out that imagining is an event rather than a state. We agree, but here we will follow the practice, common in the philosophy of mind, of using the word 'state' in a broad sense to pick out events, states, and processes. This fits the practice within neo-Davidsonian semantics of quantifying over eventualities—i.e. states in this very broad sense [Parsons, 1990]. Accordingly, we will most often talk of entering into or being the subject of states of imagining, but if need be, all of our claims could be reformulated in terms of events.

<sup>5</sup>What is the nature of imagining and how does it differ from belief, memory, perception and so forth? This is obviously a huge issue, but we will not try to solve it in this paper. We will assume that imagining is a state with a distinctive functional, epistemological and phenomenal role, a role that distinguishes it from other states that have different such roles. Exactly how to specify these roles will not matter for our purposes.

that each of the verb's argument-places is associated with a different thematic role, which serves to specify the role that particular items (objects, properties or propositions) play with respect to the state.

Some common thematic roles are: instrument, subject, cause, location, among many others.<sup>6</sup> The subject of the state is typically the person who is in the state denoted by the verb, the location is where, if anywhere, the state is instantiated, and so on. But there are also some less common thematic roles, such as the content role, which specifies the proposition that is the content of the relevant state if there is one, and the theme role, which specifies the direct object if any of the state reported by the verb.<sup>7</sup>

If we apply this approach to cases involving a that-clause complement, we may say, for example, that (3)—'Sally is imagining that the world is flat'—is true if and only if:

- (9) There is a state *s* such that [imagining(*s*) & Subject(*s*,Sally) & Content(*s*, the proposition that the earth is flat)]

Here Content is a thematic role that accounts for the semantic contribution that-clauses make to propositional attitude ascriptions.<sup>8</sup> A similar approach can be taken for (4), for example, where all that changes is the proposition.

The same applies in cases in which 'imagine' appears, not as an intransitive verb with a that-clause complement, but as a transitive verb with an NP complement, as it does in (5), 'Sally is imagining her keys'. Since the keys in question are physical objects that exist just as Sally does (or so we will assume), it is natural to interpret (5) as being true only if there is a relation of a particular sort between Sally and them. We may capture this by saying that (5) is true if and only if:

- (10) There is a state *s* such that [imagining(*s*) & Subject(*s*,Sally) & Theme(*s*,her keys)]

Here the theme is the direct object of the state of imagining, and is a different thematic role than the content role that was introduced above. Nevertheless, the state of imagining reported in (5) and in (3) is the same type of state; propositions

<sup>6</sup>See, among others, Parsons [1990], Forbes [2006], and Grimm and McNally [2015].

<sup>7</sup>Our use of the role 'subject' is slightly nonstandard. Where we have used 'subject', Parsons would use 'agent' or 'experiencer'. But as we will see below, this use is forced on us by the nature of imagining, which requires us to distinguish between the individual who imagines (the subject, in our sense), the individual who does the thing imagined (the agent), and individual to whom this event is like something (the experiencer).

<sup>8</sup>For discussion of the neo-Davidsonian approach to the semantics of attitude verbs, see Kratzer [2006] and Hacquard [2010], Forbes [2018], and Yli-Vakkuri and Hawthorne [2018]. See also Pietroski [2000] for related ideas.

and concrete particulars simply play different roles in that state.

To assume that (5) reports a state of which Sally's keys are the theme is in effect to assume that 'imagines' is either an extensional verb or an intensional transitive verb on what is usually called its relational reading. But 'imagine' may occur as an intensional transitive verb with a notional rather than a relational reading. In (6), for example, Sally imagines not her keys but a unicorn. Since there are no unicorns, they cannot be the theme of the state, and it can't be that Sally bears any relation to one of them. Once again, however, the neo-Davidsonian framework can accommodate this, and the remedy again is to appeal to a different thematic role. Following Forbes [2006], we will say that 'a unicorn,' on the notional reading, specifies a property that characterises Sally's state of imagining, which we can capture with a thematic role called 'char'. From this point of view, (6) is true if and only if:

- (11) There is a state *s* such that [imagining(*s*) & Subject(*s*,Sally) & Char(*s*,the property of being a unicorn)]<sup>9</sup>

For the property of being a unicorn to characterise a state is not for that property to be the object of the state; Sally is not (we will assume) imagining the property of being a unicorn, as she might do if she were in a class on the metaphysics of properties. As in the case of content, within the neo-Davidsonian framework, char is understood as a novel thematic role distinctive to the notional reading of intensional transitive verbs. Spelling out how char functions in the case of notional imagining is a difficult task, but since nothing we will say below will turn on how it functions, we will not pursue it here.

We have given a brief account both of intransitive and transitive occurrences of 'imagine'. How might we develop this account to deal with cases in which 'imagine' takes a wh-complement?

In general, wh-clauses have two readings, an interrogative reading and a free relative reading—and when embedded under 'imagine', wh-clauses can receive either interpretation [Bresnan and Grimshaw, 1978, Frana, 2017, ~ Simík, 2018]. Here we will concentrate exclusively on the interrogative reading. One well-known account of the semantics of embedded interrogatives, which we shall adopt, is the one developed by Karttunen [1977]. On Karttunen's view, the semantic value of an embedded interrogative is a set of propositions each of which is a true answer to the corresponding question. So, for example, 'where her keys are' has as its semantic value a set of propositions each of which is a true answer to the question 'where are Sally's keys?', although in this case there may only be

<sup>9</sup>In the text we modify Forbes's view slightly. Forbes's actual view is that char is a relation between an event and a generalized quantifier—a property of properties. But here we treat char as a relation between an event and an ordinary property. Nothing we say in what follows will depend on this difference.

one such proposition.<sup>10</sup>

Adopting this approach gives us a straightforward way to deal with (7)—‘Sally is imagining where her keys are’—where the *wh*-clause has its interrogative reading, namely, that it is true if and only if:

- (12) a. There is a set of propositions *A* that truly answer the question ‘Where are Sally’s keys?’, each of which could be expressed by a sentence of the form ‘Sally’s keys are in location *L*’; and  
 b. There is a proposition *p* in *A* and a state *s* such that [imagining(*s*) & Subject(*s*, Sally) & Content(*s*, *p*)]

In effect, (7) reports a case of propositional imagining but does not specify exactly what the relevant proposition is. It only says that Sally is in a state of imagining whose content is a proposition that truly answers the question ‘Where are her keys?’.<sup>11</sup>

The same approach may be taken to cases of imagining-how, which will be central to us when we turn to the inside/outside distinction. In the case of (8), for example, we may say that ‘how Sally got home’ has as its semantic value a set of propositions each of which is a true answer to the question ‘how did Sally get home?’. Hence (8) is true if and only if:

- (13) a. There is set of propositions *A* that truly answer the question ‘How did Sally get home?’, each of which could be expressed by a sentence of the form ‘Sally got home in way *W*’; and  
 b. There is a proposition *p* in *A* such that there is a state *s* such that

---

<sup>10</sup>Two features of the the semantics for embedded questions offered by Karttunen [1977] are worth noting. First, Karttunen treats *wh*-interrogatives as denoting sets of what are sometimes called ‘mention-some’ answers. Second, the answers in question, on his view, must be true answers. This last point has the consequence that verbs that are not themselves factive when they take *that*-clause complements, such as ‘tell’, behave factively when they take *wh*-clause complements: ‘The verb *tell* with a *that*-complement does not entail that what is told is true; with an indirect question it does’ [Karttunen, 1977, p. 11]. However, this feature is controversial. While it is endorsed by Groenendijk and Stokhof [1984], Stanley and Williamson [2001], and Stanley [2011], among others, it is denied by Lahiri [2002], Egré and Spector [2007], and George [2011]. We will not engage with this controversy here. In the text we will assume that Karttunen’s point about ‘tell’ holds also for ‘imagine’, but our basic points could be made in a framework that does not require *wh*-interrogatives to denote sets of true answers.

<sup>11</sup>In discussing embedded questions, Karttunen says nothing at all about ‘imagine’; he discusses only ‘know’. On his view, in order to know-*wh*, one must know that *p* for every *p* that is a true, mention-some answer to the embedded question. This account of the relationship between knowing-*wh* and knowing-that has not been widely adopted. Here our account of interrogatives embedded under ‘imagine’ differs from Karttunen’s account of ‘know’ in that we require, for a subject to imagine-*wh*, only that the subject imagines that *p* for *some p* that is a true, mention-some answer to the embedded question. For similar approaches, see George [2011] and Stanley [2011].

[imagining(s) & Subject(s,Sally) & Content(s,p)]

And of course the same thing will apply, *mutatis mutandis*, for other sorts of 'wh'-constructions.

### 3. Imagining how it feels and how it looks

We have been concentrating on imagination in general, but our interest is not with that but with what Vendler describes as 'vicarious experience', that is, with cases in which we imagine various experiences.

To report such cases, it is natural in ordinary language, as well as in philosophy and science, to use 'wh'-constructions, such as:

(14) Sally is imagining how it feels to get home late.

(15) Sally is imagining how it looks to get home late.

In outline it is clear that we may extend the neo-Davidsonian view just summarized to such cases. In the case of (14), for example, at least if we take the wh-clause here to have its interrogative reading, we may treat it as having as its semantic value a set of propositions each of which is a true answer to the question expressed by 'how does it feel to get home late?' Then (14) is true if and only if there is a state of imagining that has one of those propositions as its content.

While this will indeed be our approach, it will be important for our purposes to notice that an expression such as 'how does it feel to get home late?' has more structure than is apparent at first. We may ask, for example, not only 'how does it feel to get home late?' and 'how does it feel for Sally to get home late?' but also 'how does it feel to Mary for Sally to get home late?'—suppose Mary, for example, is Sally's mother sitting up concerned about Sally's getting home late. In short, 'how does it feel to get home late?' must have sufficient structure to distinguish in principle the individual understood to get home late, and the individual understood to feel a certain way. We will use the phrase 'agent' to denote the first, and 'experiencer' to denote the second.

What this suggests is that (14) is true if and only if:

- (16) a. There is a set  $A$  of propositions that truly answer the question 'how does  $x$ 's getting home late feel to  $y$ ', each of which could be expressed by a sentence of the form ' $x$ 's getting home late feels to  $y$  way  $W$ '; and
- b. There is a proposition  $p$  in  $A$  and a state  $s$  such that [imagining(s) & Subject(s,Sally) & Content(s,  $p$ )]

This approach to (14) entails that there are at least three potential individuals to



keep track of: the subject who imagines, the agent and the experiencer. When we leave these subjects unarticulated, as in (14), all three coincide: Sally is imagining how it feels to her for her to get home late. But in sentences otherwise like (14) but in which these subjects are articulated, they might in principle come apart. Sally's neighbour might be imagining what it is like to Sally's mother (Mary) for Sally to get home late.

It will be important also to take note of a potential distinction in considering which propositions serve as answers to the relevant question. One can imagine how it feels to Mary for Sally to get home late, but one can also imagine how it feels to a neighbour for Sally to get home late. In the latter case, there may be no specific neighbour to whom it feels like something—'a neighbour' can be interpreted non-specifically. Thus, according to the view we have proposed, the sentence 'Sally's getting home late feels to a neighbour way *W*' can express two propositions: one in which there is a specific neighbour who feels that way, but another in which there is not. Moreover, it can be true that Sally's getting home late feels to a neighbour way *W*—that is, is such as to make a neighbour feel a certain way—without there being any neighbour who feels that way.<sup>12</sup>

What we have just said for (14) applies also in the case of (15) except that 'looks' replaces 'feels.' Hence it is true if and only if:

- (17) a. There is set *A* of propositions that truly answer the question 'how does *x*'s getting home late look to *y*?', each of which is expressed by a sentence of the form '*x*'s getting home late looks way *W* to *y*;' and  
 b. There is a proposition *p* in *A* and a state *s* such that [imagining(*s*) & Subject(*s*, Sally) & Content(*s*, *p*)]

Here again we have potentially three individuals to keep track of, and a potential ambiguity in the embedded sentence, and so a potential ambiguity in which proposition serves as the content of the state.

<sup>12</sup>We think that a scopal account of the distinction between specificity and nonspecificity is plausible, but will not try to defend this in the text. In fact, there are three distinctions here that have all been argued to come apart: between specific and nonspecific; between wide and narrow scope; and between *de re* and *de dicto* readings. If these distinctions do come apart, there will be many more than just two readings. However, what is important for our purposes is that there are at least two readings available for the indefinite, one of which is not existentially committing. We remain neutral here on how these two readings are best understood. For further discussion, see Montague [1974], Fodor [1970], Keshet [2008, 2011] and Szabó [2010] for further discussion.

#### 4. Imagining-wh and the inside/outside distinction

With this general approach to 'imagine' and 'imagine-wh' before us, we can now turn our attention to Vendler's puzzle. The first thing is to explicate the distinction between imagining from the inside and the outside, or equivalently, inside and outside imagining.

Here our account is straightforward. To imagine something from the inside—to be in a state or engage in an event of inside imagining—is to imagine how that thing feels or what it feels like. So, to imagine swimming in that water from the inside is to imagine how swimming in that water feels or what swimming in that water feels like. By contrast, to imagine something from the outside—to be in a state or engage in an event of outside imagining—is to imagine how it looks or what it looks like. So, to imagine swimming in that water from the outside is to imagine how swimming in that water looks or what swimming in that water looks like.<sup>13</sup>

What is the status of the claim that to imagine something from the inside is to imagine what it feels like and to imagine something from the outside is to imagine what it looks like? We take this to be a stipulation rather than anything else. The phrases 'from the inside' and 'from the outside' are terms of art, and different people may use them differently. What we have just done is stipulate how we will use them here. Still, it is a stipulation that has considerable intuitive backing. When Vendler imagines swimming in that water, it is extremely natural to say that what he is doing is imagining what it feels like to swim in that water. Likewise, when he imagines himself from a cliff top swimming in that water, it is extremely natural to say that what he is doing is imagining what he looks like from a cliff-top swimming in that water.

One distinctive feature of this proposal, as we have already indicated, is that it treats the distinction between inside and outside imagining as a distinction within imagining-wh. If there is imagining-wh just as there is knowing-wh, there can be no problem in principle with the suggestion that we can indeed imagine how it looks or feels to swim in that water. Our proposal goes further only in that it identifies imagining from the inside with imagining how something feels, and imagining from the outside with imagining how something looks. A further feature is that, on this view, the inside/outside distinction is not exhaustive. One can perfectly well imagine that something is the case without imagining either how something feels or how it looks.<sup>14</sup>

---

<sup>13</sup>Two things are worth emphasis here. First, we are treating 'how it feels' and 'what it feels like' as equivalent in the text; likewise 'how it looks' and 'what it looks like'. There may be some differences here but these will not matter to the points we want to make. Second, we will sometimes use the infinitive 'to swim' as a variant on the gerund 'swimming', but strictly speaking our interest is in the latter.

<sup>14</sup>Here it is important to recall a point we made earlier in fn. 10, namely, that on Karttunen's

Suppose now we accept this account of the inside/outside distinction; then we are confronted with three questions regarding the sentences (1) and (2) with which we began. First, why, and in what sense, does (1) require you to imagine what swimming in that water feels like? Second, why, and in what sense, does (2) permit you to do this, but also permit you to imagine what swimming in that water looks like? And, finally, what does all this tell us about the arguments we reviewed above, the argument for semantic difference and the argument for semantic sameness? Our task in the next three sections is to answer these questions.

## 5. Imagining events and concealed questions

The first question of the three just distinguished is: why, and in what sense, does (1)—‘Imagine swimming in that water’—require you to go into a state in which you imagine what it feels like to swim in that water? Why, as we might put it, does (1) require the inside reading?

Our answer to this question involves three observations. The first is that (1) has a gerundive complement, ‘swimming’, that functions in certain ways like an infinitive such as ‘to swim.’ Like the infinitive, ‘swimming’ lacks an overt subject; and in both cases it is common to posit a covert subject—‘PRO’ as it is typically called—that can serve as the agent of the swimming. In the case of the gerundive nominal, this yields what is standardly called the PRO-*ing* construction [Lees, 1960, Abney, 1987, Milsark, 2005, Pires, 2007, Grimm and McNally, 2015].

How should we interpret PRO as it occurs in the PRO-*ing* construction in (1)? Standardly, PRO is taken to be indexed to, or ‘controlled’ by, the subject of the entire ascription. In such cases, PRO denotes that subject. But PRO can also have what is called an ‘arbitrary’ or ‘generic’ interpretation, on which it does not denote the subject of the ascription, but instead is interpreted roughly as meaning ‘one’, as in ‘imagine one swimming in that water.’ As we will see as we proceed, an important fact about (1) is that it permits the generic interpretation, but let us assume for the moment that PRO here has its standard, non-arbitrary reading; it then follows that if you comply with (1), you imagine [PRO swimming],

---

semantics, imagining wh- has a factivity presupposition: if one imagines wh-, what one imagines must be true. This, together with the proposal articulated in the text, entails that both inside and outside imagining likewise have a factivity presupposition. We will not try here to deal with issues that may arise from this consequence, except to notice two points. First, we could if we wish avoid the consequence by offering slightly broader definitions of inside and outside imagining; for instance, we might treat inside imagining as either a state of imagining what something feels like or a state that would be imagining what something feels like, were its content true. Second, as also noted in fn. 10, our basic suggestions could be made even if we relinquish this feature of Karttunen’s semantics.

where PRO is controlled by, and so receives its reference from, the subject of the sentence (deleted in imperatives), namely, you.

The second observation is that while the PRO-ing construction bears some similarity to an infinitive, and has some features of a clause, it is nonetheless standardly interpreted as a nominal expression that denotes an event or an event-type, with PRO serving to denote the agent of that event.<sup>15</sup> And as we saw above, just as one can imagine that such and such is the case, one can also imagine things, like people, faces, furniture, *etc.* Among the things one can imagine are events (see [Higginbotham, 2003]), and so just as you can imagine a death, a party, a funeral, and so on, you can likewise imagine swimming. Thus, to comply with (1), you must imagine an event—namely an event of swimming—of which you are the agent.

The third observation has to do with concealed questions, which is a major topic in contemporary semantics; a recent extended discussion is Frana [2017]. Some nominals that appear as the objects of certain verbs can be interpreted as concealed questions. 'John knows the capital of Mongolia', for example, is naturally interpreted as 'John knows what the capital of Mongolia is', and, 'At the end of the story, Miss Marple revealed the murderer' is naturally interpreted as 'At the end of the story, Miss Marple revealed who the murderer is.' Something similar is true in the case of 'imagine,' though here the question at issue is very often a 'what it is like' question, rather than a 'what it is' or 'who it is' question. For example, 'John imagined the capital of Mongolia' is naturally understood as 'John imagined what the capital of Mongolia is like.' Likewise, 'Mary imagined Ulaanbaatar' is naturally heard as 'Mary imagined what Ulaanbaatar is like.' And finally, to take a case of imagining an event rather than an object, 'they imagined the Royal wedding' is naturally heard as 'they imagined what the Royal wedding was like.'

These three observations allow us to formulate our main suggestion about (1), namely, that to imagine [PRO swimming in that water] is to imagine what [PRO swimming in that water] is like, or equivalently for most purposes, to imagine what it is like [PRO to swim in that water]. In other words, what (1) asks you to do is to imagine what swimming in that water is like.

How does this proposal help to explain why (1) requires the inside reading? The answer here has to do with a well-known observation in philosophy of mind: namely, that in most contexts, 'what it is like' acts like 'what it feels like', particu-

---

<sup>15</sup>Concerning the status of the PRO-ing construction as a noun phrase, see Schachter [1976], Pullum [1991], Grimm and McNally [2015]. Abney [1987] treats most gerundive expressions as DPs. This contrasts with the older tradition, initiated by Lees [1960], Ross [1967, 1972], Wasow and Roeper [1972] and endorsed by Chomsky [1970], on which gerunds were seen as clauses transformationally related to sentences. Concerning the semantic view that gerunds denote events, see Portner [1992], Higginbotham [2003], Grimm and McNally [2015]. Grimm and McNally [2015] treat 'swimming' as a noun phrase that denotes an event-type.

larly in cases in which we have a gerund with a PRO subject; this is what Stoljar [2016] has called the 'stereotypical' reading of 'what it's like'. In most contexts, that is, to ask what it's like being one of the beautiful people just is to ask how it feels being one of the beautiful people. Likewise, in this context, to be asked to imagine what swimming in that water is like will convey the request to imagine what swimming in that water *feels* like. That is why (1) has the inside reading.

This explanation of why (1) requires the inside reading is, strictly speaking, not a semantic explanation—the requirement in question is pragmatic. 'What it's like' does not literally mean 'what it feels like.' But the point of referring to a stereotypical reading is to bring out something that is commonly understood in ordinary speech and in philosophical discussions of consciousness: that 'what it's like' is stably interpreted as 'what it feels like'.<sup>16</sup> This point raises a number of questions: for instance, what does 'feels' mean as it is used here? And what is the nature of this stable connection? For our purposes, however, the important point is that there is such a connection, not its precise nature, and so we will set these questions aside.<sup>17</sup>

One might object that not all imaginings of events are cases of inside imagining. When you imagine your funeral, for example, this would usually be from the outside rather than the inside. You don't imagine what it feels like for you to be at your funeral; since you are dead, it presumably feels no way at all. You might perhaps imagine what it feels like to others to be at your funeral, which is a case of inside imagining, but even here there is no requirement that this occurs when you imagine your funeral. However, our proposal is not that, whenever you imagine an event, you imagine it from the inside. While (1) does require you to imagine an event, the key point in addition is that here the event is denoted by a gerundive complement, and it is only in such cases that the inside reading is required.<sup>18</sup>

<sup>16</sup>A point made by Paul Snowdon [2010] illustrates both the stability of the connection between 'what it's like' and 'what it feels like' and the fact that they do not literally mean the same thing. He points out that one can ask, e.g., 'what will it be like for Britain to leave the EU?', without asking how Britain will feel. This shows that they are non-synonymous, but the very strikingness of the example demonstrates their stable connection; it is the exception that proves the rule.

<sup>17</sup>For discussion of some of these issues, see Brogaard [2012] and Stoljar [2016].

<sup>18</sup>Anand [2011] provides examples similar to the funeral example, such as 'Imagine being buried, unconscious', that involve gerundive complements, which he claims do not have an inside reading. On the contrary, we think this sentence does ask you to imagine from the inside—it is simply impossible to comply with. Indeed, it is because it is a case of inside imagination that complying with it is impossible. However, a reviewer rightly points out that this example differs importantly from imperatives such as 'Imagine a round square'. We agree; there are two key differences. First, unlike 'round square', there is nothing inconsistent or unsatisfiable about the complement 'being unconscious' on its own. Second, even when the question concealed by the complement is made overt, as in 'Imagine what being unconscious is

One might also object that what we have said relies on an exaggerated view of the phenomenon of concealed questions. In the semantics literature, this phenomenon is sometimes restricted in two ways. First, such concealment is only possible when the complement of the verb is a determiner phrase, and it is controversial whether the PRO-*ing* construction is a DP. Second, the only interrogatives that are concealed are 'identification questions', i.e., questions of the form 'what it is' or 'who it is'. From this point of view, while 'John knows the capital of Mongolia' may indeed be equivalent to 'John knows what the capital of Mongolia is', it is not the case that 'Mary imagines Ulaanbaatar' is equivalent to 'Mary imagines what Ulaanbaatar is like', still less that 'I imagine swimming in that water' is equivalent to 'I imagine what swimming in that water is like'.

There are several points to make in response to this objection. As regards identification questions, it is hard to see why 'what it is' questions can be concealed while 'what it's like' questions cannot. When you imagine your funeral, for example, you don't imagine what your funeral is, you imagine what it's like. Thus, the restriction of concealed questions to identification questions—as argued for by Nathan [2006] and adopted by Frana [2017]—is on the face of it unprincipled: this example is as compelling as the examples they discuss. As regards the question of whether the gerund is a nominal expression as opposed to a clause, we saw above that there is a significant strand of work in syntax indicating that it is a nominal expression.<sup>19</sup> Having said this, we acknowledge that at this point there is an empirical presupposition in our argument, namely, that the PRO-*ing* construction is of an appropriate syntactic type to conceal questions.

## 6. Imagining objects and concealed questions

Our second question of the three distinguished above was: why, and in what sense, does (2) permit you to imagine what swimming in that water feels like, but also to imagine what swimming in that water looks like? Why does it permit both an inside and an outside reading?

Our answer to this question begins with the observation that, like (1), (2) can be read as having an nominal complement, and so as involving a case of non-propositional imagination. While we will discuss its syntax in detail in the next section, the key thing to notice is that (2) has a reading on which it entails (18), and this is obviously non-propositional:

---

like', the imperative still can be complied with. It is only when one moves to the stereotypical interpretation, 'Imagine what being unconscious feels like', via a pragmatic mechanism, that the imperative is impossible to comply with.

<sup>19</sup>We do not think that the question of whether the gerund is categorized as a DP rather than an NP bears on whether it can conceal a question. The main point for our purposes is that the gerund is a nominal expression, whatever its phrasal category.

(18) Imagine yourself.

On the reading on which it entails (18), (2) does not ask you to imagine that something is the case, nor even to imagine an event. Rather, it asks you to imagine a thing. What is the thing that you are asked to imagine? It is yourself, swimming. In this way we may see (2) as analogous to the Beatles' 'picture yourself on a boat on a river.' In that case, you picture something, namely, yourself on a boat on a river. Likewise, (2) tells you to imagine something, namely, yourself, swimming or yourself as a swimmer or qua swimmer as we will sometimes say (see Landman [1989a,b], Grimm and McNally [2015], Szabó [2003]).

Suppose this is correct and (2) has a reading where it entails that you are to imagine a thing, namely yourself, swimming. In that case, our earlier observation about concealed questions applies. When you imagine a thing, you imagine what it's like. In consequence, when you imagine yourself, swimming you imagine what you are like as a swimmer.

Why do these claims about (2) permit it to have the outside reading? What we have said doesn't *entail* that (2) asks you to imagine what you as a swimmer look like. Still, this interpretation is nevertheless encouraged because standardly, when we imagine what an object is like, we imagine what it looks like. When we imagine what apples are like, for example, we typically imagine what they look like; likewise, if you imagine what you are like, swimming, you typically imagine what you look like, swimming.

It is an interesting question which we will not settle here why this is so. It might simply be that we tend to imagine things in highly visual terms. It might be that we often hear 'imagine' as restricted to cases of visual imagination. But whatever is true, it is surely true that when we imagine what objects are like we often imagine what they look like. That is why (2) permits, and in fact strongly suggests, an outside reading.

This explains why (2) permits an outside reading; but why does it also permit an inside reading? The answer is that an expression like 'yourself swimming' is ambiguous. It may be used to denote an object of a particular kind, namely, you qua swimmer. That is the reading we have been focusing on so far. However, it may also be used to denote an event, namely an event of swimming of which you are the agent. As we will see more fully below, on one reading, 'yourself swimming' is what is sometimes called the ACC-*ing* construction, which is closely related to the PRO-*ing* construction. Given this similarity, (2) will have a reading that is very similar to the dominant reading of (1). It too will be a case of imagining an event of swimming of which you are the agent. And while imagining an event may not require you to enter into a state of inside imagining, it permits, and in this case strongly suggests, that you comply by doing so.<sup>20</sup>

<sup>20</sup>What about a community of blind people? Our claim about the connection between

In sum, the explanation for the fact that (2) permits both readings is as follows: on one reading it is a case of imagining an object, and on another reading it is a case of imagining an event. When you imagine either an object or an event you imagine what they are like. Imagining what an object is like is very often a matter of imagining what the object looks like. And while imagining what an event is like need not require that you imagine what it feels like, it suggests that you do so when the event is picked out by the *ACC-ing* construction. That is why (2) has both inside and outside readings.<sup>21</sup>

## 7. The arguments for semantic sameness and difference revisited

The third question of the three distinguished above was: what does our proposal say about the arguments, first, that (1) and (2) are semantically different, and, second, that they are semantically the same?

As regards the argument for semantic difference, our attitude is straightforward: we accept it. We accept, that is, that (1) and (2) are semantically different since, while both are equivalent to sentences that explicitly ask you to imagine-*wh*, the sentences to which they are equivalent in each case are distinct.

Turning then to the argument for semantic sameness, as we saw above, the basic idea of the argument is that (1) and (2) are at some level syntactically the same, and so should say the very same thing. Vendler himself formulated this point by arguing that in both sentences, the complement of 'imagine' is derived from the same clause, [you swim], in the deep structure, and so however we interpret this clause, so long as we interpret it uniformly, the sentences will come out as meaning the same thing.

But in fact, there are at least two reasons for thinking that (1) and (2) differ syntactically. First, the clausal account of the syntax of such complements is not the only view; on the contrary, perhaps the dominant view treats gerunds as nominal expressions—noun or determiner phrases—rather than clauses. Given this view, (1), repeated here, has the structure given in (19):

### (1) Imagine swimming in that water

imagining what an object is like and imagining what it looks like is that the connection is contingent, and arises, more or less, because we are inveterate visualisers. So in a community of blind people, depending on the details, it simply might not be true.

<sup>21</sup>One alternative to the view we have proposed here is that (1) and (2) differ in that (2) expresses a propositional attitude while (1) does not. On this view, (2) would permit both inside and outside readings because it is simply a very general attitude—it enjoins you to imagine that you are swimming in that water—and allows you to do so in any number of ways. While this is a way of accommodating the way that (2)'s compliance conditions differ, it does not account for the syntactic data we present in the next section. Specifically, if I imagine that I am swimming in that water, it does not follow that I imagine myself—but as we will see, (2) validates exactly this inference.



(19) Imagine [<sub>DP</sub> PRO swimming in that water].

In (19), [PRO swimming in that water] is the *PRO-ing* construction discussed above, which denotes an event type whose agent is denoted by PRO. By contrast, (2), repeated here, is ambiguous between the two structures given in (20) and (21):

(2) Imagine yourself swimming in that water.

(20) Imagine [<sub>DP</sub> yourself swimming in that water].

(21) Imagine yourself<sub>*i*</sub> [<sub>AP</sub> PRO<sub>*i*</sub> swimming in that water].

In (20), the complement of 'imagine' is what above we called the *ACC-ing* construction.<sup>22</sup> Semantically, this construction is similar to the *PRO-ing* construction, and so, we think, likewise denotes an event of which you are the agent. Thus, the reading brought out by (20) is one on which you are required to imagine an event of which you are the agent—a reading very similar to the reading in (19). By contrast, (21) evinces a reading on which the direct object of the state of imagining is a person, rather than an event. In (21), [PRO<sub>*i*</sub> swimming in that water] is likewise an instance of the *PRO-ing* construction, except it is one that serves as what is called a 'free adjunct' that modifies 'yourself'. The key feature of free adjuncts is that they can be dropped; this vindicates our observation above that (2) requires you to imagine yourself. This is a fundamental syntactic distinction that differentiates (1) from (2).

There is significant evidence that (2) has the free adjunct reading just proposed. First, free adjunct uses of the *PRO-ing* construction are extremely common. In fact, in examining corpus data, Grimm and McNally [2015] show that *PRO-ing* constructions are most frequently used as free adjuncts. The frequency of such uses should attune us to the possibility that (21) has such a structure. Second, the presence of a free adjunct reading of similar sentences involving 'see' is well-attested. Consider:

(22) John saw Bill swimming in the water.

Similarly to (2), (22) appears to have a reading that entails (23):

(23) John saw Bill.

Declerck [1982] and Felser [1999] both recognise this fact, and posit that when

<sup>22</sup>An anonymous referee raises the question of how, if 'yourself swimming' is an instance of the *ACC-ing* construction, 'yourself' gets accusative case marking. Here we use the label '*ACC-ing*' to pick out a particular kind of event-denoting gerundive construction, where the agent of the event is denoted by a DP with accusative case, but we will not adopt any particular syntactic theory of how this occurs.

'see' is followed by an DP + gerund combination, it is ambiguous, and has a reading on which the DP + gerund does not form a constituent. Rather, just as we have posited for (2), they hold that (22) is ambiguous between two readings brought out by (24) and (25), respectively:

(24) John saw [<sub>DP</sub> Bill swimming in that water]

(25) John saw Bill<sub>i</sub> [<sub>AP</sub> PRO<sub>i</sub> swimming in that water.]

These two readings are structurally identical to the two readings of (2) discussed above. This provides further evidence for our proposal concerning 'imagine', first because there is a general similarity between 'imagine' and perceptual verbs, but second, and more specifically, because (2) clearly reports a case of visual imagining, and so we would expect that 'imagines' in this case behaves like 'sees.' Thus, we think there is strong evidence for a syntactic ambiguity in (2) that is not present in (1), and this, together with our arguments above concerning concealed questions, explains the availability of the outside reading for (2), and the unavailability of such a reading for (1).

But there is a second syntactic difference between (1) and (2). We said above that both sentences have readings on which they require the subject to imagine events—i.e. the readings evinced by (19) and (20). However, these two readings are different in virtue of the presence of PRO in the former. Earlier, we took PRO to be non-arbitrary, but noted that it often has an arbitrary interpretation. That possibility is available for (19) but not for (20). The sentence 'imagine swimming in that water' allows you to comply by imagining an arbitrary agent swimming in that water, but 'imagine yourself swimming in that water' does not.

To illustrate, compare 'imagine swimming in that water' with 'remember swimming in that water'. The latter requires the agent of the remembered event to be non-arbitrary, namely, the very person whose memory it is; not so for imagining swimming in that water. A person who says 'imagine swimming in that water' might go on to elaborate by saying 'one would be so cold', and here, the anaphoric 'one' clearly indicates that PRO has its arbitrary interpretation. Thus, even on the reading that is similar—the reading of both (1) and (2) that enjoins you to imagine an event—there are differences concerning who you must imagine doing the swimming.

Thus the argument from semantic sameness fails on two counts. (1) and (2) differ syntactically in that the latter but not the former involves a PRO-*ing* construction that serves as a free adjunct, and so can be dropped. And even when both enjoin you to imagine an event, (1) and (2) differ in that the latter, but not the former, requires you to imagine that you yourself are the agent of the event that you imagine.

## 8. The ellipsis view

Let us summarize the main points so far. We have suggested that to imagine something from the inside is to imagine how it feels or what it feels like, while to imagine something from the outside is to imagine how it looks or what it looks like. The reason that (1) asks you to imagine swimming from the inside is that, to comply with it, you need to imagine an event, and in general, to imagine an event is to imagine what the event is like. This in turn will require you in context to imagine what the event feels like. The reason that (2) permits you to imagine swimming from the outside but also permits you to imagine swimming from the inside is that it is ambiguous between a reading that entails imagining an object and a reading that entails imagining an event. Imagining an object is imagining what the object is like, and this in turn will very often mean imagining what the object looks like. Imagining an event, however, as we have seen, standardly requires imagining what the event feels like. Finally, the argument that (1) and (2) are semantically equivalent mistakenly assumes that the complements of the two sentences are both derived from the very same clause, and so that the presence of 'yourself' in (2) makes no syntactic difference.

We now turn to the comparison between this proposal and the other main proposals that have been made in the literature. As we noted above, Vendler's own proposal is that (2)—'imagine yourself swimming in that water'—involves an elided verb, 'seeing', which can be made explicit, as it is in (26):

(26) Imagine seeing yourself swimming in that water.

But there is no such elision, he argues, and so no such verb present, in (1), 'imagine swimming in that water.' The result is that there is an important semantic distinction in what Vendler takes to be the clausal complements of the two sentences. So on Vendler's view, the distinction between inside and outside imagining is a distinction between states of imagining of two different kinds. Imagining from the outside is imagining seeing, whereas imagining from the inside does not involve seeing at all.

Vendler's ellipsis view is elegant, but it confronts several problems. The first is that it does not explain, but rather takes for granted, why (1) is a case of imagining from the inside in the first place. Vendler does not provide a semantics for the constructions he distinguishes, but given that he takes the complements of both (1) and (2) to be clauses, and takes 'imagine' to be an aspectual verb, we think it is plausible that he takes both clauses to denote events. But it is unclear why imagining the event of swimming in that water should yield the inside reading. Of course, Vendler could adopt our proposal, but to do so he would need to accept both the view that gerunds are event-denoting nominals, and that they conceal questions—a far cry from his actual view.

The second problem is that Vendler's proposal regarding (2) is descriptively mistaken. On the ellipsis view, imagining seeing yourself swim is both sufficient and necessary for imagining yourself swimming—yet in fact it is neither. It is not sufficient since I can perfectly well imagine someone seeing me swim without imagining myself swimming. I might, for instance, imagine myself on a mountain straining my eyes to see myself swimming, but have none of the accompanying phenomenology of the person doing the seeing. Or, to take another example, I might imagine myself seeing the Mona Lisa by imagining my own look of surprise and awe, while altogether having failed to visualise the famous painting. And it is not necessary since, it is perfectly possible to imagine yourself swimming totally unseen. That is to say, it is possible for you to imagine a situation in which you are swimming, but in which there is neither someone seeing you swim nor an event of seeing.<sup>23</sup>

One might think that our own view faces a version of this last objection. On our view, to imagine swimming from the outside is to imagine what it is looks like to swim. But isn't looking a certain way always looking a certain way *to someone*? If so when you imagine what you look like swimming, there must be someone to whom it looks that way. But a point we made above serves to show that our view does not face this problem. Swimming in that water may look a certain way to someone, without there being anyone specific to whom it looks that way. But as many have pointed out (see, for instance, Forbes [2003, 2006] and Saul [2003]), the nonspecificity of an indefinite standardly relieves it of its existential commitments—nonspecificity and nonexistence go together. If so, swimming in that water may look a certain way to someone, without there being some person to whom it looks that way. This contrasts with Vendler's proposal, which has no materials with which to draw such distinctions.

In addition to advancing the ellipsis view, Vendler offers several reasons in favour of it. The first is that his view does not require postulating two meanings for 'imagine'—but of course the same thing is true on our own view. On our view, imagining from the inside and the outside is just a difference in what is imagined. Indeed, this is a straightforward prediction of the neo-Davidsonian view we have presupposed.

The second reason is that the ellipsis view explains the fact that imagining yourself swimming in that water is phenomenally similar to seeing yourself swimming in that water. But our proposal does that too: after all imagining what it looks like to swim in that water is phenomenally similar to seeing yourself swim in that water, because both plausibly involve representing various visual properties of yourself when you swim in that water.

Finally, Vendler argues that the presence of an elided 'seeing' can be demonstrated by the behaviour of adverbial modifiers, such as those in (27) and (28):

---

<sup>23</sup>See White [1986] for similar criticisms of Vendler's proposal.

- (27) Imagine the battlefield from above.  
 (28) Imagine the music coming from a distance.

The suggestion here is that, without an elided 'seeing' in (27), and 'hearing' in (28), there would be nothing for the manner adverbials 'from above' and 'coming from a distance' to modify. Clearly, he thinks, you imagine *seeing* the battlefield from above, and *hearing* the music coming from a distance.

But our proposal handles this issue easily. On our view, to imagine the battlefield is to imagine what the battlefield is like; in turn to imagine what the battlefield is like is to imagine what the battlefield is like to someone—here the 'someone' is the experiencer of the battlefield. What 'from above' does in (27) is to modify the position of the experiencer of the battlefield; the same is true for the experiencer of the music in (28).

## 9. The indexical view

Turning finally to the indexical view, on this view the difference between (1) and (2) is the difference between imagining *de se* and imagining *de dicto*.

The background distinction here between *de se* and *de dicto* is a feature of mental states in general and may be understood as follows. Take a case in which you see yourself in the reflection of a shop window, but you don't realize that the person reflected is in fact you. In such a case, you may believe that that person is walking without believing that you yourself are walking, even though that person is of course yourself. If so, (29) may be true while (30) is false:

- (29) You believe that the person reflected in the window is walking.  
 (30) You believe that you yourself are walking.

There are several ways to capture the difference here. It suffices for our purposes to say that (29) reports a case of *de dicto* belief, while (30) reports a case of *de se* belief.<sup>24</sup>

The same thing applies in imagination. You might imagine that that person, i.e., the one reflected in the window, is wearing a hat without imagining that you yourself are wearing a hat, and this is true even when you yourself are the person reflected in the window. If so, (31) is true while (32) is not:

- (31) You are imagining that the person reflected in the window is wearing a hat.  
 (32) You are imagining that you yourself are wearing a hat.

<sup>24</sup>An anonymous reader points out that nothing about the reflexive on its own forces the *de se* reading—it may at least partly be due to the present tense.

We may capture the difference again by saying that (31) reports a case of *de dicto* imagining, while (32) reports a case of *de se* imagining.

What does this have to do with Vendler's puzzle and inside/outside imagining? For proponents of the indexical view, to imagine from the inside is to imagine *de se*, while to imagine from the outside is to imagine *de dicto*. So, in particular, (1) asks you to imagine a case in which you yourself are swimming in that water while (2) asks you to imagine someone who is in fact you swimming in that water.<sup>25</sup>

This proposal is simple and straightforward but it confronts a fundamental problem. While of course imagination may come in *de se* or *de dicto* forms, just like any other mental state, and while there are certainly *de se* and *de dicto* readings of the sentences which Vendler is considering, nevertheless, the *de se/de dicto* distinction crosscuts the inside/outside distinction, at least as the latter occurs in Vendler's puzzle. In the first place, imagining from the outside may have a *de se* element too. Take a case in which you imagine *de se* that you yourself are wearing a hat, but you don't imagine that the person (who is in fact you) is wearing a hat. You might nevertheless imagine that you yourself are wearing a hat in various ways. You might imagine what it feels like for you to wear a hat, which is a case of inside imagining. But you may also imagine what you yourself look like wearing a hat. That is a case of *de se* imagining, but because you are imagining how you look, it is a case of outside imagination.

In his defense of the indexical view, Ninan [2008] acknowledges that there are cases of outside imagining that are not cases of imagining *de dicto*, but he suggests nevertheless that all cases of inside imagining are cases of imagining *de se*. But even this is implausible. On the face of it, you could imagine how it feels for Bill to swim in that water, which is a case of imagining from the inside or you could imagine how it looks for Bill to swim in that water, which is a case of imagining from the outside. But nothing here involves the *de se* in any obvious way.

What reason does Ninan give for supposing that all cases of imagining from the inside are cases of imagining *de se*? One answer he explores has to do with the interpretation of PRO in (1). It is common to interpret PRO constructions of this sort as reporting *de se* states (for instance, in addition to Ninan, see Chierchia [1989] and Stanley [2011]). From this point of view what (1) asks you to do is to imagine *de se* swimming in that water.

However, even if we grant this interpretation of PRO, this would at most

---

<sup>25</sup>Here our presentation ignores important distinctions between different proponents of the indexical view. For example, the forms of the indexical view endorsed by Recanati, Higginbotham, and Ninan all differ significantly in how they are implemented. However, our arguments against this view are addressed to points on which they all agree, and so the differences will not concern us.

show that (1) involves both *de se* imagining *and* inside imagining. It does not show that all cases of inside imagining are cases of *de se* imagining. Of course it is important to capture any *de se* element that might be present in (1), and what Ninan and others say may be helpful in that regard. But this is orthogonal to the distinction between inside and outside imagining, at least as we have analysed it here.

Moreover, it is far from clear that PRO as it occurs in (1) always has a *de se* interpretation. In some cases, PRO must receive its interpretation from the subject of the sentence—this is what is called obligatory control. But in other cases, control is optional, and in such cases, PRO is ambiguous: it can either take its non-arbitrary form, and receive its interpretation from the subject, or it can take its arbitrary form, and refer generically [Carnie, 2006, pp. 410-411].

In the case of (1), it is plausible that PRO exhibits optional control, and so can be interpreted in either way. If John imagines PRO swimming, it is not required that John imagines an event in which he himself is swimming, although he may well do so. As we noted above, he may also imagine an event with an arbitrary agent. If so, he does not necessarily engage in a case of imagining *de se*. Nevertheless it remains the case that to imagine swimming is to imagine what it is like to swim, which in the context will require an inside reading. Hence not every case of inside imagining is a case of imagining *de se*.

## 10. Conclusion

Looked at from a distance, the solution we have been exploring to Vendler's puzzle is a natural one. It is natural to think that imagining swimming in that water from the inside is to imagine what it feels like to swim in that water. Likewise it is natural to think that imagining swimming in that water from the outside is to imagine what it looks like to swim in that water. The difficulty, though, is in explaining why (1) and (2) should be read that way; that is, why they have the syntactic and semantic properties required to support these interpretations. Our aim has been to provide that explanation by appealing to two main ideas. The first is that both (1) and (2) involve non-propositional imagining, imagining an event in one case and imagining an object in the other. The second is that when you imagine an event or object, you imagine what it is like. These ideas together tell us that (1) asks you to imagine what swimming is like, something that demands the inside reading at least in these contexts, while (2) asks you to imagine what you qua swimmer are like, something that suggests but does not require the outside reading.

Do the ideas developed here apply to other issues distinct from but related to Vendler's puzzle? We think so and will finish by mentioning three. The first concerns the presence of the inside/outside distinction beyond imagination. An

important point about Vendler's puzzle is that similar cases arise for memory and anticipation, among other sorts of mental state (see, e.g., [Higginbotham, 2003]). Just as one can imagine swimming from the inside and the outside, one can also remember or anticipate swimming from the inside and the outside. On the face of it, the approach we have developed will apply here too, at least suitably adjusted. For example, while to remember swimming requires some sort of causal or explanatory connection to the relevant event that imagining does not, it may nevertheless also be that remembering swimming is remembering what it's like.

The second concerns other puzzles about imagination that likewise involve gerundive complements. The most prominent of these is Bernard Williams's [1973] puzzle about the difference between imagining being Napoleon and imagining that you are Napoleon (for a recent discussion, see Ninan [2016]). The ideas we have developed apply here too. For to imagine being Napoleon is to imagine an event or state—namely, the state of being Napoleon—which again is a case of non-propositional imagining. In turn, to imagine a state is to imagine what it's like, which entails that to imagine being Napoleon is to imagine what it's like being Napoleon. Hence, to imagine being Napoleon is not to imagine an apparent impossibility, namely, that you yourself are Napoleon, which is precisely the problem that Williams is concerned with.

The final application is to puzzles about perspective in imagination. One prominent example here is Christopher Peacocke's [1985] well-known suggestion that to visualize an apple is to imagine seeing an apple, which, as he points out, entails that there is truth in Berkeley's notorious proposal that it is impossible to visualize an apple unseen. But suppose we think of visualizing an apple, not as imagining seeing it, but instead as imagining what it looks like. As we noted in connection with Vendler's ellipsis view, one may imagine that an apple looks a certain way, and hence imagine what it looks like, without imagining that there is someone to whom the apple looks that way. If so, Peacocke's Berkeleyan conclusion may be resisted.<sup>26</sup>

## References

- Steven Abney. *The English Noun Phrase in its Sentential Aspect*. Dissertation, Massachusetts Institute of Technology, Cambridge, MA, 1987.
- Pranav Anand. Suppositional projects and subjectivity. Available at <http://web.eecs.umich.edu/~rthomaso/lpw11/anand.pdf>, 2011.

---

<sup>26</sup>For comments and reactions, we are grateful to Ryan Cox, Bronwyn Finnegan, Kristina Liefke, the audience at the Bochum Language Colloquium, and three anonymous reviewers for this journal.



- Joan Bresnan and Jane Grimshaw. The syntax of free relatives in English. *Linguistic Inquiry*, 9(3):331–391, 1978.
- Berit Brogaard. What do we say when we say how or what we feel? *Philosopher's Imprint*, 12(11):1–22, June 2012.
- Andrew Carnie. *Syntax: A Generative Introduction*. Blackwell Publishers, Malden, MA, second edition edition, 2006.
- Gennaro Chierchia. Anaphora and attitudes “de se”. In van Benthem Bartsch and van Emde Boas, editors, *Semantics and Contextual Expression*, pages 1–31. Kluwer/Reidel, 1989.
- Noam Chomsky. Remarks on nominalization. In Roderick Jacobs and Peter Rosenbaum, editors, *Readings in English Transformational Grammar*, pages 184–221. Ginn, Waltham, MA, 1970.
- Renaat Declerck. The triple origin of participial perception verb complements. *Linguistic Analysis*, 10(1):1–26, January 1982.
- Paul Egré and Benjamin Spector. Embedded questions revisited: *an* answer, not necessarily *the* answer. Presentation at MIT LingLunch, 2007.
- Claudia Felser. *Verbal Complement Clauses: A Minimalist Study of Direct Perception Clauses*. *Linguistics Today* 25. John Benjamins Publishing Company, 1999.
- Janet Dean Fodor. *The Linguistic Description of Opaque Contexts*. PhD thesis, Massachusetts Institute of Technology, 1970.
- Graeme Forbes. Intensionality. *Aristotelian Society Supplementary Volume*, 76(1): 75–99, 2003.
- Graeme Forbes. *Attitude Problems*. Oxford University Press, Oxford, 2006.
- Graeme Forbes. Content and theme in attitude ascriptions. In A. Grzankowski and M. Montague, editors, *Non-Propositional Intentionality*. Oxford University Press, Oxford, 2018.
- Ilaria Frana. *Concealed Questions*. Oxford Studies in Theoretical Linguistics. Oxford University Press, Oxford, 2017.
- B. R. George. *Question Embedding and the Semantics of Answers*. PhD thesis, University of California, Los Angeles, Los Angeles, 2011.
- Scott Grimm and Louise McNally. The *-ing* dynasty: Rebuilding the semantics of nominalizations. *Proceedings of SALT*, 25, 2015.
- Jeroen Groenendijk and Martin Stokhof. *Studies on the Semantics of Questions and the Pragmatics of Answers*. PhD thesis, Universiteit van Amsterdam, 1984.
- Valentine Hacquard. On the event relativity of modal auxiliaries. *Natural Language Semantics*, 18:79–114, 2010.
- James Higginbotham. Remembering, imagining, and the first person. In Alex Barber, editor, *Epistemology of Language*, pages 496–533. Oxford University Press, Oxford, 2003.
- Lauri Karttunen. Syntax and semantics of questions. *Linguistics and Philosophy*, 1:1–44, 1977.

- Ezra Keshet. *Good Intensions: Paving Two Roads to a theory of the De re/De dicto Distinction*. PhD thesis, Massachusetts Institute of Technology, 2008.
- Ezra Keshet. Split intensionality: a new scope theory of *de re* and *de dicto*. *Linguistics and Philosophy*, 33:251–283, 2011.
- Angelika Kratzer. Decomposing attitude verbs. UMass Amherst Manuscript, 2006.
- Utpal Lahiri. *Questions and Answers in Embedded Contexts*. Oxford University Press, Oxford and New York, 2002.
- Fred Landman. Groups 1. *Linguistics and Philosophy*, 12:559–605, 1989a.
- Fred Landman. Groups 2. *Linguistics and Philosophy*, 12, 1989b.
- Robert B. Lees. *The Grammar of English Nominalizations*. Mouton, The Hague, 1960.
- Gary Milsark. Gerundive nominalizations. In Martin Everaert and Henk van Riemsdijk, editors, *The Blackwell Companion to Syntax*, pages 436–458. Blackwell Publishers, 2005.
- Richard Montague. The proper treatment of quantification in ordinary english. In Richmond H. Thomason, editor, *Formal Philosophy: Selected Papers of Richard Montague*, pages 247–270. Yale University Press, 1974.
- Lance Nathan. *On the interpretation of concealed questions*. Dissertation, Massachusetts Institute of Technology, Cambridge, MA, 2006.
- Dilip Ninan. *Imagination, Content, and the Self*. PhD thesis, Massachusetts Institute of Technology, Cambridge, May 2008.
- Dilip Ninan. Imagination and the self. In Amy Kind, editor, *The Routledge Handbook of Philosophy of Imagination*, Routledge Handbooks, chapter 20. Routledge, 2016.
- Terence Parsons. *Events in the Semantics of English*. MIT Press, 1990.
- Christopher Peacocke. Imagination, experience, and possibility. In John Foster and Howard Robinson, editors, *Essays on Berkeley: A Tercentennial Celebration*. Oxford University Press, 1985.
- John Perry. The problem of the essential indexical. *Noûs*, 13(1):3–21, 1979.
- Paul Pietroski. On explaining that. *Journal of Philosophy*, 97(12):665–672, December 2000.
- Acrisio Pires. The derivation of clausal gerunds. *Syntax*, 10(2):165–203, 2007.
- Paul Portner. *Situation Theory and the Semantics of Propositional Expressions*. PhD thesis, UMass Amherst, Amherst, Mass, 1992.
- Geoffrey K. Pullum. English nominal gerund phrases as noun phrases with verbphrase heads. *Linguistics* 29, pages 763–800, 1991.
- François Recanati. *Perspectival Thought: A Plea for a (Moderate) Relativism*. Oxford University Press, Oxford, 2007.
- John R. Ross. *Constraints on variables in syntax*. Dissertation, Massachusetts Institute of Technology, Cambridge, MA, 1967.

- John R. Ross. Double *-ing*. *Linguistic Inquiry*, 3:61–86, 1972.
- Jennifer Saul. What are intensional transitives? *Aristotelian Society Supplementary Volume*, 76(1):101–119, 2003.
- Paul Schachter. A nontransformational analysis of gerundive nominals in english. *Linguistic Inquiry*, 7:205–241, 1976.
- Paul Snowdon. On the what-it-is-like-ness of experience. *Southern Journal of Philosophy*, 48(1):8–27, 2010.
- Jason Stanley. *Know How*. Oxford University Press, Oxford, 2011.
- Jason Stanley and Timothy Williamson. Knowing how. *Journal of Philosophy*, 98(8):411–444, 2001.
- Daniel Stoljar. The semantics of ‘what it’s like’ and the nature of consciousness. *Mind*, 125(500):1161–1198, 2016.
- Zoltán Szabó. On qualification. *Philosophical Perspectives, Language and Philosophical Linguistics*, 2003.
- Zoltán Gendler Szabó. Specific, yet opaque. In Maria Aloni, Harald Bastiaanse, Tikitú Jäger, and Katrin Schulz, editors, *Logic, Language and Meaning: 17th Amsterdam Colloquium, Amsterdam, The Netherlands, December 16-18, 2009, Revised Selected Papers*, pages 32–41. Springer Berlin Heidelberg, Berlin, Heidelberg, 2010.
- Radek ~ Simík. Free relatives. In Cécile Meier Hotze Rullmann Daniel Gutzmann, Lisa Matthewson and Thomas Ede Zimmermann, editors, *The Wiley-Blackwell Companion to Semantics*. Wiley-Blackwell, 2018.
- Zeno Vendler. Vicarious experience. *Revue de Métaphysique et de Morale*, 84e Année(2):161–173, Avril-Juin 1979.
- Zeno Vendler. Speaking of imagination. In T. W. Simon and R.J. Scholes, editors, *Language, Mind, and Brain*. Oxford University Press, reprinted as chapter iii of *The Matter of Minds* edition, 1982.
- Kendall Walton. *Mimesis as Make-Believe: On the Foundations of the Visual Arts*. Cambridge University Press, Cambridge, 1990.
- Thomas Wasow and Thomas Roeper. On the subject of gerunds. *Foundations of Language*, 8:44–61, 1972.
- Alan R. White. Ways of speaking of imagination. *Analysis*, 46(3):152–156, June 1986.
- Bernard Williams. Imagination and the self. In *Problems of the Self*. Cambridge University Press, 1973.
- Richard Wollheim. Imagination and identification. In *On Art and the Mind*. Harvard University Press, Cambridge, 1974.
- Juhani Yli-Vakkuri and John Hawthorne. *Narrow Content*. Oxford University Press, New York and Oxford, 2018.