

Ellipsis licensing and redundancy reduction: A focus-based approach

Anonymous 1

XYZ

XYZ

XYZ

Anonymous 2

XYZ

XYZ

XYZ

Abstract The focus of this paper is the characterization of the identity condition on sluicing. While the formulation of the identity condition remains an open issue, recent work suggests that sluices are anaphoric to an implicit *question* or *issue* that the antecedent makes salient in the discourse (“Q-equivalence approaches,” Ginzburg & Sag 2000; AnderBois 2011; 2014; 2016; Barros 2014; Weir 2014; Kotek & Barros to appear). We highlight several challenges to Q-equivalence, and argue instead for a return to a focus-based approach (Rooth 1992a; Romero 1998; Fox 2000; Merchant 2001). We develop a proposal similar to, but improving on Merchant 2001, where sluicing is possible provided that the antecedent and sluice have the same focus-theoretic propositional content. Under such an approach, antecedents are importantly not responsible for raising any particular issue/question themselves. We furthermore provide a generalized account going beyond sluicing to explain cases of VP-ellipsis. Finally, we entertain the idea that the theory of ellipsis licensing should be integrated into the general theory of redundancy reduction — in particular, that the semantic condition on identity in ellipsis is the same as the condition on deaccenting.

Keywords: sluicing, identity condition, semantics, focus, question under discussion, inquisitiveness, inquisitive semantics, anaphora to issues, ellipsis

1 Introduction

Sluicing is clausal ellipsis in a *wh*-question, leaving only the *wh*-phrase overt (Ross 1969; Chung et al. 1995; Merchant 2001, among others), as in (1a). For concreteness, we adopt the standard analysis in (1b), where sluicing involves *wh*-movement followed by PF-deletion/non-pronunciation of TP (Merchant 2001 and many others).¹ Following Merchant, we refer to *wh*-phrases left overt in sluicing as *remnants*. Remnants typically correspond to some indefinite XP in the antecedent, the

¹ Although what we say below will be largely independent of this assumption.

remnant's *correlate*. (Throughout, ~~strikethrough~~ represents unpronounced material. Here, the correlate is “*someone*” and the remnant is “*who*.”)

(1) **A simple example of sluicing in English:**

- a. Sally called someone, but I don't know who.
- b. Sally called someone, but I don't know who [_{TP} Sally-called-*t*].

In this paper we concentrate on the properties of the *identity* licensing condition on ellipsis. Ellipsis, following Rooth (1992a), is a form of *redundancy reduction*, one of several mechanisms provided by natural language to mark linguistic material as redundant/recoverable (alongside pronominalization and prosodic reduction, i.e., *deaccenting*). Intuitively, the missing content in an ellipsis construction must be, in some sense, identical to some salient *antecedent* in the immediately preceding discourse (Hankamer & Sag 1976). In (1), the string “*Sally called*” in “*Sally called someone*” makes this same string redundant in the sluiced continuation, licensing its omission.

Despite the appeal of this intuitive description, there is currently no consensus on the precise nature of the identity condition on ellipsis (Chung 2013; Barros 2014; Weir 2014, inter alia). Some authors propose to formulate this condition in terms of semantic equivalence, where the literal interpretations of the antecedent and the elided clause are synonymous in some sense (Hardt 1993; Ginzburg & Sag 2000; Merchant 2001; Barros 2014, a.o.). Others state this condition in terms of syntactic equivalence, where the elided structure must match that of its antecedent (Ross 1969; Chung et al. 1995; Chung 2006; Merchant 2013, a.o.). Others yet propose a hybrid condition, involving some degree of syntactic identity alongside a semantic identity condition (e.g. Rooth 1992a; Romero 1998, Chung 2006; 2013, Chung et al. 2010, AnderBois 2011; 2014; 2016; Merchant 2013; Weir 2014).

A growing consensus is that a hybrid condition is needed, such that a limited degree of syntactic identity is required,² alongside some semantic condition (Merchant 2005; Chung 2006; AnderBois 2011; Chung 2013; Weir 2014, a.m.o.).³ Starting with AnderBois (2011), the literature has increasingly adopted the view that the correct semantic condition is one where sluicing is anaphoric to some abstract *question* or *issue* that the antecedent makes salient (Ginzburg & Sag 2000; AnderBois 2011; 2014; 2016; Barros 2014; Weir 2014; Kotek & Barros to appear). The basic idea behind the AnderBoisian (henceforth “Question-equivalence” or “Q-equivalence”) approach is that sentences with indefinites or disjunctions introduce implicit questions into the discourse, which may then serve as semantic

² In other words, an exact match between the structure of the antecedent and the structure of the elided material is *not* required.

³ See Lipták (2015) for a survey of the literature in this domain.

antecedents for a sluiced sentence. In (1), *Sally called someone* implicitly raises to salience the question *Who did Sally call?*. This implicit question is similar enough to the sluiced question *Who Sally called?*, licensing the ellipsis in (1).

In this paper, we focus on the semantic component of the identity licensing condition on ellipsis. Our main claim is that a proposal along the lines of Merchant’s (2001) focus-theoretic approach to ellipsis licensing is on the right track. We argue against the increasingly popular Q-equivalence approaches on empirical as well as conceptual grounds. We furthermore entertain the idea that the theory of ellipsis licensing should be assimilated into the theory of redundancy reduction more broadly, focusing on a comparison with deaccenting.

In the remainder of the paper, we first spell out our focus-based proposal in §2, which is similar in spirit and coverage to Merchant’s (2001) influential e-GIVENness proposal. In §3 we argue that there is no empirical motivation for Q-equivalence approaches, and additionally highlight several conceptual challenges for such approaches. We show that our focus-based approach is not susceptible to these challenges. In §4, we discuss Merchant’s (2001) account and compare it to our own. We highlight a challenge to Merchant’s proposal which our proposal can better manage. In §5, we generalize our account to cases of VP-ellipsis, where we illustrate along the way another advantage of our account over Merchant’s. We conclude by suggesting that the theory of ellipsis licensing should be assimilated into the theory of redundancy reduction more broadly — specifically, that the semantic condition on identity in ellipsis is the same as the semantic condition on identity in deaccenting — and show how to extend our proposal along these lines.

2 A focus-based proposal

We begin by presenting the idea that we will defend in this paper. This is a focus-theoretic based account of identity for ellipsis licensing, inspired by similar previous proposals by Schwarzschild (1999) and Merchant (2001) et seq. Our main goal in this paper will be to argue for a focus-based approach and against Q-equivalence ones. We spell out our variant of the focus-based approach here for concreteness.

2.1 Background: Modeling questions and propositions

Our focus-based account is based on the *Alternative Semantics* account of the compositional semantics of focus (Rooth 1985; 1992b, cf Hamblin 1973). Under this approach, items such as *wh*-words and F(ocus)-marked elements introduce alternatives into the derivation. *Focus-semantic values* $\llbracket \cdot \rrbracket^f$ are computed for each node in

the syntactic derivation alongside their *ordinary value* $\llbracket \cdot \rrbracket^o$. Focus-sensitive operators such as *only* can then use alternatives to different effects:

(2) **Alternatives can be used by focus-sensitive operators:**

- a. David *only* wears a bow-tie when [teaching]_F.
 \approx David doesn't wear a bow-tie when doing anything else.
- b. David *only* wears [a bow-tie]_F when teaching.
 \approx David doesn't wear anything else when teaching.

(Beaver & Clark 2008)

Recall that our goal in this paper is to provide an account of the identity condition on sluicing in examples such as (1), repeated from above, where a declarative antecedent and a question continuation must somehow be semantically identical.

(3) Sally called someone, but I don't know *who* [_{TP} Sally-called_t]. (= 1)

We adopt the view that questions denote sets of propositions that are possible answers to the question (Hamblin 1973; Karttunen 1977). In (4a), the *wh*-word *who* acts as a source of alternatives, here corresponding to relevant individuals in the context (see Hamblin 1973; Ramchand 1997; Kratzer & Shimoyama 2002; Beck 2006; Cable 2010; Kotek 2014), as shown in (4b). The question denotation is given in set form and in function form in (4c–d).

(4) **The denotation of a *wh*-question:**

- a. *Who* did Sally call?
- b. $\llbracket \textit{Who} \rrbracket^f = \{x_e : x \in \textit{human}\}$
- c. $\{ \textit{Sally called Abby}, \textit{Sally called Betty}, \textit{Sally called Cathy}, \dots \}$
- d. $\lambda p . \exists x (p = \lambda w . \textit{Sally called } x \textit{ in } w)$

We furthermore adopt the standard assumption that propositions denote sets of worlds that satisfy certain truth conditions:

(5) **The denotation of a proposition:**

- $\llbracket \textit{Sally ran} \rrbracket^o = \lambda w . \textit{Sally ran in } w$
- \rightsquigarrow the collection of all of the worlds in which Sally ran.

Finally, we introduce a union operation over propositions, \cup . This operation will be useful when we present our proposal in (7) below.

(6) **The denotation of the \cup operator:**

- $\llbracket \textit{Sally ran} \rrbracket^o$ or $\llbracket \textit{Mary ran} \rrbracket^o =$
- $[\lambda w . \textit{Sally ran in } w] \cup [\lambda w . \textit{Mary ran in } w]$
- \rightsquigarrow the collection of all of the worlds in which either Sally ran or Mary ran (or both).

2.2 Proposal

We propose that sluicing is licensed provided the antecedent and sluice have the same focus-theoretic propositional content:

(7) **Proposal:**

Sluicing may apply in CP_E provided CP_E has a salient antecedent, CP_A , and the set of worlds used to construct the alternatives in $\llbracket CP_E \rrbracket^f$
 \leftrightarrow the set of worlds used to construct the alternatives in $\llbracket CP_A \rrbracket^f$.

For most purposes, this amounts to the following:⁴

(8) **The proposal, in brief:**

$\cup \llbracket CP_A \rrbracket^f \leftrightarrow \cup \llbracket CP_E \rrbracket^f$

We illustrate how this proposal handles sluicing using our simple example with an indefinite correlate (9). First, note that condition (a) of our proposal is met: CP_E has a salient antecedent CP_A , as illustrated in (10). Condition (b) of our proposal is also met, as we can demonstrate that the focus-semantic values of the antecedent clause and of the sluice are equivalent: $\cup \llbracket CP_A \rrbracket^f \leftrightarrow \cup \llbracket CP_E \rrbracket^f$, (11).

(9) $[CP_A \text{ Sally called someone }]$, $BIDK^5 [CP_E \text{ who Sally-called }]$. (= 1)

(10) **Condition (a) of (7) is met in (9):**

- a. Sluiced clause CP_E : $\text{who}_i \text{ Sally-called } t_i$
- b. Antecedent clause CP_A : $\text{Sally called someone}$

(11) **Condition (b) of (7) is also met in (9):**

- a. $\llbracket [CP_E \text{ Who Sally-called}] \rrbracket^f = \lambda p . \exists x (p = \lambda w . \text{Sally called } x \text{ in } w)$
- b. $\cup \llbracket [CP_E \text{ Who Sally-called}] \rrbracket^f = \lambda w . \exists x (\text{Sally called } x \text{ in } w)$
- c. $\llbracket [CP_A \text{ Sally called someone}] \rrbracket^f = \{ \lambda w . \exists x (\text{Sally called } x \text{ in } w) \}^6$
- d. $\cup \llbracket [CP_A \text{ Sally called someone}] \rrbracket^f = \lambda w . \exists x (\text{Sally called } x \text{ in } w)$
- e. (11b) \leftrightarrow (11d)

Note that in this simple case, sluicing would also be licensed by simply making reference to the ordinary semantic value of the antecedent, as opposed to its focus value. As will become evident in §3.3.6, we will need to make reference to the

⁴ Things are more complex in two cases: contrast sluicing (see e.g. Merchant 2001) and multiple sluicing (e.g. Lasnik 2014; Kotek & Barros to appear). We discuss these issues further below.

⁵ BIDK = But I don't know...

⁶ Following Rooth 1985; 1992b, the focus-semantic denotation of non-focused material is a singleton set containing its ordinary value.

focus semantic value of focused material in order to account for contrastive sluices, and therefore we generalize here, as well.

Consider next the phenomenon of *sprouting*, a sub-case of sluicing, in which the remnant lacks an explicit linguistic correlate (Chung et al. 1995, a.o.). Such cases will become important in our argumentation against Q-equivalence approaches below. As example (12) shows, we find cases of both argument and adjunct sprouting. In particular, example (12b) demonstrates sprouting’s flexibility:

(12) **Argument and adjunct sprouting:**

- a. Sally ate, but I don’t know what.
- b. Sally left, but I don’t know $\left\{ \begin{array}{l} \text{when, with whom, in which car,} \\ \text{why, how, where to, ...} \end{array} \right\}$.

Our proposal can easily capture examples of sprouting. Consider first examples of argument sprouting, as in (12a). Example (13) illustrates how such cases are captured by our analysis:⁷

(13) **Accounting for argument sprouting:**

$[\text{CP}_A \text{ Sally ate }]$, $\text{BIDK } [\text{CP}_E \text{ what Sally ate }]$.

- a. $\llbracket \text{what Sally ate} \rrbracket^f = \lambda p . \exists x (p = \lambda w . \text{Sally ate } x \text{ in } w)$
- b. $\cup \llbracket \text{what Sally ate} \rrbracket^f = \lambda w . \exists x (\text{Sally ate } x \text{ in } w)$
- c. $\cup \llbracket \text{Sally ate} \rrbracket^f = \lambda w . \text{Sally ate in } w$
- d. (13b) \leftrightarrow (13c)

Importantly here, notice that if Sally ate in w , then she necessarily ate a certain thing x in w . As a consequence, the set of worlds described by the sluice in (13b) and the set of worlds described by the antecedent (13c) must be identical:

$$(14) \quad \llbracket \text{Sally ate} \rrbracket = \{ w : \text{Sally ate in } w \} = \cup \{ \lambda w . \text{Sally ate } x \text{ in } w \mid x \in D_e \}$$

Consider next examples of adjunct sprouting, as in (12b). Example (15) illustrates how our proposal works for the adjunct *when*.

(15) **Accounting for adjunct sprouting:**

$[\text{CP}_A \text{ Sally left }]$, $\text{BIDK } [\text{CP}_E \text{ when Sally left }]$.

- a. $\llbracket \text{When Sally left} \rrbracket^f = \lambda p . \exists t (p = \lambda w . \text{Sally left at time } t \text{ in } w)$
- b. $\cup \llbracket \text{When Sally left} \rrbracket^f = \lambda w . \exists t (\text{Sally left at time } t \text{ in } w)$
- c. $\cup \llbracket \text{Sally left} \rrbracket^f = \lambda w . \text{Sally left in } w$

⁷ Starting here, we do not explicitly show that condition (a) of our proposal in (7) is satisfied. This can be easily verified to hold in all of the examples under consideration in this paper.

d. (15b) \leftrightarrow (15c)

As in the case of argument sluicing in (13), it is important here that if Sally left in w , then she necessarily left at a certain time t in w . As a consequence, the set of worlds described by the sluice in (15b) and the set of worlds described by the antecedent (15c) must be identical:

(16) **Leaving events always involve a time of leaving:**

$$\llbracket \text{Sally left} \rrbracket = \{ w : \text{Sally left in } w \} = \\ \cup \{ \lambda w . \text{Sally left at time } t \text{ in } w \mid t \in D_s \}$$

Matters are more complex in other cases of adjunct sprouting, such as ... *with whom* or ... *in which car* in (12b). As a general rule, not every event of Sally leaving must involve a companion or a car:

(17) **Leaving events don't always involves a companion:**

- a. Sally left, but I don't know who Sally-left with.
- b. $\{ w : \text{Sally left in } w \} \neq \cup \{ \lambda w . \text{Sally left with } x \text{ in } w \mid x \in D_e \}$

Here, we appeal to a process of accommodation, much like the one appealed to by other accounts of sprouting. For the moment, we adopt the (perhaps too powerful) definition from Lewis 1979.

(18) **Accommodation (Lewis 1979: 340):**

If at time t something is said that requires presupposition P to be acceptable, and if P is not presupposed just before t , then, *ceteris paribus* and within certain limits, presupposition P comes into existence at t .

This allows the antecedent to entail the sluiced question's existential focus closure/existential presupposition.⁸ In (17), the sluice presupposes that all relevant "Sally-leaving" worlds are "Sally-leaving-with-someone" worlds. We propose to invoke an operation which we call **pruning**, which removes worlds from the antecedent's denotation that are inconsistent with the sluice's presupposition, following accommodation. For (17b), worlds where Sally did not leave with anyone are pruned from the antecedent's denotation, yielding equivalence with the denotation of the sluice, and correctly predicting sprouting to be licensed.

To summarize our proposal, in this section we sketched a focus-based account, where sluicing is possible provided that the antecedent and sluice have the same focus-theoretic propositional content. In section 4 we will compare this proposal

⁸ See Rooth 1992a; Fox 1995; 2000 for discussion of accommodation in deaccenting and ellipsis licensing.

with Merchant’s (2001) influential e-GIVENness account, which is also focus-theoretic. We will argue that in many cases, the two accounts achieve similar results, but that our account allows for wider overall coverage of data.

Before doing so, in section 3 we show in detail that Q-equivalence approaches to identity in ellipsis licensing face insurmountable obstacles. In the process of making this case, we will introduce more complex cases of sluicing and sprouting. We will show how our proposal captures these cases below.

3 Q-Equivalence approaches are unmotivated

In this section, we present the popular Q-equivalence approaches to ellipsis licensing. These approaches reference “Questions under Discussion” (QuDs, following Roberts 1996/2012) or *issues* (in the Inquisitive Semantics sense) in the calculation of identity for ellipsis licensing. We highlight empirical and conceptual problems for these approaches to ellipsis licensing.

3.1 The basic idea

Q-equivalence approaches take as their starting point the intuition that antecedents with expressions like indefinites and disjunctions implicitly raise questions as to which alternative holds. For instance, in (19), an assertion like *Sally ate something* intuitively raises the question *What did Sally eat?*. Likewise, *Sally ate either a hamburger or a hotdog* raises the question *Which of the two did Sally eat?*. Relevantly, assertions with indefinites and disjunctions make for natural sluicing antecedents, with the indefinite or disjunction serving as the remnant’s correlate, (20):⁹

(19) **Indefinites and disjunctions intuitively raise questions:**

- a. Sally ate something.
 \rightsquigarrow *What did Sally eat?*
- b. Sally ate either a hamburger or a hotdog.
 \rightsquigarrow *which of the two did Sally eat?*

(20) **Indefinites and disjunctions serve as natural correlates:**

- a. Sally ate something, BIDK what Sally ate t .
- b. Sally ate either a hamburger or a hotdog, BIDK which one Sally ate t .

Sluicing is possible when the question denoted by the sluice is equivalent to the question raised by the antecedent (Ginzburg & Sag 2000; AnderBois 2011; Barros

⁹ We will not comment in this paper on the choice of *wh*-word in the remnant. See Dayal & Schwarzschild 2010 and Barros 2013 for a discussion of “Antecedent-Correlate Harmony.”

2014; Weir 2014; Kotek & Barros to appear). The goal, then, is to determine precisely what question is raised by the antecedent.

We find two types of ways to approach this issue. For AnderBois 2011 et seq, the question raised by the antecedent is its Inquisitive-Semantic inquisitive denotation (called an *issue*, Groenendijk & Roelofsen 2009). This is the most explicit implementation of Q-equivalence, as it provides an explicit semantics in the Inquisitive Semantics framework, where antecedent assertions have compositionally derived question-like meanings.

Alternatively, and more commonly, the question raised by the antecedent might be the *Question under Discussion* (QuD) relevant in the context, in the sense of Roberts 1996/2012 (cf Büring 2003; Barros 2012; 2014). Following Roberts 2012, we take QuDs to be semantico-pragmatic objects—salient question meanings in a discourse with interrogative force. Their role in discourse is to shape the flow of information exchange, as interlocutors engage in the cooperative task of addressing the QuD. QuDs may be made salient implicitly, or explicitly (e.g., by asking a direct question). However, implementations of QuD-based accounts are largely “proof of concept,” often taking a particular QuD for granted, but failing to address how the QuD actually comes about. An exception is Barros (2014), which provides an explicit algorithm for calculating the current QuD raised by an antecedent in an ellipsis construction:¹⁰

(21) **A QuD-calculation algorithm (Barros 2014):**

- a. Replace the indefinite/disjunction with the corresponding *wh*-phrase.
- b. Front the *wh*-phrase.
- c. The result is the QuD raised by the antecedent.

This algorithm can apply in simple cases to derive semantic identity and correctly predict licit cases of sluicing:

¹⁰ Barros’s (2014) algorithm builds on Büring’s (2003) algorithm for computing a “family of questions” QuD based on contrastive topics:

- (i) a. Step 1: Replace the focus with a *wh*-word and front the latter; if focus marks the finite verb or negation, front the finite verb instead.
- b. Step 2: Form a set of questions from the result of step 1 by replacing the contrastive topic with some alternative to it.
- (ii) $\llbracket \text{Clara ate the BEANS} \rrbracket^{ct} = \{ \text{what did } x \text{ eat?} \mid x \in D_e \}$

(22) **Applying Barros’s (2014) algorithm to a simple example of sluicing:**

- [_{CP_A} Sally ate something], BIDK [_{CP_E} what Sally ate *t*] (= 20a)
 a. [_{CP_A} Sally ate what] step (21a)
 b. [_{CP_A} what_{*i*} Sally ate _____{*i*}] step (21b)
 c. The QuD raised by CP_A: What Sally ate? step (21c)

The QuD raised by the antecedent CP_A in (20a) is calculated to be as in (22c): “What Sally ate?”. Q-equivalence then requires that this question meaning be identical to the meaning of the sluiced question CP_E. This is indeed the case in (20a), and therefore sluicing is correctly predicted to be acceptable in this case.¹¹ However, heuristic approaches are explicitly so — they go a step further than intuitionistic approaches, but are just heuristics after all, sidestepping important questions as we will see.

Despite the intuitive appeal of these approaches, in what follows we raise one conceptual challenge and six empirical challenges to Q-equivalence. These will ultimately lead us to reject these approaches to semantic identity, and to advocate for a return to a focus-theoretic approach.

3.2 A conceptual challenge

Recall again the case of sprouting: sluicing which takes place in the absence of a correlate.

- (23) **Argument and adjunct sprouting:** (= 12)
 a. Sally ate, but I don’t know what.
 b. Sally left, but I don’t know $\left\{ \begin{array}{l} \text{when, with whom, in which car,} \\ \text{why, how, where to, } \dots \end{array} \right\}$.

In these examples, there is no indefinite or disjunction correlate with an “issue raising” capacity in the antecedent. Moreover, different *issues* or *QuDs* must be raised by the antecedent to license ellipsis in each one of the cases illustrated in (23a–b). We must therefore ask how the antecedent makes salient or raises any of these (possibly infinitely many) imaginable issues?

¹¹ Notice that this question meaning is represented here by a sentence that is not grammatical in English, since we have abstracted away from the additional *do*-support step that applies in English questions. The precise status of this step is immaterial to the discussion — all that matters is that if we apply it in the QuD, we must also apply it in the sluice, or that we show that it does not affect the meaning of the question, since Q-equivalence requires equivalence of meaning but not structure. Since in the one case we are deriving a discourse object and in the other an object which is unpronounced, either solution would derive the desired result.

For [AnderBois 2011 et seq.](#), this is done through the process of *issue bridging*, which is explicitly designed to allow different issues to be relevant, depending on the nature of the sprouted continuation. This process can be fruitfully thought of as a form of accommodation, where the sprout determines what the relevant issue or question must have been to license the continuation (see our discussion of (18) above).¹²

For QuD accounts, different QuDs must be raised by the antecedent to license each sluice, in turn. However, these theories must explain in what sense the question is “under discussion” at all, if it is never explicitly mentioned, nor can it be gleaned before the sluice is encountered.¹³

An answer along the lines of the account in [AnderBois 2011 et seq.](#) would involve a process of accommodation, so that regardless of the QuD prior to the sluice, once the sluice is uttered, interlocutors accommodate a new QuD which is raised by the presuppositions of the sluice. However, as noted in [Chung et al. 2010](#), such an accommodation process does not appear to be obligatory. Consider examples such as (24):

- (24) **Challenge to semantic equivalence from sluicing ([Chung et al. 2010](#)):**
- a. Jack finished his homework, but I don’t know with whose help he ~~finished his homework~~.
 - b. She went to the movies, but I don’t know who with ~~she went to the movies~~.
 - c. He put in a bid, but I don’t know on who’s behalf ~~he put in a bid~~.

[Chung et al. 2010](#) highlight such examples as challenges to semantic identity approaches in general, and in particular to the proposal in [Merchant 2001](#), where a necessary semantic condition on ellipsis is that the ellipsis clause be GIVEN (in e.g., [Schwarzschild’s 1999](#) sense) with respect to the antecedent.¹⁴ For GIVENness to be met, the antecedent must entail the existential focus-closure of the elided question (heuristically speaking, this is the sluiced question’s existential presupposition), modulo existential focus closure.

In none of the examples in (24) is it clear that the antecedent renders the ellipsis clause GIVEN in the relevant sense. Finishing one’s homework does not entail doing

¹² See [Barker \(2013: §6.3\)](#) for additional discussion of this challenge for Inquisitive Semantics based approaches.

¹³ Some authors have suggested that there is no actual sprouting. Instead, such antecedents have implicit correlates ([Fortin 2007; 2011; Barros 2014](#)), which are present in the syntax even if they are not pronounced. Even if so, something more is needed to determine which implicit correlate is present in each example.

¹⁴ Strictly speaking, Merchant’s condition requires mutual entailment between the antecedent and ellipsis clause. (I.e., they must both be [Schwarzschild 1999-GIVEN](#) with respect to each other.) We return to a more explicit characterization of Merchant’s influential condition in section 4.

so with someone's help; going to the movies does not entail going with someone; putting in a bid does not entail putting it in on anyone's behalf, so Merchant's condition would predict sprouting in such cases to be impossible. Notice moreover that this is not a sluicing-specific issue, as "pre-sluices" arguably require the same sort of accommodation:

(25) **Pre-sluices raise the same questions regarding accommodation:**

A: Sally left.

B: Who did she leave with, if anyone?

The same data challenge Q-equivalence. While it seems intuitively correct that antecedents with disjunctions and indefinites "raise issues/QuDs," sprouting antecedents, lacking such formal elements, do not intuitively seem to do so on their own. Why, in particular, should the utterance *Jack finished his homework* raise a QuD equivalent to the sluiced question *With whose help he finished his homework?* (Why not "how quickly," or "when exactly," instead?)

Such data are not fatal, however, for semantic approaches, provided something is said about the interpretation of such antecedents *in context*, with perhaps a little help from accommodation. A story can be told where sprouting may be, to some extent, "self-licensing" via accommodation of the sluiced question's existential presupposition, not unlike what we have argued in (17) above.

For instance, insofar as *wh*-questions come with existential presuppositions, sluices, being elided *wh*-questions, do too.¹⁵ Insofar as the existential presupposition of the sluice in (24a) may be accommodated, namely, *that Jack finished his homework with someone's help*, the hearer may also accommodate a bridging inference that *if Jack finished his homework, it must have been with someone's help*. This move requires a very liberal understanding of accommodation, and it is difficult for us, at this juncture, to see how such accommodation may be constrained.

Q-equivalence approaches require an additional step, however, in order to make this work out. Above and beyond the antecedent having to entail the sluice, the antecedent must additionally raise a question/issue that is equivalent to the sluiced question. How can this be achieved, when the antecedent lacks any explicit indefinites or disjunctions? Our intuitions cast additional doubt on the plausibility of such an assumption: nothing about the antecedents in (24) implies or raises their respective sluiced issues, as far as we can tell.

However, there is a way around this, even with Q-equivalence approaches. Suppose the antecedent in (24a), *Jack finished his homework*, is uttered in a context

¹⁵ Though there remains some debate as to the nature of this presupposition. In particular there is reason to believe that it is a "speaker's" presupposition, since negative answers to *wh*-questions are possible across speakers (see Dayal 2016 for recent discussion).

where the sluiced question's presupposition has been accommodated: *That Jack finished his homework with someone's help*. We might assume that utterance of the (actual) antecedent in an example like (24a), against a background with such a presupposition, is tantamount to raising the sluiced issue. In a context where it is GIVEN that if Jack finished his homework, he must have done it with someone's help, utterance of the sentence *Jack finished his homework . . .* may plausibly raise the question of whose help Jack recruited in achieving this task. Similar reasoning should apply straightforwardly to other examples with the relevant properties.

The Q-equivalence approaches appear to be saved, given the above reasoning. Nonetheless, we highlight again a critical question:

(26) **A crucial question:**

To what extent is *the antecedent* responsible for raising any particular issue/QuD at all?

We argue that the answer to this question is that **the antecedent is in fact not responsible for raising any questions/issues at all**. More precisely, although it's clearly *possible* for antecedents to raise issues — as is the case in sentences containing indefinites and disjunctions — we argue that they *need not* necessarily be responsible for raising the sluiced issue.¹⁶ As a consequence, Q-equivalence theories contain a fatal flaw: they crucially rely on an object — the issue/QuD raised by the antecedent — that may not always exist.

(27) **A crucial conclusion:**

Any theory that requires the antecedent to be responsible for raising the issue/QuD relevant for identity in sluicing is irreparably doomed to failure.

In the next section, we discuss six cases in which the antecedent cannot or should not be thought of as raising a salient issue/QuD which can then be used to calculate semantic identity, but nonetheless sluicing is possible. We conclude that any approach that ties ellipsis licensing to a particular question/issue raised by the antecedent is doomed to fail.

¹⁶ Although clearly, the issue raised by the sluice is constrained by the antecedent in some way. This may follow more generally from the nature of discourse coherence, where prior discourse constrains and guides later utterances.

3.3 Six empirical challenges

3.3.1 The Answer Ban and *else* modification

Barker 2013 defines a constraint on the distribution of sluicing called the *answer ban*, illustrated in (28–29).

(28) **The answer ban:**

The antecedent clause must not resolve, or even partially resolve, the issue raised by the sluiced interrogative.

(29) **The answer ban rules out sluicing of already-answered questions:**

* Chris knows that Jack left, but Sally doesn't know who left.

Barros 2013 claims that the answer ban follows from Q-equivalence. He reasons that QuDs/Issues are only 'live' in discourse as long as they are unanswered.¹⁷ The sluice in (29) lacks an antecedent QuD/Issue, because the would-be QuD/Issue has already been answered by the antecedent. As a consequence, sluicing is correctly predicted to be ruled out.

However, we raise both a conceptual and an empirical problem with this view.¹⁸ First, note that the answer ban is stated as a constraint on *antecedents* — a syntactic object — while QuDs/Issues are *discourse objects*, leading to an ontological problem. Even if this issue were reconciled, however, we find a second problem. Contrary to the predictions of Q-equivalence approaches, it is possible to sluice an "answered question":

(30) **Answer ban violations are possible:**

- a. Jack left at 5 PM, so we know both *that* he left, and when ~~he~~ left.
- b. Jack left at 5 PM, so we know both *that* someone left at 5 PM, and who ~~left at 5 PM~~.

Notice that in (30a–b) is it crucially the context and not the antecedent itself that answers the sluice's question, distinguishing these examples from the ungrammatical (29). Under Barros's (2013) reasoning, however, it is unclear why it matters whether it's the antecedent or the context that provides the answer.

Under our approach, on the other hand, answer ban violations such as (29) follow from the fact that $\cup[\text{antecedent}]^f \not\leftrightarrow \cup[\text{sluice}]^f$ whenever the antecedent answers the sluice:

¹⁷ Once they are answered they are "popped off" a push-down stack in Roberts's (2012) system.

¹⁸ See also Collins et al. 2015 for other empirical arguments against Q-equivalence accounts of the answer ban.

(31) **Deriving the answer ban:**

* Jack left, but Sally doesn't know who left.

- a. $\cup \llbracket \text{Jack left} \rrbracket^f = \lambda w . \text{Jack left in } w$
- b. $\cup \llbracket \text{who left} \rrbracket^f = \lambda w . \exists x (x \text{ left in } w)$
- c. (31a) $\not\leftrightarrow$ (31b)

On the other hand, examples such as (30a–b) are predicted to be allowed, because the sluice and antecedent are equivalent in our terms:

(32) **Deriving answer ban violations:**

Jack left at 5 PM, so we know both

$[\text{CP}_A \text{ that someone left at 5 PM}]$, and $[\text{CP}_E \text{ who left at } \cancel{5 \text{ PM}}]$. (= 30b)

- a. $\cup \llbracket \text{someone left at 5PM} \rrbracket^f = \lambda w . \exists x (x \text{ left at 5PM in } w)$
- b. $\cup \llbracket \text{who left at 5PM} \rrbracket^f = \lambda w . \exists x (x \text{ left at 5PM in } w)$
- c. (32a) \leftrightarrow (32b)

Notice next that *else*-modification can rescue examples such as (29):

(33) **Else-modification can rescue answer ban violations:**

Chris knows that Jack left, but Sally doesn't know who else left.

To capture this, we appeal to **pruning** once again. We assume that worlds in the antecedent proposition that are inconsistent with the sluiced question's presuppositions are removed from the antecedent's meaning. *Else*-questions have an *additive* presupposition (akin to, e.g., *quién mas/who more* in Spanish). Jack is presupposed to be a leaver, alongside the existential presupposition that some non-Jack individual also left.¹⁹ When this additive presupposition is explicitly denied, a subsequent *else*-question is unacceptable, as shown in (34).

(34) **Else-wh-questions have an additive presupposition:**

* Jack_i didn't leave. Who *else*_i left? (cf. Jack_i left. Who *else*_i left?)

In (33), pruning in the antecedent involves removing worlds where Jack was the only leaver, ensuring equivalence between the union of the sluiced question (i.e., *the set of propositions such that Jack left, and someone other than Jack also left*) and the antecedent proposition (i.e. *that Jack left and someone else left*). These meanings are spelled out in (35a–b):

¹⁹ See von Stechow 1993, Culicover & Jackendoff 1995, and Barros 2014 for further discussion of *else* and expletive modification.

(35) **After pruning, equivalence holds in (33):**

- a. $\cup \lambda p . \exists x [p = \lambda w . x \text{ left in } w \wedge \text{Jack left in } w \wedge x \neq \text{Jack}]$
- b. $\lambda w . \exists x [x \text{ left in } w \wedge \text{Jack left in } w \wedge x \neq \text{Jack}]$
- c. (35a) \leftrightarrow (35b)

3.3.2 Cross-speaker sprouting

A second challenge to Q-equivalence approaches arises when we consider cases where sluicing/sprouting happen across speakers. That is, speaker A may utter an assertion, which speaker B may then treat as an antecedent for a sluice. This is possible in both sprouting and non-sprouting sluices.

(36) **Cross-speaker sluicing:**

- a. A: Sally met someone.
B: Who ~~did Sally meet?~~
- b. A: Sally left.
B: When ~~did Sally leave?~~

In our presentation of this material, audiences report the intuition that it seems entirely up to speaker B to choose which issue to sluice, and furthermore, that there is no requirement that speaker A share speaker B's intention to raise this issue at the time of utterance. Once speaker A accepts speaker B's discourse move (raising the sluiced issue), then it is clear that there is a QuD on the table, but this falls short of the expectations of Q-equivalence approaches, where the antecedent must raise the relevant issue with which the sluice must be semantically identical.

Facts like those in (36) cast doubt on the notion that the antecedent assertion/speaker A is somehow responsible for raising the relevant QuD. Instead, it seems as if it is the sluiced question that raises the relevant QuD. In other words, the sluicer/asker is responsible for the issue raised.

Additionally, it is not clear how appealing to accommodation can get around this problem. To see this, consider what such an accommodation account would have to look like. The discourse in (36b) fails to provide the necessary ingredients in the right order in order for sluicing to go through. For sluicing to go through, there must be an antecedent, which must raise an issue, which can then be sluiced. An appeal to accommodation in (36b) might look as follows: even though, according to our intuitions about discourses like that in (36b), speaker A need not have intended to raise speaker B's sluiced issue in uttering the antecedent, we must retroactively assume that this was in fact speaker A's intention in uttering the antecedent. Once this is achieved, sluicing may go through provided the sluice is identical semantically to this issue. We find to be this a very strange sort of accommodation, and one which

is additionally empirically unmotivated given our intuitions about the exchange in (36b). There is no sense in which the felicity of the sluice in (36b) rests on our capacity to construe speaker A as having intended to raise the sluiced issue.

In support of this point, consider the fact that speaker A may indeed explicitly raise a specific issue with an antecedent, but speaker B is not then limited to sluicing only that issue.

(37) **Sluicing is not constrained by the QuD raised by the antecedent:**

A: Sally left. Do you know how long ago she left? I don't care about who she left with.

B: No, sorry, I only know who with ~~she~~ left.

On the other hand, our account can deal with such cases without any difficulty. Under our proposal, the union of the sluiced question's meaning must be equivalent to the set of worlds denoted by the antecedent. With example (36a), this is straightforward and follows the procedure we introduced in section 2. The antecedent is a set of worlds where Sally met someone. The sluice is a set of propositions of the form *That Sally met x*, where *x* is a member of the domain in the model. The union of this set of propositions is the set of worlds where Sally met someone. Semantic equivalence is straightforwardly met. The procedure similarly goes through in (36b), under the assumption that if Sally left in *w*, then she left at a certain time *t* in *w* (see our discussion of (15) and the discussion of accommodation in (17)).

3.3.3 Antecedent sharing

A third challenge to Q-equivalence approaches arises when we consider cases that we dub Antecedent Sharing. In (38), we observe a single antecedent followed by a sluiced continuation as well as a sprouted continuation:

(38) **Sluicing with antecedent sharing:**

Sally met someone, BIDK who ~~she~~ met, or when ~~she~~ met them.

Q-equivalence accounts struggle to explain the availability of cases such as (38). Examples like the above require that antecedents be associated with multiple issues/questions simultaneously — one for each sluice. However, current proposals don't allow for more than one question/issue to be raised to salience at a time, since it's the antecedent that must raise the question/issue.

On a QuD-based account, there can only be one current QuD that interlocutors strive to resolve at a time, since the QuD is modeled as a stack (Roberts

1996; 2012).²⁰ An alternative proposal where the sluice is responsible for raising the question that licenses the sprout is also not viable — the QuD raised by a question is the question itself. No QuD theory we are aware of allows a *who* question to raise a *when* QuD; a *who* question instead always raises a *who* QuD.

Alternatively, on an Inquisitive Semantics based account, if we follow the common assumption that any given antecedent has one single inquisitive denotation, this denotation must somehow be one that licenses both a *who* issue and a *when* issue simultaneously; but there is no way to do this in a way that matches the interpretations of each independent sluice in the current theory. Specifically, in (38), the sprouted inquisitive denotation is a set of events sorted by times, whereas the non-sprouted inquisitive denotation has alternatives sorted by individuals met. These are, then, two distinct denotations that must at the same time match the inquisitive denotation of a single antecedent sentence — a contradictory requirement.

Under our approach, on the other hand, antecedent sharing is no different than any other case of sluicing/sprouting. We can easily show that equivalence holds between the denotation of the antecedent and that of both sluices, provided that meeting x in w necessitates meeting x at some time t in w (cf 15):

(39) **Deriving antecedent sharing:**

- Sally met someone, ~~BIDK~~ ~~who she met~~, or when ~~she met them~~. (= 38)
- a. $\cup \llbracket \text{Sally met someone} \rrbracket^f = \lambda w . \exists x (\text{Sally met } x \text{ in } w)$
 - b. $\cup \llbracket \text{who Sally met} \rrbracket^f = \lambda w . \exists x (\text{Sally met } x \text{ in } w)$
 - c. $\cup \llbracket \text{when Sally met (them)} \rrbracket^f = \lambda w . \exists t \exists x (\text{Sally met } x \text{ at } t \text{ in } w)$
 - d. (39a) \leftrightarrow (39b) \leftrightarrow (39c)

3.3.4 Non-issue antecedents

A related challenge can be identified when we consider examples such as in (40a–c), where the sentences themselves explicitly state that the would-be issue/QuD raised by the antecedent (under the Q-equivalence approach) is not relevant or not interesting. Despite this fact, sluicing and sprouting are licensed:

(40) **Non-issues can license sluicing:**

- a. Jack would date anyone, it doesn't matter who!
- b. There's going to be another faculty meeting, but no one cares what about. (Anonymized p.c.)

²⁰ The alternative tree model may fare slightly better, but this model, too, only entertains one question at a time as the current QuD. See Rojas-Esponda 2014.

- c. Someone, anyone, needs to make sure the plants get watered daily, it doesn't matter { who, when }.

As discussed above, issues/QuDs are discourse moves, accepted by conversational participants, who have agreed to collaboratively address the issue. However, when we consider (40a), does the antecedent really raise a *who* question, despite the fact that the sentence explicitly asserts that any person *x* we might choose would verify the predicate *Jack would date x*? Likewise, in (40b), we would have to accommodate that the antecedent raises a *what about* question — i.e., that *what about* matters, despite our explicit denial of this fact.

Here one might argue that the issues or questions raised by the antecedents in (40a–c) are salient, even if the speaker explicitly opts out of asking them. Nonetheless, it's not at all obvious how this would be implemented in any existing QuD account. More specifically, this goes counter to the idea that QuDs should be accepted by conversational participants as salient and relevant issues, which they together seek to resolve (Roberts 2012).

3.3.5 Question antecedents

In all the cases we have seen above, sluicing involved a declarative antecedent. However, question antecedents are also possible. This is shown in example (41). Notice that in (41), sluicing would be impossible if “*and if so*” were omitted.

(41) **Question antecedents can license sluicing:**

Is Sally dating someone? *(And if so,) who is ~~Sally dating~~?

On a Q-equivalence view, this is surprising and unexpected. The antecedent raises an explicit question/issue, but that is a *different* question than the QuD/issue that would be needed to license the sluice. How can an explicit question raise a QuD/issue that's a *different* question? We are aware of no theory that predicts this to be possible.

However, such examples follow from our approach. We adopt the view that polar questions denote a two-membered set of alternatives: the “yes” answer and the “no” answer. Notice that the union of the worlds denoted by these two answers is trivially the entire domain of discourse (42a), predicting therefore not to license any sluicing. To tackle this, we take seriously the fact that the “*and if so*” continuation cannot be omitted in (41). We assume that “*and if so*” supplies the “yes” answer to the question, as in (42b) which then serves as the antecedent for the sluice in (42c).²¹ Sluicing is therefore correctly predicted to be available.

²¹ See Needham (2012); Snider (2017) and references therein for arguments that *so* is a propositional anaphor in English. For Needham, *so* is a presupposition trigger anaphoric with the propositional

(42) **Deriving sluicing with question antecedents:**

- a. $\cup \llbracket \text{Is Sally dating someone?} \rrbracket^f =$
 $\cup \{ \text{Sally is dating someone, Sally isn't dating anyone} \} = W$
- b. $\cup \llbracket \text{Sally is dating someone} \rrbracket^f = \lambda w . \exists x (\text{Sally is dating } x \text{ in } w)$
- c. $\cup \llbracket \text{Who is Sally dating?} \rrbracket^f = \lambda w . \exists x (\text{Sally is dating } x \text{ in } w)$
- d. (42b) \leftrightarrow (42c)

3.3.6 Contrast sluicing

In addition to polar questions, *wh*-questions can also antecede sluices (Merchant 2001). These are *contrast* sluices, where the remnants are contrastively focused.

(43) **Contrast sluicing:**

- a. Sally has five CATS_F, but I don't know how many DOGS_F she has.
- b. I know which BOOKS_F she read, but not which ARTICLES_F she read.

As with our discussion of polar question antecedents above, it is not clear how Q-equivalence approaches handle *wh*-question antecedents. The antecedent clearly doesn't raise the sluiced issue/question needed to license the sluice on its own, since it explicitly raises a different issue/question.

Here we present one attempt at an answer, along the lines of Barros 2014: In a context where Mary's pets are discussed, we can imagine a QuD with sub-QuDs such as in (44) guiding the conversation, and licensing ellipsis:

(44) **A discourse strategy for generating an appropriate QuD for (43a):**

How many pets does Sally have?

- a. How many cats does Sally have?
- b. How many dogs does Sally have?

Given this assumption, we are able to use the context and focus structure of the antecedent to generate the "right" QuD to license our sluice, predicting (43a–b) to be available.

However, we argue that such an explanation is in danger of over-generating QuDs, which would license unwanted sluices. Consider the examples in (45–46) below (from Anonymized, p.c.). It seems plausible to assume that *Sally didn't call ALEX_F* in (45) raises the QuD *Who did Sally call?*. Yet this QuD cannot license sluicing in this example. A similar concern affects example (46). How would QuDs be constrained to rule these examples out?

content of a polar immediate question under discussion, but see our argument above for why this fails to predict the availability of sluicing in examples like (41).

(45) **Ungrammatical sluices which Q-equivalence over-generates:**# Sally didn't call ALEX_F { but, and } I dont know who Sally called ϵ .(46) A: Did(n't) Sally call ALEX_F?B: # I dont know who Sally called ϵ .

Our approach can handle such cases. We assume that the denotation of a *wh*-question with a contrastively focused remnant is a family of questions (that is, set of questions, see Büring 2003; Kotek 2014, among others).

(47) **A family of questions denotation for contrast sluices:**

a. $\llbracket \text{which books}_{\text{F}} \text{ she read} \rrbracket^f = \left\{ \begin{array}{l} \text{which books she read,} \\ \text{which magazines she read,} \\ \text{which articles she read, } \dots \end{array} \right\}$

b. $\llbracket \text{which articles}_{\text{F}} \text{ she read} \rrbracket^f = (47\text{a})$

The union of both questions in (47a) and (47b) is an identical set of propositions, as shown in (48a). The union of this set is a set of worlds, as in (48b). Since, again, this set is identical for (47a) and (47b), we predict sluicing to be allowed in example (43b). Notice that we had to take the union of each question twice to yield a set of worlds — since our proposal compares sets of worlds, not sets of propositions.²² Once this move is granted, we correctly predict sluices with question antecedents to be acceptable.

(48) **Deriving contrast sluicing:**

a. $\cup(47\text{a}) = \cup(47\text{b}) = \{ p : \exists x(p = \lambda w . \text{she read } x \text{ in } w) \}$

b. $\cup(48\text{a}) = \lambda w . \exists x (\text{she read } x \text{ in } w)$

3.4 Interim summary

To summarize the discussion in this section, Q-equivalence approaches attribute ellipsis licensing to QuDs/Issues raised by the antecedent. In this section we raised several challenges to Q-equivalence. In sprouting, the question is intuitively accommodated posthoc, once the sprout is uttered. We claimed that it is not raised by the antecedent. Moreover, non-issue antecedents can license sluicing, resolved questions can license sluicing (the answer ban), and a single antecedent can license multiple sluices (antecedent sharing). In each of these cases, extant Q-equivalence approaches run into trouble. In addition, we showed challenges from question

²² We prefer this approach to generalizing our analysis to comparing sets of any kind, since to the best of our knowledge, this is the only exception to the generalization that sets of worlds must be compared.

antecedents: both polar questions and *wh*-questions can license ellipsis, but Q-equivalence approaches face a challenge in explaining how the right issue/question could be raised by the antecedent at all, as well as an over-generation problem, once a solution is found.

As a consequence, we have argued that we shouldn't necessarily place the burden of raising the issue on the antecedent, contra the very foundation of Q-equivalence approaches. We showed how our focus-based account (7) accounts for all of the data presented here.

(49) **Proposal (repeated):** (= 7)

Sluicing may apply in CP_E provided CP_E has a salient antecedent, CP_A , and the set of worlds used to construct the alternatives in $\llbracket CP_E \rrbracket^f$
 \leftrightarrow the set of worlds used to construct the alternatives in $\llbracket CP_A \rrbracket^f$.

Crucially for our account, whether it is the antecedent or the sluice that is responsible for raising the relevant issue — indeed, whether there is relevant issue raised at all — is an orthogonal question to whether ellipsis is licensed in the clause.

4 A return to a focus-based approach

4.1 Merchant's (2001) truth conditional mutual entailment

Having argued against Q-equivalence approaches, we now return to Merchant's (2001) influential focus-theoretic implementation of semantic identity in ellipsis. As we noted above, our proposal (7) is inspired by — and is very similar to — Merchant's account. In this section, we show that Merchant's proposal runs into trouble in a subset of sluices which are handled straightforwardly by our account. A second challenge for Merchant's (2001) account, from VP-ellipsis with relational opposite predicates, will be discussed in section 5.

Merchant's (2001) proposal builds on theories of focus and deaccenting (prosodic reduction). Following Rooth 1992a, ellipsis can be seen as a form of radical deaccenting — that is, deaccenting and ellipsis form a natural class, as two cases of redundancy reduction.²³ As a form of redundancy reduction, therefore, conditions on deaccented material would be expected to apply to ellipsis constructions, as well. However, Rooth shows that the conditions on deletion appear to be stronger than those relevant for prosodic deaccenting. To account for this, Rooth proposes

²³ See Romero 1998 for an extension of Rooth's (1992a) theory to explain a variety of constraints on sluicing remnants and their correlates. Romero additionally compares Rooth's Alternative Semantic proposal to that of Schwarzschild 1999, demonstrating that they make identical predictions.

two distinct redundancy relations; one which applies to both ellipsis and deaccenting, and one which applies only to ellipsis, essentially requiring syntactic identity between the elided structure and some linguistic antecedent (in the spirit of e.g., [Fiengo & May 1994](#), among others).

[Merchant 2001](#) defends the claim that there is no syntactic parallelism condition at work in ellipsis, and proposes, instead, a semantic parallelism condition on ellipsis which is stronger than that for deaccenting.²⁴ Instead of having a syntactic condition that applies only to ellipsis, and a semantic parallelism condition that applies to both deaccenting and ellipsis, we end up with two semantic parallelism conditions: a weaker one for deaccenting, and a stronger one for ellipsis.

[Merchant](#) adopts the theory in [Schwarzschild 1999](#) for deaccenting, where a constituent, XP_E , may be deaccented provided that it is GIVEN. The notion of GIVENNESS is defined in (50):

(50) **GIVENness:**

XP_E is GIVEN whenever it has some salient antecedent, XP_A , and XP_A entails the existential focus closure of XP_E (written $F\text{-clo}(XP_E)$), modulo \exists -type shifting.

(51) **Existential Focus Closure**

$F\text{-clo}(XP_E)$ is the result of replacing F-marked parts of XP_E with variables of the same type, and existentially closing the result.

For example, VP_A in (52b) counts as GIVEN, since VP_A entails $F\text{-clo}(VP_E)$. (Deaccenting is represented throughout in small font.)

(52) **Using GIVENness to license deaccenting:**

- a. Bill was [VP_A reading a book], and Sally was [VP_E reading] too.
- b. $\exists x \exists y [\text{reading}(x, y) \wedge \text{book}(y)] \models \exists x [\text{reading}(x)]$

The condition on ellipsis is dubbed e(lliptical)-GIVENness, and essentially requires GIVENness to be checked twice; first, the ellipsis constituent must be GIVEN with respect to its antecedent, and likewise, the antecedent must also be GIVEN with respect to the ellipsis constituent.

²⁴ Since [Merchant 2001](#), many authors, including Merchant himself, have scaled back this claim empirically, showing that some degree of syntactic identity appears to be at work in constraining [Merchant's](#) (2001) proposal from over-generation. See e.g. [Merchant 2005; 2013](#); [Chung 2006; 2013](#); [Chung et al. 2010](#); [AnderBois 2011](#); [Weir 2014](#); [Barros 2014](#), among many others.

(53) **Focus Condition on Ellipsis (FCE, Merchant 2001)**

- a. A constituent E can be deleted iff E is e-GIVEN.
- b. An expression counts as e-GIVEN iff E has a salient antecedent A and, modulo \exists -type shifting,
 - i. A entails F-clo(E), and
 - ii. E entails F-clo(A)
- c. F-clo(α) is the result of replacing F-marked parts of α with \exists -bound variables.

Merchant treats traces of *wh*-phrases in sluiced TPs as \exists -bound variables (see also Schwarzschild 1999). For a simple sluice like that in (54), F-clo(TP_E) entails its antecedent TP_A, and F-clo(TP_A) entails TP_E, satisfying the FCE.²⁵

(54) **Deriving simple sluicing using Merchant's FCE:**

[TP_A Someone left], but I don't know who [TP_E ~~left~~].
 \uparrow
 TP_A = F-clo(TP_A) = $\exists x$ [human(x) & left(x)]
 TP_E = F-clo(TP_E) = $\exists x$ [human(x) & left(x)]

4.2 e-GIVENness reconsidered

Taking the union of the Roothian focus-semantic value of some XP, as we propose in §2, comes very close to Merchant's (2001) appeal to Existential Focus Closure.²⁶

(55) **Our proposal and e-GIVENness are very similar:**

- a. $\cup[[\text{Who left?}]]^f = \lambda w . \exists x (x \text{ left in } w)$
- b. F-clo(Who left?) = $\lambda w . \exists x (x \text{ left in } w)$

For the most part, e-GIVENness will achieve the same results as our account has, unlike Q-equivalence approaches. However, e-GIVENness falls short for sluices with quantified correlates. Consider first cases of multiple sluicing (Takahashi 1994), where more than one remnant survives ellipsis. In (56a–b) we see examples of multiple sluicing in Russian and English, respectively. See Lasnik 2014 and Kotek & Barros to appear for a discussion of the felicity of English multiple sluicing.

²⁵ In calculating F-clo(A/E), we assume that the remnant's trace in TP_E contributes its restriction to \exists -clo(E)/F-clo(E). We stick to trace-theoretic representations for ease of exposition, although a copy-theoretic account may be needed to derive this result.

²⁶ See Weir 2014 for this observation with Fragment Answers.

(56) **Multiple sluicing in Russian and English:**

- a. Každyj priglasil kogo-to na tanec, no ja ne pomnju, kto kogo.
 everyone invited someone to dance but I not remember who whom
 ‘Everyone invited someone to dance, but I don’t remember who invited
 whom to dance.’ (Grebenyova 2009)
- b. Every boy likes some girl, BIDK which boy which girl.

Examples (56a–b) involve a quantified antecedent on its surface scope ($\forall > \exists$) reading, with a pair-list multiple question in the sluiced continuation. These antecedent/sluice pairs in pair-list multiple sluices fail to be mutually entailing with their quantified antecedents. We show this here for example (56a):

(57) **The FCE incorrectly predicts multiple sluicing to be ruled out:**

- a. [TP_A Everyone invited someone to dance] ($\forall > \exists$)
 $TP_A = F\text{-clo}(TP_A) =$
 $\forall x [\text{person}(x) \rightarrow \exists y [\text{person}(y) \ \& \ \text{invited-to-dance}(x,y)]]$
- b. ... BIDK $\text{who}_i \text{ whom}_j$ [TP_E t_i invited t_j to dance]
 $TP_E = F\text{-clo}(TP_E) =$
 $\exists x \exists y [\text{person}(x) \ \& \ \text{person}(y) \ \& \ \text{invited-to-dance}(x,y)]$

The same holds true for any pair-list multiple sluice whenever the antecedent has a wide-scope universal: \exists -closure or Focus closure of *wh*-traces in TP_E , as assumed by Merchant (2001), will inevitably lead to a failure of mutual entailment.

We entertain next a possible solution to this problem under Merchant’s account, which we will show faces problems of its own: if we take the quantifiers in examples (56a–b) to be F-marked, we would predict sluicing to go through. In that case, all we would need is to be able to find quantifiers to “plug in” in place of *everyone* and *someone* in the antecedent (57a), which can lead to semantic identity with the clause in (57b) — a task that we are easily able to perform. However, this approach faces two problems. First, there is no cue in the prosody to suggest that the quantifiers in the antecedent are F-marked. Worse, this proposal leads to over-generation. There is nothing stopping this procedure from going through in examples such as (58–59) from Grebenyova 2009 and Kotek & Barros to appear, respectively, which are ungrammatical but would be predicted to be acceptable under this account.

(58) **Superiority in sluicing: Correlates must match remnants:**

Každyj priglasil kogo-to na tanec, ...
 everyone invited someone to dance

- a. ...no ja ne pomnju kto₁ kogo₂.
 but I not remember who whom (cf 56a)

- b. * ...no ja ne pomnju kogo₂ kto₁.
but I not remember whom who
- (59) a. Every boy likes some girl, BIDK which boy which girl. (cf 56b)
b. * Some boy likes every girl, BIDK which boy which girl.

The problem of quantified antecedents extends beyond multiple sluicing, to sluices with unambiguously quantificational correlates. We show this in example (60), where e-GIVENNESS is not met, and hence sluicing is incorrectly predicted to be impossible.

(60) **Sluicing with quantificational correlates:**

She read most of the books, but we don't know which ones she read.

- a. TP_A entails F-clo(TP_E) (there are books that Sally read), but
b. TP_E does not entail F-clo(TP_A).

Under our approach, the multiple sluicing facts and those with quantified correlates are predicted. We adopt the approach to pair-list questions in Dayal 1996 (see also Kotek 2014): pair-list questions denote a set of pairings of individuals in the domain, exhausting the first element in the pair. In a toy model with 4 individuals:

(61) **Representing multiple questions:**

Everyone was dancing with someone, but I can't recall who was dancing with whom.

$$\llbracket \text{Who was dancing with whom} \rrbracket = \left\{ \begin{array}{l} a \text{ and } b \text{ danced and } c \text{ and } d \text{ danced,} \\ a \text{ and } c \text{ danced and } b \text{ and } d \text{ danced,} \\ a \text{ and } d \text{ danced and } b \text{ and } c \text{ danced} \end{array} \right\}$$

As we can see, each alternative in the set is a graph of the “dance with” relation. This is the set of worlds where *a*, *b*, *c*, and *d* each danced with someone. The union of the multiple sluice meaning, then, is equivalent to the union of the proposition “everyone danced with someone,” $\cup \llbracket \text{Everyone danced with someone} \rrbracket^f$.²⁷ As a result, we correctly predict multiple sluicing to be possible in cases such as (56a–b).

This adds to existing arguments against a characterization of the semantic identity condition on sluicing in terms of truth conditional mutual entailment. The general complaint in the literature about the FCE is that it *under-generates* ellipsis in

²⁷ For cases of quantificational correlates such as (60), alternatives must be “most of the books” alternatives (with different choices of books). This can be achieved via global accommodation, given the antecedent’s context-change potential and its effect on the context when the sluice happens. See also the discussion of accommodation surrounding example (17) above.

For an explanation of superiority mismatches as in (58–59), we refer the reader to the discussion in Kotek & Barros to appear.

certain contexts. In the next section, we see how the FCE also *over-generates*, following observations in Hartman 2009. In section 5 we entertain Hartman’s (2009) objection to the FCE and show that our proposal does not face the same problem.

To account for the data, we entertain the idea that the semantic licensing condition on ellipsis is exactly the same as the condition on deaccenting. This is not a novel claim, but the consensus in the literature, following Rooth 1992a and Merchant 2001, is that the semantic conditions on ellipsis and deaccenting are distinct. Fox 2000, on the other hand, holds that the semantic conditions on deaccenting and ellipsis are the same. Here, we defend this claim, and illustrate how our proposed semantic condition in (7) may function as a general condition on redundancy reduction, encompassing both ellipsis and deaccenting.

5 Ellipsis and redundancy reduction

5.1 A generalized account of ellipsis licensing

Q-equivalence approaches imply a conceptually unattractive conclusion about identity in ellipsis: that VP-ellipsis and sluicing must be subject to independent licensing conditions (Chung et al. 1995; 2010; AnderBois 2011). Conversely, e-GIVENNESS in Merchant 2001 had broad empirical coverage, deriving VP-, NP-, and TP-ellipsis from the same principles.²⁸ In this section we show how to extend our proposal to achieve similar coverage, and in fact improve on e-GIVENNESS.

Here we extend our proposal to VP-ellipsis, and demonstrate how it accounts for a puzzle noted in Hartman 2009. Hartman points out a set of cases where, for VP-ellipsis, e-GIVENNESS over-predicts identity when *relational opposites* are involved. (The predicates *win/lose* are relational opposites here.)

(62) **e-GIVENNESS over-generates VP-ellipsis with relational opposites:**

- * Mary will [_{VP_A} beat someone at chess], and
John will [_{VP_E} ~~lose to someone at chess~~] (too).
- a. $VP_A = F\text{-clo}(VP_A) = \exists x, y (x \text{ will beat } y \text{ at chess})$
- b. $VP_E = F\text{-clo}(VP_E) = \exists x, y (x \text{ will lose to } y \text{ at chess})$

e-GIVENNESS is met in (62a–b), since it is always the case that if someone lost to someone at chess, then someone beat someone at chess, and vice versa.²⁹ Ellipsis is therefore incorrectly predicted to be possible in (62).

²⁸ Merchant 2004 shows that this approach also works for fragment answers as a form of TP-ellipsis.

²⁹ Putting aside for the sake of argument in this section the irrelevant possibility that the individual in question lost to a computer chess program.

Hartman appeals to *semantic equivalence* to prevent these cases. (See Hartman 2009 for details.) Comparing the denotations of VP_A and VP_E rules out VP-ellipsis, since the two are not semantically equivalent:

- (63) **VP-ellipsis with relational opposites explained by semantic equivalence:**
- a. $VP_A = \lambda x . x \text{ won at chess}$
 - b. $VP_E = \lambda x . x \text{ lost at chess}$
 - c. $VP_A \neq VP_E$

Our approach in (7) can be generalized to cover VP-ellipsis in the same way as Hartman's proposal does. We provide this generalized condition on ellipsis licensing in (64):

- (64) **Our proposal generalized beyond sluicing**

XP_E may be elided provided that it has a salient antecedent, XP_A ,
and $\cup[[XP_E]]^f = \cup[[XP_A]]^f$.

This generalized proposal can explain Hartman's examples, as shown in (65):

- (65) **Our generalized proposal can explain Hartman's examples:**

- a. $\cup[[[VP_E \text{ lost at chess}]]^f] = \cup\{ \lambda x . x \text{ lost at chess} \} = \lambda x . x \text{ lost at chess}$
- b. $\cup[[[VP_A \text{ won at chess}]]^f] = \cup\{ \lambda x . x \text{ won at chess} \} = \lambda x . x \text{ won at chess}$

Since the denotations in (65a–b) are not equivalent, our generalized condition achieves the same results as Hartman's account. Our proposal, then, achieves the same coverage as e-GIVENness — and improves on it by dealing with relational opposites, by virtue of making reference to non-propositional content.³⁰

5.2 A theory of redundancy reduction

Can we go even further? Hartman 2009 claims that while ellipsis with relational opposites is impossible, deaccenting in parallel cases appears to be possible, providing the evidence in (66). Consequently, he argues that the licensing conditions on ellipsis are stronger than those on deaccenting, where semantic equivalence is an ellipsis-specific requirement that deaccenting is not subject to.

³⁰ More recently, Merchant 2018 points out that e-GIVENness does not need to be stated in terms of Schwarzschildian existential focus closure, and proposes a Roothian Alternative-Semantic version which sidesteps Hartman's challenge by making reference to non-propositional VP meanings, much like our proposal.

(66) **Deaccenting with relational opposites (Hartman 2009: ex (14–15))**

- a. * I own the bracelet. And the NECKLACE does ~~belong to me~~ too.
- b. I own the bracelet. And the NECKLACE belongs to me also.
- c. * First Mary beat me at chess. And then JOHN did ~~lose to her~~.
- d. First Mary beat me at chess. And then JOHN lost to her.

We agree with Hartman that there is a sharp contrast in acceptability between the elliptical and deaccented versions of the sentences in (66). This is consistent with the Roothian idea that the parallelism conditions on ellipsis are both distinct from and stronger than those on deaccenting — a claim that we will argue against below. However, to our ear, (66d) is not fully acceptable, as deaccenting the relationally opposite predicate *lost* strikes the hearer as somewhat surprising. We concede that deaccenting in (66b) is much better than in (66d), but we suspect that this is because in (66b), the deaccented predicate *belong to* is not in relational opposition to its antecedent *own*.

We turn now to explaining why this is relevant to acceptability of deaccenting in our account of the differences between deaccenting and ellipsis. When we cast the empirical net more widely, it does not appear to be the case that, in general, deaccenting with relational opposites yields acceptable results:

(67) **Hartman’s problem also affects deaccenting (contra Hartman):**

- a. * Mary will beat someone at chess, and John will lose to someone at chess.
- b. * Mary is older than someone, and Bill is younger than someone (too).
- c. * Mary is taller than her sibling, and Jack is shorter than his sibling (too).

One way to account for the data in (67) is to assume that the semantic parallelism condition on ellipsis is also active in deaccenting (contra Hartman). This is precisely what is proposed in Fox 2000. The empirical puzzle, then, is why it is that deaccenting with relational opposites, while generally unacceptable, is nonetheless more acceptable than ellipsis under the same conditions (recall example (62)).

In terms of Fox’s (2000) proposal, this follows from constraints on accommodation. Specifically, redundancy reduction requires an antecedent. When a suitable antecedent for some deaccented or elided phrase is missing in the context, as in the cases of relational opposites above, such an antecedent must be accommodated. Importantly, accommodation requires a *trigger* (to adopt Fox’s terminology). In cases of deaccenting, the presence of overt reduced material that lacks a parallel antecedent triggers the requisite process of accommodation. In ellipsis, on the other hand, the trigger is missing from the speech signal. As a result, accommodation does not take place, leading to unrecoverability/unacceptability.³¹

³¹ Here we are concerned with the semantic parallelism condition on ellipsis and redundancy reduction in general. On the other hand, in Fox 2000, parallelism must be both structural and interpretive. That

We propose that this process is also behind the pattern we see in (66), where (66b) is more acceptable than (66d). Specifically, in (66b) the deaccented predicate has an advantage over the deaccented predicate in (66d) in that it is not in relational opposition with its antecedent predicate. We assume that this difference aids in accommodation, and is responsible for the difference between these two examples.

At this juncture, we revisit [Hartman](#)'s concern regarding whether his semantic identity condition on VP-ellipsis could be extended to sluicing. The challenge from relational opposites for e-GIVENNESS in VP-ellipsis stems from the fact that e-GIVENNESS renders XP meanings propositional via existential closure in the calculation of identity, as would be required to check mutual entailment. [Hartman](#)'s semantic equivalence condition makes direct reference to VP predicate meanings, avoiding the problem of mutual entailment. Our proposal achieves [Hartman](#)'s results in the same way, as the meanings we compare are not propositional for VPs.

Given this solution, however, we encounter a problem: the same issue that plagues e-GIVENNESS in VP-ellipsis persists in sluicing, since \exists -closure of the sluice and the antecedent would be mutually entailing (if someone lost at chess then someone won at chess and vice versa). Importantly for our proposal, we run into the same problem as e-GIVENNESS, since the set of worlds where someone lost at chess is identical to the union of the sluiced question's meaning: the set of worlds where someone won at chess.

(68) **[Hartman](#)'s problem also affects sluicing:**

* Someone lost at chess, but I don't know who ~~won at chess~~.

As a solution, [Hartman](#) suggests comparing the meanings of the predicate abstract created by *wh*-movement in the sluice to that of the predicate abstract created by scoping the correlate out of the TP in the antecedent. This would give us the right sort of objects to compare, and would rule out sluicing with relational opposites in much the same way as with VP-ellipsis, as in (63) above.³²

is, the identity condition on redundancy reduction requires that reduced linguistic material have an antecedent LF available in the discourse with which it is structurally and semantically isomorphic. If such an antecedent is missing, but an appropriate trigger is present in the speech signal, such an LF will be accommodated. Despite this technical and theoretical difference in implementation, we defend [Fox](#)'s idea that the conditions on both deaccenting and ellipsis are the same, and the apparent differences that led [Schwarzschild](#) and [Merchant](#) to posit distinct conditions may be derived via appeal to accommodation.

³² See also [Weir 2017](#), who explores similar issues in fragment answers and proposes an account of the identity condition on fragments and sluices that makes reference to structured meanings. However, [Weir](#)'s account makes crucial reference to the QuD that the antecedent makes salient, and is therefore subject to the same challenges as other Q-equivalence approaches, as outlined in section 3.

(69) **Comparing predicate abstracts helps:**

$$\lambda x . x \text{ lost at chess} \neq \lambda x . x \text{ won at chess}$$

Although [Hartman](#)'s solution works, it faces a conceptual challenge. [Hartman](#)'s semantic identity condition is intended to exist alongside [Rooth's \(1992a\)](#) focus-theoretic parallelism condition on deaccenting. In short, ellipsis is licensed just in case that conditions on deaccenting are met (satisfying Roothian focus-theoretic parallelism) and, *in addition*, [Hartman](#)'s semantic condition is satisfied. This is justified in part by the putative need to posit two distinct parallelism conditions, one for deaccenting, and one for ellipsis.

As our generalized focus-theoretic proposal can extend to redundancy reduction operations beyond ellipsis, in the spirit of [Rooth 1992a](#) — with differences between ellipsis and deaccenting explained by differences in the availability of accommodation, following [Fox 2000](#) — we believe that reducing [Hartman](#)'s two distinct parallelism conditions into a single one would lead to a more parsimonious, and therefore a conceptually and intuitively sounder, account.

The solution that saves our approach in the face of data like that in (68) comes for free, once we adopt the assumption in [Schwarzschild 1999](#) that conditions on deaccenting of GIVEN material are checked *iteratively*. That is, for some deaccented XP, α , not only must α be GIVEN, but so must all of α 's subconstituents. This result follows from how GIVENness is defined: if some subconstituent of α , call it β , is not GIVEN, then neither can α be. As a consequence, in TP-ellipsis, our parallelism condition (64) must be checked at TP *as well as* its subconstituents.

As demonstrated above, our parallelism condition is met at the TP level in (68). However, since the parallelism condition must be checked at the level of every subconstituent as well, VPs will also be compared. (68) will be ruled out since the union of $\llbracket \text{lost at chess} \rrbracket^f$ and the union of $\llbracket \text{won at chess} \rrbracket^f$ are not equivalent. In other words, TP-ellipsis with relational opposites in (68) is ruled out for precisely the same reason that VP-ellipsis was in (65).

Admittedly, in the literature on sluicing, e-GIVENness is not typically assumed to require such iterative checking. Indeed, [Merchant 2001](#) does not invoke it in his proposal and implementation. This may be the case because in most simple cases of sluicing, such iterative checking is superfluous in that e-GIVENness is met at each stage. (We leave it to the reader to verify this.) Nonetheless, insofar as e-GIVENness is an extension of [Schwarzschild's 1999](#) theory, we consider iterative checking in this manner to “come for free,” and to be implicit in e-GIVENness — just as it is explicit in [Schwarzschild's](#) GIVENness.

In our terms, we require that the reduced (elided or deaccented) category, and any sub-constituents therein, meet our condition in (64). Like for e-GIVENness, iterative checking is superfluous in simple cases under our account as well, as shown in

(70). This requirement becomes crucial only in cases such as the ones of relational opposites discussed in this section.

(70) **Simple sluicing predicted to go through with iterative checking:**

- a. $[\text{CP}_A \text{ Someone left}]$, but I don't know $[\text{CP}_E \text{ who left}]$.
- b. $\cup[[\text{CP}_A \text{ someone left}]]^f = \lambda w . \exists x(x \text{ left in } w)$
- c. $\cup[[\text{CP}_E \text{ who left}]]^f = \lambda w . \exists x(x \text{ left in } w)$
- d. $\cup[[\text{VP}_A \text{ left}]]^f = \lambda x . x \text{ left}$
- e. $\cup[[\text{VP}_E \text{ left}]]^f = \lambda x . x \text{ left}$

5.3 Summary

To summarize, in this section, we generalized our approach beyond sluicing to account for patterns in VP-ellipsis, in the spirit of Merchant 2001, who provides a unified theory of semantic identity in ellipsis. We then followed Fox 2000 in assuming that both sluicing and deaccenting are subject to this same semantic identity condition. The empirical differences in the distribution of these two redundancy reduction operations, which had led Rooth 1992a to propose two distinct conditions, are instead explained via an appeal to accommodation as in Fox 2000. The result is, we believe a more parsimonious proposal that is better motivated and achieves a wider empirical coverage than these previous accounts that it builds on. The generalized proposal is given in (71–73).

(71) **A generalized licensing condition for redundancy reduction:**

XP_E may be reduced (elided or deaccented) provided that it has a salient antecedent, XP_A , and $\cup[[\text{XP}_E]]^f = \cup[[\text{XP}_A]]^f$.

(72) **Constraint on accommodation (following Fox 2000):**

In the absence of an antecedent, one can be accommodated, provided that there is an overt *trigger* in the context.

Deaccenting provides an appropriate trigger, but ellipsis does not.

(73) **Iterative satisfaction condition (following Schwarzschild 1999):**

For any reduced (elided or deaccented) XP, not only must XP satisfy (71), but all of XP's constituents, and any sub-constituents therein, must also satisfy (71).

Finally, note that while we have laid out a theory of parallelism in redundancy reduction, we have not proposed a more general theory of accent placement. In short, our parallelism condition could be seen as replacing the definition

of GIVENness in [Schwarzschild 1999](#), which itself plays a part in a more complex system governing the distribution of accent and deaccenting in English sentences. For space reasons, we leave demonstrating this aside here, as accounting for patterns of accent placement would take us too far afield. For our purposes, given our goals in this paper, one may profitably implement [Schwarzschild's \(1999\)](#) system and constraints, replacing the definition of GIVENness therein with our new condition. It would certainly be interesting if anything went wrong with this move. We leave a thorough investigation of this issue to future work.

6 Conclusion

The precise characterization of the identity condition on sluicing has been the subject of a large and growing body of literature in recent years. In this paper, we have argued against an emerging consensus that sluices must be anaphoric to an implicit *question* or *issue* that the antecedent makes salient in the discourse (“Q-equivalence approaches,” [Ginzburg & Sag 2000](#); [AnderBois 2011](#); [2014](#); [2016](#); [Barros 2014](#); [Weir 2014](#); [Kotek & Barros to appear](#)). Instead, we argued for a return to a focus-based approach ([Rooth 1992a](#); [Romero 1998](#); [Fox 2000](#); [Merchant 2001](#)), and offered a new formulation of the identity requirement on sluicing couched in [Rooth's \(1992b\)](#) Alternative Semantics framework.

Under our proposal, the set theoretic union of the focus semantic values of the antecedent and the sluice must be equivalent in order for ellipsis to go through. We showed that this proposal handles not only basic sluices, but also contrast sluices and sprouting in a parsimonious and empirically motivated way. Although our proposal is inspired by, and is in many ways similar to, [Merchant's \(2001\)](#) focus-based e-GIVENness account of ellipsis licensing, we showed that our account fares better in accounting for cases of multiple sluicing and sluicing with quantified correlates.

Along the way, we highlighted conceptual as well as empirical challenges to Q-equivalence approaches — most importantly, that antecedents should *not* be burdened with the task of raising the question or issue needed for ellipsis licensing — taking the rug from under any Q-equivalence approach. At the same time, we demonstrated that our account is able to straightforwardly meet and explain all of these challenges to Q-equivalence. In sum, our proposal is an argument for a return to the idea in [Rooth 1992a](#) and [Merchant 2001](#) that semantic conditions on sluicing, and ellipsis in general, should be couched in terms of focus-theoretic dimensions of meaning. It is an implementation of the idea that ellipsis is a radical form of deaccenting, both being forms of redundancy reduction operations.

Having established our account of the identity condition on sluicing, we then went a step further and generalized our semantic identity condition to other forms of

ellipsis besides sluicing. In particular, we showed that our generalized condition is able to automatically account for challenges from VP-ellipsis to Merchant's (2001) e-GIVENness raised in Hartman 2009. Finally, we showed that our generalized condition is able to provide a unified account for the distribution of ellipsis and of deaccenting, where the two are subject to the same semantic parallelism condition, modulo accommodation and constraints thereupon (Fox 2000).

Going forward, our proposal opens several fruitful domains of inquiry. For one, it would be important to check how well our proposal fares as a replacement definition for Schwarzschild's GIVENness. More broadly, although the ellipsis literature makes heavy use, to our minds, of the results from the literature on focus, it is not as clear that results from the ellipsis literature, in turn, inform theories of focus. If this is correct, then our paper can also be seen as "giving back" in a useful way to the literature on focus, in providing a new definition of GIVENness as it applies to deaccenting and accent placement.

References

- AnderBois, Scott. 2011. *Issues and alternatives*: University of California Santa Cruz dissertation.
- AnderBois, Scott. 2014. The semantics of sluicing: Beyond truth conditions. *Language* 90(4). 887–926.
- AnderBois, Scott. 2016. Ellipsis in inquisitive semantics. In Jeroen van Craenenbroeck & Tanja Temmerman (eds.), *The oxford handbook of ellipsis*. Oxford: Oxford University Press.
- Barker, Chris. 2013. Scopability and sluicing. *Linguistics and Philosophy* 36. 187–223.
- Barros, Matthew. 2012. Short sources and pseudosluicing: a non-repair approach to island sensitivity in contrastive TP ellipsis. In *Proceedings of CLS 48*. 61–75. Chicago Linguistic Society.
- Barros, Matthew. 2013. Harmonic sluicing: Which remnant/correlate pairs work and why. In *Proceedings of SALT 23*. 295–315.
- Barros, Matthew. 2014. *Sluicing and identity in ellipsis*: Rutgers University dissertation.
- Beaver, David & Brady Clark. 2008. *Sense and sensitivity: How focus determines meaning*. Oxford, UK: Wiley-Blackwell.
- Beck, Sigrid. 2006. Intervention effects follow from focus interpretation. *Natural Language Semantics* 14. 1–56.
- Büring, Daniel. 2003. On D-Trees, Beans, and B-Accents. *Linguistics and Philosophy* 26. 511–545.

- Cable, Seth. 2010. *The grammar of Q: Q-particles, wh-movement, and pied-piping*. Oxford, UK: Oxford University Press.
- Chung, Sandra. 2006. Sluicing and the lexicon: The point of no return. In Cover & Kim (eds.), *BLS 31: general session and parasession on prosodic variation and change*. 73–91.
- Chung, Sandra. 2013. Syntactic identity in sluicing: How much and why. *Linguistic Inquiry* 44(1). 1–44.
- Chung, Sandra, William Ladusaw & James McCloskey. 1995. Sluicing and logical form. *Natural Language Semantics* 3. 239–282.
- Chung, Sandra, William Ladusaw & James McCloskey. 2010. Sluicing: between structure and inference. In Rodrigo Gutiérrez Bravo, Line Mikkelsen & Eric Potsdam (eds.), *Representing language: Essays in honor of Judith Aissen*, 31–50. Santa Cruz: University of California, Santa Cruz: Linguistic Research Center.
- Collins, James N., Daria Popova, Ivan A. Sag & Thomas Wasow. 2015. Sluicing and the inquisitive potential of appositives. In Marlies Kluck, Dennis Ott & Mark de Vries (eds.), *Parenthesis and ellipsis: cross-linguistic and theoretical perspectives*, Berlin: de Gruyter.
- Culicover, Peter & Ray Jackendoff. 1995. Something else for the binding theory. *Linguistic Inquiry* 26. 249–275.
- Dayal, Veneeta. 1996. *Locality in wh quantification: Questions and relative clauses in hindi*. Kluwer Academic Publishers.
- Dayal, Veneeta. 2016. *Questions*. Oxford University Press.
- Dayal, Veneeta & Roger Schwarzschild. 2010. Definite inner antecedents and wh-correlates in sluicing. In Peter Staroverov, Aaron Braver, Daniel Altshuler, Carlos Fasola & Sarah Murray (eds.), *Rutgers working papers in linguistics*, vol. 3. 92–114. New Brunswick, NJ: LGSA.
- Fiengo, Robert & Robert May. 1994. *Indices and identity*. Cambridge, Massachusetts: MIT Press.
- Fortin, Catherine Rose. 2007. *Indonesian sluicing and Verb Phrase Ellipsis: Description and explanation in the Minimalist framework: The University of Michigan dissertation*.
- Fortin, Catherine Rose. 2011. We need LF-copying: a few good reasons why. In Mary B. et al Washburn (ed.), *Proceedings of WCCFL 28*. 87–95. Somerville, MA: Cascadilla Proceedings Project.
- Fox, Danny. 1995. Economy and scope. *Natural Language Semantics* 3. 283–341.
- Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge, Mass.: MIT Press.
- Ginzburg, Jonathan & Ivan Sag. 2000. *Interrogative investigations: The form, meaning and use of english interrogatives*. CLSI publications.

- Grebenyova, Lydia. 2009. Sluicing and multiple wh-fronting. In Nguyen Chi Duy Khuong & Richa Samar Sinha (eds.), *Proceedings of GLOW in Asia 5*. 219–242. New Delhi: Central Institute of Indian Languages.
- Groenendijk, Jeroen & Floris Roelofsen. 2009. Inquisitive semantics and pragmatics. In Larraitz Zubeldia & Jesus Larrazabal (eds.), *Proceedings of Semantics Pragmatics and Rhetoric (SPR) 09*. Donostia, Spain.
- Hamblin, C. L. 1973. Questions in montague english. *Foundations of Language* 10. 41–53.
- Hankamer, Jorge & Ivan Sag. 1976. Deep and surface anaphora. *Linguistic Inquiry* 7. 391–428.
- Hardt, Daniel. 1993. *Verb phrase ellipsis: Form, meaning and processing*: University of Pennsylvania dissertation.
- Hartman, Jeremy. 2009. When e-GIVENness over-predicts identity. Handout presented at the Fourth Brussels Conference on Generative Linguistics (BCGL 4), Ellipsis Workshop. Hogeschool-Universiteit Brussel.
- Karttunen, Lauri. 1977. Syntax and semantics of questions. *Linguistics and Philosophy* 1. 3–44.
- Kotek, Hadas. 2014. *Composing questions*: Massachusetts Institute of Technology dissertation.
- Kotek, Hadas & Matthew Barros. to appear. Multiple sluicing, scope, and superiority: consequences for ellipsis identity. *Linguistic Inquiry* .
- Kratzer, Angelika & Junko Shimoyama. 2002. Indeterminate pronouns: The view from Japanese. In Y. Otsu (ed.), *The proceedings of the third Tokyo conference on psycholinguistics*. 1–25.
- Lasnik, Howard. 2014. Multiple sluicing in English? *Syntax* 17(1). 1–20.
- Lewis, David. 1979. Scorekeeping in a language game. *Journal of Philosophical Logic* 8. 339–359.
- Lipták, Anikó. 2015. Identity in ellipsis: An introduction. *Lingua* 166. 155–171.
- Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.
- Merchant, Jason. 2004. Fragments and ellipsis. *Linguistics and Philosophy* 27. 661–738.
- Merchant, Jason. 2005. Revisiting syntactic identity conditions. Handout, Workshop on ellipsis, University of California, Berkeley.
- Merchant, Jason. 2013. Voice and ellipsis. *Linguistic Inquiry* 44(1). 77–108.
- Merchant, Jason. 2018. Verb-stranding predicate ellipsis in greek, implicit arguments and ellipsis-internal focus. In Jason Merchant, Line Mikkelsen, Deniz Rudin & Kelsey Sasaki (eds.), *A reasonable way to proceed*, University of California.

- Needham, Stephanie Maureen. 2012. *Propositional anaphora in English: The relationship between so and discourse*: Carleton University MA thesis.
- Ramchand, Gillian. 1997. Questions, polarity and alternative semantics. In *Proceedings of NELS 27*. 383–396.
- Roberts, Craige. 1996. *Information structure: Towards an integrated theory of formal pragmatics*, vol. 49 (OSU Working Papers in Linguistics). OSU: The Ohio State University Department of Linguistics.
- Roberts, Craige. 2012. Information structure in discourse: towards an integrated formal theory of pragmatics. *Semantics and Pragmatics* 5. 1–69.
- Rojas-Esponda, Tania. 2014. A discourse model for überhaupt. *Semantics and Pragmatics* 7(1). 1–45.
- Romero, Maribel. 1998. *Focus and reconstruction effects in wh-phrases*: University of Massachusetts Amherst dissertation.
- Rooth, Mats. 1985. *Association with focus*. Amherst, MA: University of Massachusetts Amherst dissertation.
- Rooth, Mats. 1992a. Ellipsis redundancy and reduction redundancy. In S. Berman & A. Hestvik (eds.), *Proceedings of the Stuttgart ellipsis workshop, Arbeitspapiere des Sonderforschungsbereichs 340*.
- Rooth, Mats. 1992b. A theory of focus interpretation. *Natural Language Semantics* 1. 75–116.
- Ross, John. 1969. Guess who? In R. Binnick, A. Davison, G. Green & J. Morgan (eds.), *Papers from the 5th regional meeting of the Chicago Linguistic Society*. 252–286. Chicago: Chicago Linguistic Society.
- Schwarzschild, Roger. 1999. GIVENness, AvoidF, and other constraints on the placement of accent. *Natural Language Semantics* 7. 141–177.
- Snider, Todd Nathaniel. 2017. *Anaphoric reference to propositions*: Cornell University dissertation.
- Takahashi, Daiko. 1994. Sluicing in Japanese. *Journal of East Asian Linguistics* 3. 265–300.
- von Stechow, Kai. 1993. Expletive constructions. *Natural Language Semantics* 1(2). 123–148.
- Weir, Andrew. 2014. *Fragments and clausal ellipsis*: University of Massachusetts Amherst dissertation.
- Weir, Andrew. 2017. Cointensional questions and their implications for fragment answers. In *Proceedings of SuB 21*.