Deep properties of a surface anaphor: on the contextual restriction of sluicing sites

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Abstract

Three apparently disparate aspects of sluicing (i.e., Barros effects, inheritance-of-content effects, and the ability to take split antecedents) could be unified if the relevant sluices were derived from deletion of an underlying cleft or copular clause. However, such cleft/copular sources are demonstrably unavailable in many of the relevant cases. We resolve this paradox by extending and modifying Elbourne's (2008) implementation of the hypothesis that ellipsis sites are necessarily associated to a free contextual variable. This approach allows us to recreate the relevant parts of the semantics of clefts and copular clauses without invoking their syntax. Given that contextual variables are deep anaphors, our proposal supports Elbourne's conjecture that surface anaphors invariably contain a deep-anaphoric component.

Keywords: Sluicing, contextual restriction, deep vs. surface anaphora

1 Introduction: three puzzles in sluicing and a common solution

1.1 Puzzle #1: Barros effects

A flurry of studies over the last two decades has provided strong crosslinguistic support for the idea that clefts and copular clauses can underlie certain instances of clausal ellipsis (see, among many others, Merchant 1998, Potsdam 2007, Rodrigues et al. 2009, van Craenenbroeck 2010, Hiraiwa and Ishihara 2012, Paul and Potsdam 2012, Gribanova 2013, Barros 2014, Gribanova and Manetta to appear, and references). Among these studies, Barros 2012 stands alone in developing a purely semantic argument in favor of a cleft source. His

argument is based on the observation that the incongruence of the non-elliptical wh- question in (1a) disappears under sluicing (1b). We will refer to this particular repair-by-ellipsis effect as a *Barros effect*.

(1)   Jack kissed Sally, and he also kissed someone else…

    a.   # …but I don't know who he kissed.

    b.   …but I don't know who.

The source of incongruence in (1a) is easy to pinpoint. If one says *I don't know who Jack kissed*, one is asserting ignorance of the identity of all of the people that Jack kissed (Romero 1998 and references); but then, this contradicts the previous assertion *Jack kissed Sally*, which entails that one does know the identity of at least one such person. The congruence of the minimally different (2) supports this analysis: here the assertion that I know some of the people Jack kissed is not contradicted by the subsequent assertion of Peter's ignorance.

(2)   I know that Jack kissed Sally, and that he then kissed someone else, but Peter doesn't know who Jack kissed.

To explain why ellipsis repairs the incongruence of (1a), Barros proposes that (1b) doesn't stem from deletion of (1a), but rather from deletion of the cleft in (3), which is independently grammatical and congruent. In turn, (3) is congruent because it is possible to write a semantics for *it* roughly paraphraseable as "the person other than Sally that Jack kissed".

(3)   Jack kissed Sally, and he also kissed someone else, but I don't know who it is.

Barros's proposal, while ingenious, lacks generality: Lipták (2013) and Saab (2015) show that paradigms analogous to (1) can be constructed in environments where a cleft source like (3) is not available. In both cases, this is accomplished by using sluicing remnants that are illicit cleft pivots. Saab, for example, exploits the distribution of Spanish DPs bearing the differential object marker *a*. Examples (4a) and (4b) are analogous to (1a) and (1b), respectively, and need no additional comment. The interesting example is (4c), which shows that *a*-marked objects may not function as cleft pivots. The ungrammaticality of (4c) then implies that (4b) cannot stem from deletion of an underlying cleft.

(4)   Juan besó   a   María, y   también besó a   alguien más…
       Juan kissed DOM María and also   kissed DOM someone else

    a.   # … pero no sé   a   quién besó.
            but   not know.1SG DOM who   kissed

    b.   … pero no sé   a   quién.
            but   not know.1SG DOM who

    c.   * … pero no sé   a   quién es.
            but   not know.1SG DOM who   is

Additionally, the Barros effect in (4b) cannot be analyzed in terms of a covert *else* modifier. Borrowing an argument from Lipták (2013), we note that the unsluiced version of such a sentence, given in (5), has a different meaning —i.e., one where the wh- phrase alludes to a third person that Juan kissed, on top of María and the unspecified *alguien más* of the antecedent.

(5) Juan besó a María y también besó a alguien más, pero no sé
     Juan kissed DOM María and also kissed DOM someone else but not know
     a quién más besó.
     DOM who else kissed
     "Juan kissed María, and he also kissed a second person, but I don't know which third person he kissed"

Importantly, the paradigm in (4) is not a quirk of Spanish. As Saab himself points out, it can be replicated across languages with any type of phrase that constitutes a licit sluicing remnant but not a licit cleft pivot. The paradigm in (6), from Lipták 2013, illustrates this pattern with Hungarian accusative-marked objects (6), and the one in (7) does so with German PPs.

(6) Mari meg hívta Jánost, és meg hívott még valaki…
     Mari PV invited Janos.ACC and PV invited also someone.ACC

    a. # … de nem tudom kit hívott meg.
        but not know.1SG who.ACC invited PV

    b. … de nem tudom kit.
       but not know.1SG who.ACC

    c. * … de nem tudom kit volt az.
       but not know.1SG who.ACC was that

(7) Hans hat mit Maria gesprochen, und er hat auch mit jemand anderem
     Hans has with Maria talked and he has also with someone else.DAT
     gesprochen…
     talked

    a. # … aber ich weiß nicht, mit wem er gesprochen hat.
       but I know not with who.DAT he talked has

    b. … aber ich weiß nicht, mit wem.
       but I know not with who.DAT

    c. * … aber ich weiß nicht, mit wem es ist.
       but I know not with who.DAT it is

It is also worth noting that the Barros effects in (4) through (7) cannot be accommodated by assuming that sluicing exceptionally licenses otherwise illicit cleft pivots, as Elliott and Murphy (2015) propose for sluices embedded under *egal* 'no matter' in German. This line

of attack would fail to account for the fact that Barros effects also obtain in Romanian, which lacks clefts entirely (Dobrovie-Sorin 1990, 1994).

(8) Ivan a tucat-o   pe Maria, a   tucat şi pe altcineva…
     Ivan has kissed-CL ACC Maria has kissed and ACC someone.else

    a. # … dar nu ştiu   pe cine Ivan a   tucat.
           but not know.1SG ACC who Ivan has kissed

    b.   … dar nu ştiu   pe cine.
           but not know.1SG ACC who

1.2 Puzzle #2: inheritance of content

The hypothesis that underlies this paper is that Barros effects are part of a larger class of sluices that exhibit a cleft- or copular-like interpretation, even in languages and environments where such underlying clefts and copular clauses are demonstrably unavailable. Consider first *inheritance of content*, i.e., the fact that sluicing remnants inherit the restriction of their indefinite correlates, even if wh- items in the corresponding unsluiced questions do not (Ginzburg 1992, Chung et al. 1995). The unsluiced question in (9a) means that Jack didn't see any of the people who left the party early, whether they were students or not. In contrasts, the sluice in (9b) means that Jack didn't see any of the students that left early, without any assertion as to whether he failed to see any non-student early-leavers.

(9) Some students left the party early…
    a. … but Jack didn't see who left the party early.
    b. … but Jack didn't see who.   [Barros 2014:160]

Jacobson (2013) and Weir (2014) discuss an analogous pattern with fragment answers. Just as above, the non-elliptical reply in (10B) doesn't entail that the Germans dancing in the quad were students (if anything, this meaning is a conversational implicature); in contrast, the fragment in (10) necessarily comes with this entailment. For conciseness, we will focus on the sluicing case and assume that our analysis carries over to fragments (this much is uncontroversial under an analysis of fragments along the lines of Merchant 2004 and Weir 2014, where the fragment moves to a left-peripheral position prior to TP deletion, just as wh- words do under sluicing).

(10) A: Which students were dancing in the quad?
     B: Some Germans were dancing in the quad.
     B': Some Germans.

It is tempting to analyze inheritance of content by requiring (9b) to stem from a copular clause like (11), which is also a question exclusively about students. Here, *they* is acting in the same way as *it* in (3), i.e., it gives us a meaning paraphraseable as "the students just mentioned".

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(11)   Some students left the party early, but Jack didn't see who they were.

This analysis, however, suffers from the same lack of generality as Barros's cleft-based account of Barros effects. To begin with, it forces us to say that (11) is the only possible source for (9b) —if (9a) could also be a source, (9b) would not exhibit an obligatory inheritance-of-content effect. However, while English does allow copular clauses along the lines of (11) to be sluicing sources, it does not restrict sluices to just these sources (see especially Merchant 2001:§4.2). Moreover, we can use the same line of argumentation we deployed in (4) through (8) to show that inheritance of content is not contingent on the availability of an underlying cleft or copular source. The Spanish examples (12a) and (12b) have the same meanings as (9a) and (9b), respectively; however, they cannot be derived from a copular clause because *a*-marked phrases are illicit copular pivots (12c). Just as is the case with Barros effects, comparable examples in other languages can be constructed with any phrase that is a licit sluicing remnant and an illicit cleft/copular pivot.

(12)   Juan vio a   unos estudiantes en la fiesta. . .
       Juan saw DOM some students   in the party

   a.   . . . pero Pedro no sabe   a   quién(es) vio Juan en la fiesta.
              but Pedro not knows DOM who.PL   saw Juan in the party
          [= Pedro doesn't know who (whether student or not) Juan saw at the party]

   b.   . . . pero Pedro no sabe   a   quién(es).
              but Pedro not knows DOM who.PL
          [= Pedro don't know which students Juan saw at the party]

   c. * . . . pero Pedro no sabe   a   quién(es) eran.
              but Pedro not knows DOM who.PL   were

1.3   Puzzle #3: split-antecedent sluices

Consider, finally, *split-antecedent sluices*, which have not been discussed in detail in previous literature, as far as we know.[1] Example (13) illustrates this pattern; its meaning can be paraphrased as "if Jack wants to interview an athlete, the editor asks which athlete he wants to interview, and if Sally wants to profile a politician, the editor asks which politician she wants to profile".

(13)   Whenever Jack wants to interview an athlete or Sally wants to profile a politician, the editor asks which.

An analysis where (13) stems from deletion of (14a) is inadequate, on two counts. First, the most prominent reading of (13) is that Jack's athlete and Sally's politician are different

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[1]Lobeck (1995:29–30) and Elbourne (2008:fn. 18) do note the possibility of split-antecedent sluices (with Merchant 2013a:fn. 2 recounting Elbourne's observation), but neither author provides an analysis or even a cursory description of their properties. Elbourne, however, does speculate that they can be subsumed under some form of the theory of VP and NP ellipsis he develops; we argue in §3.3 that his conjecture is correct.

people, whereas (14a) only offers a reading where they are the same people.[2] Second, for a number of speakers, (14a) licenses a "crossed" reading (a term suggested to us by an anonymous reviewer) where, if Jack wants to interview an athlete, the editor might ask either which athlete he wants to interview or which politician Sally wants to profile (and similarly for situations where Sally wants to profile a politician). This reading is ostensibly unavailable in (13). Rather, it would seem that (13) stems from deletion of the cleft (14b), which allows the same range of readings.

(14) a. Whenever Jack wants to interview an athlete or Sally wants to profile a politician, the editor asks which he wants to interview or she wants to profile.

  b. Whenever Jack wants to interview an athlete or Sally wants to profile a politician, the editor asks which it is.

But here again we run into the same problem as above: examples analogous to (13) are possible even when a cleft source like (14b) is unavailable. The paradigm in (15) illustrates this by exploiting the by-now familiar fact that Spanish *a*-marked objects are not licit cleft or copular pivots. Examples (15a) and (15b) have the same readings as (13) and (14a), respectively, and need no further comment;[3] example (15c) crucially contrasts with (14b) and shows that we can't attribute its acceptability to the presence of an underlying cleft. As in the previous two subsections, comparable examples can be constructed in other languages with phrases that are licit sluicing remnants and illicit cleft pivots.

(15) a. Siempre que Juan quiere entrevistar a   un futbolista o María quiere
           always that Juan wants interview DOM a footballer or María wants
           investigar a   un político, el editor pregunta a   cuál.
           profile   DOM a politician the editor asks   DOM which

  b. Siempre que Juan quiere entrevistar a   un futbolista o María quiere
      always that Juan wants interview DOM a footballer or María wants
      investigar a   un político, el editor pregunta a   cuál   quiere
      profile   DOM a politician the editor asks   DOM which wants
      entrevistar Juan o quiere investigar María.
      interview   Juan or wants profile   María

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[2]Note that (13) is still compatible with a situation in which the footballer and the politician are the same person (for example, we might be talking about Romário de Souza, who followed up his footballing career with elected positions in the Brazilian Congress and Senate); the crucial point here is that, unlike in (14a), this reading is not enforced. We provide (i) as an additional illustration of this asymmetry: in (ia), Sally may or may not have joined the Navy for the same reasons Jack joined the Army, but in (ib), she joined the Navy for the same reasons Jack did the Army.

(i) a. Jack joined the Army and Sally joined the Navy, but neither remembers why.

  b. Jack joined the Army and Sally joined the Navy, but neither remembers why he joined the Army and she joined the Navy.

[3]Although the contrast between (15a) and (15b) is perhaps more pronounced if the two TPs in the scope of the wh- phrase in (15b) are joined with *y* 'and' instead of *o* 'or'.

    c.   * Siempre que Juan quiere entrevistar a   un futbolista o María quiere
           always   that Juan wants interview DOM a   footballer or María wants
           investigar a   un político, el editor pregunta a   cuál   es.
           profile   DOM a politician the editor asks   DOM which is

1.4   Evidence in favor of silent syntactic structure

Some readers might be tempted to take these form-meaning mismatches as evidence for non-structural analysis of sluicing, where the ellipsis site is radically empty and the observed meaning arises from a semantic/pragmatic inference rule (for different implementations of this idea, see Hardt 1999, Ginzburg and Sag 2000, Kehler 2002, Culicover and Jackendoff 2005, Jacobson 2013, and references). To counter such temptations, we show here that these sluices (specifically, split-antecedent sluices) exhibit a number of connectivity effects that strongly suggest the presence a complex underlying syntax.

1.4.1   Locality effects

Perhaps the best argument against a non-structural analysis lies on the observation that, under the correct circumstances, these sluices are sensitive to islands embedded in the ellipsis site.[4] Consider Nakao and Yoshida's (2007) and Nakao's (2009) observation (credited to Lasnik 2005) that sluicing fails to repair locality violations of adverbial wh- phrases. Specifically, the following examples only allow the high reading of *why* and *how*. Nakao and Yoshida argue that the low reading is absent because it would entail an irreparable ECP violation (i.e., movement of *why*/*how* across a relative clause boundary, see Chung et al. 1995:274). Note that the fact that we are dealing with adverbial remnants precludes a pseudosluicing analysis (Merchant 2001).

(16)   John wants to hire someone who fixes cars for a certain reason, but I don't know why.
      = I don't know why John wants to hire this person.
      ≠ I don't know why this person fixes cars.

(17)   John wants to hire someone who fixes cars in a certain way, but I don't know how.
      = I don't know how John wants to hire this person.
      ≠ I don't know how this person fixes cars.

If split-antecedent sluices have the same internal syntax as regular sluices, they should exhibit the same effect. As the following examples show, this prediction is correct.

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[4] Jacobson (2013:52–54), in developing a non-structural analysis of fragments, argues that these judgments are not a reliable diagnostic of silent syntactic structure on the grounds that (i) it is unclear that island effects are syntactic in nature; and (ii) a similar deviance arises also in cases where the antecedent doesn't contain an island. We refer readers to Weir 2014:§§2.3–2.4 for a critique of Jacobson's arguments.

(18) John wants to hire someone who fixes cars for a certain reason and Sally wants to hire someone who fixes bikes for a certain reason, but I don't know why.
  = I don't know why John and Sally want to hire these people.
  ≠ I don't know why these people fix cars and bikes

(19) John wants to hire someone who fixes cars in a certain way and Sally wants to hire someone who fixes bikes in a certain way, but I don't know how.
  = I don't know how John and Sally want to hire these people.
  ≠ I don't know how these people fix cars and bikes.

We can conclude, then, that the types of sluicing discussed in §§1.1–1.3 are derived by deletion of a regular wh- question.

1.4.2 Voice mismatches

Merchant (2013b), building on previous observations by Hardt (1999), Merchant (2001), Kehler (2002), Frazier and Clifton Jr. (2006), Kertz (2010), Kim et al. (2011), and others, points out that voice mismatches are possible under VP ellipsis (20), but not under sluicing (21).[5]

(20) a. The janitor must remove the trash whenever it is apparent that it should be [removed].

  b. This system can be used by anyone who wants to [use it].

(21) a. * Someone assassinated JFK, but I don't know who by [he was assassinated].

  b. * JFK was assassinated, but I don't know who [assassinated him].

Importantly, the unelided versions of the examples in (21) are grammatical, which suggests that this is a genuine ellipsis effect.

(22) a. Someone assassinated JFK, but I don't know who he was assassinated by.

  b. JFK was assassinated, but I don't know who assassinated him.

Merchant points out that the distribution of voice mismatches is difficult to account for in inference-based (non-structural) theories of ellipsis resolution, since the relevant inferences should be allowed for independently of the VPE/sluicing distinction. Instead, he proposes that the availability of a voice mismatch correlates with the size of the ellipsis site. Assume that voice is encoded in the functional head Voice, located right above *v* (Kratzer 1996, Collins 2005, i.a.). Assume also that Voice heads contained in ellipsis sites need to have the same active/passive feature specification as their counterparts in the antecedents (Merchant 2013b, Chung 2013). It follows from this that voice mismatches are licitc only in ellipsis sites small enough to exclude Voice —i.e., VP ellipsis, but not sluicing.

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[5]The impossibility of voice mismatches under ellipsis was first noticed by Merchant (2001:34–35), who already recognizes it as a problem for the semantic identity condition he proposed in that work. Merchant 2013b circumvents this problem by defining the identity condition we describe in the main text.

We can now use this asymmetry as a test for internal structure. As the following examples show, split-antecedent sluices require strict voice matching, suggesting they have the same complex underlying syntax as regular sluices. We omit Barros effects and inheritance of content effects, as it is difficult to construct illustrative examples.

(23)   a. During the scrum, someone punched Al and someone kicked Ed. Both wish they knew who (*by).

      b. Al's TV was stolen and Mary's car was vandalized. Neither knows who *(by).

(24)   a. Durante la melé, alguien pegó   a   Oscar y   alguien pateó a
        during   the scrum someone punched DOM Oscar and someone kicked DOM
        Daniel. Ambos quieren saber (*por) quién.
        Daniel both   want   know   by   who

      b. La tienda fue asaltada   y   las vitrinas fueron destrozadas. La policía aún
        the shop   was burglarized and the racks   were   destroyed   the police   still
        no   sabe   *(por) quién.
        not know   by   who

1.4.3   Case connectivity

In case-marking languages, ATB extraction requires the case morphology of the extractee to satisfy the case assignment properties of all the relevant predicates (Citko 2003, 2005 and references; note that different abstract Cases are possible, so long as they are syncretic). Thus, (25a) is grammatical because *wen* realizes the accusative assigned by both *unterstützen* and *behindern*. Compare to (25b), where *behindern* still assigns accusative but *helfen* assigns inherent dative: neither *wen* nor *wem* can simultaneously realize the case requirements of both predicates, and this results in ungrammaticality.

(25)   *German (Fanselow 2002)*

      a. Wen   hat [Anna unterstützt] und [Oskar behindert]?
        who.ACC has   Anna supported   and   Oskar obstructed

      b. { * Wen   / * wem   } hat [Anna geholfen] und [Oskar behindert]?
        who.ACC   who.DAT   has Anna helped   and Oskar obstructed

The minimal pair below shows that split-antecedent sluices are subject to the same restriction (this is effectively an extension of the argument in Ross 1969:253 and Merchant 2001:43–45). On the assumption that this effect is purely morphosyntactic (i.e., case morphology reflects the establishment of a specific syntactic relation between the case bearer and the case assigner),[6] the fact that (25) and (26) pattern together suggests that this class

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[6] Nykiel and Sag (2011) challenge this assumption on the grounds that it fails to predict strict case matching effects in sluices where a case mismatch could conceivably be expected. Similarly, Barker (2013) argues that case connectivity in sluicing can be covered by a "syntactic book-keeping" mechanism that transmits the case of the correlate to the sluicing remnant, even if the sluicing site doesn't contain a case assigner. We refer the readers to Vicente 2015, to appear for discussion of these alternatives.

of sluices stem from deletion of a complex underlying syntax. Note that (26b) has the same range of readings as English (13) above.

(26)   a.   Wann immer Anna jemanden   unterstützt oder Oskar jemanden
             whenever   Anna someone.ACC supports   or   Oskar someone.ACC
             behindert, der Chef fragt wen.
             obstructs the boss asks who.ACC

       b.   Wann immer Anna jemandem   hilft oder Oskar jemanden   behindert,
             whenever   Anna someone.DAT helps or   Oskar someone.ACC obstructs
             der Chef fragt { * wen   / * wem   }.
             the boss asks   who.ACC   who.DAT

1.5   The common solution

To recap: we have described three patterns of sluicing whose interpretation seems to correspond to what an underlying cleft (or copular clause) would give us. However, this interpretation persists even in cases where such an underlying structure is demonstrably unavailable. This pattern suggests an obvious solution, i.e., dissociating the relevant part of the *semantics* of clefts (specifically, their anaphoric properties) from the *syntax* of clefts, so that one can have the first without necessarily invoking the second.[7] In the following sections, we will discuss a way to implement this idea (effectively, an extension of Elbourne's 2008 analysis of VP and NP ellipsis) and then show how it accounts for Barros effects, inheritance of content, and split-antecedent sluices.

To introduce our proposal, it is instructive to go back to Barros's (2012) account of Barros effects in English, which is based on the fact that *it* in (3) can be assigned a meaning paraphraseable as "the person other than Sally that Jack kissed". To achieve this effect, Barros assumes that pronouns can be decomposed into a definite determiner and a free contextual variable that the assignment function maps to some discourse-salient meaning. In this particular example, Barros argues, the contextual variable can be mapped to the function $\lambda x \in D_e$.[Jack kissed $x \land x \neq$ Sally], where [$x \neq$ Sally] reflects the contribution of *else* (cf. Barros's paper and §3.1 for details); composing this function with the definite determiner gives us the desired meaning for *it*.

Independently of Barros's proposal, Elbourne (2008) argues that contextual variables can also be exploited to treat certain analytically difficult types of VP and NP ellipsis;[8] we

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[7]Lurking here is the potential misunderstanding that this paper is an argument against cleft-based sluices in general. This is not correct, as we still accept the existence of such sluices (for example, the English data discussed in the previous sections, where there is no direct evidence against an underlying cleft, are in principle ambigouous between a cleft-based analysis and one based on contextual restriction). At best, the argument we are constructing here is one against specific arguments in favor of cleft-based sluices, namely, those based exclusively on the anaphoric properties of clefts.

[8]Properly, Elbourne is making two separate claims (and so are we, by extension): first, that ellipsis sites need to be contextually restricted; and second, that contextual restriction is best implemented through a syntactically independent variable. In principle, one can accept the first claim and yet implement contextual

present and discuss his analysis in §2: specifically, we show that his implementation of the relation between the ellipsis site and the contextual variable (mediated by a dedicated functional head THE) can be recast, to no ill effect, in terms of the Predicate Modification mode of composition. In §3, the core of this article, we show how this approach can be used to provide a unified analysis of the patterns in §§1.1–1.3. On top of that, there is the fact that Elbourne's evidence in favor of a contextual variable comes exclusively from VP and NP ellipses with multiple antecedents.[9] While we do consider split-antecedent sluices (§3.3) the bulk of our evidence consists of sluices with a single antecedent. The fact that these sluices require the same analysis suggests that contextual variables are an integral component of the syntax of ellipses, rather than a device to handle cases with split antecedents. More generally, given contextual variables are effectively deep anaphors, our extension of Elbourne's work points towards the conjecture that all surface-anaphoric ellipses contain a deep-anaphoric element (hence the title of this article, which extends that of Bentzen et al.'s 2013). Whether this conjecture is correct, however, remains to be determined.

1.6 Two caveats

Before moving into the main part of the paper, we want to address two sets of data pointed out to us by one of the reviewers of this paper. The common feature of both sets is that they seem to contraindicate an analysis of the patterns in §§ 1.1–1.3 in terms of contextual restriction of the ellipsis site. We argue here that this is not so.

1.6.1 Contextually restricted questions without ellipsis

The reviewer in question provides the following examples, which show that inheritance of content and Barros effects can arise in unsluiced questions.

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restriction without invoking such variables. Hardt (1999) proposes an analysis along these lines for VP ellipsis, where I^0 (the functional head that embeds the VPE site) is a deictic element containing a variable that tracks discourse salient information. More recently, Weir (2014) analyzes inheritance of content in fragments (see (10) above) by defining an identity condition that requires ellipsis sites to take discourse objects (rather than syntax/LF structures) as their antecedents. While the intuition behind these proposals is effectively the same as ours, we have chosen not to pursue the technical implementations they develop. For Hardt 1999, we refer the reader to the discussion in Elbourne 2008:§3.2. For Weir 2014, we will only note that his proposal is finely tailored to fragments and (unlike Elbourne's) it remains unclear how well it scales to other types of ellipsis (e.g., Weir requires fragments to be licit answers to a salient QUD; the discussion in Miller and Pullum 2013 suggests that this requirement doesn't extend to VP ellipsis).

[9]Properly, he presents three case studies, i.e., multiple antecedents, ellipsis-containing antecedents, and binderless sloppy readings. That said, he then explicitly argues that the latter two cases should be analyzed as special cases of ellipsis with multiple antecedents.

(27) A: We already know that Pete kissed Mary at the party, but I hear that he also kissed someone else.

      B: Aw c'mon, don't be a tease! Tell me who Pete kissed!

      A: Sorry, I don't know who Pete kissed. I'm just reporting a rumor.

(28) A: (Among other people,) I saw a famous phonologist at the party.

      B: Oh really? Who did you see?

      A: Morris Halle.
         [cf. A: # Morris Halle, Jim McCloskey, and Luigi Rizzi]

It is noteworthy that, unlike in sluices, contextual restriction in unsluiced questions is clearly not obligatory —if it were, the unsluiced examples we introduced in §§1.1–1.2 would be felicitous. The reviewer himself acknowledges this much, agreeing with the judgments we provide for the English examples in the previous sections. The question, then, is why Barros effects and inheritance of context (*qua* effects of contextual restriction) are obligatory under sluicing, but not in unelided questions. Here, it is remarkable that (27) and (28) require very specific contextual setups. To quote from Cappelen and Lepore's (2004:39) discussion of the context sensitivity of non-indexicals.

> "It involves a *complex imaginative activity*. It requires conjuring up interesting scenarios, making these scenarios vivid (to yourself and to your audience), and then in some way empathizing in the most literal fashion with the participants in these imagined scenarios. It requires, so to speak, placing yourself imaginatively into the shoes of a participant in these imaginative scenarios."

In other words, many expressions can exhibit context sensitivity, provided that the right discourse conditions are met. This is an observation that speaks directly against the idea that contextual restriction is invariably grammatically encoded.[10] What we are proposing is that ellipsis sites are true context sensitive expressions, in that contextual restriction is grammatically encoded in the dedicated variable R,[11] whereas (27)/(28) and comparable examples are not; in the latter, context sensitivity effects must be derived non-grammatically, through Cappelen and Lepore's "complex imaginative activity" or some equivalent pragmatic process (e.g., a conversational implicature).

At this point, we have to defer a proper analysis of the discourse conditions that license (27)/(28) to a future paper.

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[10]A good analogy here is the distinction between binding and correference. For one correference with a local antecedent is obligatory with anaphors (*Jack$_i$ criticized himself$_{i/*k}$*) but not with pronouns (*Jack$_i$ said that Sally criticized him$_{i/k}$*). This asymmetry suggests that correference with anaphors is a grammatical process (anaphoric binding, subject to familiar syntactic restrictions), whereas correference with anaphors is a discourse/pragmatic process, which can be manipulated with well-crafted contexts.

[11]As has been independently argued for other expression. See, for example, the claims by von Fintel 1994, Stanley 2000, Martí 2003, and others to the effect that strong quantifiers also carry a comparable variable. We need to note here that some of the claims in this particular line of research (e.g., Barros's 2013 claim that wh-words themselves are hosts of contextual variables, cf. §3.2) are incompatible with our analysis. For space reasons, we cannot explore the proper distribution of contextual variables here.

1.6.2 Crossed readings, deaccentuation, and respectively-modification

The reviewer also notes that crossed readings are also blocked in (14a) if the material following *which (one)* is deaccented, especially if *respectively* is added (the same is true for (15b).[12] We have nothing to say as to why deaccentuation blocks the crossed reading in this example. Here we will simply note that there are cases where deaccentuation or *respectively*-modification fail to yield the same reading we observe in the sluice, and therefore the obligatoriness of crossed readings in split-antecedent sluices must be considered a genuine ellipsis effect (Elbourne 2008:§3.1 makes a comparable observation for VP and NP ellipsis). Consider the unsluiced version (29), where *respectively*-modification is disallowed, and the meaning is clearly distinct from that of the corresponding sluice, even when deaccentuation (indicated with *small italics*) is factored in —i.e., (29) is a question about players that Sally both praised and criticized, rather than about the defender she praised and the midfielder she criticized. The sluiced and unsluiced versions of Spanish (29b) have the same range of readings, with the additional factor that an analysis in terms of an underlying cleft is blocked by the presence of an *a*-marked wh- phrase.

(29) a. Of the seven players involved in the build-up to the goal, Sally praised a defender and criticized a midfielder, but I can't remember which (# *she praised and criticized* (∗ *respectively*)).

b. De los siete jugadores que participaron en el gol, María aplaudió a   un
of the seven players   that took.part   in the goal María praised   DOM a
defensa y   criticó   a   un centrocampista, pero no recuerdo a
defender and criticized DOM a midfielder,   but   not remember DOM
cuáles   (# *aplaudió y   criticó   (∗ respectivamente*)).
which.PL   praised and criticized   respectively

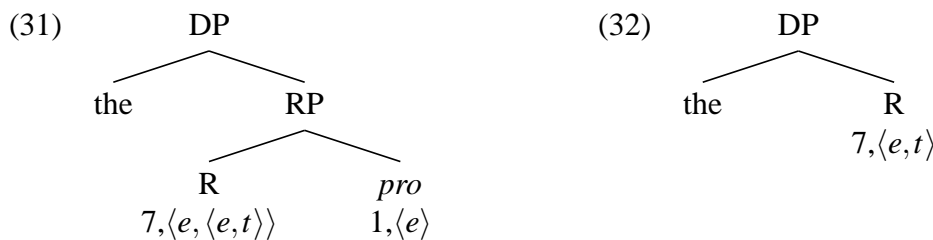## 2   From E-type anaphora to contextually restricted ellipsis

2.1   E-type anaphora

This subsection provides a quick sketch of the analysis E-type pronouns that forms the basis of Elbourne's (2008) analysis of VP and NP ellipsis, which in turn forms the basis of our analysis of sluicing. This analysis is based on the fact E-type pronouns can be consistently paraphrased with definite descriptions containing a relative clause that tracks the meaning of the clause that contains the antecedent of the pronoun (Cooper 1979, Evans 1980, Heim 1990, Neale 1990, Heim and Kratzer 1998, Elbourne 2005).
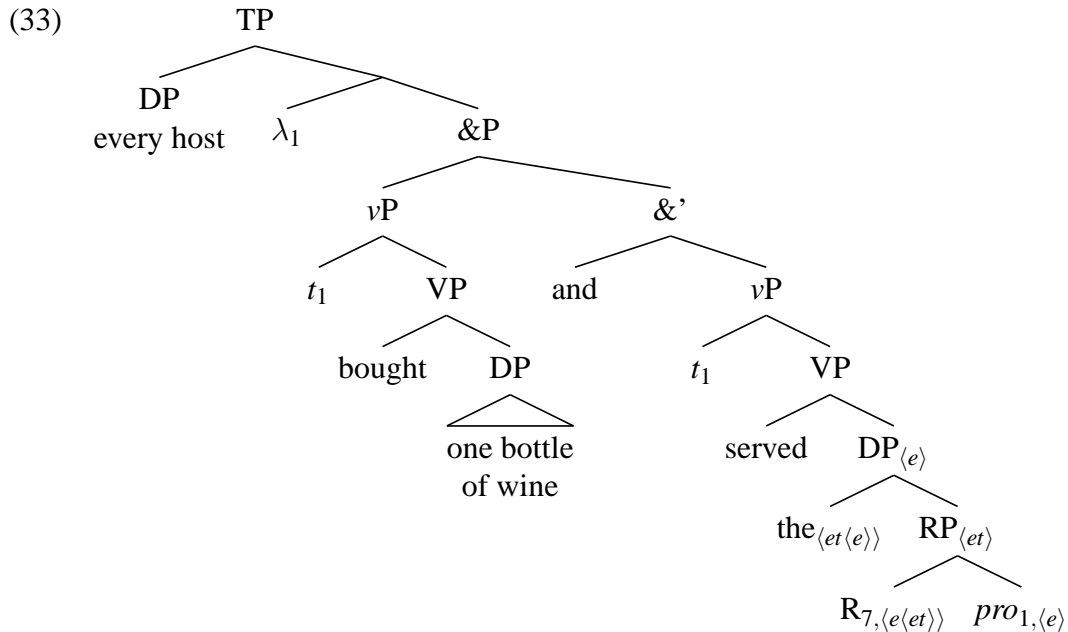
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[12]In his comments, the reviewer implies that the crossed reading is unavailable by default and needs to be forced by stressing *or* and assigning each conjunct a distinct prosody. We haven't tested to what extent this conjecture is true.

(30)   a. Every$_i$ host bought [a bottle of wine]$_k$ and served it$_k$ with the dessert.

       b. Every$_i$ host bought [a bottle of wine]$_k$ and served [the bottle of wine he$_i$ had bought]$_k$ with the dessert.

The truth-conditional equivalence of (30a) and (30b) can be captured by taking pronouns as the spell out of a definite determiner whose complement consists of a free contextual variable R plus an optionally bound variable *pro* (31). In actual practice, *pro* is necessary only when the relative clause that paraphrases the E-type pronoun contains a variable bound from outside, as is the case in (30). Cases with no bound reading (e.g., *Jack bought [a bottle of wine]$_k$ and served it$_k$ with the dessert*, the VP ellipsis example in §2.2 below, or the sluicing cases in §3), can be dealt with in two different ways. First, one can uniformly treat R as two-place operator and let the assignment function map *pro* to a relevant individual (rather than a set of covarying individuals). Alternatively, one can assume that R has an alternative semantics as a one-place function (32). For the purposes of this paper, there is no tangible difference between these two approaches; for the sake of convenience, we will assume the structure (32).

(31)   DP   (32)   DP

       the   RP   the   R
                                                                   $7,\langle e,t \rangle$
                  R   *pro*
           $7,\langle e,\langle e,t \rangle \rangle$ $1,\langle e \rangle$

The tree in (33) illustrates the analysis of (30a). Here, R tracks the salient relation between hosts and the bottles of wine they bought; properly, we can define an assignment function g that maps the numeral 7 in the index of R to the function $\lambda x.\lambda y.[y$ is a bottle of wine that x bought]. Its sister *pro* is bound by the indexed lambda associated to movement of *every host*. Functional Application yields a semantics for RP as the one-place function $\lambda y.[y$ is a bottle of wine that $g(1)$ bought], where $g(1)$ is a variable bound by *every host*; this ensures that bottles covary with hosts. Finally, the definite determiner ensures that the whole DP refers to the unique bottle of wine y that x bought, for every x, x a host. This whole substructure is then spelled out as *it*.

(33)

TP
├── DP — every host
├── λ_1
└── &P
    ├── vP
    │   ├── t_1
    │   └── VP
    │   ├── bought
    │   └── DP — one bottle of wine
    └── &'
        ├── and
        └── vP
            ├── t_1
            └── VP
                ├── served
                └── DP$_{\langle e \rangle}$
                    ├── the$_{\langle et\langle e\rangle\rangle}$
                    └── RP$_{\langle et \rangle}$
                        ├── R$_{7,\langle e\langle et\rangle\rangle}$
                        └── $pro_{1,\langle e\rangle}$

2.2 Extension to ellipsis

Elbourne (2008) proposes that the functional structure in (31)/(32) is an integral part of VP and NP ellipsis sites; here we use the VP ellipsis case as an illustration. As a first step, Elbourne defines the two-place operator THE (34) to mediate the relation between the contextual variable and the ellipsis site. Here, $\ulcorner^*P\urcorner$ is defined as a plural predicate that characterizes both singular entities that are P and plural entities whose atomic parts are all P (Link 1983), and $\ulcorner\iota\urcorner$ is defined as a metalanguage operator such that, for any function h, $\ulcorner\iota x.h(x)\urcorner$ is defined if there is exactly one x such that $h(x) = 1$.[13]

(34) $\llbracket\text{THE}\rrbracket^g = \lambda F_{\langle st,t\rangle}.\lambda G_{\langle st,t\rangle}.\sigma f_{\langle st\rangle}(F(f) = 1 \wedge G(f) = 1)$
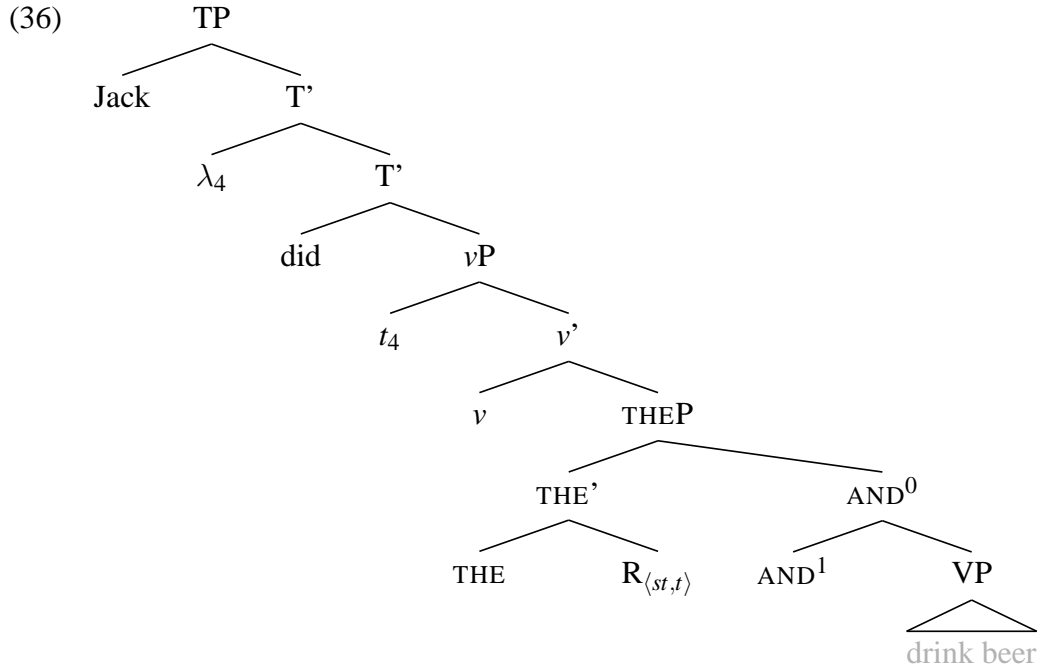   where $\sigma x Px := \iota x(^*Px \wedge \forall y(^*Py \rightarrow y \leq_i x))$

In prose, THE takes two properties of VP meanings F and G (F being RP and G being an abstraction over the meaning of the elided VP) and returns the unique entity f in $D_{\langle st\rangle}$ (the domain of VP meanings) such that any other object h in $D_{\langle st\rangle}$ that also satisfies F and/or G is either identical to f or an atomic subpart of f.[14] As a practical illustration of this analysis, consider the simple VP ellipsis in (35). Given what we have reviewed so far, *Jack*

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[13] In a slight abuse of notation, we use s as the type of events whenever we are dealing with VP ellipsis and as the type of worlds/situations whenever we are dealing with sluicing.

[14] The $\langle st,t\rangle$ and $\langle st\rangle$ types assigned to F/G and f, respectively, reflect Elbourne assumption that VP ellipsis literally targets VP, before v is merged and turns it into a predicate of individuals. If we wanted to say that VP ellipsis targets a larger constituent that contains the vP-internal trace of the subject, THE would have to take two arguments of type $\langle\langle e,st\rangle t\rangle$ and map them to the maximal entity in $D_{\langle e,st\rangle}$ composed of entities in $D_{\langle e,st\rangle}$. More generally, THE can be treated as a type-flexible operator that, for any type τ, maps two constituents of type $\langle\tau,t\rangle$ into the relevant maximal individual of type τ.

did too is assigned the representation in (36), with elided constituents rendered in a light grey font. Note the absence of *pro*, as this example lacks a bound reading. Here we assume, as does Elbourne, that the antecedent clause licenses a mapping of R to a function along the lines of $\lambda f_{\langle st \rangle}.[\exists e(f(e) = 1 \wedge \text{AGENT}(e, \text{Sally})]$ (for the sake of exposition, we omit the numerical index of R in all subsequent representations).

(35)   Sally drank beer. Jack did too.

(36)

TP

Jack   T'

λ_4 T'

did   *v*P

t_4 *v*'

v   THEP

THE'   AND^0

THE   R$_{\langle st,t \rangle}$ AND^1 VP

drink beer

Note that VP is the sister of an AND^n functional head, whose definition we give in (37) below (this is a generalization of the one in Elbourne 2008:200). This functional head does a more tangible job in cases with split antecedents, where it maps its *n* arguments to the characteristic function of the set of objects of the relevant domain (in the case of VP ellipsis, $\langle st \rangle$) that are part of the plural individual that has all and only these *n* arguments as atomic parts. Here, however, AND^n is largely solving a type mismatch problem. By definition, THE requires two arguments of type $\langle st,t \rangle$, but bare VPs are only of type $\langle st \rangle$; AND^n circumvents this problem by mapping the meaning of VP to a (singleton) set of properties of VP meanings.

(37)   For all $n > 0$ and type $\langle \tau \rangle$, $[\![\text{AND}^n]\!]^g = \lambda f_{1\langle \tau \rangle} \dots f_{n\langle \tau \rangle}.\lambda h_{\langle \tau \rangle}.h \leq_i f_1 \oplus \dots \oplus f_n$

Following Elbourne 2008, we assume than R and AND^0 have the following meanings.

(38) $[\![\text{R}_{\langle st,t \rangle}]\!]^g = \lambda f_{\langle st \rangle}.\exists e(f(e) = 1 \wedge \text{AGENT}(e, \text{Sally})$
      [a property of VP meanings such that Sally is their agent]

(39) $[\![\text{AND}^0{}_{\langle st,t \rangle}]\!]^g = \lambda h_{\langle st \rangle}.h \leq_i \text{drink-beer}$
      [a property of the VP meaning *drink beer*]

We can now use these meanings and the lexical entry in (34) to derive the meaning of THEP.

(40) $[\![\text{THEP}_{\langle st \rangle}]\!]^g$

$$= \iota f_{\langle st \rangle} \left(\begin{array}{c} \left(\begin{array}{c} {}^*[\lambda m.\exists e[m(e) = 1 \wedge \text{AG}(e, \text{Sally})]](f) \\ \wedge \quad \forall h_{\langle st \rangle}[{}^*[\lambda m.\exists e[m(e) = 1 \wedge \text{AG}(e, \text{Sally})]](h) \to h \leq_i f] \end{array} \right) \\ \wedge \left(\begin{array}{c} {}^*[\lambda n.n \leq_i \text{drink-beer})]](f) \\ \wedge \quad \forall k_{\langle st \rangle}[{}^*[\lambda n.n \leq_i \text{drink-beer})]](k) \to k \leq_i f] \end{array} \right) \end{array} \right)$$

When we combine (40) with the functional structure above the ellipsis site, we obtain the desired meaning for *Jack did too* —i.e., that Jack is also the agent of a beer-drinking event, defined by reference to a discourse-salient beer-drinking event whose agent is Sally.

2.3   Contextual restriction through Predicate Modification

Elbourne's THE is a remarkable functional head, in the sense that it effectively constitutes a lexicalization of the Predicate Modification (PM) mode of composition (a possibility already sketched, in a slightly different way, in Heim and Kratzer 1998:§4.3.2). Consider the following definition of PM, which is a generalization of that in Heim and Kratzer 1998:65.

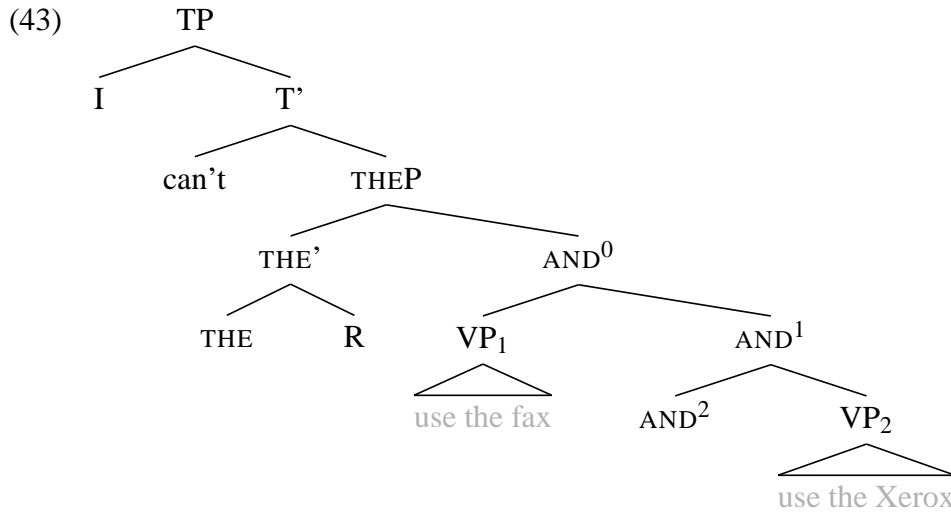(41)   For any type τ, if α is a branching node with daughters $\beta_{\langle \tau, t \rangle}$ and $\gamma_{\langle \tau, t \rangle}$, then $[\![\alpha_{\langle \tau, t \rangle}]\!]^g = \lambda f_{\langle \tau \rangle}.[\![\beta]\!]^g(f) = 1 \wedge [\![\gamma]\!]^g(f) = 1$

At their core, THE and PM yield the same result: they take two constituents $M_{\langle \tau, t \rangle}$ and $N_{\langle \tau, t \rangle}$, and define an object f_τ such that both $M(f)$ and $N(f)$ are true. The main difference between the two approaches is that THE incorporates the $\leq_i$ relation, which enables reference to proper subparts of the relevant objects. This relation is a crucial part of Elbourne's analysis of ellipsis sites with split antecedents, and it is a relation that a PM approach doesn't provide. Note, however, that Elbourne requires THE to come with a $\leq_i$ relation because THE is itself defined in terms of the ι operator, which requires that there be a unique f that satisfies both R and AND^0. Given that the PM approach does away with the ι operator, the necessity of the $\leq_i$ relation also vanishes. In other words, instead of defining a unique maximal f and then allowing access to its component subparts, we let both the maximal f and its subparts be directly accessible.[15]

To illustrate, consider example (42), from Fiengo and May (1994). Tree (43) illustrates the Elbournian structure of the clause containing the ellipsis site.

(42)   Whenever Oscar is using the fax or Max is using the Xerox, I can't.

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[15]Here we should note that Elbourne (2008:fn. 10) conjectures that THE can be viewed as an instantiation of Merchant's (2001) [E] feature. The PM approach we develop doesn't allow this identification, as it does away with THE. To the extent that one wants to implement deletion as the effect of an [E] feature, two possibilities present themselves: one can assume that Elbourne is correct and the relation between R and the ellipsis site is necessarily mediated by an [E]-feature-carrying THE (see §2.4 below); or, alternatively, one can assume that [E] is a (sub)feature restricted to appearing on designated functional heads (e.g., interrogative C in the case of sluicing). We do not have evidence in favor of either approach.

(43)

```
                        TP
                ┌────────┴────────┐
                I                 T'
                           ┌──────┴──────┐
                        can't          THEP
                                  ┌───────┴────────┐
                               THE'              AND⁰
                            ┌───┴───┐       ┌──────┴──────┐
                          THE      R      VP₁          AND¹
                                       △         ┌──────┴──────┐
                                  use the fax   AND²          VP₂
                                                           △
                                                       use the Xerox
```

Assuming the meanings for AND^0 and R in (44) and (45), the entry for THE in (34) gives us (46) as the meaning for for THEP. In combination with the subject and the modal, Elbourne 2008:199 paraphrases this meaning "I can't perform the relevant action(s), out of using the fax and using the Xerox, that are being performed". Note that this paraphrase permits a reading where I can't use neither the Xerox nor the fax; Elbourne (2008:207ff) (see also §3.3.1 below) argues that this is a virtue of the analysis, as certain discourse structures do, in fact, license this kind of non-split reading.

(44) $[\![\text{AND}^0]\!]^g = \lambda h_{\langle st\rangle}.h \leq_i \text{use(fax)} \oplus \text{use(Xerox)}$
      [a property of VP meanings such that their atoms are part of the $\{\text{use(fax)}\oplus\text{use(Xerox)}\}$ plurality]

(45) $[\![R]\!]^g = \lambda f_{\langle st\rangle}.\exists e(f(e) = 1 \wedge \text{AGENT}(e, \text{Oscar}\oplus\text{Max}))$
      [a property of VP meanings such that their agents are part of the $\{\text{Oscar}\oplus\text{Max}\}$ plurality]

(46) $[\![\text{THEP}]\!]^g$

$$= \iota f_{\langle st\rangle}\left(\begin{array}{c} \left(\begin{array}{c} {}^*[\lambda m.\exists e[m(e) = 1 \wedge \text{AG}(e, \text{oscar} \oplus \text{max})]](f) \\ \wedge \quad \forall h_{\langle st\rangle}[{}^*[\lambda m.\exists e[m(e) = 1 \wedge \text{AG}(e, \text{oscar} \oplus \text{max})]](h) \rightarrow h \leq_i f] \end{array} \right) \\ \wedge \left(\begin{array}{c} {}^*[\lambda n.n \leq_i \text{usexerox} \oplus \text{usefax})]](f) \\ \forall k_{\langle st\rangle}[{}^*[\lambda n.n \leq_i \text{usexerox} \oplus \text{usefax})]](k) \rightarrow k \leq_i f] \end{array} \right) \end{array} \right)$$

The action that is being performed, in turn, is determined by the way the *whenever* clause interacts with TP. Elbourne 2008:204–205 already acknowledges the crucial role of *whenever* but remains vague on the details, limiting himself to asserting that "the general outlines are clear". We can be more specific by building on Rawlins's (2013) work and analyzing *whenever* clauses as sets of conditional antecedents that compose pointwise with the host clause.[16] We can then require that the resolution of the ellipsis site be contingent on the

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[16]Rawlins (2013:118) defines Pointwise Functional Application as in (i). As he carefully notes, standard Functional Application can be treated as the special case of Pointwise Functional Application where both α

proposition that holds in each situation; properly, of all the meanings made available by
(46), the one used to resolve the ellipsis site is the one that stands in a certain relation
(e.g., mutual truth-conditional entailment modulo F-closure, as in Merchant 2001) with the
situationally-appropriate antecedent VP. This much gives us the observed reading of (42):
in those situations where Oscar is using the fax, I can't perform the relevant action out of
using the fax and using the Xerox, and in those situations where Max is using the Xerox, I
can't perform the relevant action of using the fax or using the Xerox.

This much is correct, but note the crucial role of the $\leq_i$ relation. In (46), ιf gives us
the unique plurality of fax-using and Xerox-using events that can act as an argument of
both THE and R. In order to obtain the correct reading of (42), we need to access the fax-
using and Xerox-using atoms that compose this plurality. Enabling access to this atoms is
the purpose of the $\leq_i$ relation: without it, we would predict (42) to have only the reading
where, if Max is using the Xerox, I can't use either the Xerox or the fax, and if Oscar is
using the fax, I can use neither machine either.

In contrast to the account sketched above, we propose the following structure for (42).
For ease of reference, we use the label "RP" for the node immediately dominating R and
AND^0, but nothing depends on this particular terminological choice. The goal is to derive
the same range of meanings for RP that THEP has in (46), i.e., atomic events of fax-using
and Xerox-using, and their union.

(47)
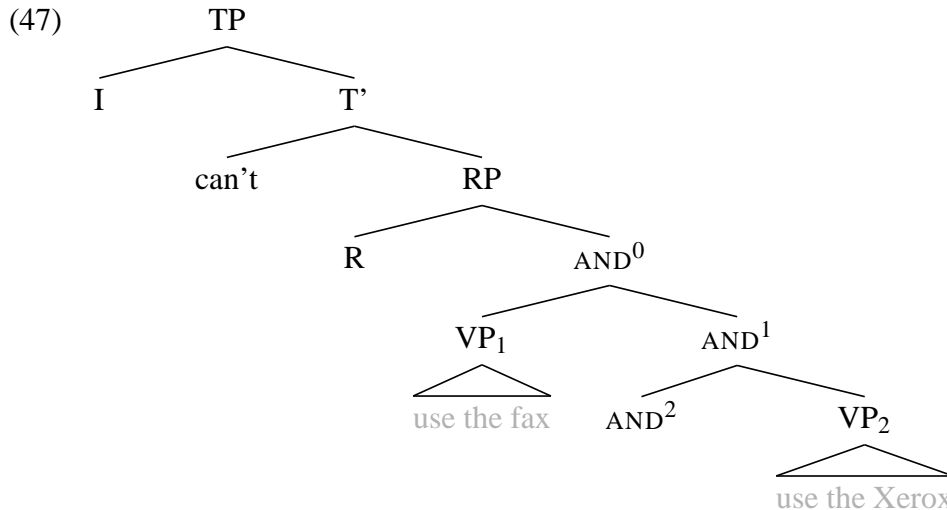
As a first step, we are going to use slightly different meanings for R and AND^n. For one,
given that we want RP to denote in $\langle st \rangle$ (as, by assumption, all complements of T^0 do), the
definition of PM in (41) requires R and AND^0 to also denote in $\langle st \rangle$. In the case of AND^0, we
will use the alternative definition in (48) below (see Link 1983, Winter 2001), which simply

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and β are singleton sets.

(i)   If α and β are daughters of γ, and $[\![\alpha]\!] \subseteq D_{\langle \sigma\tau \rangle}$ and $[\![\beta]\!] \subseteq D_{\langle \sigma \rangle}$, for types $\langle \sigma \rangle$ and $\langle \tau \rangle$, then $[\![\gamma]\!] = \{y \in D_{\langle \tau \rangle} \mid \exists f \in [\![\alpha]\!] : \exists x \in [\![\beta]\!] : f(x) = y\}$

returns a sum of arguments, rather than the characteristic function of the set that contains these arguments (this definition handles conjunctions with two conjuncts, but it can be easily generalized to an arbitrary number of conjuncts). Note that this approach allows us to dispense with AND^n in ellipses with a single antecedent, which Elbourne required exclusively in order to enable the elided constituent to act as an argument of THE. By eliminating THE, we also eliminate this necessity.

(48)   For any types $\langle \tau \rangle$, $\langle \sigma_1 \rangle$, $\langle \sigma_2 \rangle$, $[\![\text{AND}^2(x_{\langle \tau \rangle}, y_{\langle \tau \rangle})]\!] = [\![x \oplus y]\!] = [\![x]\!] \sqcup [\![y]\!]$, where
   a.   if $\tau = t$, then $\sqcup_{\tau \langle \tau, \tau \rangle} = \vee_{\tau \langle \tau, \tau \rangle}$
   b.   if $\tau = \sigma_1, \sigma_2$, then $\sqcup_{\tau \langle \tau, \tau \rangle} = \lambda x(z).\lambda y(z).\lambda z_{\sigma_1}.x(z) \sqcup_{\sigma_2 \langle \sigma_2, \sigma_2 \rangle} y(z)$

In the case at hand, (48) takes two VP meanings and returns their union. We can now define the semantics below for the relevant nodes: AND^0 is the union of the VP meanings in (49), and R tracks the meaning of the antecedent VPs (note that here AND^0 and R happen to have the same meaning; we will however see in §§3.1–3.2 below that this need not be the case).

(49)   a. $[\![[\text{use the fax}]_{\langle st \rangle}]\!]^g = \lambda f_{\langle s \rangle}.\text{use(fax)}$
        b. $[\![[\text{use the Xerox}]_{\langle st \rangle}]\!]^g = \lambda f_{\langle s \rangle}.\text{use(Xerox)}$

(50) $[\![\text{AND}^0_{\langle st \rangle}]\!]^g = \lambda f_{\langle s \rangle}.[\text{use(fax)} \oplus \text{use(Xerox)}]$

(51) $[\![R_{\langle st \rangle}]\!]^g = \lambda f_{\langle s \rangle}.[\text{use(fax)} \oplus \text{use(Xerox)}]$

By PM, RP receives the semantics in (52): a function f that yields truth when acting as an argument of both AND^0 and R. The meanings that correspond to this function are paraphrased in (53). The reader can check that they are the same meanings that THEP in (46) makes available. As noted above, the absence of the ι operator renders the $\leq_i$ relation unnecessary: instead of defining a unique maximum f and then using the $\leq_i$ relation to access its atomic components, we allow the atomic components in question and their union to be all listed as possible values of f.

(52) $[\![RP_{\langle st \rangle}]\!]^g = \lambda f_{\langle s \rangle}.[\text{use(fax)} \oplus \text{use(Xerox)}]$

(53)   a. $f_1 =$ a fax-using event defined by reference to a contextually salient fax-using.
        b. $f_2 =$ a Xerox-using event defined by reference to a contextually salient Xerox-using.
        c. $f_3 =$ a plurality of Xerox-using and fax-using events defined by reference to a contextually salient plurality of Xerox-using and fax-using events.

This analysis yields the correct reading of (42): given events $\{f_1, f_2, f_3\}$, I can't perform whichever event(s) are relevant in a given situation, where "relevant event(s) in a given situation" correspond to the propositions that make up the unconditional antecedent.

2.4 Interim summary

We have seen that a PM strategy yields the same results as Elbourne's system. In what follows, we will stick to the PM strategy, as it allows for more streamlined representations. Readers who prefer an Elbournian analysis are welcome to recast our analyses in these terms. We will also remain agnostic as to which of the two analyses is the correct one (or whether both are), as the data we consider here do not allow us to resolve this issue either way. We will only note that an Elbournian would potentially offer a natural way of accounting for examples where VP ellipsis sites are embedded under pronouns and definite determiners (Baltin 2012, Bentzen et al. 2013). One could conjecture that such pronouns and determiners constitute the spell out of THE; if this conjecture turns out to be correct, then the non-existence (to our knowledge) of sluicing sites embedded under comparable pronoun/determiners[17] can be taken as evidence in favor of our PM analysis, at least for the narrow case of sluicing.

3 Cleft effects without a cleft syntax

3.1 Barros effects

Going back to the realm of sluicing, consider again Saab's (2015) Barros paradigm in Spanish (throughout this section, we reuse the example numbers given in §1).

(4) Juan besó a   María, y también besó a   alguien más…
    Juan kissed DOM María and also   kissed DOM someone else

   a. # … pero no sé   a   quién besó.
          but not know.1SG DOM who   kissed

   b.   … pero no sé   a   quién.
          but not know.1SG DOM who

   c. * … pero no sé   a   quién es.
          but not know.1SG DOM who   is

As we pointed out in §1, the challenge lies on explaining why sluicing repairs the incongruence of (4a) despite the unavailability of a cleft/copular source. Given the discussion in §2.3, we can solve this problem by letting R be mapped to a salient function that restricts the sluicing site in the appropriate way. Evidence in favor of this analysis comes from the

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[17]With perhaps the exception of the Southern Dutch dialects discussed by van Craenenbroeck (2010), an illustrative example of which we reproduce in (i). On the one hand, van Craenenbroeck provides extensive evidence to the effect that *da* is a demonstrative pronoun, rather than the homophonous complementizer; but on the other hand, he also providese equally extensive evidence to the effect that this *da* is the subject of an underlying cleft, which sets these examples apart from the ones we are discussing in this article.

(i) Jef eid iemand   gezien, mo ik weet nie wou da.
     Jef has someone seen   but I know not who that

fact that (4a) becomes grammatical if the contextual restrictor is overtly expressed (as a time adverbial, for example). The difference between (4a) and (4b), then, reduces to the latter obligatorily being associated to a covert contextual variable.

(54)   Juan besó a   María el lunes,   y   también besó a   alguien   más el
      Juan kissed DOM María the Monday and also   kissed DOM someone else the
      martes,   pero no sé   a   quién besó   el   martes.
      Tuesday but   not know.1SG DOM who   kissed the Tuesday

For explicitness, we are going to assume that sluicing deletes the TP node, yielding (55) as a representation of (4b). Note, however, that this system is flexible enough to allow for ellipsis of a different node —for example, one could adjoin R to C', so as to account for the generalization in Merchant 2001:§4.2 that C heads never survive sluicing (although see Marušič et al. 2015); or perhaps to CP, to capture the inquisitivity effects discussed by AnderBois (2011, 2014). Opting for any of these alternatives would require letting R track the meaning of an appropriately different expression.

(55)
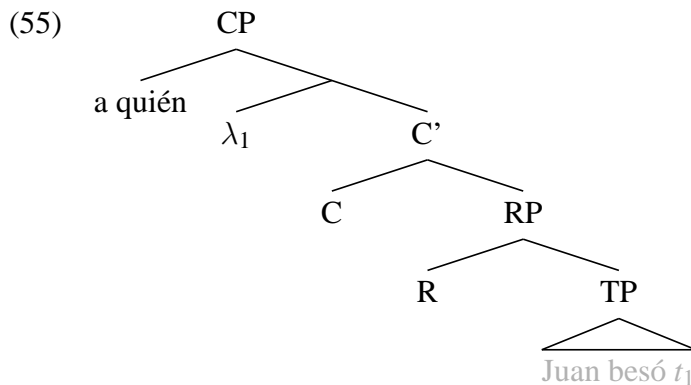
On the assumption that wh- traces are variables over choice functions (Hagstrom 1998, Cable 2010), TP receives the meaning in (56), i.e., a proposition containing a choice function variable f over individuals (properly, f should be restricted so that it ranges only over humans; we leave this restriction implicit). The meaning of R is given in (57): a discourse-salient proposition containing a choice function variable over the domain of people. The crucial part of this meaning is $[x \neq \text{María}]$, which excludes María from the set of individuals that the choice function variable ranges over. We assume, as Barros 2012 does, that this piece of meaning is licensed by the presence of *else* in the antecedent clause. This result can be attained by treating *else* as an exceptive modifier with a lexical entry along the lines of $\lambda P \lambda x [P(x) \wedge x \neq y_i]$, where y_i is anaphoric to a discourse-salient entity (von Fintel 1993).

(56) $[\![\text{TP}_{\langle st \rangle}]\!]^g = \lambda w.\text{Juan kissed } f(x)(w)$

(57) $[\![\text{R}_{\langle st \rangle}]\!]^g = \lambda w.\text{Juan kissed } f(x)(w) \wedge x \neq \text{María}$

Then, RP receives the meaning in (58) by PM: a function into propositions containing a choice function variable, such that the set of individuals that the variable ranges over excludes María.

(58) $[\![\text{RP}_{\langle st \rangle}]\!]^g = \lambda w.\text{Juan kissed } f(x)(w) \wedge x \neq \text{María}$

Finally, the material above RP yields the familiar semantics of questions —specifically, the C head returns the set of propositions corresponding to the different values of the choice function variable, and the wh- phrase existentially binds this variable (Hagstrom 1998:ch.5 *et seq*). Readers can verify that it corresponds to the observed reading of (4b), i.e., a question about the identity of the non-María individual that Juan kissed.

(59) $[\![\text{CP}_{\langle st,t \rangle}]\!]^g = \lambda p.\exists f.p = [\lambda w.\text{Juan kissed } f(x)(w) \wedge x \neq \text{María}]$

We close off this subsection by comparing our analysis of Barros effects to Saab's (2015), who proposes that the sluicing site takes the entire coordinate structure in (4) as its antecedent, with the wh- phrase undergoing asymmetric extraction from the second conjunct (60). We refer readers to Saab's paper for a detailed discussion of the semantics of this structure. Note that the syntax in (60) should yield a CSC violation: this is not lost on Saab, who goes on to argue that the grammaticality of (4b) qualifies as an argument in favor of the hypothesis that ellipsis can repair locality violations (*contra* the conclusions of Abels 2011, Barros et al. 2014, and especially Merchant 2001:§5.4.3 for the narrow case of CSC violations).

(60)   no sé   [a   quién]$_i$ [[Juan besó a   María] y   [besó t_i también].
       not know.1SG DOM who   Juan kissed DOM María and kissed   also

There are various reasons to consider alternatives to Saab's proposal. For one, it doesn't offer a way to group Barros effects together with inheritance of content and split-antecedent sluices as different instantiations of a more general phenomenon (see especially §3.2 below for evidence that this grouping is desirable, at least for the narrow case of inheritance of content). A more serious problem stems from Saab's implicit hypothesis that the congruence of (4b) is contingent on the congruence of (60). Consider, in this light, (61B), which a number of speakers (including the third author of this paper) find congruent under the indicated reading.[18]

(61)   A: Juan besó a   María, y   también besó a   alguien más.
           Juan kissed DOM María and also   kissed DOM someone else

       B: Sólo a   Susana.
           only DOM Susana
           [= Susana is the only person besides María that Juan kissed]

Under Saab's analysis, (61B) would be derived from deletion of (62B). Notably, (62B) is incongruent: one cannot assert that Juan kissed María and then follow up with an assertion that he only kissed Susana. Given that the contradiction inherent to (62B) is not a locality problem, one would have to assume a semantic repair mechanism on top of the island repair mechanism that Saab already assumes.

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[18]Those speakers who do not accept the indicated reading interpret (61B) as a denial of (61A), i.e., "it is not the case that Juan kissed María and someone else; the only person he kissed at all was Susana". We do not have anything interesting to say as to why this division exists.

(62)   A: Juan besó   a   María, y   también besó   a   alguien más.
               Juan kissed DOM María   and also   kissed DOM someone else

       B: # Juan besó   a   María y   besó   sólo a   Susana
              Juan kissed DOM María and kissed only DOM Susana

A contextual restriction account, on the other hand, doesn't encounter this problem. The indicated reading of (61B) can be derived in the same manner as (4b), i.e., by deletion of *Juan besó sólo a Susana*. We assume that the contextual variable that restricts the ellipsis site has the same meaning as in (57); as a consequence, the alternative set of *sólo a Susana* excludes María, as desired.

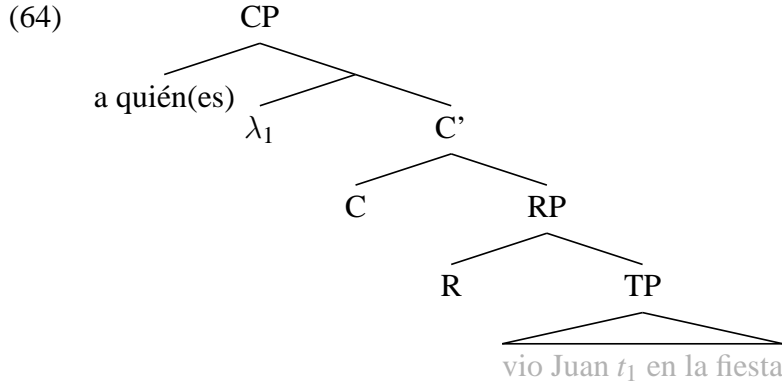### 3.2   Inheritance of content

We move on now to inheritance-of-content effects, which we argue can be treated in the same terms as Barros effects. For convenience, we repeat the Spanish paradigm in (12), and reiterate that the presence of the differential object marker *a* in the remnant precludes an analysis in terms of an underlying cleft or copular clause.

(12)   Juan vio   a   unos estudiantes en la   fiesta...
      Juan saw DOM some students   in the party

     a.   ... pero Pedro no   sabe   a   quién(es) vio   Juan en la   fiesta.
             but   Pedro not knows DOM who.PL   saw Juan in the party
             [= Pedro doesn't know who (whether student or not) Juan saw at the party]

     b.   ... pero Pedro no   sabe   a   quién(es).
             but   Pedro not knows DOM who.PL
             [= Pedro doesn't know which students Juan saw at the party]

     c.   *   ... pero Pedro sabe a   quién(es) eran.
             but   Pedro not   know DOM   who.PL were

The parallelism between (4) and (12) should be apparent: in (4b), we had to ensure that *a quién* reflected the meaning of its *a alguien más* correlate and ranged only over non-María individuals; in (12b), we have to ensure that *a quién* reflects the meaning of its *a unos estudiantes* correlate and ranges only over individuals that are students. Note, additionally, that *exactly*-modification triggers an inheritance-of-content effect in unsluiced questions (63). Dayal and Schwarzschild (2010), from whom this observation originates, attribute it to the hypothesis that *exactly* is an anaphoric expression that tracks the restriction of a discourse-salient expression. This parallels the pattern in (54), where overt contextual modification via an adverb repairs the incongruence of (4b).

(63)   a.   Jack saw a phonologist, but I don't know who he saw exactly.

       b.   Juan vio   a   un fonólogo,   pero no sé   a   quién vio   exactamente.
           Juan saw DOM a   phonologist but   not know DOM who   saw exactly

These paralellisms suggest very strongly that (12b) should be treated in the same way as (4b), i.e., by contextually restricting the sluicing site. Below we provide a syntax for (12b) plus a semantics for the relevant nodes; readers can confirm that, abstracting away from the meanings of lexical items, it is exactly the same syntax and semantics we have proposed above for (4b).

(64)

```
                    CP
          ┌─────────┴──────┐
      a quién(es)          │
                  λ₁       C'
                      ┌────┴────┐
                      C        RP
                           ┌────┴────┐
                           R        TP
                                vio Juan t₁ en la fiesta
```

(65)   a. $\llbracket \text{TP}_{\langle st \rangle} \rrbracket^g = \lambda w.\text{Juan saw } f(x)(w) \text{ at the party}$

b. $\llbracket \text{R}_{\langle st \rangle} \rrbracket^g = \lambda w.\text{Juan saw } f(x)(w) \text{ at the party } \wedge \text{student}(x)$

c. $\llbracket \text{RP}_{\langle st \rangle} \rrbracket^g = \lambda w.\text{Juan saw } f(x)(w) \text{ at the party } \wedge \text{student}(x)$

d. $\llbracket \text{CP}_{\langle st,t \rangle} \rrbracket^g = \lambda p.\exists f.p = [\lambda w.\text{Juan saw } f(x)(w) \text{ at the party } \wedge \text{student}(x)]$

Our solution is arguably superior to the one advanced by Romero (1998) and Barros (2013), who take the remnant itself (rather than the sluicing site) to be the target of contextual restriction —cf. Barros's (2013:208) characterization of R as an NP modifier. We agree that this line of attack does derive inheritance of content effects under sluicing. The downside is that, by treating contextual restriction as a property of wh- items rather than ellipsis sites, it predicts (incorrectly) that inheritance-of-content effects will also arise freely in unelided sentences, so long as suitably salient antecedent is available. Although this is true on occasion (see §1.6.1), the effect is clearly not as pervasive as Romero's and Barros's proposals seem to predict.[19] Our approach, in contrast, doesn't suffer from this shortcoming.

3.2.1 Inheritance of content meets Barros effects

By treating inheritance of content and Barros effects as different manifestations of the same underlying phenomenon, we predict the existence of Barros-like effects in inheritance-of-

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[19]Romero (1998:§1.4) considers whether inheritance of content could be forced on sluices by appealing to other requirements of ellipsis (e.g., the Focus Condition of Rooth 1992) and comes up with a negative answer. She eventually proposes that inheritance of content follows from the entailments of questions embedded under *know* (cf. Karttunen 1977 *et seq*). This, however, is an incomplete solution on two counts; first, it doesn't cover inheritance-of-content effects in sluices that are not embedded under *know* (most prominently, matrix sluices); and second, it incorrectly predicts that inheritance-of-content effects will also arise in unsluiced questions, so long as they are embedded under *know* or predicates that give rise to similar entailments.

content environments.[20] We submit that the following Spanish examples, with a first person subject for *know*, instantiate this pattern. The unsluiced question in (66a) is incongruent because the antecedent already constitutes a partial answer, just as in the Barros examples discussed in §§1.1 and 3.1;[21] example (66b) shows that sluicing can repair this incongruence; and (66c) shows that the felicity of (66c) cannot be attributed to deletion of an underlying cleft. Under our proposal, we can cover the repair effect in (66b) by having R tracks the restriction of the indefinite correlate. This gives us a congruent meaning paraphraseable as "I don't know the identity of the individual *x*, *x* a phonologist, that Juan saw".

(66) Sé   que Juan vio a   un fonólogo…
      know.1SG that Juan saw DOM a   phonologist

      a. # … pero no sé   a   quién vio.
             but   not know DOM who   saw

      b.   … pero no sé   a   quién.
             but   not know DOM who

      c. * … pero no sé   a   quién fue (que vio).
             but   not know DOM who   was that saw

Similarly, consider the following contrast, modelled after (2) in §1.1 (the following judgments also hold for English). Example (67a) is grammatical for the same reason as (2), i.e., the assertion that I know the identity of some of the people that Juan kissed is not contradicted by Pedro's ignorance. Note, however, that this example means that Pedro is unaware of the identity of any of the people Juan kissed; whereas the sluiced counterpart (67b) means that Pedro is unaware of the identity of the non-María individual that Juan kissed. Again, this asymmetry can be accounted for by assuming that the sluice comes with a contextual variable that tracks the meaning of a salient antecedent; as in the prototypical Barros effects examples, this allows us to derive a meaning for (67b) paraphraseable as "Pedro doesn't know the identity of the individual *x*, where *x* is not María, such that Juan kissed *x*".

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[20]Or, more broadly, we predict that sluicing can rescue incongruent questions even in environments where the correlate is not modified by *else*, as in the following pairs. The discussion in the rest of this subsection applies here too.

(i)   Jack saw Sally, and then he saw a colleague…
      a. # … but I don't know who he saw.   b.   … but I don't know who.

(ii) Juan vio a   María y   luego vio a   un colega…
      Juan saw DOM María and then   saw DOM a   colleague
      a. # … pero no se   a   quién vio.   b.   … pero no sé   a   quién.
             but   not know.1SG DOM who   saw   but   not know.1SG DOM who

[21]Dayal and Schwarzschild (2010:108) provide a comparable example (*Joan was talking to a phonologist, but I don't know who (exactly) she was talking to*) and claim it is felicitous. The speakers we have consulted disagree with this judgment, although the infelicity of this example seems to be less strong than that of (66a). We have nothing to say as to why English and Spanish judgments differ in this way.

(67) Sé   que Juan besó a   María y   que también besó a   alguien
     know.1SG that Juan kissed DOM María and that also   kissed DOM someone
     más…
     else

   a. … pero Pedro no sabe a   quién besó   Juan.
          but Pedro not knows DOM who   kissed Juan

   b. … pero Pedro no sabe a   quién.
          but Pedro not knows DOM who

These examples illustrate one of the core properties of R. As discussed above (cf. also §3.3.1 below), while R may be anaphoric to a number of discourse-salient propositions, some restrictions are still apparent. Specifically, in (67b), it is crucial that R tracks the meaning of the salient situation of Juan kissing some non-María individual, rather than just kissing anyone. Notions of congruence arguably fail to enforce this result, given that the unsluiced question (where the assertion is that Pedro doesn't know who Juan kissed at all) is itself congruent. We propose that, given a set of possible salient antecedents, R tracks the meaning of the most informative one. Formally, this constraint can be formulated as a requirement that R entail its (asserted, rather than presupposed) antecedent, if any (cf. Thoms 2015 for a different implementation of the same idea in a different empirical domain).[22]

In conclusion, the examples in this subsection support our proposal that inheritance of content and Barros effects are simply different manifestations of the same general phenomenon.

3.3 Split-antecedent sluices

Below we repeat the Spanish split-antecedent paradigm from §1.3. As explained there, (15a) cannot be derived via simple deletion of a question containing a clausal disjunction (15b), as the two sentences have a different range of readings. Crucially, this problem cannot be solved by taking (15a) to stem from an underlying cleft, given that Spanish clefts do not tolerate *a*-marked pivots (14b).

(15)   a.   Siempre que Juan quiere entrevistar a   un futbolista o María quiere
             always that Juan wants interview DOM a footballer or María wants
             investigar a   un político, el editor pregunta a   cuál.
             profile   DOM a politician the editor asks   DOM which

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[22]As expected, this is also the case with prototypical deep anaphors, e.g., English *do it*/*do so*.

(i)   Jack works hard, and Sally also does so.   [= Sally works hard / ≠ Sally works]

b.   Siempre que Juan quiere entrevistar a   un futbolista o María quiere
     always   that Juan wants interview DOM a   footballer or María wants
     investigar a   un político, el editor pregunta a   cuál   quiere
     profile   DOM a politician the editor asks   DOM which wants
     entrevistar Juan o quiere investigar María.
     interview Juan or wants profile   María

c.   * Siempre que Juan quiere entrevistar a   un futbolista o María quiere
       always   that Juan wants interview DOM a   footballer or María wants
       investigar a   un político, el editor pregunta a   cuál   es.
       profile   DOM a politician the editor asks   DOM which is

We propose that split-antecedent sluices can be covered by a straightforward extension of
the analysis of split-antecedent VP ellipsis that we sketched in §2.3. We begin by assuming
that the sluicing site contains two TPs (each containing the wh- trace left by ATB extraction
of *a cuál*) conjoined by an AND^2 operator. As in the previous sections, we assume that R
composes with AND^0.

(68)
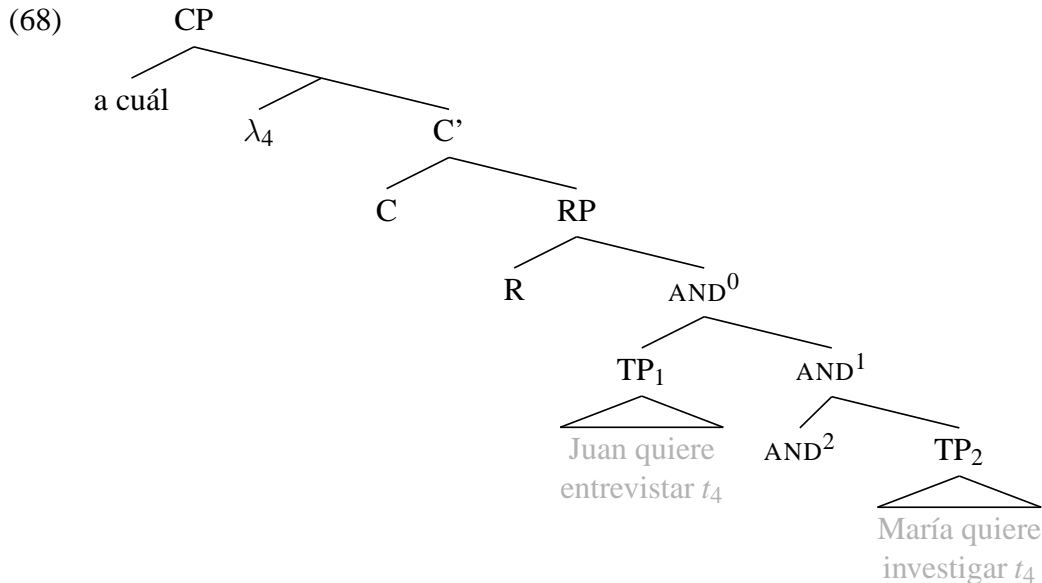
We assume the following meanings for TP_1, TP_2 (both of which denote in $\langle st \rangle$), and AND^0.
The result is a set of TP meanings, each containing a choice function variable over D_e.

(69) $[\![[\text{TP}_1]_{\langle st \rangle}]\!]^g = \lambda w.$ Juan wants to interview $f(x)(w)$.

(70) $[\![[\text{TP}_2]_{\langle st \rangle}]\!]^g = \lambda w.$ María wants to profile $f(x)(w)$.

(71) $[\![\text{AND}^0_{\langle st \rangle}]\!] = \left\{ \begin{array}{l} \lambda w.\text{Juan wants to interview } f(x)(w) \\ \oplus \quad \lambda w.\text{María wants to profile } f(x)(w) \end{array} \right\}$

As above, the meaning of R is going to be crucial in deriving the correct meaning for the sluice. We propose that R is performing the same function as in §§3.1 and 3.2 above, i.e., ensuring that the meaning of the antecedent is taking into account for the resolution of the sluice. This is apparent in (72), where we restrict the domain of the free choice variables to footballers and politicians, respectively. By PM, composition of R and AND^0 yields (73).

(72) $[\![\text{R}_{\langle st \rangle}]\!]^g = \left\{ \begin{array}{c} \lambda w.\text{Juan wants to interview } f(x)(w) \wedge \text{footballer}(x) \\ \oplus \quad \lambda w.\text{María wants to profile } f(x)(w) \wedge \text{politician}(x) \end{array} \right\}$

(73) $[\![\text{RP}_{\langle st \rangle}]\!]^g = \left\{ \begin{array}{c} \lambda w.\text{Juan wants to interview } f(x)(w) \wedge \text{footballer}(x) \\ \oplus \quad \lambda w.\text{María wants to profile } f(x)(w) \wedge \text{politician}(x) \end{array} \right\}$

When we factor in the interrogative C head and the wh- phrase, we arrive at the following semantics for the interrogative CP: in prose, a question about the footballers that Juan interviewed and the politicians that María profiled.

(74) $[\![\text{CP}_{\langle st,t \rangle}]\!]^g = \lambda p.\exists f.p = \left\{ \begin{array}{c} \lambda w.\text{Juan wants to interview } f(x)(w) \wedge \text{footballer}(x) \\ \oplus \quad \lambda w.\text{María wants to profile } f(x)(w) \wedge \text{politician}(x) \end{array} \right\}$

As discussed in §1.3, there are two properties of these sluices that we need to account for. First, as opposed to the corresponding unsluiced question, the individuals that Juan interviews and María profiles need not be both footballers and politicians. Here, this effect follows from the assumption that the sets of individuals each choice function variable ranges over are independent from each other.

Second, these sluices don't allow a crossed reading, where the editor reacts to Juan's wish to interview a footballer by asking which footballer he wants to interview or which politician María wants to profile. Blocking this reading amounts to blocking a resolution of the sluicing site as the union of the two propositions in (71). This can be done, as we did in §2.3 for split-antecedent VP ellipses, by taking the contribution of *whenever* into account and requiring that the sluice be resolved by reference to the corresponding proposition in the unconditional set that acts as the antecedent. The meaning of (15) can then be paraphrased as follows: the editor asks about the identity of the individual x that satisfies the relevant open proposition (out of Juan wanting to interview x, for x a footballer; María wanting to profile x, for x a politician; and the union of these two) in a given situation, where "relevant open proposition in a given situation" is defined by reference to the propositions that make up the unconditional antecedent. Thus, in those situations where Juan wants to interview a footballer, the relevant open proposition is $\lambda w.[\text{Juan wants to interview } f(x)(w) \wedge \text{footballer}(x)]$, and analogously for María's desires to profile a politician.

3.3.1 Manipulating the discourse to block split readings

At this juncture, it is important to note that not all examples that could potentially have a split antecedent reading actually do. In both (75) and (76), the sluice has a single-antecedent reading determined by the second conjunct of the preceding conjunction. Note that (76) features an *a*-marked remnant that precludes a cleft-based analysis.

(75)   Sally kissed an Arsenal striker, and then she hugged a Liverpool defender, but I
       can't remember which one.
       [= I can't remember which Liverpool defender she hugged.]

(76)   María besó a   un delantero de Boca Juniors y   luego abrazó a   un
       María kissed DOM a striker   of Boca Juniors and then hugged DOM a
       defensa de River Plate, pero ahora mismo no recuerdo a   cuál.
       defender of River Plate but   now   right   not remember DOM which.SG
       [= I can't remember which River Plate defender María hugged]

The availability of these readings is expected under our analysis, where R picks up a salient
meaning from the surrounding discourse. The peculiarity of these examples reduces to
the fact that the second conjunct is salient enough to block the split-antecedent reading.
Importantly, this pattern also obtains in other types of ellipsis —e.g., in the minimal pair
below, only the VPE site in (77a) supports a split reading (Prüst et al. 1994).

(77)   a. Maaike dances. She sings. Saskia does too.
           [= Saskia dances and sings]
       b. Maaike dances. Brigitte sings. Saskia does too.
           [= Saskia sings]

Elbourne (2008:207ff), following Fiengo and May 1994, argues that the (un)availabilty of
a split reading depends on the structure of the preceding discourse. Of (77b), he says that
"if one asserts that a person does two things and then, with ellipsis, asserts that a second
does too, one will be interpreted as asserting that the second person does the two things",
adding later on that "no such factors obtain in [(77b)]". Elbourne supports this contention
by noting that single-antecedent readings can be counterbled. All it takes is furnishing
(77b) with some extra content that prompts a split reading.

(78)   Saskia, being the competitive type, has managed to acquire all the skills that Maaike
       and Brigitte possess. Maakie dances. Brigitte sings. Saskia does too.
       [= Saskia dances and sings]

Similar manipulations are possible with (75) and (76). Perhaps the easiest way to bring
back the split antecedent reading is by using a plural wh- phrase, which forces us to consider
the plurality of people dated (or kissed) across situations.

(79)   Sally kissed an Arsenal striker, and then she hugged a Liverpool defender, but right
       now I can't remember which (ones).
       [= I can't remember which Arsenal striker she kissed or which Liverpool defender
       she hugged]

(80) María besó   a   un delantero de Boca Juniors, y   luego abrazó a   un
      María kissed DOM a   striker   of Boca Juniors and then   hugged DOM a
      defensa de River Plate, pero ahora mismo no recuerdo a   cuáles.
      defender of River Plate but   now   right   not remember DOM which.PL
      [= I can't remember which Boca Juniors striker she kissed or which River Plate
      defender she hugged]

In a similar vein, the following sluices favor a single-antecedent reading, but one that,
unlike those in (79) and (80), takes the leftmost clause as its antecedent. We suggest that
this is because the structure of these sentences (and specifically the presence of an *after*
clause, rather than a conjunction) raises the salience of Arsenal and Boca Juniors strikers,
respectively.

(81) Although I can't remember which (one), I know that Sally kissed an Arsenal striker
      after she hugged a Liverpool defender.
      [= I can't remember which Arsenal striker she kissed]

(82) Aunque no recuerdo a   cuál, sé   que María besó a   un delantero de
      although not remember DOM which know that María kissed DOM a   striker   of
      Boca Juniors después de besar   a   un defensa de River Plate.
      Boca Juniors after   of kiss.INF DOM a   defender of River Plate
      [= I can't remember which Boca Juniors striker María kissed]

These data suggest that our account is on the right track: if sluicing sites are contextually re-
stricted (independently of the specific implementation of contextual restriction), we should
be able to effect manipulations that favor either a single- or a split-antecedent resolution of
the sluice.

4   Conclusions and outlook

We have seen that a number of apparently unconnected properties of sluicing can be unified
if sluicing sites (and ellipsis sites in general) are necessarily contextually restricted. Barros
(2012, 2014) already hints at a solution along these lines by claiming the relevant sluices
as stemming from a cleft built around a contextually restricted *it* pronoun. However, his
analysis lacks generality, given that the relevant effects persist even in cases where cleft
sources are demonstrably unavailable. This suggests that contextual restriction needs to
be dissociated from the specific syntax of a cleft. Our implementation of this hypothesis
in terms of free contextual variable is a variation of Elbourne's (2008) analysis of VP and
NP ellipsis, but we want to re-emphasize that our analysis doesn't rely on this particular
implementation being correct. In principle, the same results can be attained with a different
implementation of contextual restriction, so long as one accepts that the obligatory con-
textual restriction of sluices is not tied to the presence of an underlying cleft. This result
highlights an important methodological point, i.e., that comparing the *meanings* of sluiced
and unsluiced questions is not a reliable heuristic to determine what the underlying *syntax*

of the sluicing site is. This is, remarkably, the same insight that Saussure had over a century ago:

> "The very word *ellipsis* has a meaning which should give pause for thought. Such a term suggests that we know at the outset how many terms a sentence *should* be made up of, and that by comparing the actual terms it contains we work out the shortfall. But if a term is infinitely extendable in its meaning, the calculation we are trying to establish using *n* ideas and *n* terms is clearly quite ridiculous, and moreover perfectly arbitrary."   [Saussure 2014:67]

The particular approach to sluicing (and ellipsis in general) we have defended here has a number of additional consequences. Consider, for example, the status of the surface vs. deep anaphora distinction, which independent work (e.g., Baltin 2012, Thompson 2014) has already argued is blurrier than Hankamer and Sag (1976) originally envisioned. Our contextual variable R is effectively a deep anaphor, in the sense that its semantics are determined by reference to a salient discourse object, rather than a transformation (deletion) applying to a morphosyntactic object. The hypothesis that R is an integral component of ellipsis types routinely classified as surface anaphors (i.e., sluicing, plus VP and NP ellipsis, as analyzed in Elbourne 2001) suggests that at least some surface-anaphoric ellipses contain an irreducibly deep-anaphoric component (this result raises the conjecture that this is true of all surface anaphors; we cannot explore this conjecture here).

Second, it suggests that semantic identity conditions on ellipsis need to be reconsidered. As articulated by Rooth (1992), Schwarzschild (1999), Merchant (2001), and others, identity requires that certain types of entailments hold between the ellipsis site and its antecedent. Our work, and Elbourne's (2008), should be taken as an indication that the semantics of the ellipsis site (and, by extension, to the kind of entailments that determine whether semantic identity is satisfied or not) needs to take the contribution of R into account.[23]

Finally, it is somewhat tempting to try and connect our analysis with Lobeck's (1995) proposal that ellipsis sites need to be licensed by specific functional items (cf. also Gergel 2005, Merchant 2001 and fn. 15). One could perhaps argue that R is the functional head that makes ellipsis possible. Note that the fact that contextual variables analogous to R have been proposed in non-elliptical environments (e.g., strong quantifiers, and see the caveats in fn. 11) is not necessarily a drawback of this hypothesis —for one, the licensing items that Lobeck and Gergel discuss are functional heads that are otherwise routinely present in non-elliptical clauses (e.g., T in the case of VP ellipsis). To the extent that a licensing item doesn't obligatorily trigger ellipsis, it is possible to treat R as such a licensor. Exploring this particular hypothesis, however, goes beyond what we set out to accomplish in this paper.

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[23]A different approach would be to treat identity as a morphosyntactic isomorphism relation (cf. Chung 2013, Merchant 2013b, Thoms 2015) and then treat semantic identity effects as a by-effect of the relation between R and the antecedent. This alternative doesn't affect the conclusion that R is an integral component of the meaning of ellipsis sites.

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