

# A Q-based approach to clausal ellipsis: Deriving the Preposition Stranding and Island Sensitivity Generalisations without movement

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**Abstract** This paper argues that the meaning of a clausal ellipsis site can only be recovered from a *syntactically derived question*, regardless of whether this question is explicitly uttered or is merely pragmatically inferred. This entails that the meaning of a clausal ellipsis site cannot be recovered from an inferred question  $q$  in a language  $L$  if  $q$  is syntactically ill-formed in  $L$ . I demonstrate that this restriction on recoverability can account for Merchant's (2001; 2004) *Preposition-Stranding Generalisation* and for the observation that fragments appear to be sensitive to syntactic islands (Merchant 2004, Abels 2011, Barros et al. 2015, 2014) without any mention of whether remnants of clausal ellipsis themselves undergo movement. Because there is no need to stipulate that remnants themselves undergo (often exceptional) movement under this approach, a theory of clausal ellipsis modelled on Cable's (2010) Q-based analysis of *wh*-questions is developed that permits non-pronunciation 'around' designated phrases. This approach is shown to be preferred on many occasions to the predominant movement-based analysis (Merchant 2004), which is too restrictive and must frequently resort to the notion of *ellipsis repair*.

**Keywords:** clausal ellipsis, ellipsis repair, island evasion, preposition stranding generalisation, questions under discussion, recoverability, structured meanings

## 1 Introduction

Due largely to the influence of Merchant (2001; 2004), the dominant contemporary position on fragmentary questions and responses in the Minimalist literature is that they are derived by *clausal ellipsis*. Clausal ellipsis involves the non-pronunciation of a clause to the exclusion of one or more phrasal constituents. Thus, according to this view, fragments are not generated in syntactic isolation (Ginzburg & Sag 2000; Culicover & Jackendoff 2005; among others), but are *remnants* of an ellipsis procedure that applies to a clause.

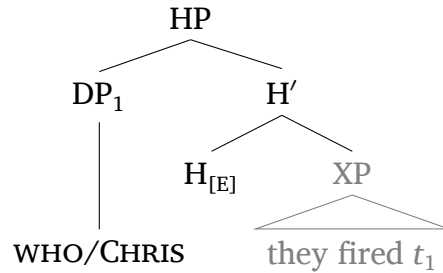
Within this clausal ellipsis framework, Merchant (2004) argues for a unified approach to fragments, according to which all remnants of clausal ellipsis are  $\bar{A}$ -moved to a position that dominates the ellipsis site. On Merchant's approach, interrogative and declarative fragments display the syntax exemplified in (1a) and (1bB) respectively. In examples, small caps represents focal prominence and greyed-out text represents ellipsis.

- (1) a. They fired someone. God knows [ WHO<sub>1</sub> [ they fired t<sub>1</sub>]].  
 b. A: They fired someone.  
 B: Yeah, [ CHRIS<sub>1</sub> [ they fired t<sub>1</sub>]].

The cornerstone of Merchant's (2004: 670-673) analysis is the *E-feature*, which provides instructions to PF and LF about how to generate and interpret clausal ellipsis. The E-feature is borne by a particular syntactic head H and, after Spell-out, instructs the PF component of grammar to render unpronounced the syntactic complement of H (call it 'XP'), either by suppressing Vocabulary Insertion (Halle & Marantz 1993) in XP or by triggering a phonological deletion operation that applies to XP, depending on one's favoured conception of PF-operations. Consequently, the E-feature's instruction to PF makes reference to a syntactic constituent, which accords with the foundational assumption that grammatical rules and/or instructions are only well-formed if they make reference to constituents (Winkler 2005: 184). Because the remnant occupies a position that dominates H, the instruction encoded in the E-feature that is received by the PF interface is therefore a simple syncope rule (2). Adopting the position that remnants of clausal ellipsis  $\bar{A}$ -move to SpecHP in English (Thoms 2010: 286; Griffiths & Lipták 2014), this analysis yields the representations in (3) for the fragments in (1).

- (2)  $\varphi_{XP} \rightarrow \emptyset/E_-$ , (modified from Merchant 2004: 671)  
 where  $\varphi_{XP}$  is the phonological representation of the material dominated by the XP node

- (3) (for (1a) and (1bB))



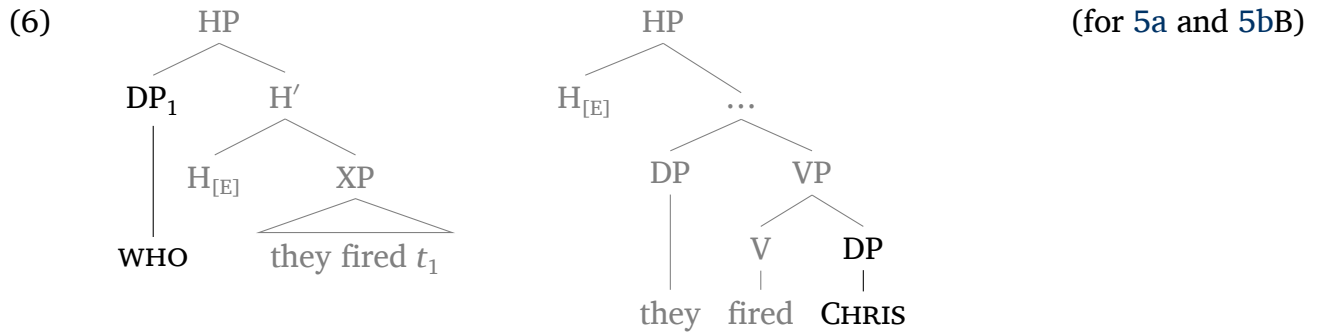
The idea that all remnants of clausal ellipsis are displaced in this manner is commonly referred to as the *move-and-delete approach* to clausal ellipsis (henceforth, the *M&D approach*).

A minor change to Merchant's analysis, which involves (2) being replaced with the instruction to PF in (4), yields a theory in which remnants remain in the ellipsis site, with non-pronunciation occurring 'around' them.

- (4)  $[_{HP} H_{[E]} \dots Y \dots] \longrightarrow [_{HP\emptyset} \dots Y_{\varphi} \dots]$ ,  
 where  $\emptyset$  = non-pronunciation,  
 $\varphi$  = phonological realisation,  
 Y = a *wh*-phrase or a focused item (to be revised)

According to (4), the E-feature instructs the PF to suppress Vocabulary Insertion (or undertake deletion) within the maximal projection HP of the head H bearing the E-feature, to the exclusion of any *wh*-phrases or focused phrases properly contained in HP. Adopting this analysis allows one to posit the representations in (6) for the fragments in (5).

- (5) a. They fired someone. God knows [ WHO<sub>1</sub> [ they fired t<sub>1</sub>]].  
 b. A: They fired someone.  
 B: Yeah, [ they fired CHRIS ].



I will refer to this variant of Merchant's (2004) analysis as the *in-situ approach* to clausal ellipsis.<sup>1</sup>

Although the M&D approach and the in-situ approach both view clausal ellipsis as a PF-operation that targets a syntactic constituent (the complement of  $H_{[E]}$  or the maximal projection of  $H_{[E]}$ ), the M&D approach clearly demands less from phonology. This is because the E-feature in the M&D framework instructs PF to apply deletion (or suppress Vocabulary Insertion) uniformly and unselectively in the ellipsis site, whereas the E-feature in the in-situ framework instructs PF to be selective with regards to how deletion (or suppression) is applied. Conversely, the in-situ clearly demands less from syntax. In the case of English, for example, the in-situ approach does not require  $\bar{A}$ -movement of presentationally focused non-*wh* phrases to a clause-peripheral position that they cannot occupy in non-elliptical environments in question-and-answer contexts (Ward 1988; Birner & Ward 1998; Breul 2004). Consequently, it appears that one cannot favour the M&D approach over the in-situ approach – or *vice versa* – on conceptual grounds alone, as one approach is as parsimonious as the other.

Which approach is correct is therefore an empirical matter. Merchant (2001; 2004) and others (e.g. Ince 2006; Shen 2017) have observed that, in certain structural configurations, all remnants of clausal ellipsis behave like  $\bar{A}$ -moved items, regardless of whether they can be moved in non-elliptical environments or not. These authors interpret their observations as evidence for the M&D approach, arguing that remnants show properties associated with  $\bar{A}$ -moved items because all remnants must undergo  $\bar{A}$ -movement to escape ellipsis.

For advocates of the in-situ approach, the fact that items that cannot be moved in non-elliptical environments, such as presentationally focused non-*wh* phrases in English, often show properties associated with  $\bar{A}$ -movement when they are remnants of clausal ellipsis must arise as a byproduct of an exogenous process, one that is independent of  $\bar{A}$ -movement itself.

In this paper, I argue that some of the  $\bar{A}$ -movement properties exhibited by fragments can be attributed to a process other than  $\bar{A}$ -movement itself. The process in question is that of recovering the meaning of the ellipsis site (i.e. semantically licensing clausal ellipsis). My argument, which is presented in §3-4, runs as follows:

- As Weir (2017) has recently shown, the explicit and implicit questions (*qs*) in the set of *Questions Under Discussion* (QUDs) from which the meaning of a clausal ellipsis site is recovered (Merchant 2004: 687; Krifka 2006; Reich 2007; Barros 2014a; Weir 2014; Barros & Kotek 2018; among others) cannot denote a set of unstructured propositions. These *qs* must therefore have *structured meanings* in the technical sense developed by von Stechow (1981) and Cresswell & von Stechow (1982) (see von Stechow 1991 and references in there).

<sup>1</sup> In reality, there are a number of contemporary in-situ approaches to clausal ellipsis on the market, including Abe & Tancredi (2013), Abe (2015, 2016), and Ott & Struckmeier (2018). Each of these differs in its technical details to the approach defended in this paper.

- Structured meanings are the product of syntactic composition. Therefore, all ellipsis-licensing  $qs$  in the QUD are syntactically generated, regardless of whether they are explicitly uttered or merely implied.
- There is no question  $q$  available in the QUD to license clausal ellipsis in a language  $L$  iff  $q$  is syntactically ill-formed in  $L$ . If no other well-formed  $q'$  is available in the QUD to semantically license ellipsis in a particular context then the fragment derived from ellipsis, which relies on  $q$  for its semantic licensing, is judged to be unacceptable.

Upon adopting this view of how clausal ellipsis is licensed, which I contend is the natural conclusion to draw from Weir's (2017) argument that ellipsis-licensing  $qs$  must have structured meanings, it can easily be shown how the restrictions it imposes serve to give the impression that remnants of ellipsis are themselves  $\bar{A}$ -moved phrases. In §2-4 of this paper, I show this for two properties of fragments: their sensitivity to syntactic islands (Abels 2011; Barros et al. 2015; 2014) and their systematic ability or inability to strand their selecting prepositions under ellipsis (Merchant 2001, 2004). These two  $\bar{A}$ -movement properties are epitomised by the *Preposition-stranding Generalisation* and the *Island-Sensitivity Generalisation*, which are introduced in §2. Both of these properties can be attributed to the semantic recoverability conditions on clausal ellipsis, rather than to the alleged  $\bar{A}$ -movement of remnants (see §3-4).

The M&D approach is not automatically invalidated by demonstrating that two of the  $\bar{A}$ -movement properties exhibited by fragments must be attributed to process other than  $\bar{A}$ -movement, however. All the other  $\bar{A}$ -movement properties of fragments discussed in Merchant (2004) and elsewhere in the literature must be similarly attributed to independent factors before the M&D approach and in-situ approach can be said to have equal explanatory power. This will remain a task for future research. However, I argue in §5 that the in-situ approach will be favoured over the M&D approach on conceptual grounds if this situation ever obtains. This is because the in-situ approach does not require superfluous  $\bar{A}$ -movement and need not appeal to the often untestable notion of 'ellipsis repair' to account for (i) the acceptability of fragments that are immovable syntactic items and for (ii) the island-insensitivity of clausal ellipsis in *wh*-in-situ languages. The paper is summarised in §6. Appended to the paper is a postface which outlines how implicit *wh*-questions are syntactically accommodated from explicitly-uttered antecedents of ellipsis.

## 2 Two $\bar{A}$ -movement properties of fragments

As mentioned in §1, the two movement properties of fragments I discuss in this paper are epitomised in the Island-Sensitivity Generalisation in (7) and the Preposition-Stranding Generalisation (Merchant 2001; 2004) in (8).

### (7) Island-Sensitivity Generalisation

In *wh*-movement languages, when no anisomorphic source for ellipsis is available, remnants of clausal ellipsis with island-bound correlates make for unacceptable fragmentary responses.

### (8) Preposition-Stranding Generalisation

When no anisomorphic source for ellipsis is available, a language  $L$  will allow 'bare' DP fragments that are interpreted as complements of prepositions iff  $L$  allows preposition-stranding under regular  $\bar{A}$ -movement.

The next two subsections explain these generalisations and show how the M&D approach can straightforwardly derive them.

## 2.1 The Island-Sensitivity Generalisation

In the ellipsis literature, *syntactic isomorphism* obtains in clausal ellipsis environments when an elliptical clause (henceforth, a *source*) and its antecedent have parallel phrase markers. Although it has been claimed that syntactic isomorphism is required to license some forms of ellipsis (Rooth 1992b; Fiengo & May 1994), research has shown that isomorphism is not required to license clausal ellipsis (Merchant 2001; Barros 2014a; among others). Support for this conclusion comes from the observation that isomorphic sources generate unattested readings (9), are ill-formed due to island-violating *wh*-movement (10-11), or simply cannot be formulated (12) for many clausal ellipsis constructions that are nonetheless judged as acceptable. Such constructions must therefore have syntactically *anisomorphic* (i.e. not isomorphic) sources.

- (9) That's a gazebo. But I don't know who built it or WHY.

*Possible sources*

- |    |                                 |                     |
|----|---------------------------------|---------------------|
| a. | why they built it               | <i>anisomorphic</i> |
| b. | # why I don't know who built it | <i>isomorphic</i>   |

- (10) They hired someone who speaks a Balkan language – guess WHICH!

*Possible sources*

- |    |                                                                                                           |                     |
|----|-----------------------------------------------------------------------------------------------------------|---------------------|
| a. | which <sub>1</sub> they speak <i>t</i> <sub>1</sub>                                                       | <i>anisomorphic</i> |
| b. | which <sub>1</sub> it is <i>t</i> <sub>1</sub> that they speak                                            | <i>anisomorphic</i> |
| c. | * which <sub>1</sub> it is that they hired [ <sub>ISLAND</sub> someone who speaks <i>t</i> <sub>1</sub> ] | <i>anisomorphic</i> |
| d. | * which <sub>1</sub> they hired [ <sub>ISLAND</sub> someone who speaks <i>t</i> <sub>1</sub> ]            | <i>isomorphic</i>   |

- (11) Sue married a tall man, but I don't know HOW tall.

*Possible sources*

- |    |                                                                                         |                     |
|----|-----------------------------------------------------------------------------------------|---------------------|
| a. | [ how tall] <sub>1</sub> he is <i>t</i> <sub>1</sub>                                    | <i>anisomorphic</i> |
| b. | * [ how tall] <sub>1</sub> she married [ <sub>ISLAND</sub> a <i>t</i> <sub>1</sub> man] | <i>isomorphic</i>   |

- (12) Either something's on fire or Joe's baking a cake, but I don't know WHICH.

*Possible sources*

- |    |                                                |                     |
|----|------------------------------------------------|---------------------|
| a. | which <sub>1</sub> it is <i>t</i> <sub>1</sub> | <i>anisomorphic</i> |
|----|------------------------------------------------|---------------------|

As the Hungarian example from Barros et al. (2015) in (13) shows, clausal ellipsis is prohibited when no well-formed source is available. In this example, the copular clausal source in (13a) is unacceptable because the plural agreement suffix '-ak', which obligatorily suffixes to predicative adjectives, is absent from *magas*, whereas the sources in (13b-13c) are ill-formed because they display island-violating *wh*-movement.

- (13) *Hungarian*

- \* John ismer néhány magas lányokat, de nem tudom milyem magas.  
 John knows some tall girls but not know.1s how tall  
 'John knows some tall girls, but I don't know HOW tall.'

*Possible sources*

- a. \* ... [ milyem magas]<sub>1</sub> a lányok t<sub>1</sub> *anisomorphic*  
           how tall the girls  
           ‘...how tall the girls are.’
- b. \* ... [ milyem magas]<sub>1</sub> [<sub>ISLAND</sub> a t<sub>1</sub> lányok] *anisomorphic*  
           how tall the girls  
           ‘...how tall a group of girls they are.’
- c. \* ... [ milyem magas]<sub>1</sub> John ismer [<sub>ISLAND</sub> a t<sub>1</sub> lányok] *isomorphic*  
           how tall John knows the girls  
           ‘...how tall a group of girls John knows.’

This example from Hungarian exemplifies the Island-Sensitivity Generalisation presented in (7), as the remnant’s correlate in the antecedent clause (i.e. *magas*) is contained in a syntactic island. This generalisation holds across languages, as Abels (2011) and Barros et al. (2014) have shown. With respect to *wh*-fragments such as *milyem magas* in (13), the pattern described by the Island-Sensitivity Generalisation is hardly surprising: Hungarian fronts its *wh*-phrases, and therefore an island-violation is expected when no ‘island-evading’ elliptical source is available. What is surprising is that the Island-Sensitivity Generalisation also holds for non-*wh* fragments in languages that do not  $\bar{A}$ -move presentational or contrastive foci in standard, non-elliptical environments. This is demonstrated by the English dialogue in (14). In this example, no anisomorphic source for ellipsis is available, as the adjective *former* cannot be used predicatively (i.e. *Buckeye Bill is former* is ungrammatical).

- (14) A: I heard Buckeye Bill is the main source of information in this two-bit town.  
       B: \* NO, FORMER. He’s moved away. (*intended*: he’s the FORMER source of information)

The observation that the Island-Sensitivity Generalisation holds for non-*wh* fragments in English is straightforwardly explained under the M&D approach, which maintains that all remnants of clausal ellipsis, regardless of whether they bear *wh*-features or not, undergo  $\bar{A}$ -movement to escape ellipsis. Consequently, the only source available for (14B) – i.e. the isomorphic source – violates the Left Branch Condition (Ross 1976), and is therefore ungrammatical:<sup>2</sup>

- (15) \* FORMER<sub>1</sub> he is [<sub>ISLAND</sub> the t<sub>1</sub> source of information] in this town.

## 2.2 The Preposition-Stranding Generalisation

Rodrigues et al. (2009) demonstrate that, in the Spanish example in (16a), the source for clausal ellipsis is the anisomorphic cleft clause in (16b).

<sup>2</sup> Potter (2017) reports the results of four experiments that test the acceptability of fragments with island-bound correlates in English. These experiments are acceptability-judgement tasks undertaken by anonymous participants via Amazon’s Mechanical Turk web-platform. Only users with IP addresses originating in the USA could participate. Potter’s participants find fragments with island-bound correlates to be acceptable. From this, Potter concludes that the Island-Sensitivity Generalisation is false. Problematically, all of Potter’s stimuli involve the island-bound correlate occupying a linearly final position in the antecedent utterance. In this position, **all** fragments are judged to be acceptable, regardless of whether their correlate in the antecedent clause is island-bound. This is the *utterance-final effect* (Griffiths & Lipták 2014: 202, footnote 10; Barros et al. 2014), an unexpected phenomenon for which a potential explanation was recently offered by Reeve (2016). Because Potter does not control for this effect, it seems warranted to reject the conclusions he draws and to therefore maintain that the Island-Sensitivity Generalisation is empirically accurate.



(16) *Spanish*

- a. Juan ha hablado con una chica, pero no sé qué chica.  
 Juan has talked with a girl but not know what girl  
 ‘Juan has talked with a girl, but I don’t know WHICH girl.’
- b. ... [ qué chica]<sub>1</sub> *t*<sub>1</sub> es la chica con la que ha hablado Juan.  
 what girl is the girl with the that has talked Juan  
 ‘...WHICH girl is the girl that Juan has talked to.’

Because these cleft clauses cannot host the exceptive modifier *más* (‘else’) in Spanish (as (17a) shows), its presence in a clausal ellipsis construction such as (16b) makes the cleft source unavailable. When this happens, an unacceptable utterance is generated, as (17b) shows. Unacceptability arises here because no isomorphic source is available, either. Generating the isomorphic source requires preposition-stranding *wh*-movement, which is forbidden in Spanish (see (17c)).

(17) *Spanish*

- a. \* [ qué chica más]<sub>1</sub> *t*<sub>1</sub> es la chica con la que ha hablado Juan.  
 what chica else is the girl with the that has talked Juan  
 ‘which other girl is the girl that Juan has talked to’
- b. \* Juan ha hablado con una chica rubia, pero no sé qué chica más.  
 Juan has talked with a girl blonde but not know what girl else  
 ‘Juan has talked to a blonde girl, but I don’t know which OTHER girl.’
- c. \* ¿Qué chica más ha hablado Juan con?  
 what girl else has talked Juan with  
 ‘Which OTHER girl has Juan talked to?’

Although no anisomorphic copular clausal or cleft source for clausal ellipsis is available (see 19) (Merchant 2001: 122), the English counterpart of (17b) in (18) is acceptable. This is because the isomorphic source in (20) is available, due to the fact that English allows preposition-stranding *wh*-movement.

(18) John spoke with the blonde girl, but I don’t know which OTHER girl.

- (19) a. \* Which OTHER girl was it?  
 b. \* Which OTHER girl was the girl that he spoke with?

(20) Which OTHER girl did John speak with?

The contrast observed between English and Spanish exemplifies the Preposition-Stranding Generalisation from (8). When the availability of anisomorphic sources is controlled for, one observes that English (a preposition-stranding language) allows for ‘bare’ DP fragments that are interpreted as complements to P, while Spanish (a language without preposition-stranding *wh*-movement) does not.

With respect to *wh*-fragments, the pattern described by the Preposition-Stranding Generalisation is again unsurprising: the constraints on *wh*-movement that (fail to) generate bare DP *wh*-fragments are also observed in non-elliptical environments. What is surprising is that the Preposition-Stranding Generalisation holds for non-*wh* fragments in languages that do not  $\bar{A}$ -move presentational or contrastive foci in standard, non-elliptical environments. For instance, English permits DP fragments that are interpreted as complements of P (see (21)), but

German, which does not permit preposition-stranding  $\bar{A}$ -movement, does not (see (22)). (Note that the dative case-marking on the German fragment rules out any anisomorphic sources for (22B).)

(21) A: Who was Peter talking with?

B: MARY.

(22) A: Mit wem hat Anna gesprochen?

with whom has Anna spoken

B: \* Dem HANS.

the.DAT Hans

(*German*, Merchant 2004: 685-686)

The observation that the Preposition-Stranding Generalisation holds for non-*wh* fragments is straightforwardly explained under the M&D approach, which maintains that all remnants of clausal ellipsis, regardless of whether they bear *wh*-features or not, undergo  $\bar{A}$ -movement to escape ellipsis. This movement is permitted in English, which permits preposition-stranding, but prohibited in German, which disallows preposition-stranding (in the cases under consideration here, at least):

(23) MARY<sub>1</sub> he was talking with  $t_1$

*the underlying syntax for (21B)*

(24) \* [dem HANS]<sub>1</sub> sie hat mit  $t_1$  gesprochen

*the underlying syntax for (22B)*

### 3 Recovering the meaning of clausal ellipsis

The previous section showed that the M&D approach derives the Island-Sensitivity and Preposition Stranding Generalisations in a straightforward manner. The question I wish to address in this paper is whether the in-situ approach presented in §1 can derive these two generalisations with equal simplicity. To answer this question, I must first discuss how the meaning of clausal ellipsis is recovered. I argue in this section that recent developments in this subfield lead naturally to the idea that clausal ellipsis is always recovered from a syntactically derived question. Once this idea is adopted, and once some technical details associated with this idea are explicated (§3.2), it can be shown that the in-situ approach derives the Island-Sensitivity and Preposition-Stranding Generalisations as parsimoniously as the M&D approach does (§4).

#### 3.1 Recovering the meaning of clausal ellipsis from the Maximal QUD

Ginzburg (1994) defines the *Questions Under Discussion* (the QUD) as a partially-ordered set that specifies the currently-discussable questions at any point during a conversation. The maximal QUD (*MaxQUD*) is the most conversationally-prominent discussable question (or unordered subset of questions) in this set, and occupies the topmost position on the pushdown stack. Questions are introduced into the QUD by a number of processes. For instance, asking an explicit question  $q$  makes  $q$  the MaxQUD, whereas asserting  $p$  moves the polar question  $?p$  into the MaxQUD position (Farkas & Bruce 2010; see Ginzburg & Miller 2017 for more ways to add questions to the QUD). In the first case, the MaxQUD is an explicit question, whereas in the second case the MaxQUD contains an implicit question. Adopting a ‘direct interpretation’ approach, Ginzburg & Sag (2000: Chapter 8) argue that the propositional meaning of a fragmentary response is obtained by unifying the fragment with a single question within the



(possibly singleton) set of questions that constitutes the MaxQUD. Ginzburg & Sag's theory has been independently recast in Minimalist terms by Krifka (2006), Reich (2007), Barros (2014a), Weir (2014; 2017), and others. In this line of research, which adheres to the notion that fragments are remnants of clausal ellipsis, it is proposed that the meaning of an elided clause is semantically recovered from the meaning of a single question in the MaxQUD. The numerous benefits of appealing to a question in the MaxQUD to recover the meaning of the elided clause, rather than appealing only to the utterance that explicitly antecedes the elided clause, are well-documented in this line of research, and are therefore not repeated here (see Weir 2014 for an engaging overview).

Weir (2017) has recently demonstrated that a simple QUD-based recoverability condition such as (25), which states that clausal ellipsis is recoverable in a clause  $\alpha$  if the focus semantic value of  $\alpha$  and the denotation of a question in the MaxQUD match, is insufficient for capturing the patterns of acceptability found in a number of clausal ellipsis configurations.

(25) **Simple QUD-licensing condition on clausal ellipsis** (*to be discarded*)

Let  $\alpha$  be a clause to which ellipsis applies, and let  $q$  be a question in the MaxQUD. Ellipsis is recoverable iff  $\llbracket q \rrbracket = \llbracket \alpha \rrbracket^f$ .

Weir's evidence comes from comparing questions such as those in (26) and (27) below. On a standard 'propositional-set' view of questions and focus, which uses Hamblin/Rooth alternatives, these questions denote the same sets of sets of possible worlds. In other words, they are *cointensional*. This is because the set of worlds in which the machine sends two signals (for instance) is the same set of worlds in which it sends the signal twice. From a propositional-set viewpoint, the focus semantic values for the answers in (26) and (27) are cointensional in precisely the same way.

- (26) A: How many signals did the machine send?  
 a. B: It sent TWO signals.  
 b. B: It sent a signal TWICE.
- (27) A: How many times did the machine send a signal?  
 a. B: It sent TWO signals.  
 b. B: It sent a signal TWICE.

Because the questions in (26) and (27) are cointensional, and because their answers are cointensional too, the simple recoverability condition in (25) predicts that clausal ellipsis is recoverable in each of the answers. This prediction is not borne out. Only the cardinal fragment may answer the question in (26), and only the multiplicative adverbial fragment may answer the question in (27), as the examples in (28) and (29) show. Having convincingly shown that one cannot appeal to morphosyntactic constraints to explain the unacceptability of (28b) and (29a), Weir concludes that the recoverability condition in (25) is inadequate.

- (28) A: How many signals did the machine send? (MaxQuD)  
 a. B: TWO signals.  
 b. B: \* TWICE.
- (29) A: How many times did the machine send a signal? (MaxQuD)  
 a. B: \* TWO signals.  
 b. B: TWICE.

Weir argues that the contrast observed in (28) and (29) can only be captured by a recoverability condition on clausal ellipsis that is formulated in the *Structured Meaning* approach to questions and focus. In this framework, questions are viewed as simple functions that yield type- $t$  expressions when applied to their answers. Both questions and statements containing foci are structured propositions that are arguments of speech-act operators such as QUEST(ION) and ANS(WER) (Reich 2002; Krifka 2006), as shown in (30) and (31). In these representations, the last member of the ordered set is the *background*, while those members that precede the background are collectively known as the *focus*. These representations are known as *focus-background structures*.

(30)  $\llbracket \text{who kissed Pete} \rrbracket = \text{QUEST}(\langle \text{PERSON}, \lambda x. x \text{ kissed Pete} \rangle)$   
 where PERSON is the alternatives the question word can range over

(31)  $\llbracket [\text{Bob}]_F \text{ kissed Pete} \rrbracket = \text{ANS}(\langle \text{Bob}, A, \lambda x. x \text{ kissed Pete} \rangle)$   
 where  $A$  is the alternative to the focus (e.g.  $A = \text{alt}(\llbracket \text{Bob} \rrbracket) = \{\text{Mary}, \text{Fred}, \dots\}$ )

Adopting the Structured Meaning framework, the recoverability condition that Weir offers is reproduced in a modified form in (32).<sup>3</sup> Unlike (25), which makes reference to the meaning of the entirety of the question that constitutes the MaxQUD and the entire elliptical clause, this condition makes reference only to meaning of their backgrounds.

(32) **Background-matching condition on clausal ellipsis**  
 Given a question  $q$  in the MaxQUD with background  $Q$  and a clause  $\alpha$  with background  $A$ , clausal ellipsis is recoverable in  $\alpha$  iff  $A \sqsubseteq Q$ .

Now consider the focus-background structures for the utterances in (28) and (29), which are given in a simplified form in (33) and (34) below. In (33), only the background of the first answer matches with the background of the MaxQUD. Conversely, only the background of the second answer matches with the background of the MaxQUD in (34). Therefore, according to Weir's condition, clausal ellipsis is only recoverable in these matching configurations. As the data in (28) and (29) have already shown, this is correct.

(33) A: QUEST( $\langle \text{NUMBER}, \lambda x. \text{the machine sent } x \text{ signals} \rangle$ ) *MaxQUD*  
 a. B: ANS( $\langle \text{TWO}, A, \lambda x. \text{the machine sent } x \text{ signals} \rangle$ )  
 b. B: ANS( $\langle \text{TWICE}, A, \lambda t. \text{the machine sent a signal at interval } t \rangle$ )

(34) A: QUEST( $\langle \text{TIME}, \lambda x. \text{the machine sent a signal at interval } t \rangle$ ) *MaxQUD*  
 a. B: ANS( $\langle \text{TWO}, A, \lambda x. \text{the machine sent } x \text{ signals} \rangle$ )  
 b. B: ANS( $\langle \text{TWICE}, A, \lambda t. \text{the machine sent a signal at interval } t \rangle$ )

Ginzburg & Sag (2000), Barros (2014a), and Weir (2014) argue that indefinite expressions invoke implicit *wh*-questions that enter the MaxQUD. This means that the assertions in (35A) and (36A) invoke implicit MaxQUDs that are equivalent to the explicit questions in (28) and (29) respectively. Because the pattern of ellipsis licensing observed in (36-35) is the same as

<sup>3</sup> Weir states that ' $\sqsubseteq$ ' in (32) is a notion of generalised entailment defined over functions, defined as in (i). In set-theoretic terms, the condition in (32) requires that, understood extensionally as sets, the background of  $\alpha$  must be a subset of the background of  $q$ .

(i)  $A \sqsubseteq Q \iff \forall x. A(x) \rightarrow Q(x)$

the one in (28-29), one must conclude that the implicit questions that license clausal ellipsis also have structured meanings.

- (35) A: I heard that the machine sent a certain number of signals.  
 a. B: Yes, TWO signals.  
 b. B: \* Yes, TWICE.
- (36) A: I heard that the machine sent a signal a certain number of times.  
 a. B: \* Yes, TWO signals.  
 b. B: Yes, TWICE.

At this point, the question arises about the how implicit questions that license clausal ellipsis come to have meanings that are structured. There are two options: either these questions are linguistically derived but unpronounced, or they are not linguistically derived and our domain-general conceptual structures (i.e. Mentalese) are complex enough to mimic focus-background structures. Although the latter option is pursued in other frameworks (e.g. Dynamic Syntax with the Type Theory of Records), I suggest that the former option is better suited to Minimalist approaches to fragments, following (Reich 2004: §5.2). This is because these approaches analyse fragments as remnants of ellipsis, which has been characterised as a *surface anaphor* (Hankamer & Sag 1976). This characterisation can be maintained if the implicit questions that license clausal ellipsis are viewed as linguistically – i.e. syntactically – derived. For ease of reference, let us refer to this idea as the *QUD-syntax Correspondence conjecture*:

(37) **QUD-syntax Correspondence conjecture**

Regardless of whether they are explicit or implicit, the questions in the MaxQUD from which the meaning of clausal ellipsis is recovered are always syntactically derived.<sup>4 / 5</sup>

<sup>4</sup> Importantly, the characterisation of clausal ellipsis as a surface anaphor and the conjecture in (37) only apply to what Merchant (2004: 716) calls ‘true’ fragmentary utterances. They do not apply to idiomatic fragments such as departure expressions (e.g. *later*, *until next time*, or the fictional *under his eye*) or to ‘discourse initial’ fragments such as (iB) below. Although discourse initial fragments are derived via clausal ellipsis of a copular clause, the only meaningful missing element – the pronoun – can be recovered through non-linguistic association with a salient individual in the world (see Barros 2014a for a more precise formulation of this idea). As a comparison of (iB) and (iB’) shows, only the pronoun and the semantically-vacuous copula can be elided in discourse initial cases.

- (i) *Context*: A very serious-looking and suitably-attired businessperson B is sitting on the Tube during the evening commute, holding a child’s colouring-book in her hand. She notices the puzzled look on the face of passenger P sitting opposite. B addresses P:

B: [ It is for my son ].                      B’: # [ It is for my son ].

<sup>5</sup> Although the meaning of clausal ellipsis is recovered from a syntactically derived question, the recovery process itself must be semantic/pragmatic in nature. Under the assumption that the topmost position in the QUD-stack can be occupied by an unordered **set** of questions (see the introductory paragraph of this section), evidence for the semantic/pragmatic nature of the recovery process comes from the observation that when more than one question is maximal in the QUD, an elided clause can be semantically ambiguous (as in (i), where clausal ellipsis can be recovered from either implicit question). The semantic/pragmatic nature of the recovery process is also exposed in the dialogue in (ii). In this scenario, the interpretation of the ellipsis site as a unification of the meanings of the implicit questions invoked from A arises from the fact that both questions have the same focus-background structure. Clausal ellipsis is recovered from one of the implicit questions (let us say the first one, for the sake of concreteness) and the meaning of the second question then instils itself into the meaning of the ellipsis site by semantically/pragmatically ‘piggybacking’ on the first question (see Messick et al. 2016 for a formalisation of this idea).

As I show in §4, the main consequence of adopting (37) is that one can use it to derive the Island-Sensitivity and Preposition-Stranding Generalisations without appealing to ‘M&D-style’ mechanisms.<sup>6</sup> Before doing this, I will first outline how pied-pied can be represented in the Structured Meaning framework, so that Weir’s Background-matching condition from (32) can be straightforwardly employed in configurations where pied-piping is observed.

### 3.2 Representing pied-piping in the Structured Meaning approach

In order to apply Weir’s Background-matching condition in configurations that display pied-piping (which will be necessary for deriving the Preposition-Stranding generalisation in §4), I must develop a Structured Meaning approach of pied-piping. To accomplish this, I adopt Cable’s (2010) approach to pied-piping and translate his ‘Q-based’ theory into the Structured Meaning framework.

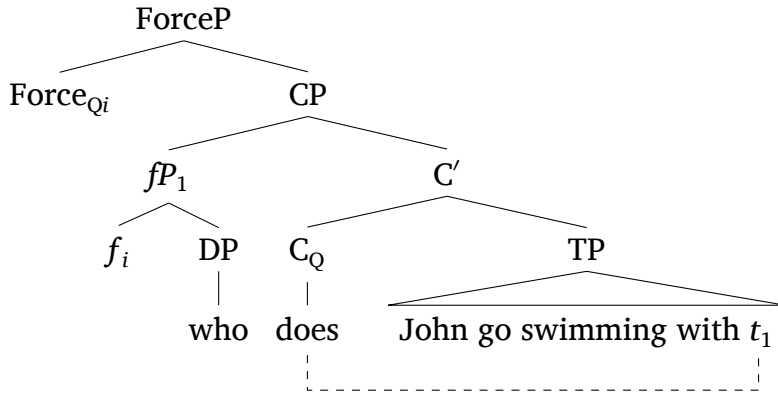
Cable’s ‘Q-based’ theory of pied-piping is a reflex of his theory of *wh*-questions. Cable argues that *wh*-phrases must be c-commanded by a Q-particle, which is phonologically realised in many of the world’s languages but is null in English. I rename the Q-particle as the *f*-particle here, as I will shortly put the Q-particle – or rather, the semantic *choice function* introduced by the Q-particle at LF – to work in both questions and assertoric utterances that display foci. In *wh*-movement languages such as English, it is the maximal projection of the *f*-particle (i.e. *fP*) that undergoes *wh*-movement, as shown in (38) below. From a semantic perspective, Cable views *wh*-words as having a focus semantic value but as having no ordinary semantic value, following Beck (2006). In other words, he views *wh*-words as introducing a set of Hamblin-alternatives. Through Pointwise Function Application (Hamblin 1973), this set of alternatives must become large enough to provide a focus semantic value for the syntactic sister of the *f*-particle. As already mentioned, the *f*-particle itself is treated as a choice function, which is any function that chooses a member from a non-empty set. This choice function takes the focus semantic value of its syntactic sister as its argument. For Cable, the choice function introduced by the *f*-particle is a variable, which is existentially-bound from the periphery of an interrogative clause. This existential binding is effectuated by the syntactic head Force<sub>Q</sub>, which also introduces a  $\lambda$ -binder for the proposition and hence derives a question meaning. Putting

- 
- |                                                                                                                              |                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| (i) A: John told me that Pete is going to Berlin.<br>B: Really? When?                                                        | qs in QUD after A: <i>When did John tell you that?</i><br><i>When is Pete going to Berlin?</i>                   |
| (ii) A <sub>1</sub> : Jack wants apples and Jill wants pears.<br>B: How many?<br>A <sub>2</sub> : Six apples and four pears. | qs in QUD after A <sub>1</sub> : <i>How many apples does Jack want?</i><br><i>How many pears does Jill want?</i> |

<sup>6</sup> Even though it has a long history (see Fiengo & May 1994: 190-193 for an early discussion and Chung et al. 2011 for a more recent one), I am aware that the QUD-syntax Correspondence conjecture is not aligned with the current orthodox stance on the syntactic status of implied questions on the QUD-stack. For instance, Roberts (2012:8), whose seminal paper arguably popularised the QUD-approach within the broader Minimalist framework, says that “a move in a discourse game is essentially semantic. A question is not necessarily realized by a speech act but is only a question denotation in the technical sense that it proffers a set of relevant alternatives which the interlocutors commit themselves to addressing”. Similarly, Farkas & Bruce (2010) suggest that “implicated content is on the table, but [...] only literal content is associated with syntactic material”. Although the conceptual advantage of treating implied questions as a discourse strategy is clear (as no syntax is required), I know of no empirical reasons to favour this treatment. This paper aims to show that there are benefits to treating implied questions – at least those implied questions that serve to license clausal ellipsis – as syntactically derived. In this respect, this paper indirectly opposes the idea the clausal ellipsis is licensed by *issues*, as technically defined as semantic objects in the Inquisitive Semantics framework (see AnderBois 2014).

these ideas together and incorporating them into the standard propositional-set approach to interrogatives yields the meaning in (39) for the *wh*-question in (38).<sup>7</sup>

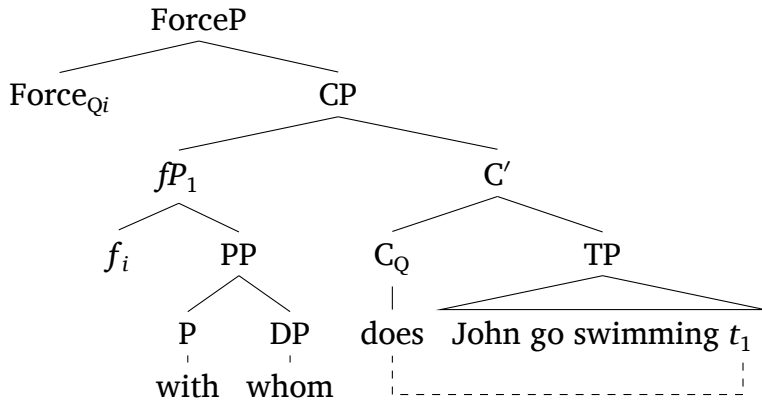
(38) Who does John go swimming with?



(39)  $\lambda p \exists f. p = \lambda w. \text{John goes swimming with } [f(\{x \mid x \in \text{PERSON}\})](w) \text{ in } w$

Notice that the *wh*-phrase is sister to the *f*-particle in (38). Because it is *fP* rather than the *wh*-phrase itself that undergoes  $\bar{A}$ -movement to form questions in English, a pied-piping configuration is generated whenever the *f*-particle is sister to larger phrase containing the *wh*-phrase, as (40) shows. For our purposes, we can take the view that the semantic formulae in (39) and (41) therefore differ only with regards to the size of the choice function's argument. Put differently, the set of individual concepts derived through Pointwise Function Application is larger in (41) than in (39). As Cable (2010: Chapter 2) makes clear, an important benefit of this analysis is that it renders LF-pied-piping mechanisms superfluous, as (39) and (41) pick out the same set of propositions (ibid. 2010: 73).

(40) With whom does John go swimming?



(41)  $\lambda p. \exists f. p = \lambda w. \text{John goes swimming } [f(\{h \mid \exists x \in \text{PERSON}. h = \lambda w'. \text{with } x(w') \text{ in } w'\})](w) \text{ in } w$

From a syntactic perspective, Cable assumes that *f* and C<sub>Q</sub> must enter into syntactic AGREE relation (Chomsky 2001) in *wh*-questions, which is represented by a dashed line in (38) and (40).

<sup>7</sup> Cable (2010) suggests that English *fP*s in matrix interrogative clauses undergo  $\bar{A}$ -movement to SpecFocP. Because the ellipsis literature typically adopts that position that English *wh*-question formation involves  $\bar{A}$ -movement to C, I choose to use the traditional 'CP' label for this projection.

Because *f* **selects for** its complement in *wh*-questions in English and *wh*-movement is overt, this triggers the overt  $\bar{A}$ -movement of *fP* to SpecCP. We may therefore understand *wh*-movement in English as arising from the fact that  $C_Q$  bears an EPP feature (Chomsky 2000: 102). Because  $\bar{A}$ -movement cannot occur over island boundaries, this encodes the island-sensitivity of English *wh*-movement. Note that  $C_Q$  itself is semantically vacuous (Cable 2010: 79).

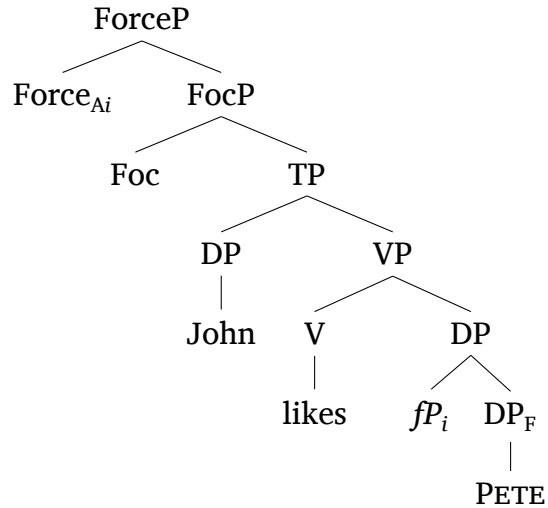
I will now recast Cable's analysis in the Structured Meaning framework. The reader should be aware at this point that, in order to maintain clarity of exposition and ease of comparison, this recasting mimics Cable's analysis as closely as possible, and therefore utilises Roothian (1985; 1992a) Alternative Semantics in a framework that typically eschews it. For a one-dimensional alternative to Cable's analysis that is couched in the Structured Meaning framework, see Reich (2004).

To translate the import of  $\text{Force}_Q$  into 'Structured Meaning' terms, I suggest that  $\text{Force}_Q$ 's introduction triggers the creation of a structured proposition that has the choice function as its focus, and a  $\lambda$ -abstraction over the choice function as its background (following Reich 2002: 175). Thus, our Structured Meaning versions of (39) and (41) are provided in (42).

- (42) a.  $\text{QUEST}(\langle f, \lambda f \lambda w. \text{John likes } [f(\{x \mid x \in \text{PERSON}\})](w) \text{ in } w \rangle)$   
 b.  $\text{QUEST}(\langle f, \lambda f \lambda w. \text{John goes swimming } [f(\{h \mid \exists x \in \text{PERSON}. h = \lambda w'. \text{with } x(w') \text{ in } w'\})](w) \text{ in } w \rangle)$

Cable (2010:201-205) suggests that his analysis can be extended to declarative utterances containing foci. I actualise Cable's suggestion here. Following Reich (2004), I suggest that F-marked items are also semantic arguments to choice functions, and that these choice functions are also introduced via syntax, just as they are in Cable's theory of *wh*-questions. To maintain the analogy with *wh*-questions, I will also refer to the syntactic instantiation of these choice functions as '*f*-particles'. A plausible Structured Meaning representation for the declarative utterance in (43) is presented in (44).

- (43) John likes PETE.



- (44)  $\text{ANS}(\langle f_{\text{Pete}}, \lambda f \lambda w. \text{John likes } [f(\{x \mid x \in \text{PERSON}\})](w) \text{ in } w \rangle)$

There is a notable syntactic difference between (43) and (38): *fP*s in assertoric responses are adjuncts in English (reflecting the adjunct status of the 'squiggle' operator from Rooth 1992a, see Reich 2002; 2004),<sup>8</sup> whereas *fP*s in *wh*-questions take a phrase containing the *wh*-phrase as

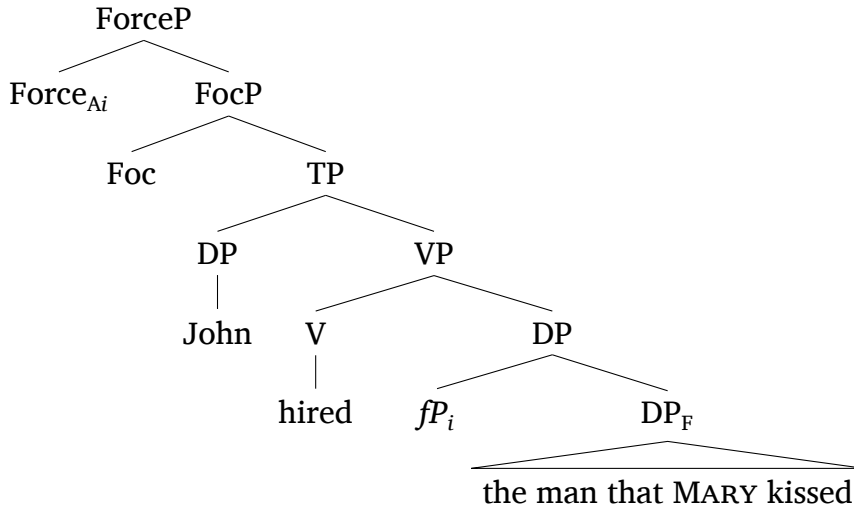
<sup>8</sup> Notice that *fP* is a minimal/maximum projection in (43): the *f*-particle is a non-projecting head and therefore also a phrase.



its complement.<sup>9</sup> Aside from the larger structured proposition being the argument to a different speech-act operator (i.e.  $\text{ANS}(\text{WER})$ , which is introduced by  $\text{Force}_A$ , rather than  $\text{QUEST}(\text{ION})$ , which is introduced by  $\text{Force}_Q$ ), the main semantic difference between (44) and the formulae in (42) is that the choice function in (44) is constrained.  $f_{\text{Pete}}$  is the *constant function* that, when applied to the set represented by its argument, chooses *Pete* from the set. This allows for the correct ordinary semantic value to be retrieved for (44), as such values are retrieved from structured propositions by applying the background to the focus (i.e.  $\langle \alpha, \beta \rangle = \beta(\alpha)$ ). For a detailed discussion of how choice functions can be constrained in this manner without recourse to syntactic movement of the focused phrase, see Reich (2004).

Just as the *f*-particle in questions is not required to take a *wh*-phrase as its direct complement (see 40), the *f*-particle in assertoric responses is not required to directly adjoin to a presentational or contrastive focus. The declarative counterparts of a pied-piping configuration, which are known as *Focus Phrase* configurations (Drubig 1994), are generated in such circumstances. According to our simple Structured Meaning treatment, the presentational Focus Phrase configuration in (45) yields the focus-background structure in (46).

(45) John hired [the man that MARY kissed]<sub>F</sub>.



(46)  $\text{ANS}(\langle f_{\lambda x'. \text{ the man}(w') \text{ that Mary kissed}(w') \text{ in } w', \lambda f \lambda w. \text{ John hired } [f(\{h \mid \exists x \in \text{PERSON. } h = \lambda w'. \text{ the man}(w') \text{ that } x(w') \text{ kissed}(w') \text{ in } w'\})](w) \text{ in } w) \rangle)$

<sup>9</sup> The reader may have noticed that I have included a **FocP** projection in the syntax tree in (43). I have included this projection simply to emphasise the possibility that a syntactic **AGREE** relation might be established between *fP* and a head in the clausal periphery (namely, **Foc**). In Hungarian, which is a focus-fronting language, this is indeed the case. Unlike in English, in which *fP* adjoins to an **F**-marked phrase in assertions (see 43), the *f*-particle **selects** an **F**-marked phrase in Hungarian assertions, much like the *f*-particle selects a complement in English *wh*-questions (Cable 2010: 201-205). Furthermore, **Foc** in Hungarian bears an **EPP** feature and therefore overt  $\bar{A}$ -movement occurs, which displaces *fP* and the phrase it selects to **SpecFocP**. This movement is sensitive to islands.

With regards to English, Kratzer (1991) famously argued that focus is insensitive to syntactic islands. In the current framework, this amounts to arguing that **Foc** and *f* do not enter into an **AGREE** relation in English assertoric responses. This claim has been indirectly challenged by Drubig (1994), Tancredi (2004), Krifka (2006), Wagner (2006), Griffiths & Lipták (2014), Erlewine & Kotek (2016) and others, and has been directly challenged recently by Erlewine & Kotek (2018). However, Bassi & Longenbaugh (2017) claim that Erlewine & Kotek's challenge to Kratzer's arguments does not hold up. Due to the absence of consensus on this issue, I choose to avoid positing that an **AGREE** relation must be established between **Foc** and *f* in English. This choice may be incorrect, however. If so, this error can be easily rectified.

The Structured Meaning-style formulae presented above are admittedly rather complicated. For clarity's sake, I will therefore use simplified notations whenever possible in the rest of this paper. Henceforth, constraints on choice functions are omitted, as are the restrictors for foci and *wh*-phrases.  $\lambda$ 's are also removed. Thus, structures without pied-piping are represented as in (47a), whereas structures with pied-piping are represented as in (47b).

- (47) a.  $\langle f, \dots f(x) \dots \rangle$                       b.  $\langle f, \dots f(\text{pied-pied material } x) \dots \rangle$

By recasting Cable's (2010) theory in 'Structured Meaning' terms in §3.2, I have now extended Weir's (2017) analysis to pied-piping and Focus Phrase configurations. The most useful outcome of this exercise is that one can now identify a common property shared by *wh*-questions and their responses, which is that each displays an *fP*. Furthermore, the utilisation of *fP* allows for a more accurate PF instruction for clausal ellipsis to be formulated. Recall from §1 that the rule for selective pronunciation (see (4)) specified that, in an elided clause, a designated phrase YP containing a *wh*-phrase or a focused element can be pronounced. One can now identify this designated phrase more accurately:

(48) **PF rule of clausal ellipsis (final version)**

$$[\text{HP } H_{[E]} \dots (\text{MP}) \dots Y \dots] \longrightarrow [\text{HP}\emptyset \dots (\text{MP}_\varphi) \dots Y_\varphi \dots],$$

where  $\varphi$  = phonological realisation

$\emptyset$  = non-pronunciation

Y = the syntactic sister of *f*

MP = non-at-issue phrase that modifies illocutionary force<sup>10</sup>

The distribution of the E-feature for English clausal ellipsis can also be specified now: it is optionally borne by Force<sub>Q</sub> and Force<sub>A</sub>.<sup>11</sup> Resultantly, a more accurate in-situ analysis of the fragments in (1), which is repeated below in (49), is provided by the structures in (50).<sup>12</sup>

- (49) a. They fired someone. God knows [ WHO<sub>1</sub> [ they fired *t*<sub>1</sub> ] ].  
       b. A: They fired someone.  
       B: Yeah, [ they fired CHRIS ].

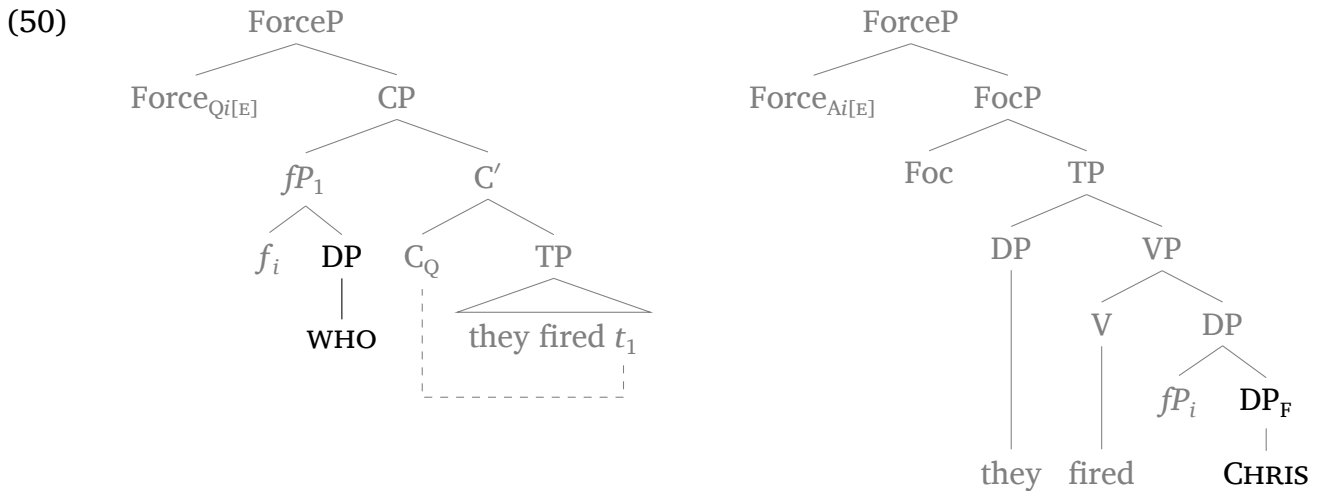
<sup>10</sup> The final line of (48) is included to account for the fact that German Modal Particles make for suitable remnants of clausal ellipsis. See §5.1 for details.

<sup>11</sup> I must emphasise that the main text only specifies the syntactic distribution of the E-feature for English. For Hungarian (for instance), the syntactic distribution of the E-feature is different: it is borne by Foc and has an EPP specification, licensing clausal ellipsis only when SpecFocP is occupied. This accounts for two important differences between English and Hungarian. The first is that the remnant of English clausal ellipsis cannot be accompanied by a complementizer, which is generated in CP (i.e. below ForceP but above FocP in both languages), while remnants of clausal ellipsis in Hungarian can. The second is that, while English clausal ellipsis is only permitted in interrogative clauses or (embedded) assertoric clauses (Temmerman 2013), which are necessarily headed by ForceP, Hungarian clausal ellipsis is permitted in a broader range of clauses, including clausal complements of factive verbs and in relative clauses. See van Craenenbroeck & Lipták (2006) and Lipták (2015) for detailed discussions of Hungarian clausal ellipsis.

<sup>12</sup> It is worth mentioning that the in-situ approach derives Merchant's (2001: 67) Sluicing-COMP generalisation (see (i)) straightforwardly, as no non-operator material in COMP is sister to *f* (see *has* in (ii) below).

(i) **Sluicing-COMP generalization:** In sluicing, no non-operator material may appear in COMP.

(ii) A: John has kissed someone.                      B: Really? \* [<sub>ForceP</sub> [<sub>fP</sub> WHO]<sub>1</sub> has he kissed *t*<sub>1</sub> ]?



Having now introduced a way to represent pied-piping in the Structured Meaning framework, and having now refined the notion of how clausal ellipsis is syntactically licensed under an in-situ approach, the stage is almost set for deriving the Island-Sensitivity and Preposition-Stranding Generalisations without requiring remnants to undergo exceptional movement from the ellipsis site in §4. However, one final issue must be addressed before we proceed to §4. Because it is novel (to my knowledge), readers receptive to the foundational idea in my analysis – namely that syntactically derived implicit questions can be invoked from explicitly-uttered assertions (see (37)) – might nonetheless be puzzled about what this ‘invocation’ procedure consists in and whether there are restrictions on it.

Although my response to these questions is fully compatible with the current ellipsis literature and therefore wholly unsurprising to ellipsis specialists, expounding it is too space-consuming and tangential to this paper’s main aim, which is merely to derive the two generalisations from §2 using an in-situ approach to clausal ellipsis. Because of this, I choose to address these questions in an appendix to this paper. Stated very briefly here, the response given in the appendix runs as follows: ‘invocation’ consists in the listener accommodating an implicit question when confronted with a fragmentary response which has a non-erotetic explicit antecedent. This accommodation procedure is syntactically specified (Fox 1999; Thoms 2013; 2015), and can perhaps be identified as Arregui et al.’s (2006) *recycling* procedure. Ignoring some important details, the accommodation procedure is constrained such that:

- (51)
- i. Aside from its *fP* projection, an implicit *wh*-question cannot contain any morphosyntactic  $\sqrt{\text{ROOTS}}$  that are not also present in the explicit antecedent (see Rudin 2018 and references therein).
  - ii. Any pronoun present in the implicit *wh*-question must co-refer with a phrase in the explicit antecedent (cf. *Vehicle Change*, Fiengo & May 1994: 218).

Because the implicit questions discussed in the upcoming sections are either syntactically isomorphic to explicit antecedents from which they are invoked or are anisomorphic copular clausal questions that obey the constraints listed above, this partial clarification of what it means to ‘invoke a syntactically derived implicit question’ is sufficient for current purposes. Readers interested in this aspect of the current framework are directed to this paper’s appendix for further discussion.

## 4 Deriving the Island-Sensitivity and Preposition-Stranding Generalisations under the in-situ approach to clausal ellipsis

### 4.1 The Preposition-Stranding Generalisation without $\bar{A}$ -movement

If the QUD-syntax Correspondence conjecture is correct, and if one adopts the idealistic position that only syntactically well-formed structures in a particular language L can be used to advance the conversation in L (i.e. if one ignores performance errors), then a question  $q$  can only be in the MaxQUD in L if  $q$  is syntactically well-formed in L. This idea is the driving-force behind deriving the Island-Sensitivity and Preposition-Stranding Generalisations without reference to syntactic movement from within the ellipsis site. In this subsection, I derive the Preposition-Stranding Generalisation.

Cable (2010) offers a number of restrictions on the syntactic position of  $fP$ . One relevant restriction is that  $fP$ s cannot be interveners to selection by functional heads. This is encapsulated in his *fP-intervention condition*, which is presented in (52).<sup>13</sup>

(52) ***fP-intervention condition*** (Cable 2010: 57)

An  $fP$  cannot intervene between a functional head X and a phrase selected by X.

At first glance, the preposition-stranding *wh*-question in (53) appears to violate the *fP-intervention condition*, as  $fP$  intervenes between DP and P that selects it before  $\bar{A}$ -movement occurs. Adopting ideas from Abels (2003), Cable (2010: 111) argues that the *fP-intervention condition* is actually satisfied in (53), as English Ps are *lexical* heads, not functional ones.

(53) [<sub>ForceP</sub> Force<sub>Qi</sub> [<sub>CP</sub> [<sub>fP</sub>  $f_i$  [ Who ]]<sub>1</sub> [ was Peter talking [<sub>PP</sub> with  $t_1$  ]]]]?

According to the QUD-syntax Correspondence conjecture, this means that (53) can serve as the MaxQUD, and can therefore license clausal ellipsis in a clause whose background matches with the background of (53). The question in (53) is the MaxQUD in the dialogue below. In this case, clausal ellipsis is licensed because the background of the MaxQUD and the background of the elliptical utterance match, as (55) shows.

(54) A: I heard that John spoke with someone important.

[<sub>fP</sub> Who] did John speak with? *implicit MaxQUD invoked from A's utterance*

B: Yeah, [<sub>ForceP</sub> he spoke with [ [<sub>fP</sub> GHANDI ] ].

- (55) a.  $\langle f, \text{John spoke with } f(x) \rangle$  *structured meaning of the MaxQUD*  
 b.  $\langle f, \text{John spoke with } f(x) \rangle$  *structured meaning of B's response*

<sup>13</sup> Because Cable does not extend his analysis to declarative clauses containing foci, he refers to this constraint as the *QP-intervention condition*. Note also that only  $f$ -particles that select for complements, such as the version of the  $f$ -particle used to form *wh*-questions in *wh*-movement languages (see (38) and (40)), are sensitive to this condition. This is because only complement-taking  $f$ -particles will ever disrupt syntactic selection. By their nature,  $f$ -particles that are adjuncts, such as the version of the  $f$ -particle that is used to form assertions containing narrow foci in English (see (43) and (45)) or *wh*-questions in *wh*-movement languages (see §5.2), never disrupt syntactic selection. See Cable (2010: 103) for an emerging typology of  $f$ -particles.

According to Cable, prepositions are *functional* heads in a language such as German. This means that *fP* cannot intervene between DP and P that selects it, which consequently rules out preposition-stranding *wh*-movement:

(56) *German*

- \* [<sub>ForceP</sub> Force<sub>Qi</sub> [<sub>CP</sub> [<sub>fP</sub> *f<sub>i</sub>* [<sub>Wem</sub>]]<sub>1</sub> [<sub>hat</sub> Anna [<sub>pp</sub> mit *t<sub>1</sub>*] gesprochen]]]?  
 who.DAT has Anna with spoken  
 ‘Who has Anna spoken with?’

According to the QUD-syntax Correspondence conjecture, this means that (56) cannot serve as the MaxQUD. It is syntactically ill-formed, and is therefore not used in conversation. Consequently, ellipsis cannot be licensed in any clause that depends on (56) for satisfying Weir’s Background-matching condition, as (56) is simply absent from the QUD. Because B’s response in (57) does indeed depend on (56) being the MaxQUD for its ellipsis site to be semantically recovered, ellipsis is judged to be unacceptable in (57B). Note that the meaning of the ellipsis site in (57B) cannot be recovered from the pied-piping *wh*-question that is the MaxQUD because the background of this question and the background of (57) do not match, as (58) shows.

(57) *German*

- A: Ich habe gehört, dass Anna mit jemandem gesprochen hat.  
 I have heard that Anna with someone.DAT spoken has  
 ‘I heard that Anna has spoken with someone.’

- [<sub>fP</sub> Mit wem] hat Anna gesprochen? *implicit MaxQUD invoked from A’s utterance*  
 \* [<sub>fP</sub> Wem] hat Anna mit gesprochen? *implicit q not invoked from A’s utterance*

- B: \* Ja, [<sub>ForceP</sub> sie hat mit [<sub>fP</sub>] GHANDI] gesprochen].

- (58) a. ⟨*f*, Anna hat *f*(mit *x*) gesprochen⟩ *structured meaning of the MaxQUD*  
 b. ⟨*f*, Anna hat mit *f*(*x*) gesprochen⟩ *structured meaning of B’s response*

This QUD-based explanation for the contrast observed between English and German is fully extensible, and therefore derives the Preposition-Stranding Generalisation without reference to movement of the remnant. Non-P-stranding languages cannot generate syntactically well-formed P-stranding *wh*-questions, and therefore such questions cannot serve as MaxQUDs. Clausal ellipsis cannot be recovered from a question that is not in the QUD, and consequently an elided clause whose meaning can only be recovered from an ill-formed (and therefore ‘QUD-absent’) P-stranding question is judged to be unacceptable.

Before moving on, there is slightly more to say about the English P-stranding data. Recall from §3.2 that, according to Cable’s (2010) theory, two utterances *u* and *u′* pick out the same (sets of) sets of possible worlds if they only differ in how much pied-piping they display. I take this to mean that, if a question *q* is added to the QUD, all syntactically well-formed pied-piping equivalents of *q* are simultaneously added to the QUD. This allows us to capture mismatch cases in which pied-piping of P occurs in the explicit question but not in the response (see (59)) or *vice versa*. This is because the explicit question in (59A) invokes the syntactically well-formed implicit P-stranded question *who did Peter speak with?*, whose background may serve as the antecedent for clausal ellipsis in (59B).

- (59) A: [<sub>ForceP</sub> Force<sub>Qi</sub> [<sub>CP</sub> [<sub>fP</sub> *f<sub>i</sub>* [<sub>PP</sub> With whom]]<sub>1</sub> [<sub>did</sub> Peter speak *t<sub>1</sub>*]]]?  
 B: [<sub>ForceP</sub> Force<sub>Ai</sub> [<sub>John</sub> spoke with [<sub>fP</sub>] MARY] ].

Mismatches are disallowed for some speakers of English when an elided *wh*-question has an explicit *wh*-question antecedent, however, as the examples in (60) show. I suspect that this restriction is pragmatic in nature, as such *wh*-fragments function as verbatim repetitions of the antecedent question. This observation is encapsulated in the rule in (61).

- (60) *Context*: A and B are police officers, and are interrogating a suspect C.
- a. A: Who were you speaking with at ten o'clock on the night of the robbery?  
B: Yeah, WHO / \* with WHOM?  
C: Nobody, I swear it!
  - b. A: With whom were you speaking at ten o'clock on the night of the robbery?  
B: Yeah, with WHOM / \* WHO?  
C: Nobody, I swear it!
- (61) **Strict Background-matching condition on clausal ellipsis** (*repeat questions*)  
Given an explicit *wh*-question  $q$  with background  $Q$  and a target *wh*-question  $\alpha$  with background  $A$ , clausal ellipsis is recoverable in  $\alpha$  only if  $A = Q$ .

## 4.2 The Island-Sensitivity Generalisation without $\bar{A}$ -movement

When coupled with the QUD-syntax Correspondence conjecture, the in-situ approach captures the Island-Sensitivity Generalisation straightforwardly. To see this, consider the dialogue in (62) below. After B answers with *yes* in (62), which moves the propositional content of A's assertion *the company wants to hire a hard worker* into the Common Ground (Stalnaker 2002),<sup>14</sup> a number of equally-maximal implicit questions are added to the QUD.<sup>15</sup>

- (62) A: I heard that the company wants to hire a hard worker.  
B: Yes,
- (i)  $q$  added to the QUD:  
Which branch of the company wants to hire a hard worker?  
Who else wants to hire a hard worker?  
What else does the company want to do? (inexhaustive list)
  - a. [ [ [ $fP$ ] The EXECUTIVE branch of the company] wants to hire a hard worker].
  - b. and [ [ [ $fP$ ] the SHAREHOLDERS ] want to hire a hard worker], too.
  - c. and [ the company wants to [ [ $fP$ ] fire any SLACKERS] ], too.
  - d. \* [ the company wants to hire a [ [ $fP$ ] VERY hard] worker].
  - (ii)  $q$  not added to the QUD:  
\* [ $fP$  How hard] do the company want to hire a worker?

<sup>14</sup> In reality, the situation described in the main text only obtains in dialogue situations, i.e. when the antecedent is articulated by speaker A and speaker B responds with a fragment. In monologue situations, in which the antecedent and the elliptical clause share a sentence uttered by the same speaker, the proposition content  $p$  of the antecedent will occupy the Local Context (Karttunen 1974) of the discourse (see Kroll & Rudin 2017's semantic licensing condition on sluicing). For simplicity's sake, I focus solely on the pragmatic import of the explicit antecedent in dialogue situations in the main text.

<sup>15</sup> See the appendix for a detailed discussion of how syntactically derived implicit questions are added to the QUD.



We observe that (62a-c) are available as fragmentary responses to (62A), each licensed by a different implicit question. Conversely, the fragment in (62d) is not available as a fragmentary response because there is no question in the QUD available to license it. The only question that could license (62d), which is given in (62ii), is syntactically ill-formed in English, and is therefore unsuitable for use in conversation.

This example illustrates that a fragment with an island-bound correlate and for which no anisomorphic source is available is unacceptable because no question is available in the QUD to semantically license it. Thus, English non-*wh* fragments are indirectly island-sensitive: this ‘island-sensitivity’ arises as an epiphenomenon. Such fragments do not themselves cross island boundaries.

#### 4.2.1 *An additional constraint on adding questions to the MaxQUD: The case of contrastive fragments*

Up to this point, this paper has focused solely on one restriction on adding syntactically derived implicit questions to the MaxQUD, which is the requirement that such questions be syntactically well-formed. There are of course other constraints on adding questions to QUD; ones which apply to all questions, regardless of whether they are syntactically derived or not. In this subsection, I wish to slightly complicate the current analysis by demonstrating how the syntactic requirement on ellipsis-licensing implicit questions and a more general constraint on the composition of the QUD can interact to further restrict the availability of clausal ellipsis in island contexts.

The general pragmatic constraint I wish to focus on, which is taken from Barros (2014b) and formulated in (63) as the *Corrective QUD constraint*, is triggered when the propositional content  $p$  of an assertion is denied entry into the Common ground, which occurs after a speaker utters a negative expression such as *no* or provides a non-linguistic indication of refutation. This constraint affects the QUD and demands that (i) the MaxQUD be reduced to a singleton set of questions  $q$ , and (ii) that  $\llbracket q \rrbracket$  be the set of propositions which are the focus-alternatives to the rejected proposition  $p$ , where this set of alternatives excludes  $p$  itself. The Corrective QUD constraint in (63) therefore aims to capture the intuition that speakers often consider each other’s proposals to update the Common Ground in need of amendment before they can be accepted, and that speakers provide their corrections via proffering a fresh answer to the explicit or implicit *wh*-question that the original ‘incorrect’ assertion aimed to answer (Merchant 2004: 687; Barros 2014b), where this original question is updated to exclude the propositional content of the ‘incorrect’ assertion as a possible answer. In cases where the original assertion contains a narrow-focused item (see B’s utterance in (64)), it is clear what the original question was. Otherwise F-marking can be pragmatically accommodated, i.e. applied retrospectively by the listener. In such cases, the Corrective QUD constraint can be satisfied varyingly, depending on where F-marking is retrospectively applied (see  $T_3$  in (65) for three possibilities). In the dialogues below,  $T_1, \dots, T_n$  represent discrete points in conversational-time.

(63) **Corrective QUD constraint**

Let  $q$  be a question and  $p$  be a proposition such that  $\llbracket q \rrbracket$  and  $\text{alt}(\llbracket p \rrbracket)$  are identical, where  $\llbracket p \rrbracket^o \in \llbracket p \rrbracket^f \setminus \text{alt}(\llbracket p \rrbracket)$ . After  $p$  is denied entry into the Common Ground, the MaxQUD must be the singleton set of questions  $\{q\}$ .

(64) *Context:* Sally, Judy, and Rob were the three teaching assistants in the department.

- T<sub>1</sub> | A: Which teaching assistant was fired?  
 T<sub>2</sub> | B: [ [ [fP] SALLY] was fired].  
 T<sub>3</sub> | A: No,  
 T<sub>4</sub> | *Speaker A's discourse-move at T<sub>3</sub> triggers the Corrective QUD constraint*  
 (i) MaxQUD after T<sub>3</sub> = {x was fired | x ∈ {Judy, Rob}}  
 T<sub>5</sub> | A: [ [ [fP] JUDY] was fired]. *answer to MaxQUD in (i)*

- (65) T<sub>1</sub> | A: John introduced Sue to Mary.  
 T<sub>2</sub> | B: No,  
 T<sub>3</sub> | *Speaker B's discourse-move at T<sub>2</sub> triggers the Corrective QUD constraint*  
 (i) MaxQUD after T<sub>2</sub> = {x introduced Sue to Mary | x ∈ D<sub>e</sub>}, **or**  
 (ii) MaxQUD after T<sub>2</sub> = {John introduced x to Mary | x ∈ D<sub>e</sub>}, **or**  
 (iii) MaxQUD after T<sub>2</sub> = {John introduced Sue to x | x ∈ D<sub>e</sub>}, ...  
 T<sub>4</sub> | B: [ [ [fP] PETE] introduced Sue to Mary]. *answer to MaxQUD in (i), or*  
 B: [ John introduced [ [fP] PETE] to Mary]. *answer to MaxQUD in (ii), or*  
 B: [ John introduced Mary to [ [fP] PETE]]. *answer to MaxQUD in (iii), ...*

Because addressing the MaxQUD is preferred but not required in non-elliptical environments, the singleton MaxQUD formed by applying the Corrective QUD constraint need not be satisfied immediately (it is satisfied at T<sub>5</sub> in (66): B's preceding assertion at T<sub>4</sub> contains the contrastive topic *Frank* and therefore addresses a superquestion), if at all (see (67)). The Corrective QUD constraint is therefore only truly impactful in elliptical environments, where it must be satisfied for clausal ellipsis to be licensed, as I will show momentarily.

- (66) T<sub>1</sub> | A: She swore at JOHN's mother last night.  
 T<sub>2</sub> | B: No,  
 T<sub>3</sub> | *Speaker B's discourse-move at T<sub>2</sub> triggers the Corrective QUD constraint*  
 (i) MaxQUD after T<sub>3</sub> = {she swore at x's mother last night | x ∈ D<sub>e</sub>}  
 T<sub>4</sub> | B: FRANK swore at JOHN's mother.  
 T<sub>5</sub> | B: SHE swore at PETE's mother.  
 (67) T<sub>1</sub> | A: She swore at JOHN's mother last night.  
 T<sub>2</sub> | B: No,  
 T<sub>3</sub> | *Speaker B's discourse-move at T<sub>2</sub> triggers the Corrective QUD constraint*  
 (i) MaxQUD after T<sub>3</sub> = {she swore at x's mother last night | x ∈ D<sub>e</sub>}  
 T<sub>4</sub> | B: that's not true.  
 T<sub>5</sub> | B: But another rumour I heard about her is that she often ...

As mentioned already, the Corrective QUD constraint affects all questions, including the syntactically derived implicit questions from which the meaning of clausal ellipsis is recovered. This means that, when the Corrective QUD constraint is triggered, a syntactically derived implicit question can only be added to the MaxQUD if it satisfies this constraint. Coupled with the requirement that they be syntactically well-formed, this additional constraint on adding implicit questions to the MaxQUD therefore reduces the likelihood of there being a question in the MaxQUD from which clausal ellipsis can be recovered. This gives rise to the prediction that fragmentary responses which are licensed after the Corrective QUD constraint applies (so-called

*contrastive* fragments, see Griffiths & Lipták 2014) are harder to license than fragments uttered in non-corrective contexts (*presentational* fragments). As is well-known, this prediction is borne out for fragments with island-bound correlates: many contrastive fragments with island-bound correlates are judged as unacceptable even though their presentational counterparts are perfectly licit, as a comparison of (68B) and (69B) shows (Merchant 2001; 2008; Griffiths & Lipták 2014; Barros et al. 2014; among others).

- (68) *Context*: There is a rumour going around that one of the teaching assistants was fired.  
 A: [<sub>ISLAND</sub> The rumour that SALLY was fired] is true.  
 B: \* No, JUDY. *contrastive fragment*
- (69) A: [<sub>ISLAND</sub> The rumour that one of the teaching assistants was fired] is true.  
 B: Yeah, JUDY. *presentational fragment*

The reason why it is contrastive fragments with island-bound correlates in particular that are affected is because the Corrective QUD constraint and the well-formedness constraint on syntactically derived implicit questions introduce conflicting demands that are especially difficult to satisfy simultaneously in island contexts. On the one hand, clausal ellipsis cannot be recovered from an implicit question which is isomorphic to the explicit antecedent in configurations where the correlate is island-bound (such a question would be syntactically ill-formed due island-violating *wh*-movement, and is therefore barred from the MaxQUD); on the other hand, implicit questions which are anisomorphic to the explicit antecedent will typically violate the Corrective QUD constraint.

To provide a concrete example of how these two constraints conspire to preclude clausal ellipsis, let us reconsider the dialogue in (68). First, imagine that the syntactically derived implicit question in (70a) is invoked from the explicit antecedent in (68). In this situation, this implicit question satisfies the Corrective QUD constraint, as it has the same denotation as  $\text{alt}(\llbracket(68A)\rrbracket)$ . Problematically however, (70a) is syntactically ill-formed, is barred from entering the MaxQUD, and therefore cannot serve as a licenser of ellipsis. This entails that the fragment in (68B) cannot be derived from the underlying isomorphic source in (70b).

- (70) a. \* [ WHICH teaching assistant]<sub>1</sub> is [<sub>ISLAND</sub> the rumour that  $t_1$  was fired] true, then?<sup>16</sup>  
 b. [ [<sub>ISLAND</sub> the rumour that [ [fP] JUDY ] was fired] is true].

The anisomorphic implicit question in (71a) makes for a suitable licenser of a presentational fragment derived from the anisomorphic elliptical source in (71b). Indeed, (71b) is the underlying source for the acceptable presentational fragment in (69B). Problematically, the question in (71a) cannot serve to license ellipsis in the contrastive environment in (68) even if the fragment in this dialogue were also derived from the short source in (71b), as the question violates the Corrective QUD constraint (see Barros 2014b, Barros et al. 2014:§4.3 for the same conclusion). This is because  $\llbracket(71a)\rrbracket = \{x \text{ was fired} : x \in D_e\}$ , whereas  $\text{alt}(\llbracket(68A)\rrbracket) = \{\text{the rumour that } x \text{ was fired is true} : x \in D_e\}$ . Provided that the *wh*-phrase is interpreted as contextually restricted to  $\text{alt}(\llbracket\text{the rumour that Sally}_F \text{ was fired}\rrbracket)$ , the implicit question in (71c) satisfies the Corrective QUD constraint, and should therefore make for a suitable ellipsis licenser. Although this question could indeed license the contrastive fragment ‘*the rumour that JUDY was fired*’, it cannot license the fragment in (68B), as neither the focus-background structure in (72a) for the potential long source in (70b), nor the focus-background structure in (72b) for the potential

<sup>16</sup> I have added the discourse particle *then* to convey the corrective nature of these questions.

short source in (71b), match the focus-background structure in (72c) for the question in (71c), which violates Weir's (2017) Background-matching condition. In short, the contrastive fragment in (68) is therefore judged as unacceptable because there is no suitable implicit question in the MaxQUD to license it.

- (71) a. WHICH teaching assistant was fired, then? *violates the Corrective QUD constraint*  
 b. [ [ [fP] JUDY ] was fired ].  
 c. WHAT is true, then? *satisfies the Corrective QUD constraint*
- (72) a.  $\langle f, \text{the rumour that } f(\text{Sally}) \text{ was fired is true} \rangle$  *structured meaning of (70b)*  
 b.  $\langle f, f(\text{Sally}) \text{ was fired} \rangle$  *structured meaning of (71b)*  
 c.  $\langle f, f(\text{the rumour that Sally was fired}) \text{ is true} \rangle$  *structured meaning of (70c)*

It is important to emphasise that the Corrective QUD constraint in (63) only requires semantic equivalence to obtain between a corrective implicit question and the focus-alternative value of the explicit antecedent: it does not require that the implicit question and the explicit antecedent share any syntactic similarities (above and beyond the general constraints on invoking implicit questions, which were mentioned briefly in §3.2 and are listed in the appendix). Consequently, implicit questions that are structurally anisomorphic to their antecedents and which satisfy the Corrective QUD constraint (and all other relevant constraints) are predicted to make for suitable licensors of contrastive fragments. This prediction is borne out, even for contrastive fragments whose correlates are island-bound (Barros et al. 2014; *contra* Griffiths & Lipták 2014). For example, the contrastive fragment in (73aB) is judged as acceptable because the implicit question in (73b) is present in the MaxQUD to license the ellipsis that generates the fragment. This implicit question makes for a suitable licensor not only because it is syntactically well-formed, but also because it satisfies the Corrective QUD constraint. Specifically, the implicit question in (73b) satisfies the Corrective QUD constraint because the pronoun *he* can be interpreted as an E-type pronoun meaning '*her new boyfriend*' (see the appendix for discussion and references). The contrastive fragment in (74aB) is acceptable for precisely the same reason: an anisomorphic implicit question containing an E-type pronoun meaning '*the person they hired*' is available in the MaxQUD to license clausal ellipsis (see (74b)).

- (73) a. A: Her new boyfriend is a TALL man.  
 B: No, [ **he** is [ [fP] SHORT] ]. *modified from Barros et al. (2014: 38)*  
 b. WHAT is **he**, then? *implicit q invoked from (73aA)*
- (74) a. A: They hired someone who speaks FRENCH last week.  
 B: No, [ **she** speaks [ [fP] GERMAN] ]. *modified from Barros et al. (2014: 37)*  
 b. WHAT language does **she** speak, then? *implicit q invoked from (74aA)*

To summarise: This subsection demonstrated how the specific constraint on syntactically derived implicit questions (namely, that they are well-formed) and a general constraint on the composition of the QUD interact to restrict the licensing of clausal ellipsis. In particular, I showed that the Corrective QUD constraint in (63) serves to restrict the number of possible anisomorphic syntactically derived implicit questions available in the MaxQUD from which clausal ellipsis can be licensed. This can give rise to a situation in which no implicit questions are available to license ellipsis (as in (68a)), but it need not (as in (73a) and (74a)). Thus, this

subsection has demonstrated that the complex distribution of purported ‘island-(in)sensitivity’ under clausal ellipsis can be reduced to a byproduct of the constraints on discourse structure.<sup>17</sup>

### 4.3 Summary of §4

I demonstrated in this section that the independently motivated *QUD-syntax Correspondence conjecture*, which is the idea that the meaning of a clausal ellipsis site is always recovered from a syntactically derived question, can be utilised to capture the Preposition-Stranding and Island-Sensitivity Generalisations without resorting to the idea that movement always occurs from within the clausal ellipsis site.<sup>18</sup> Adopting this conjecture therefore provides the required restrictiveness to the in-situ approach to clausal ellipsis but renders the M&D approach to clausal ellipsis superfluous, at least for capturing the Preposition-Stranding and Island-Sensitivity Generalisations.

## 5 The in-situ approach: clausal ellipsis without ellipsis repair

The previous three sections of this paper were devoted to showing that two  $\bar{A}$ -movement properties exhibited by fragments can be explained by appealing to how the meaning of a clausal ellipsis site is recovered, rather than by appealing to notion that remnants of clausal ellipsis necessarily undergo  $\bar{A}$ -movement.

<sup>17</sup> Because they are the simplest dialogues in which contrastive fragments are observed, this subsection has focused on dialogues in which both the explicit antecedent and elliptical clause are assertions. Contrastive fragments also arise in dialogues whose explicit antecedent is a narrow focus polar question (Merchant 2004) (i), and in interrogative environments (Merchant 2001) (ii), however.

(i) A: Did Sally swear at JOHN last night?

B: No, [ Sally swore at [  $[fP]$  PETE ] last night].

(ii) I know which KITTEN John should adopt, but I don’t know [  $[fP]$  [ which PUPPY ] he should adopt].

The pragmatic analysis offered to account for the distribution of contrastive fragments in purely assertoric exchanges in the main text extends straightforwardly to the dialogues in (i) and (ii). In the case of (i), I follow Merchant (2004) and Barros (2014b) in assuming that choosing  $\neg p$  from polar question proposal  $\{p, \neg p\}$  triggers the application of the Corrective QUD Constraint in (63) over the propositional core of the polar question. The constraint in (63) is satisfied in (i) because the propositional core of the polar question contains a focused item, and therefore an implicit *wh*-question corresponding in meaning to  $\text{alt}(\llbracket p \rrbracket)$  can be formulated (namely, *who did Sally swear at last night?*). Although the case in (ii) does not involve a negative marker such as *no*, it should still be classified as contrastive. This because the contrastive topic *puppy* in the elliptical clause (Mizuno & Erlewine 2017) gives rise to an interpretation of (ii) in which the elliptical clause is understood as a correction of the antecedent. In particular, the elliptical clause is understood as superseding the antecedent clause as the ‘correct’ subquestion to ask from the implicit superquestion *which baby animal should John adopt?* (Roberts 2012), where the members of the superquestion are sorted into sets according to species (see iii). This superquestion makes for a suitable licenser of clausal ellipsis in (ii), as it corresponds in meaning with  $\text{alt}(\llbracket \text{which kitten}_F \text{ should John adopt} \rrbracket)$  (Constant 2014; Mizuno & Erlewine 2017) and therefore satisfies the constraint in (63).

(iii)  $\llbracket \text{which baby animal did John adopt} \rrbracket = \{\{\text{John should adopt Felix, John should adopt Tibbles, ...}\}, \{\text{John should adopt Fido, John should adopt Rex, ...}\}, \dots\}$

<sup>18</sup> I must stress that island-violating  $\bar{A}$ -movement may occur independently in the ellipsis site. This happens with *wh*-fragments in *wh*-movement languages and with both *wh*- and non-*wh* fragments in focus-fronting languages such as Hungarian.



As mentioned in §1, there are other  $\bar{A}$ -movement properties exhibited by fragments that must receive an ‘in-situ’ explanation before the in-situ approach and the M&D approach can be said to have equal explanatory power (see Merchant 2004; Ince 2006; Shen 2017; among others). Although I do not provide the required ‘in-situ’ explanations for these  $\bar{A}$ -movement properties here, I nevertheless aim to show in the penultimate section of this paper that, should the abovementioned situation ever come to pass, the in-situ approach will be favoured over the M&D approach for conceptual reasons.

I concentrate in this section on the notion of *ellipsis repair*. It is widely known that the M&D approach is too restrictive and therefore frequently undergenerates fragmentary responses. To overcome this problem, advocates of the M&D approach have argued that the phonological process that yields ellipsis also circumvents certain grammatical constraints, and hence *repairs* otherwise illicit syntactic configurations (Richards 2001; Merchant 2001; 2004; 2008; Lasnik 2001; van Craenenbroeck & den Dikken 2006; Fox & Pesetsky 2005; van Craenenbroeck 2010; among many others). Because repair only occurs when ellipsis applies, the claim that ellipsis repair exists cannot be easily tested empirically, which is conceptually problematic. I will demonstrate that no appeal to ellipsis repair is required under the in-situ approach to capture the distribution of two classes of fragments for which a ‘repair’ analysis is required in the M&D framework. These classes are (i) immovable fragments in English and (ii) all fragments in *wh*-in-situ languages.

Being able to explain the distribution of these fragments without appealing to ellipsis repair is the main reason why the in-situ approach has better future prospects than the M&D approach. By design, the M&D approach will never be able to provide falsifiable analyses of the acceptability of immovable fragments in English or of fragments in *wh*-in-situ languages such as Turkish and Japanese. In contrast, ‘in-situ’ explanations of other  $\bar{A}$ -movement properties exhibited by fragments can potentially be fashioned.

## 5.1 Fragments without $\bar{A}$ -movement properties

### 5.1.1 Ellipsis repair

Because it maintains that all fragments are derived by  $\bar{A}$ -moving the remnant of clausal ellipsis to clause-peripheral position, the M&D approach predicts that the effects of an application of  $\bar{A}$ -movement in a non-elliptical utterance  $\alpha$  should yield the same effects in the fragmentary counterpart to  $\alpha$ . This prediction is incorrect for a number of cases, as Weir (2014: 167-173) demonstrates. To provide one example, consider the utterances in (75a) and (75b), which demonstrate that predicate fronting, which is a form of topicalisation, bleeds an inverse scope reading in English. Based on this contrast, the M&D approach predicts that no inverse scope reading is available in the fragmentary counterpart to (75b), which will also involve  $\bar{A}$ -movement. This prediction is incorrect, however. The example in (76) shows that both a surface and inverse scope reading are available for the fragmentary response.<sup>19</sup>

<sup>19</sup> Although the scopal ambiguity observed in (75a) is retained in its fragmentary counterpart in (76B), the most natural reading of (i), in which negation scopes under *regret*, is bled under clausal ellipsis: the fragment in (iiB) can only be understood as “I don’t regret telling John anything”. Thoms (2018) claims that (iiB)’s obligatory wide scope reading must arise through exceptional, overt  $\bar{A}$ -movement of the fragment, which therefore supports the M&D approach. The validity of this argument rests on the assumption that negation cannot take wide scope over *regret* in the non-elliptical configuration in (i). According to my own native-speaker judgements, this assumption is incorrect: negation can take wide scope in (i) if the context is sufficiently rich and there is enough emphasis on



- (75) a. John refused to teach every student. (*refuse* >  $\forall$ ,  $\forall$  > *refuse*)  
 b. ...and [teach every student]<sub>1</sub>, John refused to *t*<sub>1</sub>. (*refuse* >  $\forall$ , \*  $\forall$  > *refuse*)
- (76) A: What did John refuse to do?  
 B: [Teach every STUDENT]<sub>1</sub> John refused to *t*<sub>1</sub>. (*refuse* >  $\forall$ ,  $\forall$  > *refuse*)

Secondly, the M&D approach predicts that an illicit application of  $\bar{A}$ -movement in a non-elliptical utterance  $\alpha$  should yield an unacceptable fragmentary counterpart to  $\alpha$ . This prediction is incorrect for a number of cases. For instance, bare transitive verbs, prepositions, and derivational prefixes are immovable in English topicalisation contexts, as (77) shows. However, such items make for suitable fragments, as (78) shows.<sup>20 / 21</sup>

- (77) a. \* John wants to REVOLVE the gyroscope, so REVOLVE<sub>1</sub> he will *t*<sub>1</sub> it.  
 b. \* John wants to get UNDER the bed, so UNDER<sub>1</sub> he will get *t*<sub>1</sub> the bed.  
 c. \* John wants to be a NEUROlinguist, so NEURO<sub>1</sub> he will be a *t*<sub>1</sub>-linguist.
- (78) a. A: Should he REVOLVE or TILT the gyroscope? B: REVOLVE, of course.  
 b. A: Is IN or UNDER the bed the best hiding place? B: UNDER, I reckon.  
 c. A: Did a NEURO or PYSCHOLinguist just pass by? B: NEURO.

Although they are not fragmentary responses themselves, German modal particles (MPs) can accompany fragments, as Ott & Struckmeier (2018) show (79). The MPs observed in these examples are immovable elements that must occupy the *Mittelfeld* in the non-elliptical counterparts to (79), as the examples in (80) illustrate.

- (79) *German*
- |    |    |                                       |    |                    |
|----|----|---------------------------------------|----|--------------------|
| a. | A: | Peter hat eine paar Leute eingeladen. | B: | Wen denn?          |
|    |    | Peter has a.ACC few people invited    |    | who.ACC MP         |
| b. | A: | Wen hat Peter eingeladen?             | B: | Seine Freunde wohl |
|    |    | who.ACC has Peter invited             |    | his.ACC friends MP |

*nothing* (see iii), though whether other native-speakers agree with this judgement is currently unknown to me. It is likely that negation **must** take wide scope in (iiB) so that *scopal parallelism* (see Romero 1998; among others) obtains between (iiA) and (iiB).

- (i) I regret telling him to buy nothing.  
 (ii) A: What do you regret telling John to buy?  
 B: Nothing. ( $\neg$  > *regret*, \* *regret* >  $\neg$ )  
 (iii) *Context*: My therapist (T) and I are discussing why I took pleasure in enticing John, a recovering shopaholic, into a shopping centre and goading him into buying all the expensive items that he saw.  
 T: So you must feel guilty about telling John to buy all those things, right?  
 Me: No, I regret telling him to buy NOTHING! Nothing at all! He shouldn't fight his urges! ( $\neg$  > *regret*)

<sup>20</sup> I can confirm that, at least for the small groups of native speakers I have consulted, the judgements provided for the English data in (77) hold for their Dutch and German equivalents. Future research must decide whether or not these fragmentary responses are considered acceptable in additional languages.

<sup>21</sup> The fact that prepositions make for suitable fragments was noted early on, in an influential paper by Zwicky:

- (i) A: Are you travelling TO or FROM Africa?  
 B: TO. (Zwicky 1982:7)

(80) *German*

- a. Wen (\*denn) hat Peter (denn) eingeladen (\*denn).
- b. Seine Freunde (\*wohl) hat Peter (wohl) eingeladen (\*wohl).

To account for the observation that the fragment in (76) is interpreted in its base-generated position, and to account for the observation that immovable items often make for acceptable fragments, Weir (2014: 178-199) suggests that fragments undergo an exceptional application of movement that occurs at the PF branch of grammar. According to him, this accounts for why the fragment in (76) is interpreted in its base-generated position (the movement operation happens after transfer to the LF branch of grammar). One presumes that exceptional PF-movement can also be invoked to explain why the fragments in (79) are licit and for why the otherwise immovable elements in (77) can also purportedly move to escape clausal ellipsis in (78).

Because the exceptional movement that purportedly derives fragments is only triggered when clausal ellipsis occurs, appealing to it renders this aspect of the M&D analysis unfalsifiable, which is problematic for any scientific theory (Popper 1963). This problem becomes more acute when one considers that, in languages that do not permit focus-fronting in non-elliptical environments (such as English, which forbids presentational or contrastive foci from undergoing  $\bar{A}$ -movement in question-and-response dialogues), **all** non-*wh* fragments must be formed via exceptional movement. The problem is further compounded by the fact that more than one type of exceptional movement is required under the M&D approach, as not all *exceptional fragments* (i.e. remnants of ellipsis that occupy a structural position they usually cannot) can be derived by PF-movement. For example, Abels & Dayal (2017), who adopt the M&D approach, argue that the derivation of multiple sluices in a number of languages involves an application of movement which, while usually covert (and hence applied in the interpretative component of the grammar), becomes exceptionally overt in clausal ellipsis environments. This movement, which therefore must occur in the narrow syntax to have both an interpretative and phonological effect, allows the second *wh*-phrase in a multiple sluice to escape ellipsis (81).

- (81) Everyone made a gift from something. But  $WHO_1$  [ from  $WHAT_2$  ]  $t_1$  made a gift  $t_2$ ?

To summarise: Problematically for the M&D approach, many fragments do not behave like  $\bar{A}$ -moved phrases (e.g. with respect to scope-fixing) and many unmovable phrases make for suitable fragments. These problems are circumvented in the M&D framework by stipulating that ellipsis permits exceptional movement, but at the cost of creating an unfalsifiable theory.

### 5.1.2 The in-situ alternative

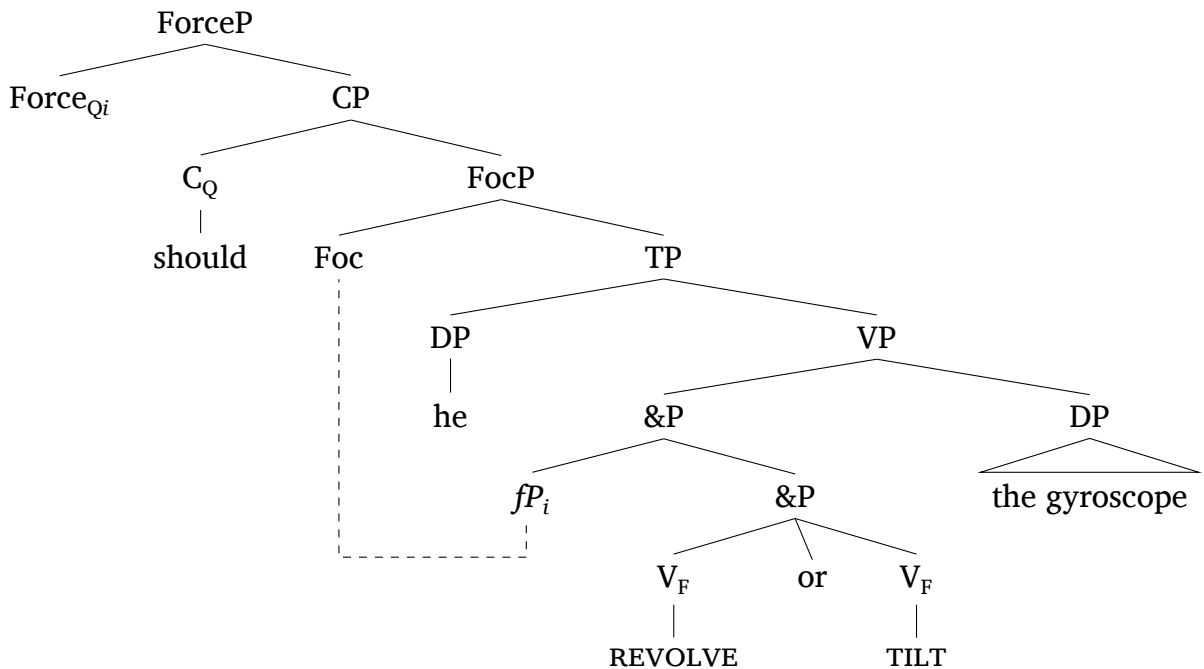
From an ‘in-situ’ perspective, the observation that some fragments do not behave like  $\bar{A}$ -moved phrases (see (76)) is unsurprising, as such fragments do not undergo  $\bar{A}$ -movement when clausal ellipsis applies. Similarly, the observation that phrases that introduce non-at-issue content can accompany fragments (see (79)) is expected if the phonological operation that yields clausal ellipsis is correctly specified to avoid deleting (or suppressing Vocabularly Insertion inside) such phrases, as the PF-rule of clausal ellipsis in (48) already is.

Consequently, an advocate of the in-situ approach need not appeal to exceptional movement to explain why the fragments in (76) and (79) are acceptable and are interpreted in the manner that they are. An explanation that does not appeal to exceptional movement is also available for why the fragments in (78) are acceptable, too. The remainder of this subsection is dedicated to presenting this explanation.

To explain why the fragments in (78) are acceptable, we must look to their antecedent clauses, which are all alternative questions. With regards to their impact on the discourse, standard alternative questions simultaneously (i) inform an interlocutor of what all of the salient propositional alternatives in the context of utterance are and (ii) ask her to choose between them. This exhaustive property of alternative questions prevents any implicit *wh*-question from being invoked from them (Biezma & Rawlins 2012: 387). Importantly for the current study, this entails that explicit alternative questions can themselves be maximally-prominent in the QUD and can therefore serve to semantically license clausal ellipsis.

The technical details of how alternative questions semantically license clausal ellipsis proceed as follows. In the Structured Meaning framework, alternative questions can be represented as a focus-background structure with a choice function as the focus and a  $\lambda$ -abstraction over the choice function as the background. The choice function in the focus position of the focus-background structure is restricted to the set of alternatives listed in the alternative question (Krifka 2001). As in §3.2, I assume that the creation of this semantic structure is triggered by  $\text{Force}_Q$ . Alternative questions also exhibit *Foc*, which enters into a syntactic AGREE relation with the head of an *fP* that *adjoins* to the coordinated focused phrases (this *fP* is therefore not subject to the *fP*-intervention condition, see footnote 13).<sup>22</sup> This is therefore the main difference between alternative questions and *wh*-questions, as *wh*-questions exhibit a ‘CP and *fP*’ pairing instead of the ‘Foc and *fP*’ pairing exhibited by alternative questions (see the syntax trees in (38) and (40) for the syntax of *wh*-questions). An alternative question such as (78aA) therefore has the syntax in (82) on the current approach.

(82) Should he REVOLVE or TILT the gyroscope?



(83)  $\text{QUEST}(\langle \{f_{\text{revolve}}, f_{\text{tilt}}\}, \lambda f \lambda w. \text{he should } [f(\{x \mid x \in D_{\langle e, \langle e, t \rangle \rangle})]\rangle)(w) \text{ the gyroscope in } w)$

<sup>22</sup> I model *Foc* and the *f*-particle as AGREEing with each other in (82) because alternative questions are known to be sensitive to syntactic islands and therefore involve covert  $\bar{A}$ -movement of *fP*. See Larson (1985) and Han & Romero (2004) for discussion.

According to Background-matching condition presented in (32), clausal ellipsis is licensed in a response to the alternative question in (82) if its background matches the background in (83). This situation obtains in (78aB), as the focus-background structure for its underlying clause in (84) demonstrates.<sup>23</sup>

- (84) a. [ he should [  $[fP]$  REVOLVE ] the gyroscope].  
 b.  $\text{ANS}(\langle f_{\text{revolve}}, \lambda f \lambda w. \text{he should } [f(\{x \mid x \in D_{\langle e, \langle e, t \rangle \rangle})]\rangle(w) \text{ the gyroscope in } w)$ )

Importantly, the acceptability of the fragmentary response in (78a) (and indeed, the acceptability of each of the fragments in (78)) is determined by their licensing question. If their licensing question does not involve standard  $\bar{A}$ -movement, as is the case for alternative questions in English, then the fragment is judged to be acceptable. Conversely, if their licensing question does involve standard  $A$ -movement, as with *wh*-questions in English, then the fragment should be judged as unacceptable. This is because none of the focused phrases in the licensing questions in (78) can undergo *wh*-movement in English when replaced by *wh*-phrases to form standard, non-echoic questions. Consequently, the current theory predicts that assertions that display the same focused phrases as the questions in (78) cannot license the fragmentary responses in (78). This is because assertions **only** invoke implicit *wh*-questions, and seeing as English cannot generate grammatical *wh*-questions that ask about bare transitive verbs, prepositions and derivational prefixes, such assertions do not invoke the *wh*-question required to license clausal ellipsis. This prediction is borne out, as the example dialogues below demonstrate.

- (85) a. A: He should TILT the gyroscope. B: \* No, REVOLVE.  
 b. A: UNDER the bed is the best hiding place. B: \* No, IN.  
 c. A: I reckon a PSYCHolinguist just passed by. B: \* No, NEURO.

We have now arrived at an explanation for why the fragments in (78) are acceptable: they are acceptable because clausal ellipsis can be recovered from their antecedent, which is an explicit alternative question. Unlike an explanation couched in the M&D framework, this explanation makes no recourse to exceptional movement, and is also able to account for why such fragments

<sup>23</sup> Schwarz (1999) and Han & Romero (2004) argue that alternative questions are always built from coordinated TPs, with coordinative ellipsis applying to give the impression of coordinated subclausal constituents (see (i)). The underlying structure in (i) yields the (simplified) focus-background structure in (ii), which exhibits a different background to the focus-background structure in (84b). Consequently, this leads to the incorrect prediction that the fragment ‘revolve’ cannot be licensed as a response to the alternative question in (82). If one wishes to adopt this ellipsis approach to alternative questions (I do not adopt it in the main text), this problem can be overcome by arguing that alternative questions involve coordinated CPs to which coordinative ellipsis applies, as in (iii) (Pruitt & Roelofsen 2013). Under this analysis, either coordinand can be used to license clausal ellipsis (see (iv)). Also, notice that (ii) is ungrammatical if ellipsis does not apply whereas (iii) is grammatical if ellipsis does not apply. Therefore (iii) has the additional benefit of not requiring *ellipsis repair*. Ingo Reich (p.c.) also points out that the lexical semantics for the coordinator *or* can be more straightforwardly specified for (iv), in which it coordinates propositions, than for (83), in which it coordinates subclausal constituents.

- (i) Should [[ he REVOLVE the gyroscope ] or [ he TILT the gyroscope]]?  
 (ii)  $\text{QUEST}(\langle \{f_{\text{he should revolve the gyroscope}}, f_{\text{he should tilt the gyroscope}}\}, \lambda f. f(\{h \mid \exists x \in D_{\langle e, \langle e, t \rangle \rangle}. h = \text{he should } x \text{ the gyroscope}\}))$   
 (iii) [ Should he REVOLVE the gyroscope ] or [ should he TILT the gyroscope]?  
 (iv)  $\text{QUEST}(\langle f_{\text{revolve}}, \lambda f \lambda w. \text{he should } [f(\{x \mid x \in D_{\langle e, \langle e, t \rangle \rangle})]\rangle(w) \text{ the gyroscope in } w) \text{ or } \langle f_{\text{tilt}}, \lambda f \lambda w. \text{he should } [f(\{x \mid x \in D_{\langle e, \langle e, t \rangle \rangle})]\rangle(w) \text{ the gyroscope in } w)$ )

are licit as responses to explicit alternative questions but are illicit as responses to implicit *wh*-questions.

To summarise: Because remnants of clausal ellipsis need not undergo  $\bar{A}$ -movement in the in-situ framework, this approach is able to provide a natural explanation for why certain fragments do not behave like  $\bar{A}$ -moved items. It is also able to account for why items that cannot undergo  $\bar{A}$ -movement in non-elliptical environments make for licit fragments without appealing to the notion of exceptional movement (unlike the M&D approach). The particular version of the in-situ approach advocated in this paper can also explain why immovable items are only judged as acceptable in particular discursive contexts in English (e.g. when anteceded by an explicit alternative question); a subtle distinction which cannot be made within the M&D framework.

## 5.2 *Wh-in-situ languages*

The remit of the Island-Sensitivity Generalisation in (7) is purposefully restricted to languages with *wh*-movement. This is because having an island-bound correlate typically has no effect on the acceptability of fragments in *wh*-in-situ languages such as Japanese (Abe 2015 and references in there), Korean (Kim & Park 2016: 27-28), and Turkish (İnce 2012), even when no island-evading anisomorphic source is available. This is exemplified by the non-*wh* presentationally and contrastively focused fragments in (86B) and (87B), which come from Turkish (İnce 2012: 206).

### (86) *Turkish*

A: Hasan [<sub>ISLAND</sub> birşey-i gezdir-en bir çocuk]-la konuş-muş.  
 Hasan something-ACC walk-NOM one child-COM talk-EVD  
 ‘Apparently, Hasan spoke with a child that walked something.’

B: Evet, köpeğ-i.  
 yes dog-ACC  
 ‘Yes, a dog.’

### (87) *Turkish*

A: Hasan [<sub>ISLAND</sub> kedi-yi gezdir-en bir çocuk]-la konuş-tu.  
 Hasan cat-ACC walk-NOM one child-COM talk-PST  
 ‘Hasan spoke with a child that walked a cat.’

B: Hayır, köpeğ-i.  
 no dog-ACC  
 ‘No, a dog.’

When one considers that no predication copular clausal short source is available for the fragments in (86) and (87) (as the ungrammaticality of (88) shows), one must conclude that Turkish fragments are genuinely island-insensitive.

### (88) *Turkish*

\* {Evet / Hayır}, (O) köpeğ-i-y-di  
 yes no it dog-ACC-COP-PST  
 ‘{Yes/No}, it was a dog.’

To account for these data within the M&D framework, İnce (2012) adopts Merchant’s (2004) idea that island-sensitivity is a phonological phenomenon, which is obviated when the lower

links in an  $\bar{A}$ -chain that crosses an island boundary are fully contained in a phrase that undergoes ellipsis (see Merchant 2004: 705-709 for details). Aside from being an unfalsifiable theory, Ince's analysis fails to explain why some fragments are indeed island-sensitive in Turkish:

(89) *Turkish*

- A: Ali [<sub>ISLAND</sub> Ayşe-yi bir sebepten davet ed-en adam]-a kız-dı.  
 Ali Ayşe-ACC a reason invitation make-NOM man-DAT get.angry-PST  
 'Ali is angry at the man that Ayşe invited for a particular reason.'
- B: \* Evet, mecburiyetten.  
 yes out.of.obligation.

Let us now consider these Turkish data from an in-situ perspective, abstracting momentarily away from the technicalities of the particular in-situ analysis adopted in this paper but upholding the QUD-syntax Correspondence conjecture. When viewed from this perspective, the data receive a natural explanation. Because Turkish is a *wh*-in-situ language, the QUD that licenses (86B) and (87B) is syntactically derivable (see (90)) and therefore available for licensing fragments when invoked from assertions. Although having island-bound *wh*-phrases is usually no obstacle to forming questions in *wh*-in-situ languages such as Turkish, grammatical questions cannot be formed if the *wh*-phrase is an adjunct contained in an island (for reasons that are irrelevant here; see Huang 1982, Görgülü 2006, and Çakır 2016 for discussion). Consequently, (89B) is unacceptable because there is no question in the MaxQUD to license it, as the desired question is syntactically ill-formed (see (91)).<sup>24</sup>

(90) *Turkish*

- Hasan [<sub>ISLAND</sub> ne-yi gezdir-en bir çocuk]-la konuş-tu?  
 Hasan what-ACC walk-NOM one child-COM talk-PST  
 'What thing was it such that Hasan spoke with a child that walked that thing?'

(91) *Turkish*

- \* Ali [<sub>ISLAND</sub> Ayşe-yi niye davet ed-en adam]-a kız-dı?  
 Ali Ayşe-ACC why invitation make-NOM man-DAT get.angry-PST  
 'What reason was it such that Ali was angry at the man who Ayşe invited for that reason?'

The ease with which the in-situ approach (as broadly construed) captures behaviour of fragments in *wh*-in-situ languages therefore highlights its cross-linguistic flexibility. The M&D approach, by comparison, is overly restrictive, as it requires the displacement of remnants in languages which typically front neither foci nor *wh*-phrases.

Although the island-(in)sensitivity of fragments in *wh*-in-situ languages is captured naturally by the in-situ approach as **broadly construed** (see Abe 2015 for a sustained example),

<sup>24</sup> The same pattern is observed in other *wh*-in-situ languages in which island-bound *wh*-adjunct questions are ungrammatical. For example, Wang & Wu (2006) note that clausal ellipsis in Mandarin Chinese is only island-sensitive when the correlate in the antecedent is an (implicit) adjunct contained within an island:

(i) *Mandarin Chinese*

- ?\* wo tingdao [<sub>ISLAND</sub> Lisi maile dong fangzi de yaoyan], danshi wo bu zhidao shenmeshihou.  
 I heard Lisi bought a house DE rumour but I not know when  
 'I heard the rumour that Lisi bought a house, but I don't know when.' (Wang & Wu 2006: 380)

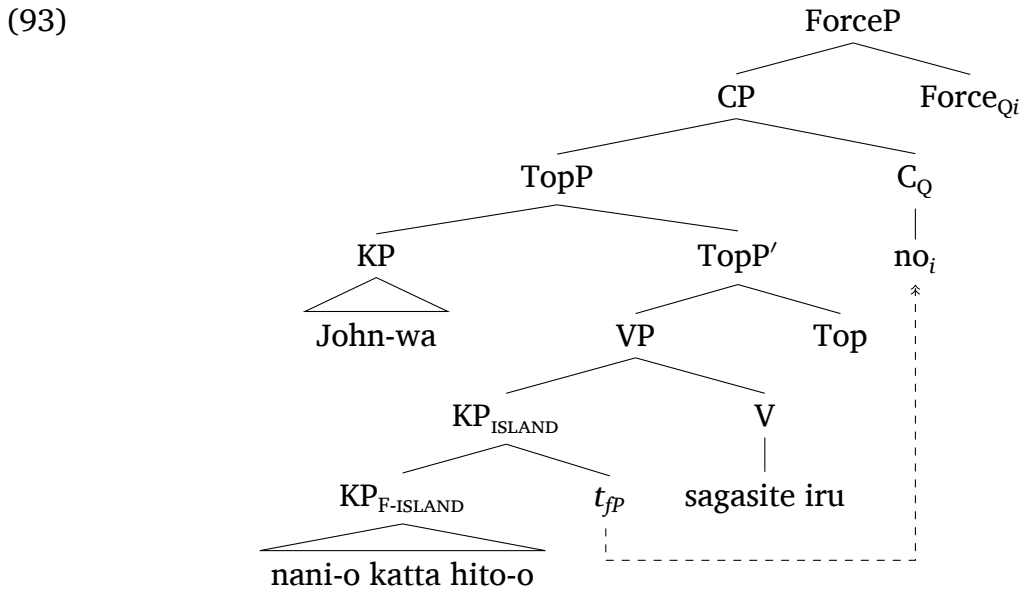
Abe (2008: 132) observes the same pattern, noting a contrast in Japanese between *wh*-adjunct fragments (e.g. *for what reason*) with island-bound correlates, which are acceptable, and *wh*-adverbial fragment (e.g. *why*), which are unacceptable.



the technical machinery behind the particular in-situ analysis advocated in this paper actually conspires to generate incorrect predictions about the distribution of fragments in *wh*-in-situ languages. In the remainder of this subsection, I describe the problem at hand (using Japanese ‘*no da*’ fragments as my construction of illustration) and then offer a solution.<sup>25</sup>

In contrast to *wh*-movement languages such as English, in which the *f*-particle selects for a *wh*-phrase (or a phrase that contains it), the *f*-particle **adjoins** to a *wh*-phrase (or a phrase that contains it) in *wh*-in-situ languages (Hagstrom 1998; Cable 2010). From this adjoined position, the *f*-particle then undergoes overt or covert long-distance head-movement to  $C_Q$ . Because the *f*-particle cannot cross an island, question formation in *wh*-in-situ languages is therefore island-sensitive. In cases where question formation appears to be island-insensitive, the *f*-particle is actually base-generated as an adjunct to the island itself, as the simplified representation for (92) in (93) illustrates.

- (92) *Japanese* (Hagstrom 1998: 40)  
 John-wa [<sub>ISLAND</sub> nani-o katta hito]-o sagasite iru no?  
 John-TOP what-ACC bought person-ACC looking-for Q  
 ‘What thing is it that John is looking for the person that bought the thing?’



Because the *f*-particle is base-generated as an adjunct to the island, (92) yields a focus-background structure in which the choice function takes the entire island as its argument:

- (94)  $\langle f, \text{John-wa } f(x \text{ katta hito-o}) \text{ sagasite iru} \rangle$  (simplified)

To satisfy the Background-matching condition and therefore license clausal ellipsis, *fP* must also be base-generated as an adjunct to a corresponding island in any candidate elliptical response to (92). Because deletion avoids the syntactic sister of *f*, this gives rise to the prediction that a fragmentary response to a question such as (92), in which the *wh*-phrase is contained in an island, must itself be island-sized (and no smaller).

Problematically, this prediction is incorrect. As the Japanese example in (95) shows, and as the Turkish examples in (86) and (87) have already shown, fragmentary responses to

<sup>25</sup> Due to space constraints, I will not enter into the debate on how Japanese embedded stripping is derived. See Merchant (2004: 712) for an overview and for references to the relevant literature.

questions in which the *wh*-phrase is contained in an island can correspond to the *wh*-phrase itself, rather than to the island that contains it.

(95) *Japanese*

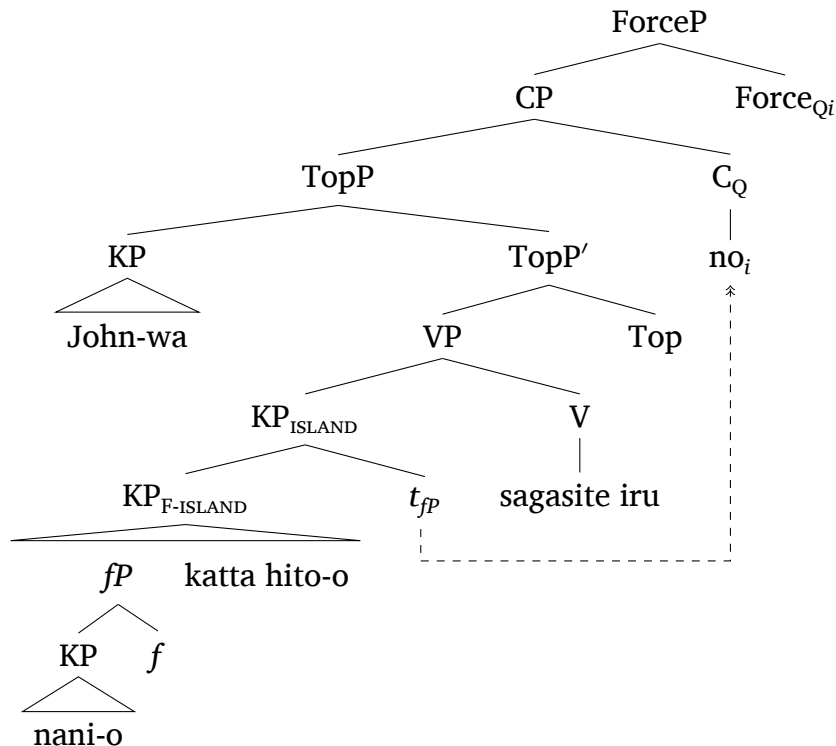
(Nishigauchi & Fujii 2006: 23, cited in Abe 2015)

- A: Hanako-wa [<sub>ISLAND</sub> kyoozyu-ga nani-o koogi-suru] tokoro-o rokuon-sita no?  
 Hanako-TOP professor-NOM what-ACC lecture scene-ACC tape-recorded Q  
 ‘What thing was it that Hanako tape-recorded a scene of the professor lecturing that thing?’
- B: Gengogaku-o desu.  
 linguistics-ACC be  
 ‘It’s linguistics.’

Although Abe (2015) has convincingly shown that fragments such as (95B) cannot be derived from island-evading anisomorphic sources (*contra* Saito 2004), one could still contend that, because the Japanese fragment in (95B) is a cleft-like structure, the clausal ellipsis that derives (95B) is governed by a different licensing constraint to the Background-matching condition.

Rather than dismiss fragments in *wh*-in-situ languages such as Japanese as somehow ontologically different from fragments in *wh*-movement languages, my current solution to the problem posed by (95B) for the current analysis (which is perhaps not the ultimate solution) is to posit an additional yet silent *f*-particle within *wh*-questions in such languages; one which does not enter into an AGREE relation with a clause-peripheral head. This *f*-particle selects for the *wh*-phrase, as the updated representation for (92) in (96) illustrates.

(96)



If a corresponding extra *f*P is inserted in the response to a question that fits the syntactic schema in (96), then matching focus-background structures are generated for the question and its response. This is demonstrated for the dialogue in (95) in (97) and (98) below (where *g* is the choice function introduced by the extra *f*-particle in the simplified focus-background structures in (98)).

(97) *Japanese*

- A: [ Hanako-wa [  $t_1$  [<sub>ISLAND</sub> kyoozyu-ga [<sub>fp</sub> [nani-o]] koogi-suru]] tokoro-o rokuon-sita no<sub>1</sub> ?  
 B: Hanako-wa [ [<sub>fp</sub>] [<sub>ISLAND</sub> kyoozyu-ga [<sub>fp</sub> [gengogaku-o]] koogi-suru]] tokoro-o rokuon-sita desu.

- (98) a. ⟨*f*, Hanako-wa *f*(kyoozyu-ga ⟨*g*, *g*(*x*)⟩ koogi-suru) tokoro-o rokuon-sita⟩ (for 95A)  
 b. ⟨*f*, Hanako-wa *f*(kyoozyu-ga ⟨*g*, *g*(*x*)⟩ koogi-suru) tokoro-o rokuon-sita⟩ (for 95B)

According to this solution, there are two *fP*s contained in the underlying clause for (95B): one that adjoins to the island and one that adjoins to the phrase that corresponds to the eliciting question's *wh*-phrase. Consequently, deletion can apply in such way that it either leaves the entire island pronounced, or only leaves pronounced the focused phrase contained within it (as in (97b)).

It is important to stress two aspects of this solution. Firstly, the fact that the additional *fP* in (96) selects for a complement means that Cable's *fP*-intervention is active, which captures the observation that Japanese obeys the Preposition-Stranding Generalisation (once the generalisation broadened to include all adpositions and case morphology on nominals) (Takita 2009).<sup>26</sup> Secondly, the analysis exemplified in (96) is only available for languages in which *wh*-phrases are focused in standard single-*wh* constituent questions (i.e. *wh*-in-situ languages such as Japanese; see Truckenbrodt 2013). It cannot be extended to *wh*-movement languages such as English or German, as  $\bar{A}$ -moved *wh*-phrases in *wh*-movement languages are inherently unfocusable in standard, single-*wh* constituent questions (ibid.). See Reich (2002: Footnote 21) for a similar analysis.

### 5.3 Summary of §5

I have shown in this section that, in addition to successfully deriving the Island-Sensitivity and Preposition-Stranding Generalisations from §2, the in-situ approach to clausal ellipsis defended

<sup>26</sup> The extent to which the Preposition-Stranding Generalisation applies to *wh*-in-situ languages is currently difficult to ascertain, as few prior studies on clausal ellipsis in *wh*-in-situ languages have successfully controlled for the availability of anisomorphic sources for ellipsis. A superficial survey of those studies in which sufficient controls are in place reveals a complicated empirical landscape. Some *wh*-in-situ languages straightforwardly fit the Preposition-Stranding Generalisation, such as Japanese and Farsi (see Toosarvandani 2008: 691), whereas some languages are straightforwardly exceptions to it (e.g. Indonesian, see Sato 2011). The status of other languages, such as Korean, is currently undecided. Korean can strand case morphology under clausal ellipsis in Merger-type non-*wh* fragments (see An 2018 and references in there) and embedded *wh*-fragments (i.e. sluices, see Kim 2015: 267). Although caseless fragments in Korean might be remnants of anisomorphic copular clausal sources, whose predicate nominal can be caseless in non-elliptical environments, the rightmost remnant of multiple fragment answers in Korean can also be caseless (see An 2018 and references in there), hence ruling out copular clauses as the only elliptical source for caseless fragments (as copular clauses only have one predicate position available). For Turkish, the empirical picture is murky: my Turkish native-speaker consultant can strand case morphology and postpositions under ellipsis in non-*wh* fragment configurations where no anisomorphic sources are available (*contra* İnce 2012), but must save both from ellipsis in sluicing contexts (in agreement with İnce 2012).

If future research supports the idea that *wh*-in-situ languages genuinely differ in their ability to strand adpositions and case morphology under clausal ellipsis, and if future research supports the idea that this variation has no independent explanation (e.g. cross-linguistic variation in prosodic grouping, cliticisation, possibilities for incorporation, etc.), then the current framework will encode this variation in the *f*-particle. If Korean (for instance) is a genuine 'stranding' language, then the lower *fP* in Korean equivalent of (96) will be understood as adjoined to the *wh*-phrase, rather than selecting for it. Because adjoined *fP*s are not subject to the *fP*-intervention condition, stranding under sluicing follows naturally.

in this paper makes correct predictions about certain types of fragments that can only be explained in the M&D framework by recourse to ellipsis repair. These include fragments that do not exhibit  $\bar{A}$ -movement properties in English, and fragments in *wh*-in-situ languages.

## 6 Conclusion

In this paper, I presented an in-situ analysis to clausal ellipsis based upon the *Q-based approach* to questions and foci consolidated in and popularised by Cable (2010). This in-situ analysis, which is a minor variant on Merchant's (2004) influential theory of clausal ellipsis, allows remnants of clausal ellipsis to remain within an ellipsis site, with deletion taking place around them.

I argued that recent advances made by Weir (2017) in the study of how the meaning of clausal ellipsis is recovered lead quite naturally to the conclusion that the meaning of a clausal ellipsis site is always recovered from a syntactically generated question, regardless of whether this question is explicitly uttered or merely implied. This conclusion was epitomised in the *QUD-syntax Correspondence conjecture*. I demonstrated that, once this conjecture is adopted, two properties displayed by fragmentary responses that are hallmarks of  $\bar{A}$ -movement (namely, their sensitivity to syntactic islands and their systematic (in)ability to appear as 'bare' DP fragments that are interpreted as complements of prepositions) are straightforwardly explained without appealing to the idea that remnants of ellipsis themselves necessarily undergo  $\bar{A}$ -movement. In other words, I demonstrated that the *Island-Sensitivity* and *Preposition-Stranding Generalisations* can be derived without recourse to syntactic movement of the remnant of ellipsis. I also demonstrated that the in-situ approach to clausal ellipsis correctly captures the (un)acceptability of immovable fragments in English and all fragments in *wh*-in-situ languages such as Turkish and Japanese without appealing to the untestable notion of *ellipsis repair*.

As mentioned in the main body of the paper, the arguments I presented do not automatically invalidate analyses of clausal ellipsis that require remnants to undergo  $\bar{A}$ -movement out of the ellipsis site. Instead, these arguments serve to emphasise the viability of in-situ approaches to clausal ellipsis, and also provide hints that in-situ analyses of ellipsis may turn out to be superior to their movement-based counterparts.

## Appendix: Syntactic accommodation of implicit *wh*-questions

If one's theory allows for the meaning of an ellipsis site to be recovered from an implicit *wh*-question, then one is obligated to specify precisely how implicit *wh*-questions are invoked from explicitly-uttered antecedent clauses. Fulfilling this obligation becomes even more pressing when implicit questions are envisaged not simply as semantico-pragmatic objects (as in Barros 2014a and Weir 2014, see also footnote 6), but as full-fledged syntactic structures, as they are in the current framework, following the QUD-Syntax Correspondence conjecture in (37) in §3. Moreover, seeing as ellipsis can be licensed in copular clausal sources which are anisomorphic to their explicit antecedents, as many of the examples from §2 have already demonstrated, and assuming that clausal ellipsis can only be licensed by an explicit or implicit *wh*-question that displays the same focus-background structure as the elliptical source (following the Background-matching condition in (32)), it follows that implicit *wh*-questions can be syntactically anisomorphic to the explicit antecedents from which they are invoked. In other words, it cannot simply be the case that syntactically derived implicit questions are structurally

isomorphic *wh*-counterparts to the explicit antecedents that invoke them (where the correlate is replaced with a *wh*-phrase and *wh*-movement occurs, see Barros' (2014a: 17) 'transformational heuristic'). Instead, the process by which syntactically derived implicit questions are invoked must be more complex. This appendix presents the first approximation of a theory of how implicit *wh*-questions are invoked.

From a broad conceptual perspective, this paper has assumed the conception of the QUD considered briefly by Carlson (1985: 100), expanded on by van Kuppevelt (1995; 1996), and recently formalised by Onea (2016), according to which implicit *wh*-questions can be invoked merely as a reaction to the current discourse move and need not be strategic, insofar as they subquestions of a more general superquestion (as in Roberts 2012). Moreover, it has assumed that multiple discourse moves can be performed in the course of single utterance; an idea exploited by Ott & Onea (2015) to explain how clausal ellipsis is licensed in appositional clauses (see also Döring 2015, Griffiths 2015a, Griffiths 2015b, and Ott 2016).

According to Carlson's and van Kuppevelt's early exposition of this view, conversation is rife with implicit questions. For van Kuppevelt (1995), even assertions uttered in succession as a monologue are interspersed with implicit questions. In (99) for instance, which is similar in form to a number of monologues presented in van Kuppevelt (1995), the speaker's second assertion ( $A_2$ ) is understood as a response to the implicit question *who is his father?*.

- (99) *Context*: An English period drama. An aristocratic yet rebellious young woman A is informing her traditionally-minded aristocratic mother about her new boyfriend, who she has been dating in secret for weeks.

$A_1$ : Mother, I've started courting a man called Gerald.

[<sub>FP</sub> Who] is his father? *implicit wh-question invoked from  $A_1$*

a.  $A_2$ : [<sub>ForceP</sub> His father's [ [<sub>FP</sub> the Duke of DEVONshire]]].

b.  $A_2$ : \* [<sub>ForceP</sub> His father's [ [<sub>FP</sub> the Duke of DEVONshire]]].

c.  $\langle f, \text{Gerald's father is } f(x) \rangle$  *structured meaning of the implicit q*

$\langle f, \text{Gerald's father is } f(x) \rangle$  *structured meaning of (99a-b)*

Assuming the implicit question in (99) is indeed invoked (as it is pragmatically prominent for both conversational-participants in the context described above), then this question clearly cannot be used to recover the meaning of clausal ellipsis in (99b), even though the focus-background structures for the implicit question and the elliptical clause match, as (99c) shows. If clausal ellipsis can only be recovered from syntactically derived questions (following the QUD-syntax Correspondence conjecture in (37)), this therefore entails that not all implicit questions can be syntactically derived implicit questions, and this in turn entails that entry into the MaxQUD is more restricted for syntactically derived implicit questions than for implicit questions that are merely semantico-pragmatic objects.

I propose that, unlike a purely semantic implicit question, a syntactically derived implicit question must be 'syntactically similar' to the explicit utterance that invokes it. Put differently, I propose that the process by which syntactically derived questions are *accommodated* (if one adopts the listener's perspective) makes reference to the syntax of the explicit utterance from which they are accommodated, following Thoms (2015). This proposal has the immediate benefit of retaining the advantages of QUD-based approaches to ellipsis recoverability (which are summarised in Weir 2014), while simultaneously aligning with psycholinguistic research that concludes that suitable utterances used for licensing ellipsis are not reached via a serial



search through irrelevant representations (Martin & McElree 2011), but are instead generated by the listener “using the [syntactic] materials at hand” (Arregui et al. 2006).

Unlike Fox’s (1999) syntactically-specified accommodation process, my accommodation process, which is presented in (100) below, does not specify that only the implicit question displaying the greatest degree of structural similarity to the explicit antecedent can be accommodated (in this regard, I follow Thoms 2013; 2015). Instead, I choose to formulate my constraints on accommodation based upon empirical observations from the previous literature about in which anisomorphic sources clausal ellipsis can be licensed and in which it cannot. In the remainder of this appendix, I present these observations and then introduce constraints on syntactic accommodation based on them.

(100) **Syntactic accommodation algorithm**

Let *W* be a *wh*-phrase or a pied-piped phrase containing a *wh*-phrase.<sup>27</sup>

Step 1: **To create a Merger-type elliptical clause:** Select a syntactic constituent *XP* from the explicit antecedent utterance and replace it with a *W* of the same syntactic category as *XP*.  $\llbracket W \rrbracket$  must equal  $\llbracket XP \rrbracket^f$ .<sup>28</sup>

**To create a sprouting-type elliptical clause:** Do nothing additional with *W* at this step.

Step 2: Generate a syntactically well-formed *wh*-question containing *W*.

Examples (11a) and (12) from §2, which are repeated below in (101), have already demonstrated that copular clauses make for suitable anisomorphic sources for clausal ellipsis. These examples therefore demonstrate that an elided copular verb may be present in the source when no corresponding copular verb is present in the explicit antecedent. They also show that an elided pronoun may be present in the source when no corresponding pronoun is present in the explicit antecedent. Furthermore, they also show that elided pronouns in the source must co-refer with a phrase (or phrases, in the case of ‘split antecedent’ phenomena, see Messick et al. 2016 and references therein) in the explicit antecedent (e.g. *he* can only be interpreted as co-referent with *a tall man* in (101a)) (Fiengo & May 1994).<sup>29</sup> Lastly, these examples show that co-referent phrases can occupy different argument positions in the antecedent and the source

<sup>27</sup> A more accurate version of this clause is: Let *W* be an *fP* that reflexively-dominates a *wh*-phrase (in the case of *wh*-movement languages, see §3.2) or a phrase that reflexively-dominates *wh*-phrase to which *fP* is adjoined (in the case of *wh*-in-situ languages, see §5.2).

<sup>28</sup> The final clause of this step, which states that  $\llbracket W \rrbracket$  must equal  $\llbracket XP \rrbracket^f$ , captures the observation that Merger-type fragments *inherit the content* of their correlates (see Chung et al. 1995, Romero 1998, Barros 2013, 2014a, Weir 2014, Jacobson 2016, and Messick et al. 2016 for various perspectives on this idea).

<sup>29</sup> Provided they co-refer with a phrase in the antecedent, elided pronouns can assume a variety of E-type functions (see i and ii), including picking out unique individuals with a salient property (in (iiiB), for instance, *they* =  $\iota x[\text{person-management-hired-last-Tuesday}(x)]$ ).

(i) A: At least three flags will be flown.

B: Okay, but  $[_{\text{ForceP}} [_{\text{CP}} [_{\text{fP}} \text{WHEN}]_1 [_{\text{will}} \{\text{they} / \# \text{ at least three flags}\} \text{ be flown } t_1]]$ ?  
(modified from Merchant 2001: 212)

(ii) What did John steal and  $[_{\text{ForceP}} [_{\text{CP}} [_{\text{fP}} \text{WHEN}]_1 [_{\text{did he steal it } t_1}]]$ ? (see Merchant 2001: §5.2)

(iii) A: Management hired someone who speaks a Balkan language last Tuesday.

B: Really?  $[_{\text{ForceP}} [_{\text{CP}} [_{\text{fP}} \text{WHICH Balkan language}]_1 [_{\text{do they speak } t_1}]]$ ?  
(modified from Merchant 2001: 210)

(*contra* Rudin 2018). For instance, *a tall man* in (101a) occupies the object position in the explicit antecedent, whereas the elided pronoun *he* occupies the subject position in the ellipsis site.

- (101) a. Sue married a tall man, but I don't know [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> [ HOW tall]]<sub>1</sub> [ he is *t*<sub>1</sub>]]].  
 b. Either something's on fire or Joe's baking a cake, but I don't know [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> WHICH]<sub>1</sub> [ it is *t*<sub>1</sub>]]].

Anisomorphic sources cannot contain elided morphosyntactic roots that are not also present in the explicit antecedent (Chung 2006; 2013). This restriction has already been demonstrated by (99b) from this subsection, which is unacceptable because it contains a novel token of the morphosyntactic root  $\sqrt{\text{FATHER}}$ .

The high degree of divergence in syntactic form observed between the elliptical clauses and their antecedents in (101) is not tolerated if the elliptical clause contains an elided lexical verb *V* which is also present in the antecedent. In such cases, any elided argument or event-modifying adjunct of *V* which is also contained in the elliptical clause must occupy the same argument-structure position in the elliptical clause that it occupies in the antecedent (Merchant 2005; Chung 2013; Rudin 2018). Similarly, no interpretable morphosyntactic feature associated with *V*'s 'eventive domain' (see Rudin 2018 for a precise characterisation) can be present in the ellipsis site if it is not also present in the explicit antecedent (Merchant 2013).<sup>30</sup> Evidence for these restrictions comes from the observation that neither argument-structure alternations (102) nor voice-mismatches (see Merchant 2013 for the relevant data) are permitted under clausal ellipsis.

- (102) A: They [<sub>vp</sub> embroidered something with peace signs].  
 B: \* Really? [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> [ On WHAT]]<sub>1</sub> [ did they [<sub>vp</sub> embroider peace signs *t*<sub>1</sub>]]]?  
 (modified from Merchant 2013: 100)

Aside from these restrictions on the eventive domain, all other deviations from syntactic isomorphism are tolerated. The examples in (103) below demonstrate that mismatches in tense, aspect, modality, and polarity between the elliptical clause and its explicit antecedent are all permitted.

- (103) a. The footballer went public with his desire **to be** transferred. He doesn't care [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> WHERE]<sub>1</sub> [ he is transferred *t*<sub>1</sub>]]]. (modified from Rudin 2018)  
 b. Sally said that customers **should** be given lower rates, but Susie said it's hard to see [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> HOW]<sub>1</sub> [ customers {**could** / **can** / **may**} be given lower rates *t*<sub>1</sub>]]]. (modified from Rudin 2018)  
 c. I remember **meeting** him, but I don't remember [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> WHEN]<sub>1</sub> [ I met him *t*<sub>1</sub>]]]. (Merchant 2001: 23)  
 d. Either hand in your final paper by midnight or explain [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> WHY]<sub>1</sub> [ you **didn't** hand in your final paper by midnight *t*<sub>1</sub>]]]. (Kroll & Rudin 2017)

<sup>30</sup> The eventive domains of an elliptical clause and its antecedent may display mismatching uninterpretable features, however. For example, an elliptical clause and its antecedent may mismatch in verbal agreement:

- (i) Bill mentioned his [<sub>np</sub> *n* [<sub>vp</sub> PRO **plan** to do away with someone]], but he didn't mention [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> WHO]<sub>1</sub> [he **plans** to do away with *t*<sub>1</sub>]]] (modified from Ross 1969: 275)

For Chung (2006; 2013) and Merchant (2013), who both subscribe to the orthodox view that licensing clausal ellipsis principally involves establishing a certain identity relation between an elliptical clause and its explicit antecedent, the data presented in (101) to (103) motivate a hybrid theory of ellipsis licensing. This theory holds that the identity condition on ellipsis is predominantly semantic in nature (specified in terms of Merchant's 2001 E-GIVENNESS condition) yet has a recalcitrant syntactic aspect to it. Although recent research by these authors (and others) has drastically narrowed the search-space for an accurate characterisation of the syntactic aspect of this identity, no definite characterisation has yet been accepted by the research community, and therefore no deeper explanation for this characterisation has been advanced.

In the current framework, this 'syntactic aspect' of the identity condition is reinterpreted as restrictions on the syntactically-specified process by which implicit questions are accommodated from the explicit antecedent. To generate all and only the acceptable anisomorphic sources presented in this subsection, the following constraints on syntactically accommodating implicit questions are required:

(104) **Constraints on syntactic accommodation**

- a. Aside from  $\overline{W}$  (see (100)), an implicit *wh*-question cannot contain any morphosyntactic  $\sqrt{\text{ROOT}}$ s that are not also present in the explicit antecedent.
- b. Any pronoun contained in the implicit *wh*-question must co-refer with a phrase in the explicit antecedent.
- c. If a lexical verb *V* is syntactically accommodated from the explicit antecedent, so are the interpretable morphosyntactic features of the eventive domain associated with *V* in the antecedent.
- d. If a lexical verb *V* is syntactically accommodated from the explicit antecedent, and if an argument or event-modifying adjunct *XP* associated with *V* in the antecedent is also syntactically accommodated, then the argument-structure relation between *V* and *XP* must also be accommodated.

As one might expect given the discussion immediately above (104), I cannot currently offer an explanation for why these constraints on accommodation – and not others – are operative in the natural language system. Any advancements made in accurately characterising and understanding the syntactic aspect of the identity condition can and should be carried over to the current approach, where they will be reinterpreted as advancements in our characterisation and understanding of the constraints on syntactically-specified accommodation.<sup>31</sup>

I end this appendix by addressing a potential concern about the division of labour in licensing ellipsis. Recall that (35), which is repeated in a modified form in (105), was one of the crucial examples motivating this paper's appeal to a semantic approach to ellipsis licensing

<sup>31</sup> As currently formulated, the accommodation procedure presented in this subsection incorrectly predicts that transitivity mismatches (as exemplified in (i) below) are permitted under clausal ellipsis. Although such cases are traditionally ruled out by appealing to the idea that ellipsis sites and their antecedents must mutually entail each other (Merchant 2001), which does not obtain in (i), I suspect that (i) is not permitted because it fails to satisfy a more general discursive constraint. Evidence that (i)'s unacceptability is not tied to ellipsis comes from the observation that its non-elliptical deaccenting counterpart in (ii) is also infelicitous.

(i) # John ran a marathon, but I don't know [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> WHEN]<sub>1</sub> [ he ran *t*<sub>1</sub> ]]].

(ii) # John ran a marathon, but I don't know [<sub>ForceP</sub> [<sub>CP</sub> [<sub>fP</sub> WHEN]<sub>1</sub> [ *he* ran *t*<sub>1</sub> ]]].

based on structured meanings. One might now wonder whether, when coupled with the simple QUD-licensing condition from (25), the theory of syntactic accommodation outlined in this subsection can independently account for the contrast between (105a) and (105b), therefore rendering any appeal to structured meanings unnecessary. In other words, one may be concerned that the theory of accommodation outlined in this subsection undermines the Q-based approach to clausal ellipsis developed in §3–5.

- (105) A: I heard that the machine sent a certain number of signals.
- a. B: Yes,  $[_{\text{ForceP}} \text{the machine sent } [_{\text{fP}} \text{ TWO signals}]]$  .
  - b. B: \* Yes,  $[_{\text{ForceP}} \text{the machine sent a signal } [_{\text{fP}} \text{ TWICE}]]$  .
  - c. How many signals did the machine send? *implicit q invoked from A's utterance*
  - d. How often did the machine send a signal? *implicit q **not** invoked from A's utterance*

I believe that this concern is misplaced. Although it is correct that, according to the accommodation procedure outlined in (100) and (104), the implicit question in (105d) cannot be accommodated from the explicit antecedent in (105A) for the intended Merger-type reading of the fragments in (105a-b), clausal ellipsis is nonetheless predicted to be licensed in both (105a) and (105b) from the accommodated question in (105c) if one adopts the simple QUD-licensing condition from (25). This is because (105a), (105b), and (105c) are all cointensional. In other words, the problem of cointensionality that motivated the use of Structured Meanings in §3 is not resolved by syntactically constraining the accommodation of implicit antecedents. This means that, like Chung (2006; 2013) and Merchant (2013), I am advocating a hybrid approach to licensing clausal ellipsis, which employs both a semantic licensing condition – Weir's Background-Matching condition – and syntactic constraints (namely, constraints on how implicit questions are syntactically accommodated).<sup>32</sup>

<sup>32</sup> If implicit questions are syntactically-accommodated explicit antecedents, then when does this accommodation process occur? Adopting the perspective of the listener, I propose that accommodation is triggered immediately after the remnant of clausal ellipsis is encountered.

There are two main reasons to adopt this position. Firstly, it dovetails with processing studies which show that elliptical configurations are projected by listeners immediately after encountering the remnant (Yoshida et al. 2013) – a process which, if the current approach is correct, will often require the accommodation of an implicit question. Secondly, the idea that accommodation is triggered immediately after encountering the remnant of ellipsis is required in the current framework to ensure that ellipsis can be licensed in infinitival embedded interrogative clauses. If accommodation occurred immediately after the first coordinand in (i), then only finite implicit questions such as *How would he fix the car?* could be accommodated and added to the MaxQUD, as root *to*-infinitival questions are syntactically ill-formed in English and are therefore denied entry into the MaxQUD (see §4 for discussion). In this situation, clausal ellipsis would be precluded in an infinitival embedded interrogative clause, as there would be no well-formed question in the MaxQUD to license it. The fact that ellipsis is permitted in the infinitival clause in (i) shows that this situation cannot obtain. Instead, accommodation must occur after the remnant of ellipsis is encountered, at which point an implicit question such as (ii) can be accommodated by 'recycling' syntactic material from both the first coordinand and the matrix clause of the second coordinand. Ellipsis is therefore licensed in (i) because the second coordinand in (i) and the question in (ii) have matching focus-backgrounds structures (see (iii) for the simplified representations).

- (i) He WOULD fix the car, but he doesn't know  $[_{\text{ForceP}} [_{\text{CP}} [_{\text{fP}} \text{ HOW}]_1 \text{ to fix it } t_1]]$ .
- (ii) Doesn't he know HOW to fix it? *implicit question invoked from (i)*
- (iii)  $\langle f, \text{he doesn't know } f(x) \text{ to fix the car} \rangle$  *structured meaning for second coordinand in (i)*  
 $\langle f_{\{p, \neg p\}}, \langle g, \text{he doesn't know } g(x) \text{ to fix the car} \rangle \rangle$  *structured meaning for q in (ii)*

## Abbreviations

{1, 2, 3} = person, ACC = accusative, COM = comitative, COP = copula, DAT = dative, EVD = evidential, MP = modal particle, NOM = nominative, PST = past, Q = question marker, S = singular, TOP = topic.

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