

The selectional variability of *imagine whether**

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Abstract White (2021) has observed that some clause-embedding predicates (esp. doxastic attitude verbs like *believe*, and non-veridical preferential predicates like *hope*) vary w.r.t. their selection properties: While these predicates commonly combine with declarative complements, they sometimes accept interrogative complements. My paper notes a similar selectional variability for fiction verbs like *imagine*: while *imagine* is typically taken to reject polar interrogative complements, some uses of *imagine whether* are acceptable. Curiously, this acceptability cannot be explained through techniques (e.g., highlighting, no presupposition, multiple senses) that have recently been used to explain the acceptability of *believe* and *hope whether*. To still account for the ability of *imagine* to take *whether*-complements, I draw on recent work on attitudinal parasitism (esp. Blumberg 2019). This work assumes that some cases of imagination depend, for their reference, on the objects of another experience (e.g., visual perception, dreaming). My semantics holds that *imagine whether* is felicitous only when the truth of the embedded TP is decided at the possible world of which the experienced scene is a spatio-temporal part. This condition is more easily satisfied when the verb in the TP has future tense (*will*), or when *imagine* is embedded under a negated ability modal or under *try*.

Keywords: clausal selection, selectional restrictions, selectional variability, polar interrogatives, fiction verbs, inquisitive semantics, *imagine whether*

1 Introduction

It has long been assumed that clause-embedding predicates differ w.r.t. their selection behavior: while some predicates, viz. *responsive* predicates, license both declarative and interrogative complements, *rogative* predicates license only interrogative complements; *anti-rogative* predicates license only declarative complements. In a series of recent studies, White (2021) has shown that the selection behavior of some

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clause-taking predicates is not as rigid as the above distinction suggests. He argues (on the basis of experimental and corpus studies; see White & Rawlins 2016, 2020) that *believe* and *hope* – which have traditionally been classified as anti-rogative predicates (see Grimshaw 1979; Lahiri 2002; Theiler, Roelofsen & Aloni 2019) – sometimes take interrogative complements. This is illustrated in (1) and (2):

- (1) a. [...] I wasn't a Christian growing up, I struggled to **believe whether** I could trust the Scriptures [...]. (White 2021: 13, ex. (19a))
 b. I am torn between **believing whether** or not Jagex can detect the RSBot client. (White 2021: 13, ex. (19c))
- (2) a. I was **hoping whether** you are able to guide me. (White 2021: 14, (23a))
 b. I have done a quite a bit of research on using a Limited Co but was **hoping whether** someone with more experience could confirm my understanding of a few points [...]. (White 2021: 14, ex. (23b))

White restricts his considerations to doxastic attitude verbs (esp. *believe*, *think*) and to non-veridical preferential verbs (esp. *hope*, *fear*). However, his observations about selectional variability seem to apply to a wider class of predicates. An interesting element of this class are representational counterfactual attitude verbs, e.g., *imagine*.¹ Like *believe* and *hope*, *imagine* is commonly taken to reject polar interrogative complements (see (3), (4)):

- (3) * I **imagine whether** it will rain tomorrow. (D'Ambrosio & Stoljar 2021: 12926)
- (4) * John **imagines whether** a woman is dancing. (Liefke acc.: 2, ex. (5d))

The above notwithstanding, *imagine* sometimes accepts polar interrogative complements (see (5)–(7)). The examples in (6) and (7) are taken from the *English Web 2020* (*enTenTen20*) corpus (see Jakubíček, Kilgarriff, Kovář, Rychlý & Suchomel 2013). This corpus contains 36 billion words spread over four genres: blogs, discussion, legal, and news. To identify attested uses of *imagine whether*, I use the Sketch Engine² corpus manager to query for *imagine* in any morphological form, followed by *whether* (using CQL [lemma="imagine"] [lemma="whether"]).

- (5) a. I am **imagining whether** the new sofa will fit into my living room. (Peterson 2017: 59)
 b. Anna {i. was trying to, ii. could not} **imagine whether** the lid would fit the kettle. (German version in Sode 2022: 1, ex. (2a))
 c. I'm **imagining whether** aliens could invade Ulm. (Özyıldız 2022: 28)

1 Giannakidou & Mari (2021) call this class *fiction verbs*. Other members of this class include the verbs *dream*, *visualize*, and *hallucinate*.

2 see <https://sketchengine.eu>.

- (6) a. [...] you can **imagine whether** we fellows went crazy when we saw that our team was winning.
 b. When we design a dress, we try to **imagine whether** a man will whistle at the woman who buys it when she wears it.
 c. With these figures you can only **imagine whether** you can make a living freelancing.
- (7) a. Gregor tried to **imagine whether** something of the sort that had happened to him today could ever happen to the chief clerk too.
 b. it's hard to **imagine whether** such a hair disaster could occur in real life.
 c. [...] **imagine whether** some tinpot dictator in some other country [is] thinking about establishing a chemical weapons program [...].

My paper aims to give an account of the acceptability of the sentences in (5)–(7) and of the unacceptability of (3) and (4). This account will need to explain the low frequency of polar interrogative complements of *imagine*³ as well as the observation that many attested occurrences of *imagine whether* are embedded under negated ability modals like *cannot* (or *could not*); e.g., (5b-ii), (6c) or under *try* (e.g., (5b-i), (6a/b)) (for a similar observation, see Özyıldız 2022: 11).

To explain the (in-)felicity of the most interesting class of cases, viz. (3)–(5), I assume that the contents of some imagination reports depend, for their reference, on another experience (e.g., the agent's visual perception or dream). I capture this referential dependence of imagination through a Blumberg (2018)-style two-dimensional semantics that interprets clausal complements as paired [= experience-parametrized] propositions (or as paired questions). In recent work, I have called such dependence *experiential parasitism* (see Liefke & Werning 2021, 2022; following Maier 2015). My semantics assumes that *imagine whether* is felicitous only when the truth of the embedded TP is decided at the possible world of which the experienced scene is a spatio-temporal part. Since this condition is more easily satisfied when the verb in the TP has future tense (*will*) or when *imagine* is embedded under a negated ability modal or under *try*, *imagine whether* – when attested – typically occurs in these constructions.

My paper is structured as follows: To motivate the need for a new account of *imagine whether*, I first show that none of the existing accounts (esp. highlighting, no presupposition, and multiple senses) explains the selectional variability of *imagine* w.r.t. polar interrogative complements (see Sect. 2). This demonstration reveals that the reports in (6) and (7) have a straightforward analysis in terms of other attitude

³ My *enTenTen20* query yielded 215 hits for [lemma="imagine"] [lemma="whether"] (vs. 283,330 hits for [lemma="imagine"] [lemma="that"]) compared to 6,388 hits for [lemma="remember"] [lemma="whether"] (vs. 863,380 hits for [lemma="remember"] [lemma="that"]).

predicates (esp. *assume*, *assess*). The rest of the paper focuses on the felicitous *imagine whether*-reports in (5). Section 3 identifies the core commonality of these reports, i.e., their experience-dependence, and provides a uniform entry for declarative and interrogative uses of *imagine* that captures this dependence. Section 4 modifies Hamblin’s (1973) classical entry for *whether* into a two-dimensional version that captures the difference in acceptability between (3)/(4) and (5). This modification centrally involves replacing the ‘actuality assumption’ in Hamblin’s original entry (according to which the truth of the embedded TP is decided at the actual world) by a ‘decidedness assumption’ (according to which the TP’s truth is decided at the world of the underlying experience, w_1). The paper closes by suggesting how future tense *will*, negated ability modals, and embedding under *try* facilitate the TP’s decidedness at w_1 and the attendant acceptability of *imagine whether* (see Sect. 5).

2 Non-Explanations

To account for White’s (2021) observation about the variable acceptability of *believe whether* and *hope/fear whether*, some recent work on clausal selection has proposed to supplement the familiar inquisitive semantics for *believe* and *hope* (or *fear*) from (Theiler et al. 2019) and (Uegaki & Sudo 2019) with one of several strategies that explain responsive uses of these predicates (see, e.g., Özyıldız, Qing, Roelofsen, Romero & Uegaki 2022). These strategies include the interpretation of the embedded *whether*-clause with one of its denotation’s alternatives (‘highlighting’; see Özyıldız et al. 2022), a lack of the Excluded Middle-presupposition (for *believe*; Theiler et al. 2019: fn. 11), a lack of the Threshold Significance-presupposition (for *fear*; Özyıldız 2022), or an assumption of multiple predicate senses (Spector & Egré 2015; cited as an option in White 2021). Below, I show that none of these strategies – and no combination of them – can be used to account for the acceptability of all sentences in (5) to (7).

2.1 Highlighting

To capture the ability of non-veridical preferential predicates to accept polar interrogative complements, Özyıldız et al. (2022) have proposed that some predicates that license polar interrogatives (incl. *hope*, *fear*) semantically combine with the positive (resp. negative) answer of the question that is denoted by these clauses.⁴ They suggest to implement this selective interpretation of polar interrogatives through a mechanism called ‘highlighting’ (resp. ‘anti-highlighting’) (see Roelofsen & Farkas 2015; Roelofsen, Herbstritt & Aloni 2019; Theiler 2021). Highlighting (indicated

⁴ This proposal is reminiscent of Karttunen’s (1977b) observation that declarative and polar interrogative clauses are interchangeable in the complement of *doubt*.

by a superscript ‘h’ below) applies to a polar question, $\{p, \neg p\}$, to select its positive alternative, p (see (8a)). Anti-highlighting (indicated by a superscript ‘ah’) selects the negative alternative, $\neg p$ (see (8b)):

- (8) a. $\llbracket V \text{ whether } p \rrbracket^h = \llbracket V \rrbracket(\llbracket \text{whether } p \rrbracket^h) = \llbracket V \text{ that } p \rrbracket$
 b. $\llbracket V \text{ whether } p \rrbracket^{ah} = \llbracket V \rrbracket(\llbracket \text{whether } p \rrbracket^{ah}) = \llbracket V \text{ that } \neg p \rrbracket$

For non-veridical preferential predicates like *hope* and *fear*, this strategy captures the intuitive acceptability of the *whether*-reports in (2a) and (2b) respectively in (11a) and (12a), and their intuitive equivalence to the declarative constructions in (9b)–(10b) resp. (11b)–(12b):

Highlighting:

- (9) a. I was **hoping whether** you are able to guide me. (see (2a))
 ≡ b. I was **hoping that** you are able to guide me.
 (10) a. I have done quite a bit of research on using a Limited Co but was **hoping whether** someone with more experience could confirm my understanding of a few points [...]. (see (2b))
 ≡ b. I have done quite a bit of research on using a Limited Co but was **hoping that** someone with more experience could confirm my understanding [...].

Anti-highlighting:

- (11) a. I **fear whether** this test would run safely on the oxygen sensor as it has a lot of drawback when compared with the others. (White 2021: ex. (25b))
 ≡ b. I **fear that** this test would *not* run safely on the oxygen sensor as it has a lot of drawback when compared with the others.
 (12) a. I know parents who seriously **fear whether** their children will ever hold a meaningful job. (White 2021: ex. (25d))
 ≡ b. I know parents who seriously **fear that** their children will *never* hold a meaningful job.

In particular, the equivalence in (9) can be captured by assuming that $\llbracket \text{hope } \varphi \rrbracket^h = \llbracket \text{hope} \rrbracket(\llbracket \varphi \rrbracket^h)$ (see Özyıldız et al. 2022). In my account of the equivalence from (9) (in (13)), $SP(c)$ and $AD(c)$ stand for the speaker and the addressee of the context c :

- (13) $\llbracket \text{I was hoping whether you are able to guide me} \rrbracket$
 = $\llbracket \text{hope} \rrbracket(SP(c), \llbracket \text{whether } AD(c) \text{ is able to guide } SP(c) \rrbracket^h)$
 = $\llbracket \text{hope} \rrbracket(SP(c), \{ \llbracket AD(c) \text{ is able to guide } SP(c) \rrbracket, \llbracket AD(c) \text{ is not able to guide } SP(c) \rrbracket \}^h)$
 = $\llbracket \text{hope} \rrbracket(SP(c), \{ \llbracket AD(c) \text{ is able to guide } SP(c) \rrbracket \})$
 = $\llbracket \text{I was hoping that you are able to guide me} \rrbracket$

Positive highlighting can, indeed, be used to account for the acceptability of (6a) and (6b) (illustrated for (6a) in (14)). An analogous observation holds for negative highlighting with respect to (6c) (see (15)):

- (14) a. You can **imagine whether** we fellows went crazy when we saw that our team was winning. (i.e., (6a))
 ≡ b. You can **imagine that** we fellows went crazy when we saw that our team was winning.
- (15) a. With these figures you can only **imagine whether** you can make a living freelancing. (i.e., (6c))
 ≡ b. With these figures you can only **imagine that** you *cannot* make a living freelancing.

Unfortunately, however, highlighting (or anti-highlighting) only explains *some* of the above instances of *imagine whether*. Cases that escape this explanation include the sofa-sentence, (5a) (copied in (16)), and the aliens-sentence in (5c) (copied in (17)): These sentences are neither equivalent to the result of replacing the polar interrogative by a *that*-clause (see (16a), (17a)) nor by its negation (see (16b), (17b)):

- (16) I am **imagining whether** the new sofa will fit into my living room.
 ≠ a. I am **imagining that** the new sofa will fit into my living room.
 ≠ b. I am **imagining that** the new sofa will *not* fit into my living room.
- (17) I'm **imagining whether** aliens could invade Ulm.
 ≠ a. I'm **imagining that** aliens could invade Ulm.
 ≠ b. I'm **imagining that** aliens could *not* invade Ulm.

2.2 No Excluded Middle-Presupposition

It is often assumed that the anti-rogativity of neg-raising predicates like *believe* derives from a systematic triviality in meaning that would arise with interrogative complements (see, e.g., Zuber 1982; Mayr 2019; Theiler et al. 2019).⁵ To explain felicitous uses of *believe whether* (e.g., (1a)–(1b)), Theiler et al. (2019: fn. 11)⁶ assume that the relevant use of *believe* in these cases does not have the neg-raising property. This assumption suggests a positive correlation between extraordinary lack of neg-raising and interrogative licensing. In what follows, I will refer to this correlation as *generalization NR* (for ‘not Neg-Raising’; following White 2021).

⁵ Analogous claims have been made for the anti-rogativity of non-veridical preferential predicates like *hope* (see Uegaki & Sudo 2019).

⁶ Note: Theiler et al. (2019) only discuss cases in which *believe* felicitously combines with a constituent question (viz. with the *who*-interrogative in *You won't believe who won!*).

$\overline{\text{NR}}$ is supported by the observation that the declarative counterpart, (18), of the acceptable *whether*-report in (1a) is not neg-raising (see (19)). The strategy of testing neg-raising on the report's declarative (!) counterpart is necessary since neg-raising never occurs with interrogative complements (see White 2021: 13).

(18) I [struggled to] **believed that** I could trust the Scriptures.

(19) a. I **didn't** believe that I could trust the Scriptures.

≠ b. I believed that I could **not** trust the Scriptures.

The above suggests that, if *imagine* were to 'typically' trigger a neg-raising inference, one could try to explain the acceptability of (5) to (7) through a lack of neg-raising in these cases. This explanation is made plausible by the observation that "[*imagine*] license[s] the neg-raising inference, at least for some speakers, in the present simple" (Özyıldız 2021: 93; presenting observations from Collins & Postal 2014). An example of neg-raising *imagine* is given in (20) (due to Özyıldız 2021: 93, ex. (57a)):

(20) a. I **don't** imagine that dragons will invade Wisconsin.

⇒ b. I imagine that dragons **won't** invade Wisconsin.

Özyıldız (2021) acknowledges that *imagine* often loses its neg-raising property when it occurs in progressive aspect (see (21)):

(21) a. I'm **not** imagining that dragons will invade Wisconsin.

≠ b. I'm imagining that dragons will **not** invade Wisconsin.

He attributes this change to the fact that progressive occurrences of *imagine* saliently have an eventive reading. On this reading, *imagine* denotes the agent's relation to an ongoing counterfactual event or (visual) scene (Stephenson 2010; see the paraphrase of the non-negated version, (22), of (21a) in (22a)), rather than to a possible proposition or fact (see the paraphrase of (22) in (22b)).

(22) I'm imagining that dragons will invade Wisconsin.

a. I'm {visualizing, forming a mental image of} **a (future) event in which** dragons are invading Wisconsin.

≠ b. I'm conjecturing **the possibility** that dragons will invade Wisconsin.

Since the occurrence of *imagine* in (22) saliently has an eventive reading, it does not allow neg-raising (see (21)). However, in contrast to what is predicted by generalization $\overline{\text{NR}}$, (22) is infelicitous (or at least slightly deviant) with a polar interrogative complement (see (23)):

(23) (*) I'm **imagining whether** dragons will invade Wisconsin.

The only readings on which (23) is acceptable are ‘special’ readings, e.g., on which the dragons in some fictional world will invade the fictional (counterpart of) Wisconsin (in that world). I will return to this consideration in Section 5.

Inversely to the above, $\overline{\text{NIR}}$ fails to explain the overall deviance of sentences like (4): since the declarative counterpart of (4), i.e., (24), saliently has an eventive reading (in (24a)) – and is, hence, not neg-raising (see (25)) –, $\overline{\text{NIR}}$ would wrongly predict that this occurrence of *imagine* accepts a *whether*-clause (s.t. (4) is acceptable). The eventive reading of this sentence is supported by the observation that the sentence sounds more natural when *imagine* occurs in progressive aspect (as in (24a)).

(24) John **imagines that** a woman is yodelling.

a. John is **imagining that** a woman is yodelling.

≡ b. John is {mentally experiencing, forming a mental / acoustic representation of} **an event in which** a woman is yodelling.

(25) a. John is **not** imagining that a woman is yodelling.

≠ b. John is imagining that a woman is **not** yodelling.

As a consequence of the above, the selectional variability of *imagine* with respect to polar interrogative complements cannot be explained through defeasible neg-raising inferences or through aspectual properties of the matrix predicate.

2.3 Multiple senses

To still capture the variable acceptability of *imagine whether*, one may assume that the occurrences of *imagine* in (3)–(4) and (5)–(7) are associated with different senses of *imagine*. The assumption of polysemous *imagine* is in line with Spector & Egré’s (2015) distinction between two senses of *tell* (viz. one anti-rogative and one responsive). However, in contrast to Spector & Egré’s distinction (which differentiates the two senses with respect to their veridicality, s.t. only the veridical sense is responsive), there is no salient property that can be used to neatly separate the sentences in (3)–(4) and (5)–(7). Since a distinction between two senses of *imagine* along the above lines is otherwise unmotivated, it cannot be used to explain the difference in acceptability between these sentences (for a related argument w.r.t. *think*, see White 2021).

Note, however, that the occurrences of *imagine* in (3)–(7) can be paraphrased through different predicates: While the occurrences in (7) admit of a paraphrase using *think of*, *estimate*, or *assess* (see (26)), the occurrences in (6) resist such paraphrase. Rather, they allow a paraphrase using *assume*, *presume*, or *figure* (see (27)):

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- (26) a. It's hard to **imagine whether** such a hair disaster could occur in real life.
≡ b. It's hard to **{think of, estimate, assess} whether** such a hair disaster could occur in real life.
- (27) a. You can **imagine whether** we fellows went crazy when we saw that our team was winning.
≡ b. You can **{assume, presume, figure} that** we fellows went crazy when we saw that our team was winning.
≠ c.[#]You can **{think of, estimate, assess} that** we fellows went crazy when we saw that our team was winning.

Things are yet different for the occurrences of *imagine* in (5): As I have argued in Section 2.2, these occurrences allow a paraphrase through experiential counterfactual attitude predicates like *visualize*, *form a mental image of*, or *mentally explore* (see (28); cf. (22a)):

- (28) a. I am **imagining whether** the new sofa will fit into my living room.
≡ b. I am **{visualizing, mentally exploring whether}** the new sofa will fit into my living room.

In virtue of this paraphrase, the acceptable examples of *imagine whether*-reports from (5) use the same sense of *imagine* as the unacceptable examples from (3)–(4) (demonstrated for the declarative progressive counterpart of (4), i.e., (24a), in (29)):

- (29) a. John is **imagining that** a woman is yodelling. (i.e., (24a))
≡ b. John is **mentally experiencing** a woman yodelling.

As a consequence of this observation, the rest of my paper focuses on the experiential imagination reports in (3) to (5). Since the senses of *imagine* from (6) and (7) prompt a treatment as different attitudes, I will leave their discussion for another occasion.

3 A Semantics for Experientially Parasitic Imagining

I have suggested above that the sentences in (3) to (5) all report instances of experiential imagining. Interestingly, these sentences further share another key feature: their reported contents depend, for their reference, on another experience. In (4)/(24a), this experience is John's visual perception from the park. In (5a), this experience is my visual perception and/or haptic experience of (different objects and spaces in) my apartment. The relevant referents are the woman from the park (whom John has previously seen at the park; see (30)) respectively the new sofa and my apartment (which I have previously seen/experienced and with which I have repeatedly interacted; see (31)). To avoid performing semantic analyses on deviant sentences like (4) – and to allow for the best possible comparability of the acceptable and the

unacceptable *imagine whether*-constructions –, I demonstrate this dependency on these sentences' declarative counterparts, (24a) resp. (31a).

To make the experiential dependency of the reported imagination contents explicit, I hereafter call imagination the *parasite* (or *parasite attitude*) (following Maier 2015, 2017; Blumberg 2018) and refer to the underlying experience (above: visual perception resp. a haptic experience) as the *host* (or *host experience*). For perspicuity, I mark the parasite attitude with a grey frame in (30) and (31). The host experience is highlighted in grey.

- (30) *Context*: During his last visit to the park, John saw a woman dancing.
 a. Now, he is imagining that the woman is yodelling.
 ≡ b. John is imagining that the woman whom he saw at the park is yodelling.
- (31) *Context*: I am choosing furniture for my apartment.
 a. I am imagining that the new sofa will fit into my living room.
 ≡ b. I am imagining that the sofa that I am {looking at, sitting on, haptically experiencing} in the store will fit into my apartment's living room.

To prepare my semantics for the occurrences of *imagine* in the sentences from (3) to (5) – and to set the stage for my account of the different acceptability of these sentences –, I will first present Blumberg's (2018) analysis of the content of parasitic attitudes (in Sect. 3.1). Based on this analysis, I then provide a uniform semantics that captures declarative and interrogative uses of *imagine* (in Sect. 3.2–3.3). I defer a presentation of the semantics of *whether* to Section 4.

3.1 Parasitic attitude contents

Experientially parasitic imagining (as discussed above) has not yet received much discussion in the literature. However, some examples can be found in (Ninan 2012: 18) (see (32)) and (Blumberg 2019: 97, ex. (102)) (see (33)):

- (32) Ralph is imagining that the man whom he sees sneaking around on the waterfront is flying a kite in an alpine meadow.
- (33) John is imagining that the woman who threatened him in his dream last night is swimming in the sea.

In these examples, the parasitic nature of imagining is made explicit by the presence of predicates for the host experience (there: *see* resp. *dream*). However, a parasitic analysis can also be triggered in the absence of such predicates. To see this, consider the imagination report in (34a) (modelled on Blumberg's (2018) 'burgled Bill'-example):

- (34) *Context*: Last night, Paul was dreaming of a tattooed woman (no particular one whom he has come across in real life).
- a. Now, he is imagining that she has clear, untattooed skin.
- ≠ i. *de re*: There exists a tattooed woman (in the actual world) of whom Paul is imagining that she has clear skin. (X)
- ≠ ii. *de dicto*: Paul is imagining an inconsistent fact, viz. that some woman both does and does not have tattoos. (X)
- ≠ iii. *de credito*: Paul is imagining that the tattooed woman from his dream has clear, untattooed skin. (✓)

The parasitic interpretation of *imagine* in (34a) is triggered by the observation that – given the context from (34) – (34a) is false on its *de re*-reading (which gives the pronoun *her* [= a tattooed woman] a specific interpretation; see (34a-i)) and that (34a) is contradictory on its *de dicto*-reading (see (34a-ii)). The parasitic interpretation is then prompted by the observation that (34a) has plausible truth-conditions on a reading that evaluates *her* at some other world or situation (different from the actual world/situation and from Paul’s imagination alternatives; see (34a-iii)). The name for this reading, i.e., *de credito*, is adopted from (Yanovich 2011).

To capture parasitic dependencies like the above, Blumberg (2018) has proposed to use Percus’ (2000) *Index Variables-approach* with distinct variables for the alternatives that are introduced by the parasite attitude (in (34): Paul’s imagining), s_2 , and for the alternatives that are introduced by the host experience (in (34): Paul’s dreaming), s_1 . The different readings of the imagination report in (34a) are given by the LFs in (35). The relevant LF – on which (34a) is true – is given in (35c).

- (35) a. [a woman-in-@] [λt . Paul imagines-in-@ [λs_1 [λs_2 . t has-clear-skin-in- s_2]]]]
- b. Paul imagines-in-@ [λs_1 [λs_2 . a woman-in- s_2 has-clear-skin-in- s_2]]]
- c. Paul imagines-in-@ [λs_1 [λs_2 . a woman-in- s_1 has-clear-skin-in- s_2]]]

The complement of *imagine* in (35) is a (type- $\langle s, \langle s, t \rangle \rangle$) function from experience alternatives to the set of Paul’s imagination alternatives. In (Blumberg 2018), such functions are called ‘paired propositions’. Note that, in (35a) and (35b), the paired proposition is a constant function (s.t. the content of the complement does not depend on Paul’s experience). This fact explains why the *de re*- and the *de dicto*-reading of (34a) can be captured with classical propositions [= sets of possible worlds/situations]. The fact that the content of the complement in (35c) does depend on Paul’s

experience (see the expression ‘a woman-in- s_1 ’) explains why the *de credito*-reading cannot be captured with a classical proposition.

Using Blumberg’s extended *Index Variables-approach*, the salient readings of (24a) and (31a) are given in (36) respectively in (37):

(36) John is imagining-in-@ $[\lambda_{s_1}$ $[\lambda_{s_2}$ the woman-in- s_1 is yodelling-in- s_2]]
 (Compare (30b): John is imagining that the woman whom he saw at the park is yodelling in his imagination)

(37) I am imagining-in-@ $[\lambda_{s_1}$ $[\lambda_{s_2}$ the new sofa-in- s_1 fits into my apartment’s living room-in- s_1]]
 (Compare (31b): I am imagining that the new sofa on which I am sitting in the furniture store will fit into my apartment’s living room)

Notably, a more careful reading of (37) even interprets some constituents of the embedded clause at the evaluation situation @. This holds for the DP *my apartment’s living room*, which receives a *de re*-interpretation:

(38) a. I am imagining-in-@ $[\lambda_{s_1}$ $[\lambda_{s_2}$ the new sofa-in- s_1 fits-in- s_2 into my apartment’s living room-in-@]]
 ≡ b. [My apartment’s living room] $[\lambda t.$ $[\lambda_{s_1}$ $[\lambda_{s_2}$ the new sofa-in- s_1 fits-in- s_2 into t]]

In what follows, I will intermittently use the simpler reading of (31a), i.e., (37). I will return to the more complex reading, (38), in Section 4.

3.2 A semantics for declarative *imagine*

I have already pointed out that Blumberg’s account of parasitic attitudes generalizes the content of these attitudes from ‘classical’ propositions (analyzed as sets of possible worlds or situations; type $\langle s, t \rangle$) to paired propositions (type $\langle s, \langle s, t \rangle \rangle$). My semantics for declarative uses of *imagine* (in (39)) incorporates this generalization: This semantics applies to a paired proposition R and an attitudinal agent z to assert that z stands in an imagination relation to a classical (!) proposition $\lambda_{s_2}.R(s_1, s_2)$ that is dependent on z ’s personally experienced [host] event or scene, s_1 .⁷ My identification of the relatum of *imagine* with a proposition (as opposed to a situation or scene)

⁷ Note: In virtue of this assumption, the semantics is unable to capture cases in which the dependency between imagining and the experience is inverted (s.t. the experience [= the parasite] emerges from imagination [= the host]). The latter is the case in (†):

(†) a. Ida is imagining a fairy flying above.

is motivated by my wish to stay as close as possible to familiar semantics for attitude reports (see, e.g., Hintikka 1969; Niiniluoto 2020) and by my focus on declarative and polar interrogative complements. In contrast to gerundive small clauses (see Higginbotham 2003; Stephenson 2010) and non-manner *how*-complements (see Umbach, Hinterwimmer & Gust 2022), the content of declaratives is exhausted by the semantic content of the TP. My semantics in (39) is inspired by the semantics for episodic [= experiential] uses of *remember* in (Liefke & Werning 2022).

$$(39) \quad \llbracket \text{imagine}_{\text{DECL}} \rrbracket^{\textcircled{a}} \quad \underbrace{\text{experientiality requirement}} \quad \underbrace{\text{anti-congruence presupposition}} \\ = \lambda R \underbrace{\lambda z (\exists e) [exp_{w_{\textcircled{a}}}(e, z) \wedge (\exists s_1. s_1 \leq \omega(e) \wedge imagine_{\textcircled{a}}(z, \lambda s_2 : s_2 \not\leq w_{s_1}. R(s_1, s_2)))]}_{\text{a paired proposition (type } \langle s, \langle s, t \rangle \rangle)} \quad \underbrace{\phantom{\lambda s_2 : s_2 \not\leq w_{s_1}. R(s_1, s_2)}}_{\text{a proposition (type } \langle s, t \rangle)}$$

In (39), the described experience-dependence is ensured by the term ‘ $(\exists e) [exp_{w_{\textcircled{a}}}(e, z) \wedge (\exists s_1 : s_1 < \omega(e) \dots)]$ ’ (hereafter called the *experientiality requirement*). In this term, ‘ $exp_{w_{\textcircled{a}}}(e, z)$ ’ expresses that, in (some specific spatio-temporal location of) the world, $w_{\textcircled{a}}$, of which the actual situation \textcircled{a} is part, the agent z has (had) an experience e .⁸ ω is a function that maps z ’s relevant experiencing event, e , to the situation or scene that serves as the object of z ’s experience. For John’s seeing event from (30), this object is the scene (perceived from John’s particular visual perspective in the park) in which a woman is dancing. The partiality of the inclusion relation between s_1 and the experienced scene $\omega(e)$, i.e., $s_1 \leq \omega(e)$, is motivated by the observation that, in cases like (34), an identity between s_1 and $\omega(e)$ (and the attendant attribution of ‘tattoo-freeness’ to the woman *with tattoos* from $\omega(e)$) would yield a contradiction (as in (34a-ii)).

Note that the entry in (39) does not contain an explicit anti-veridicality conjunct. However, in this entry, anti-veridicality arises from the combination of the experientiality requirement (esp. from the requirement $s_1 \leq \omega(e)$) and the anti-congruence presupposition, $s_2 \not\leq w_{s_1}$. The latter assumes that the situations at which the dependent proposition, $\lambda s. R(s_1, s)$, is true are not part of the experience world w_{s_1} . In virtue of this presupposition, $\lambda s. R(s_1, s)$ is false at w_{s_1} even if e is a veridical experience (as I have assumed to be the case in (30) and (31)).

≡ b. Ida is imagining a fairy in a non-actual visual scene flying (in this scene).

For a generalization of my proposed semantics to cases like (†), the reader is referred to (Liefke & Werning 2022). Observe, however, that this generalization proceeds at the expense of losing the link between s_1 and the experienced scene.

⁸ Following (Liefke & Werning 2018: 659), we assume that a situation, s_2 , is part of another situation s_1 , i.e., $s_2 \leq s_1$, if the location l_1 and time t_1 of the world-part about which s_1 contains contextually salient information includes the location l_2 and time t_2 of the world-part about which s_2 contains contextually salient information (s.t. l_1 maintains or expands the perimeters of l_2 and t_1 starts before or simultaneously with t_2 and ends after or simultaneously with t_2).

My semantics for declarative *imagine* enables the compositional interpretation of (36) and (37) as (40) and (41), respectively. To facilitate this interpretation, I intermittently ignore the future marker *will* in the sofa-sentence. I shall return to this issue in Section 4. In (41), I assume that the speaker of the context c , $SP(c)$, is Kristina (denoted by the non-logical constant *kris*).

$$\begin{aligned}
 (40) \quad & \llbracket \text{John is imagining}_{\text{DECL}} \text{-in-@} [\lambda s_1 [\lambda s_2 \text{ the woman-in-} s_1 \text{ is yodelling-in-} s_2]] \rrbracket \\
 & \equiv \llbracket \text{imagine}_{\text{DECL}} \rrbracket^{\textcircled{a}} (\llbracket \text{John} \rrbracket, \lambda s_1 \lambda s_2 \exists x. \text{woman}_{s_1}(x) \wedge \text{yodel}_{s_2}(x)) \\
 & = (\exists e) [\text{exp}_{w_{\textcircled{a}}}(e, \text{john}) \wedge (\exists s_1. s_1 < \omega(e) \wedge \\
 & \quad \text{imagine}_{\textcircled{a}}(\text{john}, \lambda s_2 : \underline{s_2 \not< w_{s_1}}. \exists x. \text{woman}_{s_1}(x) \wedge \text{yodel}_{s_2}(x)))] \\
 (41) \quad & \llbracket \text{I am imagining}_{\text{DECL}} \text{-in-@} [\lambda s_1 [\lambda s_2 \text{ the (new) sofa-in-} s_1 \text{ fits-in-} s_2]] \rrbracket^c \\
 & \equiv \llbracket \text{imagine}_{\text{DECL}} \rrbracket^{\textcircled{a}} (\llbracket SP(c) \rrbracket^c, \lambda s_1 \lambda s_2 \exists x. \text{sofa}_{s_1}(x) \wedge \text{fit}_{s_2}(x)) \\
 & = (\exists e) [\text{exp}_{w_{\textcircled{a}}}(e, \text{kris}) \wedge (\exists s_1. s_1 < \omega(e) \wedge \text{imagine}_{\textcircled{a}}(\text{kris}, \\
 & \quad \lambda s_2 : \underline{s_2 \not< w_{s_1}}. \exists x. \text{sofa}_{s_1}(x) \wedge \text{fit}_{s_2}(x)))]
 \end{aligned}$$

In line with its intuitive paraphrase (see (30b)), (40) relates John to the proposition that a woman whose acquaintance he has previously made (viz. in the park) is yodelling in his imagination. (41) relates Kristina to the proposition that the new sofa that she has previously encountered (viz. in the furniture store) will fit into her apartment's living room. I will discuss the difference between (30b)/(40) and (31b)/(41) in due course. However, before I can do so, I need to generalize the entry in (39) to interrogative complements, and to introduce the semantic entry for *whether*:

3.3 Generalization to interrogative *imagine*

To provide a semantics for *imagine whether*-constructions, I generalize the entry in (39) to an entry for interrogative uses of *imagine*. This is easily accomplished: to allow that *imagine* accepts interrogative complements, I first generalize the clausal argument of *imagine*_{DECL} (in (39): a paired proposition, R) to a paired question, Q (type $\langle\langle s, \langle s, t \rangle \rangle, t \rangle$). The latter is a characteristic function of a set of paired propositions (see Liefke 2021). My generalized entry for *imagine* (in (42)) provides the 'right' [= correctly typed] arguments for this function.

$$\begin{aligned}
 (42) \quad & \llbracket \text{imagine}_{\text{INQ}} \rrbracket^{\textcircled{a}} = \lambda \underbrace{Q}_{\text{a paired question (type } \langle\langle s, \langle s, t \rangle \rangle, t \rangle)} \lambda z (\exists e) [\text{exp}_{w_{\textcircled{a}}}(e, z) \wedge (\exists s_1. s_1 < \omega(e) \wedge \\
 & \quad \text{imagine}'_{\textcircled{a}}(z, \lambda p. \underbrace{Q(\lambda \langle s, s_2 \rangle : \underline{s_2 \not< w_{s_1}}. p_{s_2}))}_{\text{a question (type } \langle\langle s, t \rangle, t \rangle)})]
 \end{aligned}$$

The different-type complements of declarative and interrogative *imagine* require that *imagine* is treated as a different-type relation in (42). In particular, while (39)

analyzes *imagine* as a relation to a proposition, the entry in (42) analyzes it as a relation to a question. Assuming that the semantic values of declarative clauses can be lifted from paired propositions to paired questions, (42) – like (39) – enables the compositional interpretation of (36) (in (45)). This interpretation uses the type-shifter E-PARA from (43) (adopted from Liefke 2021: 334). The latter sends sets of ordered pairs of situations R to their powersets $\mathcal{P}(R)$, i.e., to downward-closed sets of paired propositions (following Ciardelli, Groenendijk & Roelofsen 2018; Ciardelli, Roelofsen & Theiler 2017, who propose this idea for the conversion of classical propositions into questions). When applied to the ‘paired propositional’-analysis of the CP *that a woman is yodelling* (see (36)), this shifter yields the paired question in (44):

$$(43) \quad \text{E-PARA} := \lambda S^{\langle s, \langle s, t \rangle \rangle} \lambda R^{\langle s, \langle s, t \rangle \rangle} (\forall \langle s_1, s_2 \rangle) [R(s_1, s_2) \rightarrow S(s_1, s_2)]$$

$$(44) \quad \text{E-PARA} (\llbracket \llbracket \lambda s_1 \llbracket \lambda s_2. \text{a/the woman-in-}s_1 \text{ yodels-in-}s_2 \rrbracket \rrbracket \rrbracket) \\ = \lambda R (\forall \langle s_1, s_2 \rangle) [R(s_1, s_2) \rightarrow (\exists x. \text{woman}_{s_1}(x) \wedge \text{yodel}_{s_2}(x))]$$

$$(45) \quad \llbracket \llbracket \text{John is imagining}_{\text{INQ}} \text{-in-@} \\ \llbracket \lambda s_1 \llbracket \lambda s_2. \text{a/the woman-in-}s_1 \text{ is yodelling-in-}s_2 \rrbracket \rrbracket \rrbracket \\ \equiv \llbracket \text{imagine}_{\text{INQ}} \rrbracket^{\text{@}} (\llbracket \text{John} \rrbracket, \text{E-PARA} (\llbracket \llbracket \lambda s_1 \llbracket \lambda s_2. \text{a woman-in-}s_1 \text{ yodels-in-}s_2 \rrbracket \rrbracket \rrbracket)) \\ \equiv \llbracket \text{imagine}_{\text{INQ}} \rrbracket^{\text{@}} (\text{john}, \lambda R (\forall \langle s_1, s_2 \rangle) [R(s_1, s_2) \rightarrow (\exists x. \text{woman}_{s_1}(x) \wedge \text{yodel}_{s_2}(x))]) \\ = (\exists e) [\text{exp}_{w_{\text{@}}}(e, \text{john}) \wedge (\exists s_1. s_1 < \omega(e) \wedge \text{imagine}'_{\text{@}}(\text{john}, \\ \lambda p. (\forall \langle s_1, s_2 \rangle : s_2 \not< w_{s_1}) [p_{s_2} \rightarrow (\exists x. \text{woman}_{s_1}(x) \wedge \text{yodel}_{s_2}(x))])])]]$$

4 Imagining whether

With the semantics for interrogative uses of *imagine* in place, we are now ready to specify the entry for the complementizer *whether*. In line with recent work on meaning-driven selectional restrictions (see, e.g., Mayr 2019; Theiler et al. 2019; Uegaki & Sudo 2019), I expect that this entry compositionally combines with the semantics of *imagine*_{INQ} as desired in (5), but generates conflict (e.g., a contradiction, triviality, or presupposition failure) when combining with the semantics of *imagine*_{INQ} in (3) and (4).

In providing the semantics of the polar complementizer, I start from the classical entry for *whether* (due to Hamblin 1973; Karttunen 1977a; Larson 1985). This entry interprets *whether* through the disjunction of a proposition and its negation, and assumes that either the proposition or its negation is true at the (actual) evaluation world $w_{\text{@}}$. On this semantics, a phrase of the form *whether q* then denotes the set of propositions $\{p : p \text{ is true} \ \& \ (p = q \vee p = \neg q)\}$ (see (46)). In what follows, I will refer to the first conjunct, $p_{w_{\text{@}}}$, in this denotation as the *actuality assumption*.

$$(46) \quad \llbracket \text{whether} \rrbracket_{\text{CLASSIC}} = \lambda q^{\langle s,t \rangle} \lambda p^{\langle s,t \rangle} \underbrace{[p_{w@} \wedge (p = q \vee p = \neg q)]}_{\text{actuality assumption}}$$

To allow that the entry for *whether* accepts paired propositions, I generalize the above entry to the entry in (47). In line with (Ciardelli et al. 2018), this generalization replaces the identity relation between the members, R , of the range set and the ‘paired proposition’-denotation, S , of the embedded TP by a semantic inclusion relation. This relation enables the entailment from *that*- to *whether*-clauses.

$$(47) \quad \llbracket \text{whether} \rrbracket_{\text{PAIRED}} \quad \text{decidedness assumption} \\ = \lambda S^{\langle s, \langle s,t \rangle \rangle} \lambda R^{\langle s, \langle s,t \rangle \rangle} \left[\overbrace{\forall s_1. R(s_1, w_{s_1})}^{\text{decidedness assumption}} \wedge \left((\forall s_2. R(s_1, s_2) \rightarrow S(s_1, s_2)) \vee \right. \right. \\ \left. \left. (\forall s_2. R(s_1, s_2) \rightarrow \neg S(s_1, s_2)) \right) \right]$$

To capture the dependence of imagination content on the object of the agent’s experience, the entry in (47) requires that the semantic value of the embedded TP is true at the world, w_{s_1} , of which the agent’s personally experienced scene, s_1 , is part. Since the propositional content of this TP is dependent on s_1 (see, e.g., (40)/(41)), (47) replaces the actuality assumption, $p_{w@}$ (generalized: $R(@, w@)$), by the requirement ‘ $R(s_1, w_{s_1})$ ’. In contrast to $R(@, w@)$ (which could only apply to cases of imagining that are dependent on a veridical experience like perception (see (31)), this requirement also applies to cases of imagining that are dependent on a counterfactual experience (see, e.g., (5c); copied in (48a)):

- (48) *Context*: I have been {watching a movie, dreaming} about aliens.
 a. I’m **imagining whether** aliens could invade Ulm. (i.e., (5c))
 \equiv b. I’m **imagining** whether the aliens from {the movie, my dream} could invade ({my dream-, the movie-world}-counterpart of) Ulm.

In what follows, I call ‘ $R(s_1, w_{s_1})$ ’ the *decidedness assumption*. Its name is motivated by the observation that this assumption decides, for each proposition that is dependent on an experienced scene s_1 (in (40): the proposition $\lambda s_2 \exists x. \text{woman}_{s_1}(x) \wedge \text{yodel}_{s_2}(x)$), whether it is true at the maximal extension, w_{s_1} , of this scene.

My entry for *whether* combines with the semantic complement in (36) as desired:

$$(49) \quad \llbracket \text{whether} \rrbracket_{\text{PAIRED}} \left(\llbracket \lambda s_1 \left[\lambda s_2. \text{a/the woman-in-}s_1 \text{ is yodelling-in-}s_2 \right] \rrbracket \right) \\ = \lambda R \left[\forall s_1. R(s_1, w_{s_1}) \wedge \left((\forall s_2. R(s_1, s_2) \rightarrow (\exists x. \text{woman}_{s_1}(x) \wedge \text{yodel}_{s_2}(x))) \vee \right. \right. \\ \left. \left. (\forall s_2. R(s_1, s_2) \rightarrow \neg(\exists x. \text{woman}_{s_1}(x) \wedge \text{yodel}_{s_2}(x))) \right) \right]$$

The above straightforwardly composes with my proposed entry for *imagine*_{INQ}:

$$(50) \quad \llbracket \text{John is imagining whether a woman is yodelling} \rrbracket^@ \\ \equiv \llbracket \text{imagine}_{\text{INQ}} \rrbracket^@ \left(\llbracket \text{John} \rrbracket, \right. \\ \left. \llbracket \text{whether} \rrbracket_{\text{PAIRED}} \left(\llbracket \lambda s_1 \left[\lambda s_2. \text{a/the woman-in-}s_1 \text{ is yodelling-in-}s_2 \right] \rrbracket \right) \right)$$

The selectional variability of *imagine whether*

$$= (\exists e) [exp_{w@}(e, john) \wedge (\exists s_1. s_1 < \omega(e) \wedge imagine'_{@}(john, \lambda p. [\forall s_1. p_{w_{s_1}} \wedge ([\forall s_2: \underline{s_2} \not\prec w_{s_1}. p_{s_2} \rightarrow (\exists x. woman_{s_1}(x) \wedge yodel_{s_2}(x))] \vee [\forall s_2: \underline{s_2} \not\prec w_{s_1}. p_{s_2} \rightarrow \neg(\exists x. woman_{s_1}(x) \wedge yodel_{s_2}(x))])])])]$$

However, when it is accepted, the anti-congruence presupposition (printed in boldface in (50)) clashes with the decidedness assumption (here: the requirement that some proposition p that is informationally stronger than the proposition ‘the woman from s_1 is yodelling’ is true at w_{s_1}): if this presupposition is true, even the original proposition (viz. ‘the woman from s_1 is yodelling’) may already be false at w_{s_1} . But this is incompatible with the assumption (marked with a red circle) that p is true at w_{s_1} . The truth of the anti-congruence presupposition is supported by the context from (30) (which suggests that said woman was not yodelling – but dancing – in s_1). The supplementary assumption that only very few people can, in fact, yodel makes it extremely unlikely that the proposition ‘the woman from the park is yodelling’ is true at a past or future point in time of w_{s_1} .

Note that the contradictoriness of the sentence in (50) – which results from the incompatibility of $p_{w_{s_1}}$ and $s_2 \not\prec w_{s_1}$ – is systematic in the sense that it is independent of the lexical content of the embedded TP: So long as we accept the anti-congruence presupposition, this sentence will receive the denotation **F** [= ‘false’]. The sentence is hence L-analytical in the sense of Gajewski (2002) (see Theiler et al. 2019). The perceived ungrammaticality of this sentence is a consequence of its L-analyticity (see also Chierchia 2006, 2013).

Things are different for the sofa-sentence, (5a) (see (51)), where $\llbracket SP(c) \rrbracket^c = kris$. In this sentence, the use of the possessive pronoun *my* in *my living room* (interpreted as $\llbracket SP(c)$ ’s living room-in-@) – and the latter’s role as the object of the predicate $\llbracket fits-in-s_2 \rrbracket$ – suggests that s_2 is a spatio-temporal (or informational) part of the actual world, $w_{@}$ (s.t. $w_{s_2} = w_{@}$). The assumption that the scene, s_1 , at the furniture store in which I am veridically experiencing the new sofa (see the context from (31)) is part of the same world as the situation, @, in which I am the owner, or tenant, of said living room (s.t. $w_{s_1} = w_{@}$ and [by $w_{s_2} = w_{@}$] $w_{s_1} = w_{s_2}$) then cancels the anti-congruence presupposition of *imagine* (see the boldfaced strikethrough in (51)). To capture these intricacies, I use the sophisticated reading of (5a) from (38):

$$(51) \quad \llbracket I \text{ am } \mathbf{imagining \textit{whether}} \text{ the new sofa will fit into my living room} \rrbracket^@ \\ \equiv \llbracket imagine_{INQ} \rrbracket^@ (\llbracket SP(c) \rrbracket^c, \llbracket \textit{whether} \rrbracket_{\text{PAIRED}} (\llbracket [\lambda s_1 [\lambda s_2. \text{the sofa-in-} s_1 \\ \text{fits-in-} s_2 \text{ into } SP(c)\text{'s living room-in-} @ \rrbracket] \rrbracket)) \\ = (\exists e) [exp_{w@}(e, kris) \wedge (\exists s_1. s_1 < \omega(e) \wedge imagine'_{@}(kris, \lambda p. [\forall s_1. p_{w_{s_1}} \wedge \\ ([\forall s_2: \underline{s_2} \not\prec w_{s_1}. p_{s_2} \rightarrow (\exists x. sofa_{s_1}(x) \wedge (\exists y. kris' \textit{room}_{@}(y) \wedge fit_{s_2}(x, y))] \vee \\ [\forall s_2: \underline{s_2} \not\prec w_{s_1}. p_{s_2} \rightarrow \neg(\exists x. sofa_{s_1}(x) \wedge (\exists y. kris' \textit{room}_{@}(y) \wedge fit_{s_2}(x, y))])])])])]$$

The possibility of taking s_2 to be a part of the experience world w_{s_1} is further supported by the future marker *will* in (5a). This marker suggests that the mentally targeted scene that serves as a truthmaker for the proposition ‘the new sofa fits into Kristina’s living room’ or for its negation ‘the new sofa does *not* fit into Kristina’s living room’ is located in a later point in time of w_{s_1} than s_1 (s.t. $t_{s_1} < t_{s_2}$). Given the sofa-shopping context from (31) – and the common assumption that we can only verify the proposition or its negation after (!) the new sofa has been purchased and delivered to Kristina’s apartment –, this is a plausible assumption.

5 Discussion

Notably, of the acceptable *imagine whether*-sentences in (5), only (5a) contains the future marker *will*. In the other two sentences, i.e., (5b) and (5c) (copied in (52a) resp. (53a)), the *whether*-complement contains the modal *could* / *would*. In (5b-ii/i), *imagine* is further embedded under a negated ability modal, respectively under *try*:

- (52) a. Anna {i. was trying to, ii. could not} **imagine whether** the lid would fit the kettle. (German version in Sode 2022: 1)
 b. (*)Anna **imagines whether** the lid fits the kettle.
- (53) a. I’m **imagining whether** aliens could invade Ulm. (Özyıldız 2022: 28)
 b. * I’m **imagining whether** aliens invade Ulm.

Since each of these sentences is much more acceptable than their non-modal counterparts (52b) resp. (53b), one would expect that the modal elements in these sentences effect a nudge towards cancelling the anti-congruence presupposition. This expectation is supported by the observation that, in Sode’s lid-sentence (52), *try* seems to make a future time-slice of w_{s_1} more plausible as the point of evaluation. In the absence of *try*, the predicate *fit* is more likely interpreted at @ (where it yields a contradiction due to the presumed falsity/undefinedness of the TP’s content at @ – the TP’s truth at @ would render Anna’s imaginative project trivial).

My observation that embedding under *try* facilitates *whether*-licensing is in line with the paraphrase of *imagining whether* as *mentally exploring whether* (in (28)) and with recent accounts of *try*. According to these accounts, *try* “picks out the ‘metal action’ stage of an event” (Grano 2011: 427) and has an obligatory existential reading (there must be some specific object [in s_1] towards which the trying is directed; see Sharvit 2003). Future work will need to generalize my entry for interrogative *imagine* to an entry that straightforwardly integrates with such event-semantic accounts of *try*. This move will also facilitate the incorporation of Özyıldız’ (2021; 2022) findings about responsivity and progressive aspect (see Sect. 2.2). The effect of embedding under negated ability modals remains a topic for future research.

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