

Remarks on conjunction, fragments, and pseudo-clefts

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Abstract

Although e.g. anaphor binding is commonly deployed as a c-command diagnostic, fragment answers and pseudo-clefts show exceptional “connectivity” effects, where binding occurs apparently without c-command. I offer new arguments that fragments and pseudo-clefts both involve elided structure, restoring the necessary c-command relations. This contrasts with work which takes connectivity to motivate abandoning c-command for a purely semantic approach to anaphor binding. The diagnostics I present for elided structure in fragments and pseudo-clefts involve the distribution of adverbials and the licensing of VP ellipsis, and are borrowed from my own work on ellipsis in co-ordinate structures.

Acknowledgments: I am indebted to Kai von Fintel, Danny Fox, Irene Heim, David Pesetsky, and Roger Schwarzschild for their feedback. All errors are, of course, my own. I receive partial financial support from a SSHRC doctoral fellowship.

1 Introduction

This paper is concerned with two constructions: fragment answers, as in (1), and copular constructions, in particular specificational pseudo-clefts, as in (2).

- (1) A: What did Obama approve?
B: This bill. *(fragment answer)*
- (2) What Obama approved was this bill. *(pseudo-cleft)*

These constructions present a well-known puzzle, which I introduce here with anaphor binding. In general, anaphor binding seems to require a structural relation to hold between the binder and the bindee whereby the binder must c-command the bindee. In fragment answers and pseudo-clefts, anaphors are apparently licensed without c-command. *Himself* is an acceptable fragment answer in (3-b), even though *Obama* in the question in (3-a) does not c-command the fragment. Similarly, in the pseudo-cleft in (4), *himself* is licit as the post-copular constituent, despite not being in the c-command domain of *Obama*, which is embedded within the pre-copular constituent.

- (3) a. A: What does Obama_{*i*} approve of?
b. B: Himself_{*i*}.
- (4) What Obama_{*i*} approves of is himself_{*i*}.

Similar data can be constructed with other phenomena generally thought to diagnose c-command, including variable binding, NPI-licensing, and scope. In each case, a puzzle of “connectivity” arises (term due to Akmajian 1970, Higgins 1976): the fragment behaves as though it were c-commanded by an element of the question, and the post-copular constituent in the pseudo-cleft behaves as though it were c-commanded by an element of the pre-copular constituent — even though these c-command relations do not hold. Sharvit (1999:300-301) provides a full review of the relevant data.

There are two possible responses to connectivity effects. Continuing to illustrate with anaphor binding, one option is to propose structures for (3) and (4) where *himself* is in the c-command domain of an appropriate licenser. The other is to take these data as evidence that anaphor binding does not actually involve c-command at all, and abandon traditional Binding Theory in favor of an alternative, purely semantic approach not dependent on a structural licensing condition (Jacobson 1994, 2015, Sharvit 1999). As anaphor binding has been widely deployed as a c-command diagnostic, this choice is, as Schlenker (2003:1) says, of “foundational” importance.

The goal in this paper is to provide new evidence that fragments and pseudo-clefts involve more structure than they wear on their sleeves. The structure for the fragment in (3) is not (5-a) (Jacobson 2015), but (5-b) (Merchant 2004), where *himself* is derived from a full clausal source. Similarly, in the pseudo-cleft in (4), the post-copular constituent is not just the DP *himself*, as in (6-a) (Jacobson 1994, Sharvit 1999), but a full clause, (6-b) (Ross 1972, den Dikken et al. 2000, Schlenker 2003).

(5) **Structures for fragment**

A: Who does Obama approve of?

- a. B: [_{DP} himself_i] (no ellipsis)
- b. B: [_{TP} ~~Obama_i approves of himself_i~~] (ellipsis)

(6) **Structures for pseudo-cleft**

- a. [[_{DP} what Obama approves of] [is [_{DP} himself_i]]] (no ellipsis)
- b. [[_{DP} what Obama approves of] [is [_{TP} ~~Obama_i approves of himself_i~~]]] (ellipsis)

Ellipsis restores the c-command relations necessary for binding. Even though *himself* is not c-commanded by the overt occurrence of *Obama*, *himself* is c-commanded by an unpronounced occurrence of *Obama* in the hidden clause.

To directly diagnose elided clausal structure, this paper brings fragments and pseudo-clefts together with another construction with an ellipsis debate of its own: conjunction. In Hirsch (2015, ‘H15’), I recently provided new empirical tests supportive of conjunction reduction, arguing that apparent conjunction of object DPs is at least optionally parsed with higher conjunction, at least as high as vP, obscured by ellipsis. I show that the tests in H15 can be extended to reveal elided structure in fragments and pseudo-clefts.¹

Discussion proceeds as follows. In Section 2, I review the syntax and semantics for fragment answers and pseudo-clefts with and without ellipsis. In Section 3, I introduce conjunction as a new testing ground for elided structure, and in Sections 4-5 extend H15’s diagnostics to fragments and pseudo-clefts. Section 6 discusses implications of the data for connectivity, and for the compositional analysis of pseudo-clefts. Section 7 concludes.

¹See Merchant (2004) (on fragments), and Ross (1972) and Schlenker (2003) (on pseudo-clefts) for other arguments for ellipsis. In the case of pseudo-clefts, though, most arguments have been quite indirect. Ross e.g. observes that the post-copular material may be a full clause in some cases (e.g. *What I did then was I called the grocer.*) — but this does not show that a full clausal parse is available in cases where the clause is not (and cannot be) overt.

2 The debates

This section reviews the syntax and semantics for fragment answers and pseudo-clefts under the ellipsis and non-ellipsis approaches, including an overview of how connectivity effects are handled semantically in non-ellipsis approaches. Fragment answers are discussed in Section 2.1, and pseudo-clefts in Section 2.2.

2.1 Fragment answers

Illustrating with the question-answer pair in (1), repeated below, the ellipsis approach in Merchant (2004) takes *this bill* to be derived from a clausal source.

- (1) A: What did Obama approve?
B: This bill.

The full PF and LF structures are given in (7), elaborating (5-b) above. *This bill* moves to a peripheral position, and the TP elides at PF, leaving *this bill* as the only remnant in (7-a). I assume that movement of *this bill* takes place on the PF branch (Weir 2014). The structure in the narrow syntax and at LF is (7-b), which has *this bill* in situ. This accounts for connectivity effects, which require the overt DP to be in the c-command domain of an element in the elided clause.

- (7) **Ellipsis derivation for fragment answer**
- a. $[_{XP} \text{ this bill}_i [_{TP} \text{ Obama approved } t_i]]$ (PF structure)
 - b. $[_{TP} \text{ Obama approved this bill}]$ (narrow syntax/LF)

Since the ellipsis approach involves covert clausal syntax, the semantics is quite straightforward. The clausal source for the fragment denotes the proposition that the answer intuitively conveys:

- (8) **Fragment answer: propositional meaning (with ellipsis)**
 $\llbracket (1.B) \rrbracket = \lambda w . \text{ Obama approved this bill in } w$

The question may be analyzed in the familiar ways, for instance as a set of propositions (Hamblin 1973, Karttunen 1977) or an equivalence relation on the set of possible worlds (Groenendijk & Stokhof 1989). I illustrate with a Hamblin analysis, by which the question in (1) denotes a set of propositions of the form *that Obama approved x in w*. That is, the set characterized:

- (9) **Question: set of propositions (with ellipsis)**
 $\llbracket (1.A) \rrbracket = \lambda p_{st} . \exists x [p = \lambda w . \text{ Obama approved } x \text{ in } w]$

An approach without ellipsis was recently advocated in Jacobson (2015). Syntactically, Jacobson proposes that a fragment like *this bill* has just the structure which it wears on its sleeve. She posits a new cross-sentential syntactic unit consisting of the question and fragment answer together, which she calls a Qu/Ans. Semantically, *this bill* has its familiar referential meaning. The question is analyzed as denoting a property, following the “categorical” approach to interrogative semantics (see Groenendijk & Stokhof 1989:25ff).

(10) **Fragment answer: referential meaning (without ellipsis)**

$$\llbracket(1.B)\rrbracket = \text{this bill}$$

(11) **Question: property meaning (without ellipsis)**

$$\llbracket(1.A)\rrbracket = \lambda x . \lambda w . \text{Obama approved } x \text{ in } w$$

Composition within the Qu/Ans proceeds by Functional Application such that the property provided by the question is applied to the individual provided by the fragment. Together, then, the question and answer have a propositional meaning, corresponding to the proposition the answer intuitively conveys.

(12) **Composition within Qu/Ans**

$$\llbracket\text{Qu/Ans}\rrbracket = \llbracket(1.A)\rrbracket(\llbracket(1.B)\rrbracket) = \lambda w . \text{Obama approved this bill in } w$$

To derive anaphor binding, Jacobson abandons Condition A — the structural constraint from traditional Binding Theory — for a purely semantic approach. Recall the example:

- (3) A: What does Obama_i approve of?
B: Himself_i.

Jacobson analyzes *himself* as denoting the identity function in (13-a). The question has the higher-order property meaning in (13-b), which requires a function f of type $\langle e,e \rangle$ as its argument and returns the proposition *that Obama approves of $f(\text{Obama})$* . Because the identity function maps Obama to himself, applying the predicate provided by the question to the identity function provided by the fragment yields the proposition *that Obama approves of Obama*.

(13) a. $\llbracket(3)\text{-B}\rrbracket = \lambda x . x$

b. $\llbracket(3)\text{-A}\rrbracket = \lambda f_{\langle e,e \rangle} . \lambda w . \text{Obama approves of } f(\text{Obama}) \text{ in } w$

c. $\llbracket\text{Qu/Ans}\rrbracket = \llbracket(3)\text{-A}\rrbracket(\llbracket(3)\text{-B}\rrbracket) = \lambda w . \text{Obama approves of Obama in } w$

2.2 Pseudo-clefts

In pseudo-clefts, the pre-copular constituent is a free relative DP. Although *what* in (2), repeated from above, occurs in both free relatives and embedded questions, data like (14) dissociate: *wh*-forms with an overt restrictor, licit in questions but illicit in free relatives, are illicit in pseudo-clefts (Sharvit 1999, Caponigro & Heller 2015). Cross-linguistic evidence from languages which morphologically distinguish questions and relatives pronouns (e.g. Hebrew) similarly argue that the pre-copular constituent is a free relative.

(2) What Obama approved was this bill.

- (14) a. I wonder [which bill Obama approved]. (embedded question)
 b. *I read [which bill Obama approved]. (free relative)
 c. *[Which bill Obama approved] is this bill. (pseudo-cleft)

The ellipsis and non-ellipsis approaches differ in how much *post-copular* structure is present. In the ellipsis approach of Ross (1972), den Dikken et al. (2000), and Schlenker (2003), the post-copular constituent is the full clause *Obama approved this bill*. The derivation is (15), after (6-b) above: at PF, *this bill* is ex situ and the TP elides, while, at LF, *this bill* is in situ.

- (15) **Ellipsis derivation for pseudo-cleft**
 a. $[[_{DP} \text{ what Obama approved}] [\text{was } [_{XP} \text{ this bill}_1 \{_{TP} \text{ Obama approved } t_i\}]]]$ (PF)
 b. $[[_{DP} \text{ what O approved}] [\text{was } [_{TP} \text{ O approved this bill}]]]$ (LF; to be revised)

Semantically, pseudo-cleft are taken to be an intra-sentential pairing of a question with its answer. The informal paraphrase for (2) is: *the complete answer to the question “What did Obama approve?” is the proposition that Obama approved this bill.*

The pre-copular free relative is interpreted as a concealed question.² Although Schlenker’s (2003) own formalization adopts an interrogative semantics after Groenendijk & Stokhof (1989), I will continue to assume a Hamblin analysis to facilitate exposition. In order to derive the target meaning, I update the LF in (15-b) with several covert morphemes, all of them familiar from the literature:

- (16) $[[_{DP3} \text{ ANS } [_{DP2} \text{ CQ } [_{DP1} \text{ what O approved}]]] [\text{was } [_{TP2} \text{ Exh } [_{TP1} \text{ O approved this bill}]]]]]$

²Note that, contrary to the data above, there is some evidence that the pre-copular material may be a question itself, rather than a free relative interpreted as a concealed question. For instance, Ross (1985) observes after Faraci (1974) that *else* is possible in embedded questions and pseudo-clefts, but not free relatives, as in (i).

- (i) a. I {know / *ate} what else she cooked.
 b. What (else) she is going to cook is spaghetti flambe.

Still, the balance of evidence favors a free relative analysis, and I assume this here — though this choice is not crucial for the main arguments in the paper. As we will see, these depend only on the *post-copular* constituent.

The free relative itself, DP_1 , denotes the individual concept in (17-a). The CQ operator, (17-b), adjoins just above DP_1 to yield the Hamlin set in (17-c): the set of propositions of the form *that y is the maximal entity that Obama approved* (see Nathan 2006 for discussion of this and alternative approaches to concealed questions).

- (17) a. $\llbracket DP_1 \rrbracket = \lambda w . \iota x [\text{Obama approved } x \text{ in } w]$
 b. $\llbracket CQ \rrbracket = \lambda x_{se} . \lambda p . \exists y [p = \lambda w . y = x(w)]$
 c. $\llbracket DP_2 \rrbracket = \llbracket CQ \rrbracket(\llbracket DP_1 \rrbracket) = \lambda p . \exists y [p = \lambda w . y = \iota x [\text{Obama approved } x \text{ in } w]]$

The Answerhood operator, defined in (18) (Dayal 1996), applies to the Hamlin set at a given world to return the strongest true proposition it contains at that world. Assuming evaluation at w_0 , ANS in (16) returns the strongest proposition of the form *that y is the maximal entity Obama approved* that is true at the actual world. The copula equates that with the proposition provided by the post-copular clause to yield the target meaning. With the post-copular clause interpreted exhaustively, the technical paraphrase is thus: the strongest true proposition of the form *that y is the maximal entity Obama approved* is equivalent to the proposition *that Obama approved only this bill*. Overall, the pseudo-cleft conveys that Obama approved only this bill.

(18) **Defining ANS (Dayal 1996)**

$$\llbracket \text{ANS} \rrbracket = \lambda Q_{st} . \lambda w : \exists p [w \in p \in Q \ \& \ \forall p' \in Q [w \in p' \rightarrow p \subseteq p']] \\ . \iota p [w \in p \in Q \ \& \ \forall p' \in Q [w \in p' \rightarrow p \subseteq p']]$$

(19) **Predicted meaning for the pseudo-cleft (with ellipsis)**

$$\llbracket \text{ANS} \rrbracket(\lambda p . \exists y [p = \lambda w . y = \iota x [\text{Obama approved } x \text{ in } w]])(w_0) \\ = \lambda w . \text{Obama approved only this bill in } w$$

The literature on pseudo-clefts has, in my estimation, been more reticent to adopt an ellipsis approach than the literature on fragment answers. This reticence likely links to the observation that a pseudo-cleft with an overt full clause in post-copular position is degraded:

- (20) ?*What Obama approved was Obama approved this bill.

In the non-ellipsis approach, the post-copular material is just the constituent that it appears to be, as in (21). The free relative DP is analyzed as a definite description (Jacobson 1999), and the copula equates the referent of the free relative with the referent of the *this bill*, (22). The paraphrase is straightforward: the maximal entity that Obama approved is this bill. Again, the pseudo-cleft conveys that Obama approved only this bill.

- (21) **Non-ellipsis derivation for pseudo-cleft**
 [[_{DP} what Obama approved] [was [_{DP} this bill₁]]] (PF/LF structure)
- (22) **Predicted meaning for the pseudo-cleft (without ellipsis)**
 ιx [Obama approved x] = this bill

There have been some attempts in the non-ellipsis tradition to reconcile connectivity with a structure-based Binding Theory. Heycock & Kroch (1999) propose that a sentence like (4), repeated below, has a logical form like (23-a), which they view as a syntactic object susceptible to transformations. They propose an operation of “ ι -reduction” which eliminates the ι operator and replaces the variable bound by ι by the expression *himself*. The output of ι -reduction is (23-b) and this is the structure relevant for binding.

- (4) What Obama approves of is himself_{*i*}.
- (23) a. ιx [Obama approves of x] = ‘himself’ (‘=’ means ‘has the same denotation as’)
 b. Obama approves of ‘himself’ AND $\forall z$ [Obama approves of z iff $z \leq$ ‘himself’]

Still, the more dominant strategy is to adopt purely semantic accounts of connectivity, along the lines of the analysis of anaphor licensing sketched for fragment answers in the preceding section (Jacobson 1994, Sharvit 1999; see discussion preceding ex. (13)).

2.3 Goal: to diagnose elided structure without connectivity

The rest of the paper presents new evidence unrelated to connectivity which aims to resolve the debate between ellipsis and non-ellipsis approaches. By finding independent evidence for or against hidden structure, we can indirectly adjudicate between the c-command-based approach to connectivity (possible with ellipsis), and the semantic approach (required without ellipsis).

3 A new testing ground: conjunction

A debate between ellipsis and non-ellipsis structures arises not only with fragment answers and pseudo-clefts, but also with co-ordination. Consider the conjunction:

- (24) Obama approved this bill and that bill.

From the surface string, it appears that *and* directly conjoins the DPs *this bill* and *that bill*, as in (25-a). However, some work has argued that (24) has at least an available parse where *and* conjoins larger constituents obscured in the surface string due to ellipsis.

(25) **Possible structures for (25)**

- a. $[_{TP}$ Obama approved $[_{DP}$ this bill [and $[_{DP}$ that bill]]] (*no ellipsis*)
b. $[[_{TP}$ Obama approved this bill] [and $[_{TP}$ Obama approved that bill]]] (*ellipsis*)

Considering the right conjunct, underlined in (25), the comparison between (25-a) and (25-b) closely resembles the alternative structures for fragments and pseudo-clefts presented in the preceding section. In each case, the question is: does the abstract syntax include clausal structure not apparent in the overt string, or just the DP that appears overtly?

In Hirsch (2015), I provide a series of empirical arguments for elided structure in the right conjunct in (24). H15 argues for vP structure in particular, but the data from H15 that I will discuss in this paper are also compatible with a full clause being present in the right conjunct. Purely for ease of exposition, I focus on a structure like (25-b), where TPs are conjoined, and TP ellipsis takes place to derive the surface string. My aim is to extend the diagnostics from H15 to probe for ellipsis in fragment answers and pseudo-clefts.

In order to apply these diagnostics as directly as possible, I will consider question-answer pairs like (26) and pseudo-clefts like (27). These differ minimally from the examples discussed thus far in that the conjunction *this bill and that bill* is present, rather than just *this bill*.

- (26) A: What did Obama approve?
B: This bill and that bill.

- (27) What Obama approved was this bill and that bill.

With ellipsis, *this bill and that bill* derives from a clausal source. Modeling on (25-b), *this bill* and *that bill* may, in fact, each derive from a separate clause, as in (28) for the fragment and (29) for the pseudo-cleft. *This bill and that bill* surfaces instead of (24) due to a difference at PF: whereas TP ellipsis takes place just in the right conjunct in (25-b), TP ellipsis takes place in both conjuncts in (28) and (29).

(28) **Ellipsis structure for fragment with conjunction**

- A: What did Obama approve?
B: $[_{TP}$ $[_{TP}$ ~~Obama approved~~ this bill] [and $[_{TP}$ ~~Obama approved~~ that bill]]]

(29) **Ellipsis structure for pseudo-cleft with conjunction**

- $[_{DP}$ what Obama approved] [was $[_{TP}$ $[_{TP}$ ~~Obama approved~~ this bill] [and $[_{TP}$ ~~Obama approved~~ that bill]]]]]

Without elided structure, the fragment in (26)-B and the post-copular material in (27) must be a direct conjunction of DPs, as in (30) and (31).

(30) **Non-ellipsis structure for fragment with conjunction**

A: What did Obama approve?

B: [_{DP} [_{DP} this bill] [and [_{DP} that bill]]]

(31) **Non-ellipsis structure for pseudo-cleft with conjunction**

[[_{DP} what Obama approved] [was [_{DP} [_{DP} this bill] [and [_{DP} that bill]]]]]

Semantically, the correct meaning can be derived with or without ellipsis in the ways sketched in the preceding section. With ellipsis, the fragment directly conveys the proposition *that Obama approved this bill and he approved that bill*, and the pseudo-cleft equates the complete answer to the question “What did Obama approve?” with that proposition. If *this bill* and *that bill* are directly conjoined, *and* may be analyzed as a sum formation operator (Link 1983), resulting in the conjunction denoting the plural individual in (32), with *this bill* and *that bill* as atoms. The question-answer pair constitutes a Qu/Ans, with the property provided by the question applying to the plural individual provided by the fragment. The Qu/Ans denotes the proposition in (33-a), which, assuming the reading is distributive, is equivalent to the proposition *that Obama approved this bill and he approved that bill*. In the pseudo-cleft, the maximal individual that Obama approved is equated with the plural individual provided by the post-copular conjunction, as in (33-b).

(32) **Interpretation of *this bill and that bill* (without ellipsis)**

[[this bill and that bill]] = this bill ⊕ that bill

(33) a. **Interpretation of conjunctive fragment; (26) (without ellipsis)**

$\lambda w . \text{John saw this bill} \oplus \text{that bill in } w$

b. **Interpretation of pseudo-cleft; (27) (without ellipsis)**

$\iota X [\text{John saw } X \text{ in } w] = \text{this bill} \oplus \text{that bill}$

After H15, I zero in on one critical difference between the ellipsis and non-ellipsis structures for (26)-B and the post-copular material in (27): the amount of structure present in the right conjunct. Just as H15’s diagnostics detect elided structure in the right conjunct in (24), they can detect elided structure in the right conjunct in (26)-B and (27). To preview the results of this investigation, the data presented in the following establish a three-way correlation. The diagnostics from H15 test positive for elided structure with apparent DP conjunction in all of simple sentences, question-answer pairs, and pseudo-clefts.

4 Test 1: Sentential adverbs

This section presents the first test for elided structure, which has to do with the distribution of certain adverbials which can adjoin on the clausal spine, but not to DPs. I demonstrate that fragments and the post-copular constituent in pseudo-clefts can host these adverbials, supporting an ellipsis derivation.

4.1 The test from H15

Certain adverbials cannot adjoin to a DP. Although H15 focuses on temporal adverbs like *yesterday*, I will illustrate with the adverbial PP *with difficulty*. To make clear that *with difficulty* cannot adjoin to a DP, I consider first its distribution outside of conjunction. In (34), *with difficulty* adjoins on the clausal spine. There are also examples like (35), where *with difficulty* linearly precedes a DP. These examples do not show, however, that the PP and DP form a constituent. The alternative derivation, given in (36), is for the PP to adjoin on the clausal spine and the DP to undergo rightward movement, extraposing above the PP (after Ross 1967).

(34) With difficulty, Obama approved this bill.

(35) Obama approved, with difficulty, this crazy bill.

(36) $[_{TP} [_{TP} [_{TP} \text{Obama approved } t_1] [_{PP} \text{with difficulty}]] [_{DP} \text{this crazy bill}]_1]$

To isolate a possible parse where the PP and DP form a constituent, we need to block the extraposition derivation. The relevant test cases are (37) and (38), both of which are deviant.

(37) ?*Obama approved, with difficulty, this.

(38) *Obama flew off to, with difficulty, that beautiful city.

The literature on rightward movement has noted that extraposition is illicit when the extraposed DP is not sufficiently “heavy”, i.e. either not of sufficient syntactic complexity, or not of sufficient phonological weight. For this reason, extraposition is commonly referred to as ‘Heavy NP Shift’. In (37), the DP *this* is light, so extraposition, as in (39), is blocked.

(39) $[_{TP} [_{TP} [_{TP} \text{Obama approved } t_1] [_{PP} \text{with difficulty}]] [_{DP} \text{this}]_1]$

A second constraint on extraposition prohibits preposition stranding. In (38), this blocks the parse in (40), where the DP extraposes stranding *to*.

(40) $[_{TP} [_{TP} [_{TP} \text{Obama flew off } [_{PP} \text{to } t_1]] [_{PP} \text{with difficulty}]] [_{DP} \text{that beautiful city}]_1]$

With extraposition parses ruled out, the only possible parses are those in (41), where the PP adjoins directly to the DP, forming a complex DP. In (41-a) for (37), the complex DP is in situ as the complement of *approved* and, in (41-b) for (38), the complex DP is the complement of *to*.

- (41) a. [_{TP} Obama approved [_{DP} [_{PP} with difficulty] [_{DP} this]]]
 b. [_{TP} Obama flew off [_{PP} to [_{DP} [_{PP} with difficulty] [_{DP} that beautiful city]]]]

The deviance of (37) and (38) shows that these parses are not available either. As DPs are licit as the complements of verbs and prepositions, the only reason for these parse to be out is for *with difficulty that beautiful city* not to constitute a well-formed complex DP. In this way, data like (37) and (38) argue that the PP *with difficulty* simply cannot adjoin to DPs.

H15's critical observation about conjunction is that a second apparent DP conjunct can host an adverbial, even if that adverbial cannot adjoin to DPs (see also Collins 1988). I continue to deploy *with difficulty* for illustration:

- (42) Obama approved this bill and, with difficulty, that bill.

The PP in (42) scopes only over the second conjunct: (42) says only that approving *that* bill was difficult, not that approving *both* this bill and that bill was difficult. Accordingly, the PP must adjoin within the second conjunct. If the second conjunct were just the DP *that bill*, the PP would have to adjoin to that DP:

- (43) [_{TP} Obama approved [_{DP} this bill [and [_{DP} [_{PP} with difficulty] [_{DP} that bill]]]]]

To reconcile (42) with the generalization that PP+DP is not a licit constituent, the second conjunct must contain elided clausal structure capable of hosting the PP. In the licit structure in (44), the PP adjoins to the hidden clause:

- (44) [[_{TP} O approved this bill [and [_{TP} [_{PP} with difficulty] [_{TP} ~~O~~ approved that bill]]]]]

Hence, because the PP *with difficulty* cannot adjoin to a DP, its distribution becomes a diagnostic for elided clausal structure. The task now is to extend the “adverbial test” for elided structure to fragments and pseudo-clefts. Critically, this test serves to diagnose ellipsis entirely independent of connectivity effects.

4.2 Fragments

Beginning with fragments, (45) inserts *with difficulty* into the second conjunct in a conjunctive fragment. As (45) is acceptable, the adverbial test is positive for elided structure.

- (45) A: What did Obama approve?
 B: This bill and, with difficulty, that bill.

To account for the acceptability of (45)-B, the fragment cannot just contain the DPs it wears on its sleeve. If it did, the PP would have to illicitly adjoin to the DP in the second conjunct:

- (46) A: What did Obama approve?
 B: [[*DP* this bill] [and [*DP* [*PP* with difficulty] [*DP* that bill]]]]

Rather, the structure for the fragment must derive from a clausal source. *This bill* and *that bill* must be the remnants of separate elided clauses, with the PP adjoined to the clause in the right conjunct:

- (47) A: What did Obama approve?
 B: [[*TP* ~~Ø~~-approved this bill] [and [*TP* [*PP* with difficulty] [*TP* ~~Ø~~-approved that bill]]]]

The structure in (47) parallels the structure for the earlier conjunction example in (44) above. As discussed in Section 3, the only difference is at PF: ellipsis takes place in both conjuncts in (47) (outputting the fragment *This bill and, with difficulty, that bill*), rather than just the right conjunct (outputting *Obama approved this bill and, with difficulty, that bill*).

Jacobson (2015) previously observed that a fragment can host modal adverbs like *possibly* and *maybe*, as in (48). She took these data not to argue for an ellipsis analysis, as modal adverbs are also observed in DP conjunctions like (49).

- (48) A: Who left?
 B: Maybe John.

- (49) Bill and maybe John left.

Once the possibility of conjunction reduction is considered, (49) is not a clear argument that *maybe* can adjoin to DPs. Still, there is other evidence that modal adverbs are licit DP-adjuncts. Building on Ernst (1984), Bogal-Allbritten (2015) observed that modal adverbs can undergo rightward extraposition together with a DP, as in (50), and that modal adverbs can form an Adv+DP constituent as the complement of a preposition, as in (51).

- (50) Mary hiked, yesterday, possibly the tallest mountain in Ireland.

- (51) Mary is meeting with probably a nurse practitioner.

Accordingly, I agree with Jacobson that the occurrence of modal adverbs in fragments does not necessitate an ellipsis analysis. The aim in this section, however, has been to demon-

strate that fragments can host a wider range of adverbials, including *with difficulty* which, unlike modal adverbs, cannot adjoin to DPs. The occurrence of *with difficulty* does argue for ellipsis.

4.3 Pseudo-clefts

Turning to the final step of the three-way correlation, the adverbial test also diagnoses elided clausal structure in pseudo-clefts. The intention in (52) is to insert *with difficulty* into the post-copular constituent. Because *with difficulty* follows *and* and precedes *that bill*, it appears that *with difficulty* is indeed contained within the post-copular constituent.

(52) What Obama approved was this bill and, with difficulty, that bill.

As before, the occurrence of *with difficulty* is not predicted without ellipsis, as the structure for (52) would be (53), with the PP illicitly adjoined to the DP *that bill*. If there is post-copular ellipsis, and *this bill* and *that bill* each derive from a separate clausal source, the PP can licitly adjoin to the clause in the right conjunct, as in (54).³

(53) $[[_{DP} \text{ what O approved}] [\text{was } [[_{DP} \text{ this bill}] [\text{and } [_{DP} [_{PP} \text{ with difficulty}] [_{DP} \text{ that bill}]]]]]]]$

(54) $[[_{DP} \text{ what Obama approved}] [\text{was } [\text{~~}_{TP} \text{ O approved this bill}~~]} [\text{and } [_{TP} [_{PP} \text{ with difficulty}] [\text{~~}_{TP} \text{ O approved that bill}]]]]]]]~~$

³Note that the pattern without a conjunction is different. *With difficulty* cannot readily precede a lone DP remnant, as in (ia). The sentence does seem to improve, though, if *with difficulty* follows the remnant, as in (ib), especially if the sentence is rendered with a prosodic boundary before *with difficulty*.

- (i) a. ??What Obama approved was, with difficulty, this bill.
- b. What Obama approved was this bill, with difficulty.

The deviance of (i) is not directly predicted: (i) should have an available structure as in (ii), which should be licit, since *with difficulty* is left-adjoined to the elided clause, just as in (54).

(ii) $[[_{DP} \text{ what Obama approved}] [\text{was } [\text{with difficulty } [\text{~~}_{TP} \text{ O approved this bill}]]]]]]]~~$

Note that the pattern is similar in a question/answer pair, as (iib), especially with a prosodic break, seems more natural than (iia).

- (ii) What did Obama approve?
 - a. ??With difficulty, this bill.
 - b. This bill, with difficulty.

In general, there seems to be a preference for the adverbial to right-adjoin to the elided clause, but this is overridden in conjunction. I offer no explanation for the general preference, but I suspect that left-attachment is viable in conjunction because left-adjoining *with difficulty* outputs a linear string which clearly disambiguates the scope of *with difficulty* to be only the second conjunct.

4.3.1 Ruling out an alternative

As noted, the argument that pseudo-clefts contain post-copular clausal structure relies on the assumption that *with difficulty* in (52) is contained within the post-copular constituent. To support this assumption, we must rule out an alternative derivation. Suppose that (52) were not a single pseudo-cleft with a post-copular conjunction, but rather derived from a conjunction of two full pseudo-clefts, with *that bill* the remnant of the second pseudo-cleft. Idiomatically, (52) would derive from:

(55) ?#What O approved was this bill and, with difficulty, ~~what O approved was that bill.~~

Instead of adjoining within the post-copular constituent, the PP in (55) adjoins to the clausal node provided by the second full pseudo-cleft. Clausal structure is not, then, required to host the PP in post-copular position: the string in (55) could be parsed as (56), with just the DP *this bill* post-copular in the first pseudo-cleft, and just the DP *that bill* post-copular in the second.

(56) [[_{TP} [_{DP} what Obama approved] [_{was} [_{DP} this bill]]]
[and [_{TP} [_{PP} with difficulty] [_{TP} [~~_{DP} what Obama approved~~] [_{was} [_{DP} that bill]]]]]]]]

The semantic analysis of pseudo-clefts sketched in Section 2.1 predicts that the derivation in (56) is not viable, as this derivation should lead to contradictory truth-conditions. The first conjunct asserts that the maximal entity Obama approved was this bill or, equivalently, that Obama approved *only* this bill. In a parallel way, the second conjunct asserts that Obama approved *only* that bill. Each pseudo-cleft gives rise to a separate exhaustive meaning and, as a result, the two pseudo-clefts are mutually incompatible. By my intuition, (55) does convey a contradiction, consistent with the prediction. Given that the original example in (52) is clearly not contradictory, it must have a different structure from (55). In particular, it must not involve two pseudo-clefts, but a single pseudo-cleft, with the conjunction post-copular. The original argument for elided post-copular structure thus succeeds: *with difficulty* is contained within the post-copular constituent, and that constituent must include an elided clause to host the PP, as in (54).

Collins (1999), however, observed that exhaustivity inferences in pseudo-clefts seem to be cancellable for some speakers. For those speakers, the derivation in (56) may, in fact, be viable. Still, even for those speakers, we can clearly demonstrate the existence of elided post-copular structure by broadening the range of data under consideration to include two additional kinds of copular constructions: definite copular sentences and clefts. These data are presented in the next subsection.

4.3.2 Extending to definite copular sentences and clefts

Example (57) replaces the pre-copular free relative in (52) with a plural definite description. Regardless of truth-conditions, (57) cannot derive from a conjunction of two full copular constructions, since plural morphology would not then be licensed, as the ungrammaticality of (58) shows.

(57) The things Obama approved were this bill and, with difficulty, that bill.

(58) *The things Obama approved were this bill and, with difficulty, ~~the things Obama approved were~~ that bill.

Rather, the structure for (57) must have the conjunction post-copular, with elided post-copular structure present to host the PP. The structure is (59), modeled after (54).

(59) [[_{DP} the things O approved] [were [~~_{TP} O approved this bill~~]
[and [_{TP} [_{PP} with difficulty] [~~_{TP} O approved that bill~~]]]]

The counterpart cleft example is (60), which clearly does not derive from (61). First, because exhaustivity inferences in clefts are more stable than in pseudo-clefts, (61) is contradictory for all speakers. Second, the word order in clefts clearly identifies the pivot. Given the word order, deriving (60) from (61) would require an implausible scattering of ellipsis between the two conjuncts. *That Obama approved* would have to elide in the first conjunct, while *it was* elided in the second conjunct.

(60) It was this bill and, with difficulty, that bill that Obama approved.

(61) *It was this bill ~~that O approved~~ and, with difficulty, ~~it was~~ that bill that O approved.

Example (61) is clearly a single cleft, with the conjunction the pivot — and the pivot must contain elided clausal structure to host the PP. Concretely, I adopt a derivation for clefts after Percus (1997), who analyzed clefts as coming from underlying definite copular sentences. I modify Percus' derivation to include ellipsis in the pivot, as I illustrate first without conjunction in (62).

(62) It was this bill that Obama approved.

- a. [_{TP} [_{DP} the \emptyset that Obama approved] [was [~~_{TP} Obama approved this bill~~]]]
- b. [_{TP} [_{TP} [_{DP} the \emptyset t₁] [was [~~_{TP} Obama approved this bill~~]]] [that Obama approved]₁]

Starting with the underlying definite copular construction in (63-a), the relative clause contained within the pre-copular DP extraposes rightward in (63-b). A spell-out rule specifies

that the remnant pre-copular constituent is realized as *it*. In turn, I propose that (60) derives as in (63). Note that the underlying structure in (63-a) is identical to (59) above for the definite copular sentence in (58).

- (63) It was this bill and, with difficulty, that bill that Obama approved.
- a. $[[_{DP} \text{ the } \emptyset \text{ that O approved}] [\text{were } [_{TP} \text{ O approved this bill}]$
 $[\text{and } [_{TP} [_{PP} \text{ with difficulty}] [_{TP} \text{ O approved that bill}]]]]]$
- b. $[[[_{DP} \text{ the } \emptyset t_i] [\text{were } [_{TP} \text{ O approved this bill}]$
 $[\text{and } [_{TP} [_{PP} \text{ with difficulty}] [_{TP} \text{ O approved that bill}]]]]] [\text{that O approved}]_i]$

H15's adverbial test provides clear support for elided post-copular structure in definite copular sentences and clefts — corroborating our initial conclusion about pseudo-clefts. Note that conclusions drawn about any one of the three copular constructions should generalize to the other two. All three constructions show connectivity effects, and there is an obvious analytical connection between them. Clefts are underlying definite copular sentences, which are themselves nearly identical to pseudo-clefts. As noted earlier, (52) and (58) just differ in whether the pre-copular constituent is a free relative (*what Obama approved*) or a definite description (*the things Obama approved*). Free relatives have the same external syntax as definite DPs, and a parallel semantics. As the superficial difference in the pre-copular constituent should not affect the post-copular constituent, if definite copular constructions and clefts contain clausal structure, pseudo-clefts should too, and vice versa.

4.4 Summary

This section has demonstrated that fragments and the post-copular constituent in pseudo-clefts can host adverbials like *with difficulty*, which must adjoin to a clausal node. To account for the occurrence of *with difficulty*, fragments must be the remnant of an underlying clause, as must be the overt post-copular material in a pseudo-cleft. I further demonstrated that definite copular sentences, clefts, and pseudo-clefts all pattern together in involving post-copular ellipsis.

5 Test 2: VP ellipsis

This section deploys a second diagnostic from H15 to reveal hidden clausal structure in fragments and pseudo-clefts. The diagnostic has to do with the licensing of VP ellipsis and, like the adverbial test, is entirely independent of connectivity effects.

5.1 The test from H15

Recall the structures for (24) with direct DP conjunction and full clausal conjunction, repeated as (64-a) and (64-b).

- (64) Obama approved this bill and that bill.
 a. $[_{TP} \text{Obama approved } [_{DP} \text{this bill}] \text{ and } [_{DP} \text{that bill}]]]$
 b. $[[_{TP} \text{Obama } [_{VP} \text{approved this bill}]] \text{ and } [_{TP} \text{Obama } [_{VP} \text{approved that bill}]]]$

Due to the presence of clausal structure in the right conjunct in (64-b), that conjunct contains the VP *approved that bill*. That same VP is not included in (64-a), where the only VP is the one containing the object conjunction, *approved this bill and that bill*. H15 detects the presence of *approved that bill* by showing that it is available to serve as antecedent to license ellipsis of another VP.

Following Sag (1976) and Williams (1977), H15 assumes that VP ellipsis is licensed only when the linguistic context provides an appropriate antecedent for the elided VP. For exposition, I take a VP to qualify as an “appropriate antecedent” just in case it has the same semantic value as the elided VP under any variable assignment. In the proto-typical example in (65), the antecedent VP in (65-a) and the elided VP in (65-b) both denote the property $\lambda x . \lambda w . x \text{ supports this bill in } w$.

- (65) A: Obama supports this bill.
 B: Clinton does ~~supports this bill~~, too.

The antecedence condition has been made more precise in Rooth (1992), Fox (2002), and Merchant (2004), among other works, but these complications are not relevant here.

A variant of H15’s critical example is (66), which inserts into the string in (65) an adverbial clause with the VP in that adverbial clause elided (Δ). A possible reading of (65) is the one paraphrased in (67), where Δ is interpreted as *approved that bill*.

- (66) Obama approved this bill and, though he would rather not have, that bill.
 (67) “Obama approved this bill and that bill, though he would rather not have approved that bill.”

Because (66) is natural out of the blue, the antecedent for Δ must be present intra-sententially. As such, the possibility of interpreting Δ as *approved that bill* argues that the analysis of (66) includes the VP *approved that bill*, supporting a structure like (64-b) over one like (64-a). The full structure for (67), including the adverbial clause, is (68), modeled on (64-b). The VP *approved that bill* in the adverbial clause in (68-b) elides under identity

with the VP *approved that bill* in the right clausal conjunct in (68-a).

- (68) a. $[[_{TP} O [_{VP} \text{approved this bill}]] \text{ [and } [_{TP} \text{CP/(68-b)} [_{TP} O [_{VP} \text{approved that bill}]]]]]$
 b. $[_{CP} \text{though } [_{TP} \text{he would rather not have } [_{VP} \text{approved that bill}] \Delta]]]$

5.2 Fragments

The question-answer pair in (69) has the adverbial clause *though he would rather not have* inserted into the conjunctive fragment *this bill and that bill*. Like (66) above, the fragment in (69-b) allows Δ to be interpreted as *approved that bill*, as in the paraphrase in (67), repeated below.

- (69) a. A: What did Obama approve?
 b. B: This bill and, though he would rather not have Δ , that bill.

(67) “Obama approved this bill and that bill, though he would rather not have approved that bill.”

Since (69) does not require a special context where the VP *approved that bill* is already present prior to A’s utterance, the antecedent for Δ must be found internal to the question-answer pair. Accordingly, the antecedent must come from one of two places: the question or the answer.

On the non-ellipsis approach neither furnishes an appropriate antecedent. The fragment in (69-b) is just a conjunction of DPs, so contains no VP at all. The only potential antecedent is the VP in the question in (69-a). Recall that the non-ellipsis approach relies on the question denoting the property $\lambda x . \lambda w . \text{Obama approved } x \text{ in } w$. The required LF to achieve this meaning is (70), where *what* is ex situ and its trace is abstracted over.

- (70) $[_{CP} \text{what } \lambda l C [_{TP} \text{Obama } [_{VP} \text{approved } t_1]]]$

The VP in (70) is *approved t_1* , which has the denotation in (71-a), dependent on the variable assignment g . The denotation for Δ is (71-b). Because the VP in the question has a different semantic value from Δ under any g where $g(l)$ maps to an individual other than that bill, the VP in the question is not an appropriate antecedent for Δ .

- (71) a. $[[_{VP}_{\text{question}}]]^g = \lambda x . \lambda w . x \text{ approved } g(l) \text{ in } w$
 b. $[[\Delta]]^g = \lambda x . \lambda w . x \text{ approved that bill in } w$

With ellipsis, the fragment itself provides an appropriate antecedent for Δ . *This bill and that bill* can derive from the clausal source in (72), where *that bill* is the remnant of the full clause *Obama approved that bill*, containing the VP *approved that bill*. The structure in

(72) is similar to the structure for (66) in (68) above. The VP in the adverbial clause elides under identity with the occurrence of *approved that bill* in the right clausal conjunct.

- (72) a. $[[_{TP} O \text{ } \cancel{[_{VP} \text{ approved this bill}]}]]$ [and $[_{TP} \text{ CP}/(72\text{-b}) \text{ } \cancel{[_{TP} O \text{ } \cancel{[_{VP} \text{ approved that bill}]}]}]]]$
 b. $[_{CP} \text{ though } [_{TP} \text{ he would rather not have } \cancel{[_{VP} \text{ approved that bill}]}] \Delta]$

5.3 Pseudo-clefts

The situation with pseudo-clefts is parallel.⁴ The illustrative datum is (73), with the adverbial clause *though he would rather not have* within the post-copular conjunction. As before, the antecedent for Δ must be intra-sentential, in this case either pre-copular or post-copular.

- (73) What Obama approved was this bill and, though he would rather not have, that bill.

The pre-copular free relative has an LF like (74), which differs from (70) above only in the addition of covert functional structure above the CP. In the non-ellipsis approach, where the pre-copular constituent is semantically a definite description, covert nominal structure is present. In the ellipsis approach, where the pre-copular constituent is a concealed question, CQ and ANS operators are present on top of nominal structure.

- (74) $[(\text{ANS}) [(\text{CQ}) [_{DP} \iota [_{NP} N [_{CP} \text{ what } \lambda 1 C [_{TP} \text{ Obama } [_{VP} \text{ approved } t_1]]]]]]]]]$

Just like in (70), the VP in (74) is *approved t*, which is not an appropriate antecedent to license of ellipsis of *approved that bill*.

The antecedent for Δ must come from the post-copular constituent. As with fragments, if *this bill and that bill* were just a conjunction of DPs, it would contain no VP to serve as antecedent for Δ — but, deriving *this bill* and *that bill* each from separate clausal sources furnishes the antecedent. The right conjunct in (75) contains the VP *approved that bill*, which is the antecedent for Δ .

- (75) a. $[[_{DP} \text{ what } O \text{ approved}] \text{ [was } \cancel{[[_{TP} O \text{ approved this bill}]}]]$
 $\text{ [and } [_{TP} \text{ CP}/(75\text{-b}) \text{ } \cancel{[_{TP} O \text{ } \cancel{[_{VP} \text{ approved that bill}]}]}]]]$
 b. $[_{CP} \text{ though } [_{TP} \text{ he would rather not have } \cancel{[_{VP} \text{ approved that bill}]}] \Delta]$

5.4 Result

An appropriate antecedent for the elided VP in the adverbial clause is predicted with ellipsis, but not on the non-ellipsis analysis. In this way, H15's VP ellipsis test provides evidence that fragment answers and pseudo-clefts both involve hidden clausal structure.

⁴Parallel data can be constructed with definite copular sentences and pseudo-clefts. As the extension is straightforward, I do not provide the examples.

6 Discussion

I began the paper with the puzzle of connectivity and, following previous work, noted that elided structure could reconcile connectivity with a c-command condition on anaphor binding (and similar phenomena). The structures for the anaphor examples would be:

- (76) A: Who does Obama approve of?
B: [_{TP} Obama_i ~~approves of himself_i~~]

- (77) [[_{DP} what Obama approves of] [is [_{TP} Obama_i ~~approves of himself_i~~]]]

This paper has provided new independent evidence that fragment answers are derived from a clausal source (Merchant 2004, *pace* Jacobson 2015), as is the post-copular constituent in a pseudo-cleft (Ross 1972, den Dikken et al. 2000, Schlenker 2003, *pace* e.g. Jacobson 1994, Sharvit 1999). Extending diagnostics from H15 for conjunction reduction, the distribution of sentential adverbials and licensing of VP ellipsis reveals clausal structure. Since elided structure is present, fragments and pseudo-clefts do not necessitate a purely semantic approach to anaphor binding.

6.1 New compositional puzzles in pseudo-clefts

In the remainder of the discussion section, I show that the results in the present paper raise new questions having to do with how semantic composition proceeds in pseudo-clefts. I suggest answers to some of these questions, and point out puzzles open for future research. Along the way, I address some of the data which has been taken in the literature to argue against ellipsis in pseudo-clefts.

6.1.1 Is the pre-copular constituent actually a concealed question?

Caponigro & Heller (2015, C&H) recently argued that the pre-copular constituent in pseudo-clefts is not interpreted as a concealed question. They took this as indirect evidence against post-copular ellipsis. As the ellipsis tradition has taken pseudo-clefts to equate a concealed question with its complete answer, they reasoned, if the pre-copular constituent is not a concealed question, the post-copular constituent cannot be an elided clause.

In light of the present study, this reasoning cannot be maintained. While C&H provided *indirect* evidence against post-copular ellipsis based on the interpretation of the pre-copular constituent, the present study has looked at the post-copular constituent itself and provided *direct* evidence for ellipsis.

Taking the evidence presented here as conclusive, there are two directions to pursue to

account for C&H's data. First, the present study provides new motivation to re-consider whether their data might be reconciled with a concealed question analysis after all. If that fails, then we must ask: how else can the pre-copular constituent semantically compose with a post-copular clause? Although full discussion of C&H's arguments is beyond the scope of this paper, I will discuss two of them and show that they do not, in fact, decisively rule out a concealed question approach.

For one, C&H observe that there are languages (e.g. Macedonian) where DPs cannot be interpreted as concealed questions in typical concealed question frames (e.g. as the complement of *tell*), but pseudo-clefts are still available, showing the same connectivity effects as English pseudo-clefts. As they acknowledge, this does not necessarily mean that these languages disallow concealed questions *in all environments*. In English, certain question embedding verbs tolerate concealed questions, while others do not, as illustrated in (78) with *tell* vs. *wonder*.

- (78) a. John told bill {who the president of the US is, the president of the US}.
- b. I wonder {who the president of the US is, *the president of the US}.

Grimshaw (1979) proposed that the grammar includes two separate systems of subcategorization: a given predicate selects for a complement of a particular syntactic category ("c-selection"), and a particular semantic type ("s-selection"). *Tell* and *wonder* both s-select for a question meaning, but differ in their c-selectional properties. *Tell* c-selects for either a CP or a DP, while *wonder* only c-selects for a DP. From this perspective, the Macedonian lexicon may include the covert operators required to interpret DPs as concealed questions, but lack question embedding verbs which c-select for DPs. Concealed question meanings could, then, still occur in pseudo-clefts.

C&H's most direct argument against the pre-copular constituent having a concealed question interpretation is the following. They observe that the embedded question in (79) elicits identification of an individual like *Paris*, not a property like *beautiful*. Conversely, the pseudo-cleft in (80) requires that the post-copular phrase provide a property, not an individual. If a concealed question must have the same interpretation as the corresponding embedded question, the contrast between (79) and (80) argues that the pre-copular constituent is not a concealed question.

- (79) A: Tell me [what the capital of France is _].
- a. B: The capital of France is Paris.
- b. B: #The capital of France is beautiful.

- (80) a. [What the capital of France is ...] is beautiful.
 b. *[What the capital of France is ...] is Paris.

A concealed question may not, however, be identical to an embedded question. According to the composition for concealed questions I have assumed, the definite meaning normally associated with the free relative would be computed first, and CQ would later apply to convert to a question meaning. With the composition proceeding this way, interpretive properties of the free relative are inherited by the concealed question. Assuming post-copular ellipsis, the LF for (80) is:

$$(81) \quad [[_{DP3} \text{ANS } [_{DP2} \text{CQ } [_{DP1} \iota [_{CP} \text{what France is}]]]]] [\text{is } [_{TP2} \text{Exh } [_{TP1} \text{France is beautiful}]]]]$$

When *what the capital of France is* uncontroversially occurs as a free relative, it must pick out a property, not an individual. In (82), the free relative occurs in a position which requires an individual, and the result is ungrammatical. Accordingly, I conclude that DP₁ in (81) must denote the property intension in (83).

- (82) *John visited [what the capital of France is ...].

$$(83) \quad [[\text{DP}_1]] = \lambda w . \iota P_{\langle e, st \rangle} [P(\text{the capital of France})(w)]$$

CQ is re-defined in (84-a) to apply to inputs of any semantic type, and the result of applying CQ to DP₁ is given in (84-b). Paraphrasing, CQ returns a set of propositions of the form *that P' is the maximal (salient) property the capital of France has*. The post-copular constituent must provide the strongest true proposition in that set and, thus, must provide a property.

- (84) a. $[[\text{CQ}]] = \lambda F_{\langle s, \alpha \rangle} . \lambda p . \exists f_{\alpha} [p = \lambda w . f = F(w)]$
 b. $[[\text{CQ}]([\text{DP}_1])] = \lambda p . \exists P'_{\langle e, st \rangle} [p = \lambda w . P' = \iota P [P(\text{the capital of France})(w)]]$

I have no explanation for *why* the free relative in (82) must have a property meaning rather than an individual meaning, and I know of no theory of free relatives that predicts this restriction. Yet, the composition presented has the important result that this restriction on the free relative results in a corresponding restriction on the concealed question. With this result in hand, C&H's observation does not appear to be an obstacle to a concealed question analysis. Regular embedded questions may pattern differently, since they are not built from free relatives.

Having addressed two of C&H's arguments against a concealed question analysis, I will continue to assume a concealed question analysis in the next subsection.

6.1.2 Is the post-copular constituent actually the strongest true answer?

This section considers how the proposition expressed by the post-copular clause relates to the concealed question. Recall that extant analyses equate the post-copular proposition with the complete answer to the question. Key data in this paper, however, point towards a less straightforward relationship.

Consider first (52), where the Hamblin set for the pre-copular concealed question is (17-c), both repeated from above.

(52) What Obama approved was this bill and, with difficulty, that bill.

(17-c) $\lambda p . \exists y [p = \lambda w . y = \iota x [\text{Obama approved } x \text{ in } w]]$

If Obama approved this bill and that bill at w_0 , the strongest true proposition in the Hamblin set is equivalent to the proposition *that Obama approved this bill and that he approved that bill (and nothing else)*. The post-copular clause, however, seems not to express that proposition, but rather a stronger one: *that Obama approved this bill and that he approved that bill with difficulty (and nothing else)*. These two propositions are not identical, so if (83) asserted identity between them, it should be judged false at w_0 , contrary to fact.

One response to this problem would be that *with difficulty* is semantically parenthetical, and does not contribute to the truth-conditions of the sentence. I am prepared to accept that response for (52), and find it even more compelling for (66), also discussed earlier on:

(66) Obama approved this bill and, though he would rather not have, that bill.

The puzzle, however, runs deeper. It is possible to construct examples where an adverb undeniably does affect truth-conditions — and where the proposition expressed by the post-copular clause fails to even entail the strongest true answer to the pre-copular question:

(85) What Obama approved was this bill and possibly that bill.

Intuitively, (85) is felicitous, and the post-copular clause conveys *that Obama approved this bill, he might have approved that bill, and he approved nothing other than this bill or that bill*. This proposition does not entail any element of the set characterized in (17-c).

The intuition is that (85) parallels its fragment answer counterpart:

(86) A: What did Obama approve?

B: This bill and possibly that bill.

In question-answer pairs, it is common for the speaker not to provide exactly the strongest true answer to the question. It looks like the relationship between the pre- and post-copular

material in a pseudo-cleft is looser than generally thought, more like in a question-answer pair. The post-copular constituent need not express the *strongest* true answer to the pre-copular question, but rather must express a *pragmatically acceptable* answer.

But, a tension arises: if the post-copular material need not express the strongest true answer, why is it interpreted as the strongest true answer in basic data with no adverb? Example (87), for instance, conveys that Obama approved only this bill and that bill.

(87) What Obama approved was this bill and that bill.

One way to reconcile (85) and (87) is to impose a requirement that the post-copular constituent be interpreted exhaustively. That is, the LFs for the post-copular constituents in (85) and (87) are as follows, with covert Exh.

- (88) a. [Exh [Obama approved [this bill]_F and possibly ~~Obama approved~~ [that bill]_F]]
 b. [Exh [Obama approved [this bill]_F and ~~Obama approved~~ [that bill]_F]]

Assuming that *this bill* and *that bill* are focus-marked, as shown, (88-a) conveys that Obama approved this bill and possibly that bill and nothing other than this bill or that bill, while (88-b) conveys that Obama approved only this bill and that bill — exactly the right intuition for both examples. The post-copular constituent, then, will generally end up interpreted as a strongest true answer, unless an operator like *possibly* is present.

Abandoning the requirement that the post-copular constituent always express a strongest true answer has the potential to shed light on additional data which look incompatible with ellipsis otherwise. Consider (89), due to Sharvit (1999:316):⁵

(89) The strangest thing Bill wants to be is a sailor.

Assuming *the strangest thing Bill wants to be* is a concealed question, its Hamblin set would be (90) under the analysis of concealed questions I have adopted here.

(90) $\lambda p . \exists y [p = \lambda w . y = \iota x [x \text{ is the strangest thing Bill wants to be in } w]]$

Sharvit observes that, in order for the post-copular material to express the strongest true proposition in that set, the post-copular material must itself be an identity statement:

(91) [[_{DP} the strangest thing Bill wants to be]
 [is [[_{TP} the strangest thing Bill wants to be is a sailor]]]]]

As Sharvit states, “[this] creates an identity sentence within an identity sentence, which

⁵Sharvit shows that examples of this profile show connectivity effects (e.g. with variable binding: *the most obvious woman no man₁ wants to answer to is his₁ mother*).

leaves us with the problem we started our with” (p. 317). If all identity statements are analyzed with ellipsis, this “identity statement within identity statement” creates a situation of infinite regress. Now, given that the post copular material need not be the strongest true answer to the pre-copular question, there is a way out of the problem. Observe that the question-answer pair in (92) is felicitous, where the answer is not an identity statement:

- (92) A: What’s the strangest thing Bill wants to be?
B: He wants to be a sailor. That’s pretty strange.

Just as B’s response is pragmatically acceptable in (92), perhaps it may also be the post-copular constituent in a pseudo-cleft. (89), then, may analyze as (93), rather than (91).

- (93) [[*DP* the strangest thing B wants to be] [is [~~*TP* he wants to be a sailor~~]]]]

Note that the post-copular constituent cannot be parsed with Exh in (93), as (89) does not convey that John only wants to be a sailor. I leave a full analysis of (89) in line with the proposals for (85) and (87) to future research.

7 Conclusion

This paper has brought together debates about whether fragments, pseudo-clefts, and coordination involve ellipsis. In doing so, I have provided new evidence that fragments and pseudo-clefts *do* involve ellipsis and, in turn, have supported an account of connectivity effects compatible with traditional Binding Theory. The results of this study raise questions about how pseudo-clefts are interpreted. I proposed answers to some of these questions, and I hope those remaining open will motivate further inquiry.

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