



# Factive islands and questions about propositions

Matías Verdecchia<sup>1</sup>

Accepted: 23 February 2022 / Published online: 10 March 2022  
© The Author(s), under exclusive licence to Springer Nature B.V. 2022

## Abstract

In this squib, I evaluate the contradiction analysis (Abrusán in *Natural Language Semantics* 19(3):257–321, 2011, in *Weak island semantics*, 2014) and the necessary infelicity analysis (Oshima in Washio et al. (eds.), *New frontiers in artificial intelligence*, 2007; Schwarz and Simonenko in *Natural Language Semantics* 26(3–4):253–279, 2018b) of factive islands in light of a pattern that has not been previously discussed in the literature: questions about propositions. I argue that while the necessary infelicity approach can straightforwardly explain the acceptability of this kind of question, the contradiction account undergenerates, since it wrongly predicts their ungrammaticality. I claim that this prediction follows from the assumption that the domain of quantification contains contraries. Therefore, the main contribution of this squib is the observation that such an assumption cannot play an explanatory role in accounting for factive islands.

**Keywords** Factive islands · Presupposition · Contradiction · Pragmatic infelicity

## 1 Introduction

As is well-known, factive clauses induce weak island effects. Roughly speaking, this means that these clauses allow the extraction of certain elements (1a), but not of others (1b–1d).

- (1) a. Who does John regret that Mary invited?
- b. \*How does John regret that Mary danced?
- c. \*How tall does John regret that Mary is?
- d. \*Why does John regret that Mary laughed?

---

✉ M. Verdecchia  
[mnverdecchia@filo.uba.ar](mailto:mnverdecchia@filo.uba.ar)

<sup>1</sup> Instituto de Investigaciones Filosóficas (SADAF-CONICET), 642 Bulnes, Buenos Aires, Argentina

Since Szabolsci and Zwarts' (1993) seminal paper, there is general agreement in the semantic-pragmatic literature that one of the key factors that determines which extractions are sensitive to weak islands is the domain which the *wh*-phrase ranges over. For instance, it is commonly assumed that while it is possible to extract *wh*-phrases that range over individuals (1a), those that range over manners (1b), degrees (1c), or reasons (1d) are not good extractees.

Within this line of research, in the last years two theories have been put forward to account for the cases in (1): on the one hand, the contradiction analysis (Abrusán 2011, 2014), according to which certain extractions from factive clauses are ungrammatical because they trigger a contradictory presupposition; and, on the other hand, the necessary infelicity analysis (Oshima 2007; Schwarz and Simonenko 2018b), which states that these questions are odd because they systematically violate certain felicity conditions. While both approaches seem to have a similar empirical coverage, in this squib I show that only the latter can account for the acceptability of a kind of question that, as far as I know, has not been previously discussed in the literature: questions about propositions, i.e., questions in which the *wh*-phrase originates as the complement of a clause-embedding predicate.

To illustrate, consider the following dialogue. Imagine a context in which speaker A has a friend who believes that the pandemic is not real.<sup>1</sup>

- (2) A: I hate that she believes that.  
 B: What do you hate that she believes?

As can be observed, in this case the *wh*-phrase *what* constitutes the internal argument of the propositional attitude verb *believes* and hence ranges over propositions. Note that this kind of question is not unique to English: similar examples can be found, for instance, in Spanish.

- (3) A: Lamento mucho que Juan piense eso.  
 regret.1SG much that Juan thinks.3SG that  
 'I really regret that Juan thinks that.'  
 B: ¿Qué lamentas que piense?  
 what regret.2SG that think.3SG  
 'What do you regret that he thinks?'

Furthermore, from a semantic point of view, questions about propositions also include simpler cases like (4) and (5), in which the *wh*-phrase originates as the complement of the matrix predicate. Importantly, note that in both these examples and the previous ones, the questions contain a propositional variable in the scope of the factive verbs *regret* and *hate*.

- (4) What do you regret?  
 (5) ¿Qué lamentás?  
 what regret.2SG  
 'What do you regret?'

<sup>1</sup>Thanks to Matthew Barros (p.c.) for suggesting this scenario.

In this squib, I argue that these cases pose a problem for the contradiction analysis. In a nutshell, I show that this approach undergenerates: it predicts that this kind of question should trigger a contradictory presupposition and, as a result, should be ungrammatical. I posit that this wrong prediction follows from the assumption that the domain of quantification contains contraries. Therefore, the main contribution of this article is the observation that such an assumption cannot play an explanatory role in accounting for factive islands.

The squib is organized as follows. In Section 2, I present the main features of the two approaches to factive islands discussed here. In Section 3, I analyze the phenomenon of questions about propositions from each theory. Finally, in Section 4 I offer some concluding remarks.

## 2 Two approaches to factive islands

In this section, I introduce two recent semantic-pragmatic accounts to factive islands: the contradiction analysis (Abrusán 2011, 2014) and the necessary infelicity analysis (Oshima 2007; Schwarz and Simonenko 2018b). For this purpose, and for the sake of exposition, I show how these approaches explain the contrast between questions about individuals (6a) and questions about manners (6b):<sup>2</sup>

- (6) a. Who does John regret that Mary invited?  
 b. \*How does John regret that Mary danced?

### 2.1 The contradiction analysis

Abrusán (2011, 2014) argues that factive islandhood arises because of a systematic semantic problem related to the propositional content of these questions. Concretely, she claims that certain extractions from factive islands are unacceptable because they always trigger a contradictory presupposition. Since no context can satisfy such a presupposition, these configurations lead to an inevitable presupposition failure.

The analysis is built on three core assumptions. First, Abrusán takes for granted that a sentence with an emotive factive predicate like (7a) triggers a presupposition like (7b), which functions as a definedness condition on the hosting sentence (7c) (Heim and Kratzer 1998):

- (7) a. John regrets that Bill is lucky.  
 b. Presupposition of (7a): John believes that Bill is lucky.  
 c.  $\llbracket \text{John regrets that Bill is lucky} \rrbracket =$   
 $\lambda w: \text{John believes that Bill is lucky in } w. \text{ John regrets that Bill is lucky in } w$

As for questions that contain factive predicates, Abrusán points out that they keep the presupposition of their declarative counterparts. For instance, the question in (8a) retains the presupposition triggered by the emotive factive verb *regret* within the scope of the *wh*-phrase, as in (8b):

<sup>2</sup>It should be noted that the picture presented here is incomplete. Of course, both proposals also explain other phenomena, such as degree questions. Nevertheless, these cases are outside the scope of this squib.

- (8) a. Who regrets that Bill is lucky?  
 b. Presupposition of (8a):  $x$  believes that Bill is lucky  
 c.  $\llbracket$ Who regrets that Bill is lucky? $\rrbracket^w =$   
 $\lambda p. \exists x[\text{person}(x) \ \& \ p = \lambda w'. \text{ } x \text{ believes that Bill is lucky in } w']$ .  $x$  regrets that Bill is lucky in  $w'$

Second, Abrusán assumes that presuppositions in wh-questions project universally; that is, they hold for every entity which the wh-phrase ranges over. To illustrate, Abrusán shows that the question in (9a) triggers the presupposition in (9b), i.e., that Bill invited each of the ten people.

- (9) a. Who among these ten people does Mary regret that Bill invited?  
 b. Presupposition of (9a):  $\forall x \in \{\text{these ten people}\}$ : Mary believes that Bill invited  $x$

Finally, the last premise is related to manner questions. Abrusán claims that in a question like (10a), the wh-phrase *how* ranges over a set of manners (e.g., *fast*, *carefully*, *by car*, etc.). Manners can be understood as functions from events to truth values.<sup>3</sup>

- (10) a. How did John run?  
 b.  $\lambda p. \exists q_{\text{manner}} [p = \lambda w'. \text{run}(w')(e^*)(\text{John}) \wedge q_{\text{manner}}(w')(e^*)]$   
 c. {that John ran fast, that John ran carefully, that John ran fast+carefully, etc.}

Crucially, Abrusán assumes that every manner predicate has at least one contrary in the domain of manners ( $D_M$ ). Two manners are contraries if they cannot be true for the same event (although they can be false). In formal terms, this condition can be formulated as follows:

- (11) CONTRARY DOMAIN CONDITION (Abrusán 2014, p. 67)  
 For each predicate of manner  $P \in D_M$ , there is at least one contrary predicate of manners  $P' \in D_M$ , such that  $P \cap P' = \emptyset$ .

To illustrate, Abrusán offers the following examples of contraries  $P$  and  $P'$ :

- (12) a.  $P$ : wisely; fast; by bus  
 b.  $P'$ : unwisely; slowly; by car

With these assumptions in mind, consider again the manner question in (6b), repeated for convenience as (13a). Since *how* ranges over a domain of manners that contains contraries, and the presupposition triggered by the factive predicate projects universally (13c), the straightforward consequence is that the question carries a contradictory presupposition. For instance, suppose that the domain of manners contains *well* and *badly*. Therefore, the question would presuppose, for a particular event, that John believes that Mary danced well and that John believes that Mary danced badly. Given that no context can entail two mutually exclusive propositions, the question always leads to a presupposition failure.

<sup>3</sup>Abrusán assumes the existence of plural manners, similar to what is commonly assumed for individuals (Link 1983).

- (13) a. \*How does John regret that Mary danced?  
 b.  $\llbracket \text{How does John regret that Mary danced?} \rrbracket^w = \lambda p. \exists \alpha [\alpha \in D_M \ \& \ p = \lambda w': \text{John believes that Mary danced in } \alpha \text{ in } w']$   
     John regrets that Mary danced in  $\alpha$  in  $w'$   
 c. Projected presupposition of the question in (13a): for every manner  $\alpha \in D_M$ : John believes that Mary danced in  $\alpha$

Moreover, the grammaticality of (6a), repeated as (14a), is also predicted under this approach. Since the domain of individuals does not contain contraries and the presupposed propositions are not mutually exclusive, the projected presupposition is not contradictory. In other words, some context can satisfy the presupposition that the question carries.

- (14) a. Who does John regret that Mary invited?  
 b.  $\llbracket \text{Who does John regret that Mary invited?} \rrbracket^w = \lambda p. \exists x [\text{person}(x) \ \& \ p = \lambda w': \text{John believes that Mary invited } x \text{ in } w']$   
     John regrets that Mary invited  $x$ .  
 c. Projected presupposition of the question in (14a): for every  $x \in D_{\text{person}}$ : John believes that Mary invited  $x$

## 2.2 The necessary infelicity analysis

In a brief but influential paper, Oshima (2007) posits a pragmatic account for factive islands. In a nutshell, he proposes that factive islandhood is due to necessary infelicity, that is, the violation of certain felicity conditions on questions in all accessible contexts. In what follows, I present Schwarz and Simonenko's (2018b) reformulation of Oshima's original proposal, which makes more explicit several aspects of his approach.

The starting point of Schwarz and Simonenko's analysis is the assumption that questions must meet certain felicity conditions in discourse. These conditions establish the permissible relations between context sets (i.e., the sets of worlds in which all the propositions in the common ground are true, in the sense of Stalnaker 1978) and possible Hamblin/Karttunen question denotations. The first felicity condition that Schwarz and Simonenko present is the *answerability condition*, which states that for a question to be felicitous, the context set must be consistent with it having an answer which is informative (i.e., there must be a world in the context set where this proposition is false) and whose presupposition is met (i.e., it is entailed by the context set). This can be formulated as in (15), where ' $c > Q$ ' indicates that the question denotation  $Q$  is felicitous relative to the context set  $c$ .

- (15) Answerability condition  
 $c > Q$  only if  $\exists p [\exists w [w \in c \ \& \ p \in Q(w)] \ \& \ c \subseteq \text{dom}(p) \ \& \ c \not\subseteq p]$

The second felicity condition that Schwarz and Simonenko assume is the *existence presupposition*, according to which in every world of the context set, the denotation of the question contains one answer that is true in that world.<sup>4</sup>

<sup>4</sup>Unlike what is commonly assumed, Schwarz and Simonenko do not include the existence presupposition in the denotation of the question, but they conceive of it as a felicity condition.

- (16) Existence presupposition  
 $c \succ Q$  only if  $c \subseteq \{w: \exists p [p \in Q(w) \ \& \ p(w)]\}$

In addition to these two felicity conditions, Schwarz and Simonenko also consider another factor which constitutes the key ingredient of Oshima's analysis: the uniqueness property. In their seminal paper, Szabolcsi and Zwarts (1993) note that extractions from factive islands are unacceptable when the embedded clause contains an 'only one time' predicate, that is, a predicate that denotes a non-iterable event (17b).

- (17) a. To whom do you regret having shown this letter?  
 b. \*From whom do you regret having gotten this letter?

Oshima (2007) reformulates this observation arguing that the extraction of a wh-phrase from a factive complement is blocked when the embedded predicate applies uniquely, i.e., it can be true of at most one object. Following Oshima, Schwarz and Simonenko formalize the interaction between factivity and uniqueness as in (18), which states that the context set entails that the presupposition  $P$  triggered by the factive predicate holds of at most one individual.

- (18) Factivity plus uniqueness  
 $c \subseteq \{w: |\{x: P(x)(w)\}| \leq 1\}$

As for questions, factivity plus uniqueness has the consequence in (19), that is, that in every world of the context set, the denotation of the question contains at most one proposition whose presupposition is true.

- (19) Consequence of factivity plus uniqueness  
 $c \subseteq \{w: |\{p: p \in Q(w) \ \& \ w \in \text{dom}(p)\}| \leq 1\}$

Now, having assumed factivity plus uniqueness, the following step is to combine this property with the answerability condition and the existence presupposition. However, as Schwarz and Simonenko argue, in this scenario the conjunction of these conditions becomes inconsistent. To begin with, consider the existence presupposition given factivity plus uniqueness. If in every world of the context set, the denotation of the question contains at most one proposition whose presupposition is true (factivity plus uniqueness) and contains at least one proposition that is true (existence presupposition), the straightforward consequence is that in every world of the context set, *the* proposition in the denotation of the question with a true presupposition is true.

- (20) Consequence of the existence presupposition, given factivity plus uniqueness  
 $c \subseteq \{w: [\iota p. p \in Q(w) \ \& \ w \in \text{dom}(p)](w)\}$

As for the answerability condition, as said above, the context set must be consistent with the question having an answer which is informative and whose presupposition is met. However, given factivity plus uniqueness, it should be the case that in every context set world there is a unique proposition in the question denotation which is true and whose presupposition is met. As a result, the answerability condition is violated: if in every context set world, the unique proposition in the question denotation with a true presupposition is true, then the answer is not informative. In other words, the question is trivial, since it "answers itself".

- (21) Consequence of the answerability condition, given factivity plus uniqueness  
 $c \not\subseteq \{w: [tp. p \in Q(w) \ \& \ w \in \text{dom}(p)](w)\}$

As can be observed, the consequences in (20) and (21) are incompatible. Thus, under this approach, factive island effects arise as a byproduct of the necessary violation of one of these felicity conditions. As Schwarz and Simonenko conclude, “if a context set satisfies such a question’s existence presupposition and also satisfies the presupposition of one of its possible semantic answers, it is guaranteed to already entail a complete answer to the question, in violation of the answerability condition” (2018b, p. 263).

It should be noted that, according to this approach, the crucial factor that distinguishes factive islands from acceptable *wh*-questions is the uniqueness property. Therefore, the general strategy adopted by Oshima and Schwarz and Simonenko consists in extending this condition for other domains, such as manners, degrees, etc. In other words, the explanation relies on the assumption that the presupposition only holds for a unique manner, a unique degree, and so on. Consider again, for instance, the question in (6b), repeated as (22):

- (22) \*How does John regret that Mary danced?

In order to demonstrate that the presupposition property in (22) only applies to a unique manner, Schwarz and Simonenko offer the following test. Schwarz (2018) argues that additive *else* makes a twofold contribution. On the one hand, it introduces the presupposition that the scope property applies for some salient entity, which he calls the *additive referent*. On the other, *else* also excludes the answers about the additive referent from the question denotation. Thus, as expected, *else* results unacceptable in questions where the scope property holds for a unique entity (23).<sup>5</sup>

- (23) #Who else is the tallest member of our team?

Crucially, adding *else* in *how*-questions is also unacceptable (24). Therefore, Schwarz and Simonenko conclude that in these cases the scope property applies uniquely too.<sup>6</sup>

- (24) #How else did he open that coconut?

<sup>5</sup>As one anonymous reviewer suggests, there are certain cases in which a predicate seems to not require uniqueness because a multi-event interpretation is available. Consider for instance the example in (i):

- (i) Who do you regret having danced with?

Following Schwarz and Simonenko, one could argue that this question is acceptable because the predicate *you have danced with x* can be true for more than one individual. However, the most natural reading seems to involve multiple events of dancing (i.e., first, you danced with John; then, you danced with Mary, and so on). Therefore, there seems to be a significant difference between this case and the deviant question in (23), since in that example there is only one event involved. I leave this issue open for future research.

<sup>6</sup>Schwarz and Simonenko point out that not all *how*-questions exhibits uniqueness. They offer the following example:

- (i) How else could he have opened that coconut?

Nevertheless, they claim that this kind of data is consistent with their proposal. As for (i), they argue that the possibility modal obviates uniqueness. Thus, “even if there is a unique way in which he opened that coconut, there plausibly can be multiple ways in which he *could* have opened it” (Schwarz and Simonenko 2018b, p. 275). Under the necessary infelicity approach, the straightforward prediction is that the addition

If this is correct, the general explanation for the ungrammaticality of (22) follows straightforwardly: in this case, the answerability condition and the existence presupposition cannot be simultaneously satisfied. In other words, these configurations also lead to necessary infelicity.

### 3 Questions about propositions

Having presented the main features of the contradiction analysis and the necessary infelicity analysis, let us see what predictions they make with respect to questions about propositions:

(25) What do you hate that she believes?

(26) What do you regret?

To begin with, consider first the contradiction approach. As shown, according to Abrusán (2011, 2014) a question like (6b) is unacceptable because it carries a contradictory presupposition. This anomaly arises as a result of the interplay of three factors: (i) presupposition triggering, (ii) universal projection, and (iii) a domain containing contraries. Taking these assumptions on, one would expect, *ceteris paribus*, the following scenario concerning (25) and (26).

Starting with (25), first, this question carries the presupposition in (27), that is, that the addressee believes that she believes something.

(27)  $\llbracket \text{What do you hate that she believes?} \rrbracket^w =$   
 $\lambda p. \exists q [q \in D_p \ \& \ p = \lambda w': \text{the addressee believes that she believes } q \text{ in } w']$   
 $\text{the addressee hates that she believes } q \text{ in } w'$

Second, as for universal projection, the presupposition in (27) should hold for every proposition in the domain of propositions ( $D_p$ ):

(28) Projected presupposition of the question in (27): for every proposition  $q \in D_p$ : the addressee believes that she believes  $q$ .

Finally, let us assume that the domain of propositions, like the domain of manners, also necessarily contains contraries. Two propositions are contrary if they cannot be simultaneously true. Note that this definition does not only hold for contradictory propositions, which cannot be simultaneously true, but cannot be simultaneously false either (e.g., *John is ten years old* and *John is not ten years old*), but also includes propositions that cannot be simultaneously true, but may be simultaneously false (e.g., *John is ten years old* and *John is eleven years old*).<sup>7</sup> Therefore, assume the following condition for domains of propositions, analogous to the one proposed by Abrusán for domains of manners (11).

---

of *could* should ameliorate the extraction of *how* from a factive island. As they point out, this prediction seems to be borne out:

(ii) ? How does she know that he could have opened that coconut?

<sup>7</sup>Thanks to Nicolás Lo Guercio (p.c.) for pointing this out.



- (29) **CONTRARY DOMAIN CONDITION FOR PROPOSITIONAL DOMAINS**  
 For each proposition  $p \in D_p$ , there is a contrary proposition  $q \in D_p$ , such that  $p \cap q = \emptyset$  (i.e. there is no world in which  $p$  and  $q$  are true).

Suppose, then, that the wh-phrase *what* in (25) ranges over the following toy domain of propositions:

- (30) Domain of propositions assuming contraries:  $\{p, q, r, s\}$   
 (where  $p \cap q = \emptyset$  and  $r \cap s = \emptyset$ , i.e., the pairs  $p$ - $q$  and  $r$ - $s$  are contraries)

The straightforward prediction of Abrisán's approach is that questions about propositions should be ungrammatical because they trigger a contradictory presupposition: since the wh-phrase ranges over a domain of propositions that contains contraries and the presupposition projects universally, the result should be that in a question like (25) it is presupposed that the addressee believes that she believes  $p$  and that the addressee believes that she believes  $q$ . Given that no context can entail such set of contrary propositions, the question should lead to a systematic presupposition failure. However, as can be observed, this prediction is not borne out: the question in (25) is grammatical. Therefore, the contradiction analysis, without further assumptions, undergenerates: it wrongly predicts the unacceptability of questions about propositions involving factive predicates.

Now, it could be argued that this problem can be solved by not extending the assumption that the domain contains contraries from the domain of manners to the domain of propositions. If so, no necessary contradiction would arise and the grammaticality of the questions about propositions would be correctly predicted. However, this alternative faces two major problems. First, it is not clear why one should adopt such a crucial assumption only for one domain (i.e., the domain of manners), since there is no independent evidence that supports this premise. Thus, even if questions about propositions could be accounted for by renouncing the assumption that the domain of propositions always contains contraries, the general proposal becomes, at least, weaker: it depends on the postulation of a purely ad hoc premise just for one domain.

Second, and more importantly, even if one does not extrapolate this assumption, nothing prevents the domain of propositions from containing at least a pair of contrary propositions. That is, even if it is not required that *each* proposition has a contrary in the domain as the condition in (29) states, it is still possible that *some* proposition has a contrary. To illustrate, consider the alternative toy domain in (31). In this case, the premise that for each proposition there is a contrary proposition in the domain does not hold, given that  $r$  has no contrary. However, such a domain is still problematic for Abrisán's proposal: if one assumes that factive presuppositions project universally, a question like (25) would be still predicted to carry a contradictory presupposition, since it would presuppose that the addressee believes that she believes  $p$  and that the addressee believes that she believes  $q$ .

- (31) Domain of propositions:  $\{p, q, r\}$   
 (where  $p \cap q = \emptyset$ )

The only way in which the theory can solve the undergeneration problem is to further assume that the domain of propositions *never* contains contraries in these cases, i.e.,

that the set of propositions is consistent. This means not only introducing another ad hoc premise which seems not to be independently motivated, but also adopting an empirically inadequate assumption, given that there are some contexts in which the domain of quantification arguably contains contrary propositions (see the discussion around (35) below). The moral of the above discussion is that the assumption that the domain of quantification contains contraries cannot play an explanatory role in accounting for factive islandhood. This conclusion means a non-trivial problem for the contradiction approach.

Consider now the example in (26), repeated for convenience in (32). While in this case what is moved is the complement of the main predicate *regret*, the same problem as in the previous case arises under Abrusán's account. Following her analysis, this question should carry the presupposition in (33).

(32) What do you regret?

(33)  $\llbracket \text{What do you regret?} \rrbracket^w =$   
 $\lambda p. \exists q [q \in D_p \ \& \ p = \lambda w'. \text{the addressee believes } q \text{ in } w']. \text{the addressee re-}$   
 $\text{grets } q \text{ in } w'$

Assuming that it projects universally, the resulting presupposition should be as follows:

(34) Projected presupposition of the question in (33): for every proposition  $q \in D_p$ : the addressee believes  $q$ .

Again, without further assumptions, the contradictory approach wrongly predicts that this question should be ungrammatical. Given that the presupposition holds for every proposition of the domain and the domain contains contrary propositions, the question would carry a contradictory presupposition (i.e., that the addressee believes  $p$  and that the addressee believes  $q$ , where  $p \cap q = \emptyset$ ), which should lead to ungrammaticality.

As one anonymous reviewer suggests, a possible solution for Abrusán's account could be to assume that the domain of propositions in these cases is contextually restricted, so that contrary propositions are not included. While adopting some kind of contextual restriction could fix the problem at the technical level, I consider this solution to be unconvincing. First, it is again a purely ad hoc stipulation: there is no independent motivation for assuming such a restriction for all cases. Second, there are certain cases in which it seems hard to contextually restrict the domain in that way. Imagine, for instance, the following dialogue during an interview:

(35) A: Do you regret something in your life?

B: Yes, I do.

A: What do you regret?

Suppose that the interviewer does not know whether the interviewee has children. In that context, it is natural to assume that the denotation of the question *what do you regret?* contains, at least, the alternative propositions *you regret having children* and

*you regret not having children* (36). Crucially, note that in this scenario it is untenable to contextually restrict the domain in order to not include contrary propositions.<sup>8</sup>

- (36)  $\llbracket \text{What do you regret} \rrbracket^w =$   
 {you regret having children, you regret not having children, ...}

If this is on the right track, the contradiction analysis predicts that the question *what do you regret?* in this dialogue presupposes, among other things, that the interviewee believes that she/he has children and that the interviewer believes that she/he does not have children.<sup>9</sup> Given that no context can satisfy this presupposition, once again, the sentence should be ungrammatical. However, as can be observed, this prediction is not borne out.

In sum, it can be concluded that Abrusán's approach undergenerates: it wrongly predicts the ungrammaticality of questions like *what do you regret?* or *what do you hate that she believes?*

Consider now the necessary infelicity analysis. As seen, according to Schwarz and Simonenko (2018b), factive islandhood results from systematic unmet felicity conditions. Particularly, they argue that the conjunction of the answerability condition (15), the existence presupposition (16), and factivity plus uniqueness (19) leads to necessary infelicity, since it will always be the case that the context set entails a complete answer to the question, violating the informativity requirement. As can be observed, from this perspective the crucial factor that distinguishes acceptable from unacceptable extractions from factive clauses is uniqueness. Therefore, a simple explanation for the grammaticality of questions about propositions is to assume that this kind of question does not impose uniqueness. Once this feature is removed, the acceptability is predicted: the answerability condition is met given that the context set has an informative answer where the presupposition is satisfied.

A natural question that arises at this point is whether there exists empirical evidence supporting the lack of uniqueness requirement in questions about propositions. Following Schwarz and Simonenko's strategy, consider the *else* modification test presented in Section 2.2. As can be observed, the questions in (37) admit the presence of the modifier *else*. That means that the predicates *she believes x* and *you know x*

<sup>8</sup>Furthermore, this example also shows that assuming that the domain of propositions *never* contains contraries, as was suggested above, cannot be taken as an adequate alternative to preserve Abrusán's account.

<sup>9</sup>As shown, a crucial assumption in Abrusán's analysis is that factive presuppositions in *wh*-questions project universally. This premise is based on the interpretation of questions about individuals like (9), repeated below in (ia), and is extended without further discussion to other cases, including manner and degree questions. However, universal projection of presuppositions in *wh*-questions is far from being an uncontroversial issue. As Schwarz and Simonenko (2018a) argue, there are some cases in which universal projection is absent, especially in questions with bare *who* or *what*. For instance, in (ib) it is harder to presuppose that Bill invited everyone.

- (i) a. Who among those ten boys does Mary regret that Bill invited?  
 b. Who does Mary regret that Bill invited?

As for the question *what do you regret?* in the dialogue in (35), from an empirical point of view, it can be argued that in this case there is no universal projection either. However, for the sake of the argument, I follow Abrusán's strategy and assume that the presupposition always holds for every entity of the domain.

do not require uniqueness, i.e., they can be true for more than one proposition (*cf.* (23)). Thus, given that these predicates do not hold only for one proposition, the answerability condition can be satisfied in (25) and (26), and the questions are correctly predicted to be grammatical.

- (37) a. What else does she believe?  
b. What else do you regret?

In sum, according to what has been discussed above, it can be concluded that the necessary infelicity approach, unlike the contradiction analysis, seems to properly account for questions about propositions involving factive islands.

## 4 Conclusions

In this squib, I evaluated two meaning-driven approaches to factive islands in light of a pattern that, as far as I know, has not been previously explored: questions about propositions involving factive predicates. I argued that while the necessary infelicity analysis can straightforwardly account for these cases, the contradiction analysis wrongly predicts their ungrammaticality. This conclusion is especially relevant since both proposals seem to exhibit a similar empirical coverage for other domains, such as questions about manners or individuals. Moreover, I showed that an explanation of factive islands that relies on the crucial assumption of contraries is empirically inadequate.

**Acknowledgements** I would like to thank two anonymous reviewers for their valuable observations and suggestions. I am also grateful to Andrés Saab, Carlos Muñoz Pérez and the members of the BA-LingPhil group at Sociedad Argentina de Análisis Filosófico for their comments on the original manuscript.

## Declarations

**Conflict of interest** The author declares that he has no conflict of interest.

## References

- Abrusán, Márta. 2011. Presuppositional and negative islands: a semantic account. *Natural Language Semantics* 19(3): 257–321.
- Abrusán, Márta. 2014. *Weak island semantics*. Oxford: Oxford University Press.
- Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Oxford: Blackwell.
- Link, Gödehard. 1983. The logical analysis of plurals and mass terms: a lattice-theoretical approach. In *Meaning, use and the interpretation of language*, eds. Robert Bauerle, Christoph Schwarze, and Arnim von Stechow, 303–323. Berlin: de Gruyter.
- Oshima, David. 2007. On factive islands: pragmatic anomaly vs. pragmatic infelicity. In *New frontiers in artificial intelligence: joint JSAI 2006 workshop post-proceedings*, eds. Takashi Washio, Ken Satoh, Hideaki Takeda, and Inokuchi Akihiro, 147–161. Berlin: Springer.
- Schwarz, Bernhard. 2018. On the locus of question exhaustification. In *Proceedings of the 48th annual meeting of the North East Linguistic Society (NELS 48)*, eds. Sherry Hucklebridge and Max Nelson, 67–80. Amherst: GLSA.
- Schwarz, Bernhard, and Alexandra Simonenko. 2018a. Decomposing universal projection in questions. In *Proceedings of Sinn und Bedeutung 22*, eds. Uli Sauerland and Stephanie Solt, 361–374. Berlin: Leibniz-Centre General Linguistics.

- Schwarz, Bernhard, and Alexandra Simonenko. 2018b. Factive islands and meaning-driven unacceptability. *Natural Language Semantics* 26(3–4): 253–279.
- Stalnaker, Robert. 1978. Assertion. In *Syntax and semantics 9: Pragmatics*, ed. Peter Cole, 315–332. New York: Academic Press.
- Szabolcsi, Anna, and Frans Zwarts. 1993. Weak islands and an algebraic semantics for scope taking. *Natural Language Semantics* 1(3): 235–284.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.