Anaphoric *it*-clefts: The myth of exhaustivity

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1 Introduction

English *it*-clefts can be divided into two distinct types. The first one is where the post-focus constituent is accented and cannot be elided as exemplified in (1). Prince (1978:898) termed such *it*-clefts “informative presupposition *it*-clefts” as the meaning of the post-focus constituent typically provides new information.

(1) It was Gore Vidal who said “It is not enough to succeed. Others must fail.”

The second type of *it*-cleft is where the post-focus constituent is de-accented or elided as exemplified in (2B) and (3B). We call these anaphoric *it*-clefts.

(2) A: Someone once said “It is not enough to succeed. Others must fail.”
    B: Yeah, it was Gore Vidal.

(3) A: Who said “It is not enough to succeed. Others must fail”?
    B: It was Gore Vidal.

Traditionally, anaphoric *it*-clefts are analyzed as giving rise to an exhaustivity implication (among others, Horn 1981; Szabolcsi 1981; Percus 1997; Roberts 1998; É. Kiss 1998; Krifka 2008; Büring 2011; Velleman et al. 2012). It is claimed that this implication amounts to identifying the entity denoted by the focused expression as the only (or maximal) entity bearing the property under discussion. For example, it is argued that the *it*-cleft in (4b), when uttered in a context where its existence presupposition is satisfied, conveys that nobody other than Greg and Dan went to CLS or that Greg and Dan exhaust the list of CLS-goers, hence the infelicity of the sentences following the *it*-cleft.

(4) Who went to CLS?
    a. Greg and Dan. I don’t know if anyone else did. / Scott did, too.
    b. It was Greg and Dan. #I don’t know if anyone else did. / #Scott did, too.

In this paper, we deny that an exhaustivity implication is part of the meaning of anaphoric *it*-clefts. Instead, we claim that anaphoric *it*-clefts are used to (further) specify an antecedent discourse referent (DR) that the speaker considers to be insufficiently specified, and the appearance of an exhaustivity implication only arises when such clefts are used to answer *wh*-questions.

∗For helpful discussions, we would like to thank Greg Kierstead, Peet Klecha, Yusuke Kubota, Dan Miles, and Mike White.
The rest of the paper is organized as follows. In §2, we provide some data to motivate our main claim and an informal sketch of our analysis. In §3, we develop a dynamic account that captures the generalizations reached in §2. In §4, we review the previous claims about the interpretation of *it*-clefts before we conclude in §5 with a brief discussion.

2 Anaphoric *it*-clefts

To see that anaphoric *it*-clefts in general do not give rise to an exhaustivity implication, one needs to look at contexts where they are not used to answer *wh*-questions. To illustrate, consider the example in (5). Here, the *it*-cleft is revising misinformation about an antecedent DR that speaker A is talking about. In particular, there is no need to bring in any notion of exhaustivity that is implicated with the use of the *it*-cleft as it is not identifying Rob as the only individual who got an NSF grant given that Mike is also a recipient.

(5) A: Did you hear, Bob got an NSF grant!
   B: Well, actually, it was Rob. And Mike got one, too!

Another example is given in (6). Again, the clefts in (6B) and (6B′) are specifying an antecedent DR by revising misinformation about it. But, on top of this, there is no need to say they implicate that the entities denoted by the focused expressions are the maximal entities with respect to some property under discussion.

(6) A: Did you see? The black cat caught a bird!
   B: I think it was the grey one.
   B′: I think it was a butterfly.

A set of further examples is given in (7). In each of (7a-e), B chooses a DR from the utterance context and equates the denotation of the postcopular NP with it (or else, as here, a quantificational NP is quantified into the postcopular position). In (7f), the antecedent DR is weakly familiar (Roberts 2003) since the robbery must have occurred at some time of day. As in the examples above, there is no need to invoke a notion of exhaustivity since these DRs are not entailed to be maximal with respect to some property.

(7) A: A gas station was robbed by a man wearing a sombrero with a basket of fruit on top of it!
   B: (Yeah,...)
   a. It was the BP station near the Bethel intersection (that was robbed).
   b. It was my halfwit brother (who robbed it).
   c. It was a pink sombrero with a purple hat band (that he was wearing).
   d. It was a Longaberger basket (that was on top of the sombrero).
   e. It was a bunch of rotten bananas (that was in the basket).
   f. It was at night (that the robbery occurred).
Finally, consider (8), an example from The Simpsons. This excerpt is from one of the Halloween episodes where Mr. Burns is a vampire and the Simpsons are visiting his mansion. The it-cleft in (8d) falsely identifies the utterer of Homer’s first sentence with the denotation of the focused expression the boy, namely Bart. Observe that alongside (8d), (8e) is also possible as a response. However, its non-cleft counterpart in (8f) isn’t, which suggests that there isn’t a question that is being answered in this context.

(8)  a. Lisa: Dad, do you notice anything strange?  
    b. Homer: Yeah, his hairdo looks so queer.  
    c. Vampire Burns: I heard that!  
    d. Homer: It was the boy!  
    (Compare)  
    e. Homer: (It wasn’t me!)  
    f. Homer: (#Not me!)

So far, we argued that anaphoric it-clefts do not, in general, give rise to an exhaustivity implication, contrary to the accepted view in the literature. However, when such clefts are used to answer wh-questions, we observe the contrast exemplified in (4), repeated below as (9). As (9a) shows, with a non-cleft answer, it is possible for the speaker to not know whether someone else other than Greg and Dan went to CLS, or to use an additive particle like too to add another individual to the plurality of people who went to CLS. However, as (9b) shows, using an it-cleft answer precludes such follow-ups. So, then, the question is why the two kinds of answers behave differently.

(9) Who went to CLS?  
    a. Greg and Dan. I don’t know if anyone else did. / Scott did, too.  
    b. It was Greg and Dan. #I don’t know if anyone else did. / #Scott did, too.

As we argued above, an anaphoric it-cleft is used to (further) specify an antecedent DR that the speaker considers to be insufficiently specified. We claim that the contrast between (9a) and (9b) arises because the antecedent DR in the context of the question in (9) is the maximal plurality of individuals with the property of going to CLS. The it-cleft identifies this plurality with the denotation of the focused expression, hence the infelicity of the sentences following the it-cleft in (9b).

To see why the answers in (9) are about the maximal plurality of individuals who went to CLS, we need to understand what the question they are answers to contributes to the context. To that end, we adopt two ideas from Hamblin (1957) and Hamblin (1971) for a dynamic analysis of questions. In particular, our analysis builds on (i) how Hamblin originally defined questions, and (ii) his notion of the presumption of a question.

Hamblin (1957) claims that (i) a question denotes a set of propositions, its possible complete answers (the so-called “Hamblin alternatives”), (ii) possible complete answers are together exhaustive and (iii) mutually exclusive. Such answers

are complete in the sense that each possibility precludes all of the others. In addition, Hamblin (1971:134) defines what he calls the presumption of a question as “equivalent to the disjunction of its answers.” The disjunction of the possible complete answers of a question is equivalent to an existential quantification on the set of its complete possible answers. Since possible complete answers are mutually exclusive, the presumption of a question requires not only existence but the unique existence of a true complete answer. Thus, the Hamblin presumption (HP) of a question is true at a given world \( w \) iff exactly one of the propositions in its extension at \( w \) is. Lastly, we follow Hamblin (1971:148), who suggests that the asker of a question and, in the case of acceptance, all the interlocutors are committed to the HP of the question.

For a who-question, each complete possible answer corresponds to a particular choice of a (possibly empty) maximal plurality with the property in question. Thus, a who-question like (9) is taken as asking for the maximal plurality of individuals with the property of going to CLS. Upon acceptance, specifying this maximal plurality becomes a commitment of the interlocutors. Given this effect of the question on the context, the contrast between (9a) and (9b) arises because in (9b) the it-cleft identifies the maximal plurality of individuals with the property of going to CLS with the entity denoted by the focused expression. But no such identification necessarily exists in (9a), because we analyze non-cleft short answers as, in general, providing only partial information about the identity of the maximal plurality in question. Put differently, (9a) says that Greg and Dan are two atoms of the maximal plurality of individuals with the property of going to CLS whereas (9b) says that that maximal plurality is the plurality with the two atoms Greg and Dan. Therefore, it is infelicitous in (9b) to continue by saying that one doesn’t know whether there are other individuals that belong to this plurality or that this plurality contains another atom, namely the one for Scott, whereas no such infelicity arises in the case of (9a).

In sum, the so-called exhaustivity implication in cases like (9) is derivable from the two properties of an it-cleft when it is used as an answer to a wh-question: (i) it takes as antecedent the maximal plurality of individuals with the property in question, which in turn is supplied by the dynamic meaning of the question, and (ii) it identifies this plurality with the denotation of the focused expression. Thus, we conclude that an exhaustivity implication is not part of the meaning of anaphoric it-clefts.

Before moving on to our dynamic analysis, we discuss an implication which we claim is part of the meaning of anaphoric it-clefts, as this is also commonly accepted in the literature. This implication, the existence presupposition of an it-cleft, is in fact what makes such an it-cleft an anaphoric construction. It acts as a constraint on the common ground and requires that there be an individual (possibly plural) with the property under discussion. In examples (5)-(8), we have illustrated this requirement in contexts where the it-clefts are not used to answer questions. On the other hand, when it-clefts are used as answers, this implication is another way in

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2But, certainly, pragmatics doesn’t always require speech acts which answer interrogatives to be complete in this sense. We will return to this point presently.

3In our usage, a plurality might have only one atom or even no atoms.
which they differ from their non-cleft counterparts since the latter do not give rise to such an implication. To illustrate, consider (10). Here, it is not mutually known that there are kids who like snakes and in fact there is an expectation on the part of Jack Hanna, a celebrity naturalist visiting a kindergarten, that there are none. In such a context, (10a) and (10b) are felicitous while the it-cleft answer in (10c) isn’t.

(10)  a. Jack Hanna: Okay kids, who likes snakes? [He expects that nobody does.]
    b. Kid: Nobody!
    c. Kid: Greg and Dan!
    d. Kid: #It’s Greg and Dan!

In a context where it is inferable or mutually known that there are individuals with the property under discussion, an it-cleft answer like (11B) becomes felicitous alongside its non-cleft counterpart in (11B’).

(11)  A: Hey, who took those last 2 slices of pizza in the lounge?
    B: It was Greg and Dan.
    B’: Greg and Dan.

3 A dynamic account

In this section, we provide a dynamic account that captures the generalizations reached in §2. We elaborate the dynamic context model in Martin (2013); Martin & Pollard (2014) and Martin (2014). This work builds on the tradition in dynamic semantics (Muskens 1996; Beaver 2001; de Groote 2006) that uses higher-order logic (HOL) to model context change. The linguistic framework we use, Dynamic Categorial Grammar (DyCG, Martin 2013), provides an interface between this kind of dynamic semantics and a linear logic based form of categorial grammar called Linear Categorial Grammar (Pollard & Smith 2012; Mihaliček 2012; Pollard 2013), which in turn is inspired by Oehrle (1994).

The underlying static semantic theory used in DyCG is written in HOL with the addition of the basic (non-logical) types e for entities, p for propositions and w for worlds. From these basic types, complex types that can be meanings of linguistic expressions are defined by the type constructor \( \rightarrow \), e.g., \( e \rightarrow p \) and \( e \rightarrow e \rightarrow p \) for unary and binary (static) properties, respectively.

We model contexts as functions from \( n \)-tuples of semantic objects to ordered pairs, whose first component is a proposition (the common ground (CG)), and whose second component is a stack of topics under discussion (TUDs). By a DR, we mean a component of the argument tuple. Each of the TUDs is one of these DRs. The TUDs replace the QUD-stack (Ginzburg 1994; Roberts 1996/2012) in the sense that questions uttered in discourse are not stored as sets of propositions. Rather, as we will see below, what the TUD keeps track of is the DRs introduced by accepted questions. Thus, answering questions in discourse amounts to specifying DRs introduced by questions.
First, consider the example context given in (12). Here, the superscript 1 on the tuple variable \( x \) gives its length and the component bound variables (here, just \( x_0 \)) are subscripted. The CG consists only of the proposition that there is a donkey that brays, and there are no topics under discussion.

(12) \( \lambda_x. \langle (\text{donkey } x_0) \rangle \) and \( (\text{bray } x_0), <\rangle \)

Now suppose that we want to update the context in (12) with the dynamic meaning of \( A \text{ farmer danced,} \) which is given in (13). Here, \( c \) is the utterance context, and \( |c| \) is the arity of \( c \), namely the number of DRs that \( c \) ‘knows about.’ In case (13) is accepted, the function corresponding to its context update, given in (14), is applied to the context in (12), yielding (15).

(13) \( \lambda_{c}.\lambda_{y|c|,x^1}. \langle (\text{farmer } x_0) \rangle \) and \( (\text{danced } x_0), <\rangle \)

(14) \( \lambda_{c}.\lambda_{y|c|,x^1}. (\pi_1(c \ y) \) and \( (\text{farmer } x_0) \) and \( (\text{danced } x_0), \pi_2(c \ y) \))

(15) \( \lambda_x. \langle (\text{donkey } x_0) \rangle \) and \( (\text{bray } x_0) \) and \( (\text{farmer } x_1) \) and \( (\text{danced } x_1), <\rangle \)

Based on the dynamic adaptation of the ideas in Hamblin (1957) and Hamblin (1971) that we discussed above, the question \( \text{Who went to CLS?} \) is assigned the (static) meaning in (17) where who is defined as in (16). We distinguish between types \( e \) (entities) and \( e^\# \) (pluralities); \( X \) and \( Y \) range over the latter. For a property \( P \) (type \( e \rightarrow p \)), \( P^\# \) is the corresponding distributive property of pluralities (type \( e^\# \rightarrow p \)); \( Z \) ranges over properties of pluralities. \( \text{maximize } X Z \) is the proposition that the plurality \( X \) is the maximal plurality with property \( Z \). Thus, the question is asking for the maximal plurality that went to CLS.

(16) \( \text{who } =_{\text{def}} \lambda_{Zp}. \exists x.P \text{ equals } (\text{maximize } X (\lambda_{Y}. (\text{person}^\# Y) \text{ and } (Z \ Y))) \)

(17) \( \text{who went-to-clsl} =_{\text{def}} \lambda_{p}. \exists x.P \text{ equals } (\text{maximize } X (\lambda_{Y}. (\text{person}^\# Y) \text{ and } (\text{went-to-clsl}^\# Y))) \)

The Hamblin presumption of the question \( \text{Who went to CLS?} \) is given in (18) which is equivalent to (19), where we eliminate \(!\), which is redundant, since the maximal \( X \) is necessarily unique.

(18) \( \exists x.P \text{ and } \exists x. (p \text{ equals } (\text{maximize } X (\lambda_{Y}. (\text{person}^\# Y) \text{ and } (\text{went-to-clsl}^\# Y)))) \)

(19) \( \exists x. \text{maximize } X (\lambda_{Y}. (\text{person}^\# Y) \text{ and } (\text{went-to-clsl}^\# Y)) \)

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*We use the following notational conventions: lambda-bound variables are subscripted, e.g., we write \( \lambda_x.a \) instead of \( \lambda x.a \). We sometimes use a single \( \lambda \) for multiple abstractions, e.g., \( \lambda x.y.a \) instead of \( \lambda x.\lambda y.a \). Object-language application is left-associative, hence \( (fa)\beta \) abbreviates \( ((fa)b) \). We eliminate outermost parentheses, so \( fab \) abbreviates \( (fa)b \) and \( f(ab) \) abbreviates \( (f(ab)) \). For any \( m \)-tuple \( x \) and \( n \)-tuple \( y \), we write \( x,y \) for the \((m + n)\)-tuple with \( x \) as its first \( m \) components and \( y \) as its last \( n \) components.*
Since $X$ might be the empty plurality, (19) is a necessary truth. However, the dynamic counterpart of (19), the dynamic Hamblin presumption (DHP) of the question, introduces a new DR corresponding to $X$. The DHP expresses that the DR $X$ is the maximal satisfier of the property in question. The dynamic semantics of an accepted $wh$-question is an update function which conjoins its DHP to the CG of the input context, and pushes the corresponding DR on top of the TUDs so that it becomes the current topic. This encodes the commitment of the discourse participants to (sufficiently) specify this DR. The update function of Who went to CLS? is given in (20). Applying this update to a context $c$ yields the new context in (21).

$$
\lambda_c. \lambda_{X[c]} \langle \pi_1(c \, x) \rangle \text{ and } \text{(maximize } X \langle \lambda_{Y[\text{person} # Y]} \text{ and (went-to-cls} # Y) \rangle \text{, push } X \langle \pi_2(c \, x) \rangle)$$

To sum up, in our dynamic analysis of questions, an accepted question introduces a DR to be further specified. In the case of an accepted $wh$-question, that DR is entailed by the context to be the maximal plurality with the property in question. Answers are analyzed as anaphoric to the DR introduced by the question they answer. Now, recall that in §2, we argued that an anaphoric $it$-cleft identifies an antecedent DR with the denotation of the focused expression. We also noted that in examples like (22) there is a contrast between $it$-cleft and non-cleft answers, which has been traditionally analyzed as the result of an exhaustivity implication that the interpretation of an $it$-cleft gives rise to.

$$
\lambda_{X[c]} \langle \pi_1(c \, x) \rangle \text{ and (maximize } X \langle \lambda_{Y[\text{person} # Y]} \text{ and (went-to-cls} # Y) \rangle \text{, push } X \langle \pi_2(c \, x) \rangle)$$

(22) Who went to CLS?
   a. Greg and Dan. I don’t know if anyone else did./ Scott did, too.
   b. It was Greg and Dan. #I don’t know if anyone else did./ #Scott did, too.

In our analysis, the non-cleft answer in (22a) is analyzed as taking as antecedent the DR introduced by the DHP of the question in (22). This DR, thanks to the question update, is the DR for the maximal plurality with the property went-to-cls#. The answer asserts that the entity denoted by the focused expression Greg and Dan is a (possibly proper) subplurality of the maximal plurality of individuals with the property in question without necessarily implicating that it is the entirety of this maximal plurality. This correctly predicts the follow-ups in (22a) to be felicitous. On the other hand, the $it$-cleft answer in (22b) identifies the same DR with the denotation of the focused expression, thereby giving rise to the so-called exhaustivity implication. Thus, as we argued before, an exhaustivity implication is not part of the meaning of an $it$-cleft.

## 4 Previous accounts

In this section, we discuss previous analyses of $it$-clefts and compare them to our account. As mentioned in the beginning, it is generally claimed that $it$-clefts identify
the denotation of the focused expression as the only or the maximal entity with
the relevant property, hence the so-called exhaustivity implication (among others,
Horn 1981; Szabolcsi 1981; Roberts 1998; Percus 1997; É. Kiss 1998; Krifka 2008;
Büring 2011; Velleman et al. 2012).

The exhaustivity implication was analyzed as an assertion by Bolinger (1972);
Halvorsen (1978); Atlas & Levinson (1981); Szabolcsi (1981); Han & Hedberg
(2008). However, Horn (1981) argued that this analysis is problematic for English.
In particular, if exhaustivity was asserted, then one wouldn’t expect (23a) to be
infelicitous but rather pattern like (23b), because the it-cleft would be informative
(examples adapted from Horn 1981).

(23) a. #I know John went to CLS but I’ve just heard it was John who went to
    CLS.
    b. I know John went to CLS but I’ve just heard only John went to CLS.

Horn (1981) claimed that the exhaustivity implication should rather be analyzed
as a conversational implicature. According to his analysis, the existence presuppo-
sition of an it-cleft, together with what it asserts, gives rise to the implication that
the individual denoted by the focused expression is the only relevant individual
with the property under discussion. The exhaustivity implication then follows from
a quantity implicature, because if there were other individuals with the same prop-
erty, the speaker would have mentioned them. The problem with this analysis, as
Velleman et al. (2012) point out, is that this implicature cannot be directly canceled
as shown in (24).

(24) #It was John who went to CLS; indeed, it was John and Bill.

A third line of analysis claims that the exhaustivity implication is a presup-
position (Kenesei 1986; Szabolcsi 1994; Percus 1997; Bende-Farkas 2006; Hed-
berg 2013). In some presuppositional analyses, e.g., Percus (1997); Bende-Farkas
(2006); Hedberg (2013), the similarities between cleft-like structures and definite
descriptions are exploited, building on the idea that it-clefts conceal a discontinuous
definite description, and equating the exhaustivity implication with the uniqueness
(or maximality) presupposition of this definite description. In some of these analy-
ses, the exhaustivity implication of an it-cleft like (25) is captured by employing a
universal quantifier as in (25a) and in yet others it is captured by the iota operator
as in (25b).

(25) It was John who went to CLS.
    a. \( \forall x (\text{went-to-CLS}(x) \rightarrow (x = j)) \)   c. \( \exists x \text{went-to-CLS}(x) \)
    b. \( j = \text{\( \iota \)} \text{went-to-CLS}(x) \)   d. \( \text{went-to-CLS} (j) \)

Velleman et al. (2012) point out that the analyses of exhaustivity that employ
(25a) are problematic because taken together with an existence presupposition like
(25c), they entail (25d), the implication which is taken to be the asserted content.
Consequently, the use of an it-cleft is predicted to be uninformative in contexts
where these presuppositions are part of the CG or are accommodated, despite the
fact that it-clefts do not sound redundant in such contexts. Moreover, (25a) does
not seem to survive under negation as examples like (26) are perfectly fine.
(26) It wasn’t John who went to CLS. It was Bill.

As mentioned above, the interpretation of exhaustivity in it-clefts is usually taken to involve a counterpart of only. Velleman et al. (2012:442) note that the idea that it-clefts and only-sentences are semantically similar has resulted in analyses where the two are claimed to have the same exhaustive meaning component. The difference, as they note, was captured by claiming that only-sentences assert, while it-clefts presuppose or conventionally implicate, exhaustivity.

Velleman et al. (2012:442) propose a similar account where they describe it-clefts as “inquiry terminating (IT) constructions.” An IT-construction is claimed to mark an answer to the current question under discussion as a maximal answer and, as a result, to resolve the question and terminate it as an active line of inquiry. Velleman et al. (2012) use the two meaning components $\text{MIN}^S$ and $\text{MAX}^S$ given in (27) to characterize only and CLEFT$^S$, their cleft operator responsible for the exhaustivity implication of an it-cleft. Here, the subscript $S$ indexes the current context which includes a Current Question under discussion ($CQ^S$) and a salient partial ordering over the alternatives in $CQ^S$, indicated by the entailment relations ($\geq^S$) and ($>^S$). In particular, $p \geq^S q$ iff $p$ entails $q$, and $p >^S q$ iff $p$ entails $q$ and $p$ is distinct from $q$.

\begin{align*}
(27) & \quad a. \quad \text{MIN}^S(p) = \lambda w. \exists q \in CQ^S[q(w) \land (q \geq^S p)] \\
& \quad \text{“There’s a true answer at least as strong as } p \text{.”} \\
& \quad b. \quad \text{MAX}^S(p) = \lambda w. \forall q \in CQ^S[(q >^S p) \rightarrow \neg q(w)] \\
& \quad \text{“No true answer is strictly stronger than } p \text{.” (Velleman et al. 2012:451)}
\end{align*}

According to Velleman et al., it-clefts and only-sentences differ in their meaning because what is at-issue for CLEFT$^S$, namely, (27a), is presupposed for only, and what is at-issue for only, namely, (27b), is presupposed for CLEFT$^S$. Consequently, they assign (28a) to only and (28b) to CLEFT$^S$. The two meaning components are separated by a dot as follows: presupposed.asserted. Given (28b), Velleman et al. would derive the exhaustivity in (25) as follows. The MIN component asserts that there’s a true answer at least as strong as (25d), and the MAX component requires that there is no answer stronger than (25d), and as a result one infers that John went to CLS and nobody other than John did.

\begin{align*}
(28) & \quad a. \quad \text{only} = \lambda w. \lambda p : \text{MIN}^S(p)(w) \cdot \text{MAX}^S(p)(w) \\
& \quad \text{b. CLEFT}^S = \lambda w. \lambda p : \text{MAX}^S(p)(w) \cdot \text{MIN}^S(p)(w) \quad \text{(Velleman et al. 2012:452)}
\end{align*}

The Velleman et al. analysis has several problems, though. First, an it-cleft doesn’t have to resolve a question and terminate it as an inquiry. For example, depending on the goals of the querier in (29), the it-clefts in (29a-c) may be taken as specifying “the cookie-taker” to the best of the cleft-utterer’s knowledge, but this may not sufficiently answer the question for it to be popped out of the QUD-stack.

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5The term Current Question (CQ) is used to refer to the question at the top of the QUD-stack in the sense of Roberts (1996/2012).

6These relations may include pragmatic ordering alongside pure entailment (Beaver & Clark 2008).
(29) Who took the last cookie?
   a. It wasn’t one of the kids.
   b. It was one of the kids but I don’t remember which.
   c. It was John or Mary but I don’t remember which.

Furthermore, *it*-clefts can be used in contexts where there is no sense in which they terminate an inquiry, as (30) illustrates. Here, A does not provide the identity of the International Relations professor who took the 3 slices of pizza, perhaps because she thinks that B wouldn’t be interested, or that B wouldn’t know the professor, or perhaps because A herself doesn’t know the identity of the professor either.

(30) A: It turns out, it was one of the International Relations professors who took the last 3 slices of pizza in the lounge!
   B: Which one?

Velleman et al. (2012:449) also claim that *it*-clefts require a question to have been raised or discussed. They propose that the existence presupposition of an *it*-clef is triggered by the question it answers (Velleman et al. 2012:456). However, an *it*-clef in English doesn’t require a question to be under discussion in prior discourse, as we discussed in §2. Recall that in (31), for example, there’s nothing in the input context that gets the question *Who robbed the BP station?* onto the QUD-stack. Rather, in (31a), the speaker B chooses an antecedent (a weakly familiar DR), namely the one for the robber(s), since the existence of such a DR is inferable from the existence of a robbery, and equates this DR with the denotation of the post-copular NP. The fact that (31b) is infelicitous in this context casts further doubt that the *it*-clef in (31a) is an answer to a question. In (31c), the speaker B chooses another DR, namely the one for the gas station (a strongly familiar DR). An exhaustivity inference does not arise because the CG does not entail that the antecedent DRs are maximal with respect to some property; the *it*-clef just picks up an antecedent DR to further specify it.

(31) A: A gas station near Bethel and River Road was robbed last night!
   B:  a. It was my two halfwit brothers (who robbed it).
       b. #My two halfwit brothers.
       c. It was be the BP station (that was robbed).

As for the meaning in (28b) that is assigned to *it*-clefts, note that MIN_p is actually equal to p! Velleman et al. already note that p |= MIN_p or, in other words, p ⊆ MIN_p. The fact that MIN_p ⊆ p follows from the definition of MIN_p and the fact that worlds are closed under entailment. So in (25), for example, the asserted content would be (25d), which is the same as what most of the previous accounts claimed it to be. On the other hand, MAX_p will be truth-conditionally equivalent to the proposition *If John went to CLS, then nobody else did.* This is the same conditional presupposition that Büring (2011) proposed for *it*-clefts, except that Velleman et al. claim that the meaning of *it*-clefts are focus sensitive in that they make reference to the current QUD. Either way, such a presupposition seems unnecessary. For instance, for (32a) to be felicitous, it is not necessary either for
the speaker to assume (32b) to be mutually known, or for the hearer to know or to accommodate it.

(32) Who came to see you last night?
   a. It was somebody that you don’t know.
   b. ps: (?) If somebody that the addressee doesn’t know came, then nobody else did.

Lastly, a Velleman et al.-style exhaustivity account cannot be extended to cases like (29c). To say that (29c) presupposes that no true answer is strictly stronger than the proposition \((\text{took-last-cookie(j)} \lor \text{took-last-cookie(m)})\) is false because (29c) entails that there is a true answer which is strictly stronger than this disjunction, namely whichever disjunct is true.

The analysis we developed does not have any of these problems. For one thing, we argued that the existence presupposition has to be satisfied independently of a question. In cases like (31), given what A says, the antecedent DR is either weakly familiar or strongly familiar, satisfying the existential presupposition in each case. As for cases like (29) and (32), we can simply say that the use of the \textit{it}-cleft provides more information about the antecedent DR.

5 Conclusion
In this paper, we argued that anaphoric \textit{it}-clefts are used to further specify an antecedent DR that the speaker considers to be insufficiently specified. An exhaustivity implication arises when such clefts are used to answer \textit{wh}-questions because (i) the dynamic meaning of a question introduces a DR for the maximal (possibly empty or singleton) plurality of individuals with the property in question, and (ii) the dynamic meaning of an anaphoric \textit{it}-cleft that answers a question has this DR as its antecedent and identifies this DR with the denotation of the focused expression.

Our analysis yields a simpler theory where exhaustivity is not encoded in the meaning of \textit{it}-clefts. The analysis also obviates the need to identify whether this putative implication is a presupposition, a conversational implicature, a conventional implicature, etc., a much discussed topic in the literature on \textit{it}-clefts.

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