

Attributive Comparatives and Bound Ellipsis

Christopher Kennedy and Jason Merchant
University of California at Santa Cruz
June 1997

1 Introduction*

Sentences (1)-(3) illustrate an ellipsis operation that permits a constituent in the clausal complement of *than* (henceforth the ‘comparative clause’) in attributive AP comparatives to be phonologically null in the surface form.

- (1) Rex wrote a more interesting abstract than I thought he wrote.
- (2) Rex wrote a more interesting abstract than I thought he did.
- (3) Rex wrote a more interesting abstract than I thought.

(1)-(3) clearly show that this operation, which we will refer to as ‘attributive comparative ellipsis’ (attributive CE), can target a range of constituents: a DP in (1), a VP in (2), and a CP in (3). This operation is not unrestricted, however. In particular, attributive CE may *not* target the corresponding attributive AP in the comparative clause, as observed by Pinkham (1982) (see also Pilch 1965). This is illustrated by the minimal pairs in (4)-(7), in which the attributive modifiers of the embedded objects have apparently been elided.

- (4) a. Rex wrote a more interesting abstract than I did/wrote.
b. *Rex wrote a more interesting abstract than I wrote a paper.
- (5) a. Kim drives a faster car than Frances drives/does.
b. *Kim drives a faster car than Frances drives a motorcycle.
- (6) a. Jones produced a less successful film than Smith produced/did.
b. *Jones produced a less successful film than Smith produced a play.
- (7) a. Nikolai made a more convincing Hamlet than Ivan made/did.
b. *Nikolai made a more convincing Hamlet than Ivan made a Romeo.

The contrast between the (a) and (b) examples in (4)-(7) presents an interesting puzzle. If attributive CE, like other elliptical phenomena in English, is licensed by an identity relation between Logical Forms (Bresnan 1973, Williams 1977, May 1985, Kitagawa 1991, Reinhart 1991, Fiengo and May 1994, Chung, Ladusaw and McCloskey 1995, Hazout 1995; cf. Sag 1980 [1976]), then the (a) and (b) sentences should be structurally identical at LF. Specifically, assuming the comparative clause is an operator-variable construction in which a null operator binds a degree variable within AP (Chomsky 1977, von Stechow 1984, Heim 1985, Hazout 1995, Izvorski 1995, Rullmann 1995), then the LFs of the comparative clauses in e.g. (5)a and (5)b are as shown in (8)a and (8)b, respectively.

- (8) a. ...than [_{CP} Op_x Frances drives a [_{AP} e_x fast] car]
b. ...than [_{CP} Op_x Frances drives a [_{AP} e_x fast] motorcycle]

* We would like to thank Sandy Chung, Jim McCloskey, and Anastasia Giannakidou for helpful discussion, and John Frampton for useful comments. This paper appeared as Linguistics Research Center Report LRC-97-03, University of California, Santa Cruz, June 1997; special thanks to Sandy Chung for providing funds to enable its distribution.

Attributive Comparatives and Bound Ellipsis

In both structures, the operator binds a variable inside the attributive AP; the difference is that in (8)a, the attributive AP is included in the constituent that is elided in the surface form (VP or DP), while in (8)b, only the attributive AP is elided.

What makes the contrast between the (a) and (b) examples in (4)-(7) even more puzzling is that there is evidence that both (8)a and (8)b should be ill-formed. As observed by Pinkham 1982 and Izvorski 1995, attributive AP subdeletion is impossible. This is illustrated by (9), which should be structurally parallel to (8)a-b, assuming that subdeletion and comparative ellipsis constructions are derived in the same way, as argued in Chomsky 1977, den Besten 1978, and Izvorski 1995 (see Grimshaw 1987 and Corver 1990, 1993 for an alternative viewpoint, however).

- (9) *Rex wrote a more interesting abstract than he wrote an insightful one.
(10) *...than [_{CP} Op_x he wrote an [_{AP} e_x insightful] one]

If (9) indicates that structures like (10) and (8)a-b are basically ill-formed, the question presented by (1)-(3) and the (a) examples in (4)-(7) is the following: why does ellipsis of a constituent that contains the attributive AP save the derivations of these sentences?

Before we can begin to formulate an answer to this question, however, a final set of facts must be considered that show that the restriction on attributive CE observed by Pinkham is not absolute. As illustrated by (11)-(14), the attributive AP *can* be elided just in case the DP that contains it is the remnant of pseudogapping.¹

- (11) Rex wrote a more interesting abstract than he did a paper.
(12) Kim drives a faster car than she does a motorcycle.
(13) Jones produced a less successful film than he did a play.
(14) Nikolai made a more convincing Hamlet than he did a Romeo.

Although (11)-(14) contrast quite clearly with the (b) examples in (4)-(7), pseudogapping does not rescue attributive subdeletion structures, however, as shown by (15)-(16).

- (15) *Rex wrote a more interesting abstract than he did an insightful one.
(16) *Maureen built a wider table than she did a long desk.

¹ Although both Pinkham 1982 and Pilch 1965 mention examples like (11)-(14), both authors mark them as ungrammatical. Pilch (1965:52), for example, discusses (i).

- (i) I bought a more expensive car than John did a bus.

Although (i) is somewhat degraded, two observations should be made. First, our research has shown that native speakers detect a clear contrast between sentences like (4)b-(7)b and (11)-(14), consistently judging the latter to be well-formed. This contrast carries over to Pilch's example: (i) contrasts quite clearly with (ii), which is structurally parallel to the (b) examples in (4)-(7).

- (ii) *I bought a more expensive car than John bought a bus.

Second, there is an important difference between Pilch's example and the sentences in (11)-(14): in the latter, the embedded subject corefers with the matrix. Pilch's example becomes much better when *John* is replaced with *I*:

- (iii) I bought a more expensive car than I did a bus.

This correlates with Levin's (1986 [1979]) observation that pseudogapping is best in comparatives with like subjects (see footnote 9 below). She herself records three examples of this sort (her pp. 15, 16, and 76) from her corpus of 75 attested examples, but does not note that these are ungrammatical without the pseudogapping – the contrast that is of interest here.

This brings out the important difference between attributive CE and attributive subdeletion: while attributive CE is allowable in certain elliptical environments, attributive subdeletion is uniformly impossible in all contexts. Attributive CE must either target a constituent in the comparative clause that contains the attributive AP, or the elided attributive AP must be contained in a DP in a pseudogapping structure.

We summarize the above observations in the following two generalizations:

- (17) *Maximize attributive CE*
 Attributive CE is possible only if (a) a constituent which contains the targeted AP is also elided, or (b) the elided AP is contained in a remnant of pseudogapping.
- (18) *No attributive subdeletion*
 Attributive subdeletion is impossible.

The goal of this paper is to show that these complex, disjunctive generalizations about the behavior of comparatives follow from a particular conception of ellipsis and binding. Specifically, these data support the view of ellipsis as an empty category in the syntax, not PF-deletion. The comparative operator in the grammatical examples, we argue, can bind this empty category, avoiding a left-branch violation; since pseudogapping is simply a subspecies of VP-ellipsis, the surprising second disjunct of (17) is predicted. We go on to show how the semantically appropriate binding relation with a degree variable can be created at LF. Attributive subdeletion, on the other hand, has a structure distinct from attributive CE, involving binding of the specifier of an adjoined element – this binding violation cannot be repaired at LF in the way that simple attributive CE binding can be.

We begin in section 2 by laying out the necessary background on the structure and derivation of comparatives, and section 3 reviews the analysis of ellipsis employed here, concentrating on what we call *bound ellipsis*, and pseudogapping. We present our analysis of the above generalizations in section 4, and review our conclusions in a final section: ellipsis is best analyzed as an empty category in the syntax, not as PF-deletion or ‘empty structures’, and the conditions on binding certain positions at LF cannot be equated with the conditions on overt movement from those positions.

2 Comparatives

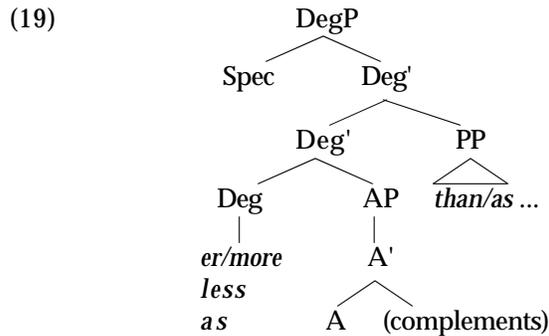
2.1 *The extended projection of the adjective: DegP*

Following Abney 1987, Corver 1990, 1997, Grimshaw 1991, and Kennedy 1997, we assume that adjectives project extended functional structure headed by a degree morpheme, i.e., a member of {*er/more, less, as, so, too, enough, etc.*}. On this view, the basic structure of a comparative ‘AP’ is as shown in (19).²

² Our assumption that the *than* constituent is adjoined to Deg', rather than generated as a complement to Deg⁰, as in Abney 1987, is based on *wh*-extraction facts involving *too* and *enough* constructions. The contrast between (i)-(ii) and (iii)-(iv) shows that arguments can be extracted out of the nonfinite clause in a *too* or *enough* construction, but adjuncts cannot be, a pattern characteristic of *wh*-extraction out of adjuncts (see e.g. Huang 1982, Rizzi 1990).

- (i) Who was Audrey angry enough to criticize?
 (ii) *How obnoxiously was Audrey angry enough to criticize her boss?

Attributive Comparatives and Bound Ellipsis



For the interpretation of structures like (19), we follow the analysis developed in Kennedy 1997, in which gradable adjectives are analyzed as functions from objects to degrees and comparative morphemes denote ordering relations between two degrees (see also Bartsch and Vennemann 1973). In particular, the comparative morphemes denote relations between the degree derived by applying the adjective to the target of predication and the degree introduced by the comparative clause, which, following e.g. Russell 1905, Postal 1974, Williams 1977, von Stechow 1984, Heim 1985, Hazout 1995, Izvorski 1995, and Rullmann 1995, we take to be a definite description of a (maximal) degree. Given these assumptions, the interpretation of a DegP can be characterized as a ‘degree property’: a property of individuals defined in terms of a relation between two degrees.³ For example, the degree phrase in an example like (20) denotes the property in (21): the property of being cold to a degree that exceeds the degree to which Mercury is cold.⁴

(20) Pluto is [_{DegP} colder than Mercury is].

(21) $\lambda x[\text{cold}(x) > \iota d[\text{Mercury is } d\text{-cold}]]$

Given the basic semantics of DegP outlined here, we can straightforwardly analyze attributive comparatives as modificational expressions (see Lerner and Pinkal 1995 for a similar approach). Syntactically, we follow Svenonius 1992 in treating the attributive phrase as left-adjoined to NP, and we assume that the constituent headed by *than* is base-generated within DegP and extraposed to a right-adjoined position, as in Bresnan 1973 (nothing crucial rests upon the extraposition analysis itself; all that is necessary is that the degree introduced by the comparative clause be supplied ultimately as an argument to the degree morpheme). For example, the structure of the direct object in (22) (*larger rings than Uranus does*) is (23), which has the interpretation in (24) (assuming that the basic

(iii) Which car was Tim too scared to drive?

(iv) *How quickly was Tim too scared to drive the Fiat?

Assuming that the *than* PP in comparatives and the nonfinite clauses in *too* and *enough* constructions are in structurally similar positions, (i)-(iv) argue in favor of analyzing this constituent as an adjunct.

³ On this view, the interpretation of DegP is parallel to that of AP in traditional analyses, which treat gradable adjectives as relations between degrees and individuals (see e.g. Cresswell 1976, Hellan 1981, Hoeksema 1983, von Stechow 1984, Heim 1985 and others).

⁴ Since the goal of this paper is to address the questions raised by the facts in section 1 for the syntactic derivation of the comparative clause, we will set aside detailed discussion of its compositional semantics. To this end, we will follow the well-established tradition of paraphrasing the interpretation of comparative clauses with expressions of the form ‘*x* is *d*-adjective’, as in (21) and (24), respectively.

interpretation of a bare plural is a property, as in McNally 1995).

- (22) Saturn has larger rings than Uranus does.
 (23) [DP [NP [DegP er large e_x] [NP rings]] [PP than Uranus does]_x]
 (24) $\lambda x[[large(x) > \iota d[Uranus \text{ has } d\text{-large rings}]] \& ring(x)]$

Although this is a very cursory overview of the structure and interpretation of DegP structures, it should however be adequate for our purposes (we refer the reader to Kennedy 1997 for a more detailed discussion of the full range of degree constructions). Our primary interest here is the syntax of the comparative clause – in particular, what the facts discussed in the introduction tell us about the syntax of comparative ellipsis and the derivation of the comparative clause. It is to these questions that we now turn.

2.2 The comparative clause and the comparative operator

Following Chomsky 1977, we assume that the comparative clause in comparative ellipsis constructions is a type of *wh*-construction in which a null-operator (henceforth the ‘comparative operator’) moves from a position within the ellipsis site to SpecCP (see Izvorski 1995 and Rullmann 1995 for recent discussion of the status of the comparative clause as a *wh*-construction). Two sets of facts provide evidence for this analysis. First, the comparative clause shows sensitivity to extraction islands, as illustrated by the examples in (25)-(32).

Wh-islands

- (25) Mercury is closer to the sun than I thought it was.
 (26) *Mercury is closer to the sun than I wondered whether it was.
 (27) *Mercury is closer to the sun than I knew who said it was.

Complex NPs

- (28) Hale-Bopp was brighter than Karl claimed it would be.
 (29) *Hale-Bopp was brighter than Karl’s claim that it would be.
 (30) *Hale-Bopp was brighter than a paper that said it would be.

Adjunct islands

- (31) The solar flares were more energetic than the aurora borealis was.
 (32) *The solar flares were more energetic than we were amazed when the aurora borealis was.

Second, some dialects of English (as well as languages like Afrikaans, Hindi, and Bulgarian; see den Besten 1978 and Izvorski 1995) permit an overt *wh*-word in the comparative clause, as shown by (33)-(34).

- (33) The flooding was less than what we had thought it would be. [NPR, 29 Jan 1997]
 (34) Jupiter is larger than what Saturn is.

Given these assumptions, the ‘surface structure’ of a typical predicative comparative ellipsis construction such as (20) is (35).

Attributive Comparatives and Bound Ellipsis

(35) Pluto is colder than [_{CP} Op Mercury is e]

The question that needs to be answered is the following: what does the comparative operator bind at LF? Ultimately, we want the comparative operator to denote a description of a degree. The natural assumption, then, is that the comparative operator binds a degree variable within DegP (e.g., the position occupied by a measure phrase in an absolute construction such as *Benny is 5 feet tall*). On this view, the LF of an example like (20) should look like a subdeletion structure, as noted in the introduction (this is the standard analysis; see e.g. Heim 1985, Moltmann 1992, and Hazout 1995 for discussion).

(36) Pluto is colder than [_{CP} Op_x Mercury is [_{DegP} e_x cold]]

This type of analysis is not available given the extended projection analysis adopted in section 2.1, however. This can be seen by an examination of just what material would be copied, and in what forms. If the predicate in this example were strictly copied, we would derive the uninterpretable LF given in (37).

(37) #Pluto is colder than [Op_x Mercury is [_{DegP} er [_{AP} cold]]]

Here the degree morpheme *er* has been copied along with the predicate. The problem is perhaps even more evident when a measure phrase is present, as in the following example (Bresnan 1973 noticed this difficulty with a strict deletion approach as well). The incorrect LF of the comparative clause derived by strict copying is given in (39), which clearly does not accurately represent the interpretation of (38).

(38) I thought Mercury was 4 million miles closer to the sun than [Op_x Ben did e_x]

(39) # than [Op_x Ben did **think Mercury was** [_{DegP} 4 million miles [_{Deg'} er [_{AP} close to the sun]]]]

Unsurprisingly, the same holds of DegPs used attributively:

(40) Rex wrote a more interesting abstract than I did.

(41) #... than [_{CP} Op_x I did write [_{DP} a [_{DegP} more [_{AP} interesting]] abstract]]

(42) Rex bought a ten foot longer boat than I did.

(43) #... than [_{CP} Op_x I did buy [_{DP} a [_{DegP} 10 foot [_{Deg'} er [_{AP} long]]] boat]]

To resolve this apparent problem of identity, we follow Kennedy 1997 in analyzing the comparative operator in comparative ellipsis constructions as categorically a DegP.⁵ If this is correct, then an example like (20) does not involve ellipsis any more than relative clauses do. Instead, its LF is identical to its representation at Spell-out:

⁵ Larson 1988 makes essentially the same claim, arguing that the empty category in comparatives such as (20) is categorically an AP. See also Klein 1980 for an analysis similar in spirit to this one. As noted above, we will not attempt to present a detailed compositional semantics of the comparative clause here, but see Kennedy 1997 for discussion of how the current analysis not only correctly supports an analysis of the comparative clause as a definite description, but also explains some puzzling constraints on the resolution of comparative 'ellipsis'.

- (44) Pluto is colder than [_{CP} Op_x Neptune is [_{DegP} e_x]]

This representation avoids the difficulties noted above; since the predicate is not copied in at LF, no extraneous degree morphology will be introduced. The semantics of the comparative operator ensure that the appropriately local predicate is selected as the interpretation of the DegP in the comparative clause, similar in many respects to the coindexing seen in relative clauses (see Kennedy 1997 for discussion).

A consequence of this analysis is that the set of constructions that we have referred to up to now with the cover term ‘comparative ellipsis’ should properly be divided into two classes: those that actually involve some kind of ellipsis, such as (1)-(3), and those that only involve movement of the comparative operator, as in (20) above. If examples in which only a DegP is ‘missing’ do not involve an actual ellipsis process, but rather movement of a DegP operator, then none of the ungrammatical (b) sentences in (4)-(7) involve ellipsis. Instead, they are derived by movement of a comparative operator from the attributive position (i.e., from a position left-adjoined to NP). Given this, it actually turns out to be completely unsurprising that such examples of ‘attributive CE’ (a label we will continue to use descriptively) are ungrammatical. As shown by (45), wh-movement of an attributive modifier out of DP is impossible.

- (45) * [_{DegP} How interesting]_x did Rex write [_{DP} an [_{DegP} e_x] abstract]]?

This is a typical ‘left-branch’ violation (Ross 1967). The precise details of why left-branch extractions are ungrammatical is not crucial to us here – the only necessary element is that this ungrammaticality must be a result of the movement, not simply of the binding configuration. If the latter were also illicit, we would expect, contrary to fact, that the parallel LFs of the grammatical examples involving ellipsis would suffer the same fate as (45). The reason for the ungrammaticality of the (b) sentences in (4)-(7) is thus exactly the same reason that (45) is impossible: they all represent left-branch violations.

But an important puzzle remains: why are examples which *do* involve some kind of ellipsis, such as (1)-(3) and (11), acceptable? In other words, why is some form of ellipsis obligatory in attributive comparatives? These deliberations lead us to restate the first generalization we arrived at in section 1, which can be simplified in an enlightening way, eliminating the disjunction (we investigate below the nature of the locality constraint on the ellipsis site):

- (46) *Attributive CE → local ellipsis*
Attributive comparative ellipsis is possible only if there is some ellipsis in the comparative clause.

These cases, which involve movement of a DegP operator, should be carefully distinguished from attributive subdeletion examples like the following.

- (47) *Rex wrote a more interesting abstract than he wrote an insightful one.
(48) *...than [_{CP} Op_x he wrote an [_{DegP} e_x insightful] one]

In the subdeletion structures, we see binding *into* a DegP, presumably SpecDegP, the position of a measure phrase. This kind of binding, as we will see, is worse than a simple left-branch violation and cannot be repaired or voided in the way that left-branch

violations can.⁶ This crucial distinction should be kept in mind, since it is the key to distinguishing the different effects of ellipsis on attributive CE and attributive subdeletion structures.

In sum, the following picture has emerged as the background against which our account is set: ‘adjectival’ phrases are in fact Degree Phrases, and the comparative operator is categorically a DegP, moved to SpecCP in the comparative clause. Simple examples like (20) do not involve ellipsis at all; instead, the DegP operator moves directly. Ellipsis rescues the derivation of otherwise impossible DegP extractions, for reasons which we return to below. Subdeletion, on the other hand, involves movement from the specifier of DegP, and attributive subdeletion cannot be rescued by concomitant ellipsis. In the next section, we review our background assumptions about ellipsis; in section 4, we turn to an explanation of the revised generalizations summarized here.

3 Ellipsis

3.1 Background

Ellipsis takes many forms, and the principles governing its occurrence and distribution are not fully understood, remaining topics of active research. We will be concerned here solely with syntactic elliptical structures in which a single constituent is missing from the overt linguistic signal, and not with the myriad other cases of “partial deletion”, gapping, stripping, or the like. Our attention will be restricted to the cases mentioned above, in particular syntactic ellipsis of the categories DP, VP, and CP. Our discussion will be centered on VP ellipsis, since this is one of the elliptical phenomena that is best studied and whose properties are fairly well-known, though our results extend to the other categories as well. In this section, we lay out the approach we will be adopting and explain some of the relevance it will have to the comparative phenomena introduced above.

We adopt the view that syntactic ellipsis involves an empty category in the surface (Spell-out) representation, whose content is recovered at LF by a process of LF-copying or ‘recycling’ (in Chung et al.’s (1995) terms) of overt linguistic material or contextually highly salient propositional content (cf. Hankamer and Sag 1976). In particular, we reject the view of this form of ellipsis which treats it simply as a variety of phonological deletion or phonetic reduction which results in the non-pronunciation of some syntactically fully specified material. Though phonetic or phonological reduction does exist, and some types of elliptical phenomena are surely of this sort (see Wilder 1995 and Swingle 1995 for arguments that right-node raising is phonologically-conditioned deletion), we will show that the elliptical phenomena discussed in section 1 must be analyzed as ‘empty-category’ ellipsis rather than as ‘PF-deletion’ or ‘empty structures’.

Although much of the literature is appropriately agnostic on the question of the structure and derivation of the constituent ‘missing’ in the surface form, and a number of studies assume PF-deletion for convenience without it being central to the argumentation (Sag 1980 [1976] and Fiengo & May 1994 are representative in this respect), some recent work has claimed that the syntactic ellipsis relevant here is PF-deletion (Tancredi 1992,

⁶ We remain agnostic on whether this binding involves movement or not (see Grimshaw 1987 and Corver 1993 for the latter view) ; it does obey islands, in any case (Chomsky 1977, Izvorski 1995).

Fox 1995, Lasnik 1995, and also Wilder 1995, who proposes a mixed system). These works reach this conclusion in part on theory-internal grounds of the organization of the grammar, and on the suggestive parallels to actual phonetic reduction or ‘deaccenting’ described in Tancredi 1992. There is however a much larger, and to our minds more persuasive, body of work originating with Wasow 1972, which argues that the ellipsis site is some kind of empty category in the syntax (Williams 1977, Chao 1989 [1987], Zagana 1988, Lobeck 1991, 1995, Kitagawa 1991, Hardt 1993, Chung et al. 1995). While this approach seems quite natural for missing DPs, it is less obvious for missing CPs, IPs, and VPs. Indeed, much of the evidence for this view of syntactic ellipsis comes from the fact that the ellipsis site with these other categories behaves like a null pronominal, and is subject to syntactic – not just phonological – licensing conditions reminiscent of those on null elements generally (see Bouchard 1984 and Roberge 1990 on the latter, and especially Potsdam 1996 for a recent approach to and a review of VP-ellipsis licensing in particular).

On this view, an example like (49) has the pre-Spell-out structure in (50)a, and the post-LF-copying structure in (50)b.

(49) Abby can’t swim, but Ben can.



3.2 Bound ellipsis

Another piece of evidence for viewing the ellipsis site as an empty category comes from constructions we will refer to as *bound ellipsis*. These are constructions in which a displaced constituent appears to originate within the ellipsis site, such as the relative operator in antecedent-contained deletion (ACD), topicalizations, passives, questions, predicate relatives, and sluices, illustrated in (51)-(59).

- (51) Josh reads every book I tell him to.
 (52) Lucy wants to subscribe to the same magazines which I do.
 (53) Pizza, I eat. Fish, I don't.
 (54) Abby was admonished, but the other girls weren't.
 (55) I know what I like and what I don't.
 (56) I'm going to make a candlestick. What {are/will} you?
 (57) Amy told me she would be there, but I'm not sure when.
 (58) They're hiding something, and I've been hired to find out what.
 (59) You're going to make it, which I'm not.⁷

⁷ This is an example of a non-restrictive predicate relative clause, where the *wh*-operator is the predicate. This construction – some additional examples are given in (i)-(iv) – has not received much attention in the literature, but it is interesting because it shows that there is a *wh*-word which ranges directly over predicates, though restricted to occurring in predicate ellipsis contexts (i.e., (v) is still ungrammatical). This restriction is reminiscent of the restriction on null VPs in general, though with

Attributive Comparatives and Bound Ellipsis

The question that arises for bound ellipsis is the following: where does the operator come from? We adopt Haik's 1987 proposal that the empty category in bound ellipsis provides an appropriate syntactic position for such operators to bind before LF-copying introduces a variable of the type required to generate an interpretable structure. That some sort of binding relation holds between the operator and (at least) the ellipsis site is illustrated by the fact that such constructions show sensitivity to islands, as Haik shows. Although it may not strictly be crucial to decide whether this island-sensitivity should be construed as a result of base-generation of the operator in its overt position and concomitant chain formation, or whether it demonstrates that the ellipsis site is the origin site of the operator *tout court*, we will follow Haik 1987 in assuming the latter to be the case.

For example, (51) has the structure in (60) at Spell-out, and the LF in (61), after resolution of the ACD (see May 1985, Kennedy to appear a).

(60) ... every book [_{CP} Op I tell him to e]

┌──────────┐

(61) ... every book [_{CP} Op_x I tell him to [_{VP} read e_x]]

Comparative ellipsis examples like those below will have the same analysis. Recall that the operator in the comparative is a DegP, and binds the ellipsis site directly as its trace. An example like (62) is interpreted directly, without any LF-copying.

(62) Pluto is colder than [_{Op_x} Mercury is e_x].

In examples with true ellipsis, the operator binds the ellipsis site before LF-copying, and the reconstructed DegP at LF.

(63) Abby has as many friends as [_{Op_x} Ben does e_x]

(64) The desk was a foot longer than [_{Op_x} I thought e_x]

We return to a closer examination of these latter cases in section 4.

some telling differences in negative subjunctives like (vi) (see Potsdam to appear for a discussion of these latter).

- (i) You're not competent to judge, which I am.
- (ii) Ben's been fired, which Mark hasn't.
- (iii) You're going to be a doctor, which I'm never going to be.
- (iv) You're a student who's going to be a doctor, which I once was as well.
- (v) *He's tall, which his father as well.
- (vi) He will be late again, which I had insisted that he not *(be).

As is the case in other non-restrictive relative clauses, the relative pronoun *which* is obligatory:

- (vii) a. You're being promoted, which he's not.
- b. *You're being promoted, that he's not.
- c. *You're being promoted, he's not. [with non-paratactic phrasing]
- d. *You're being promoted, what he's not.

Further evidence confirms that these clauses are relative CPs: they cannot be fronted, and the relative pronoun shows the typical island sensitivities, as the reader may verify. A full examination of the distribution of these data, however, is tangential to our present concerns, and will not be pursued here.

3.3 Pseudogapping

The final piece of background that needs to be examined is the analysis of pseudogapping constructions. Pseudogapping is the name given by Levin 1986 [1979], the first systematic evaluation of this domain of data, to a construction that had been sporadically noticed in the literature before that (Sag 1980 [1976] contains some examples, for instance). Examples are given in (65)-(70).

- (65) I eat pizza, but I don't seafood.
- (66) Abby won't listen to her teachers, but she will to her parents.
- (67) His idea might not seem crazy to you, but it does to me.
- (68) I want to live with a man more than I do with a woman. [Levin 1986:65]
- (69) Lucy had talked about Hungarian music before Martin did about Bakunin.
- (70) I respect him an awful lot, and I know he does me. [Levin 1986:84]

In each case, something less than an entire VP is missing; some proper subpart of the VP is left over. We will refer to this 'left-over' constituent as the remnant. Recent studies have been unanimous in analyzing pseudogapping as a subspecies of VP-ellipsis supplemented by some mechanism to rescue the remnant, following Kuno 1981: Jayaseelan 1990 proposes that the remnant is saved by Heavy XP Shift, Lasnik 1995 that it is A-movement to SpecAgr_oP, and Johnson 1997 that it is scrambling.

The fact that the remnant can be a prepositional phrase as in (66)-(69) above argues against Lasnik's hypothesis that it is simply case properties of a nominal that give rise to remnants in pseudogapping structures.⁸ This conclusion is further supported by the following data; the remnant is bracketed.

- (71) Herman strikes psychiatrists as friendly more often than he does [as psychotic].
- (72) We would view it as a liability, but they would [as an asset].
- (73) Lois would call me a fool before she would [a genius].
- (74) Rona looked more annoyed than she did [frustrated]. [Levin 1986:27]
- (75) The watchdog seemed more friendly than it did [ferocious]. [Levin 1986:27]
- (76) Marcus turned out to be a genius and Kevin did [a fool].
- (77) These stocks turn out to be a waste of money more often than they do [a wise investment].
- (78) Ben would've told us that he was unhappy, but he wouldn't have [* (that) he was broke].
- (79) There are several hardware stores still open, and there are [grocery stores] too.
- (80) There was a riot on the mall, but there wasn't [in the garden].

These data, while not perfect in all respects, seem to us to be no more or less degraded than pseudogapping in general is; pseudogapping is notoriously subject to variation across

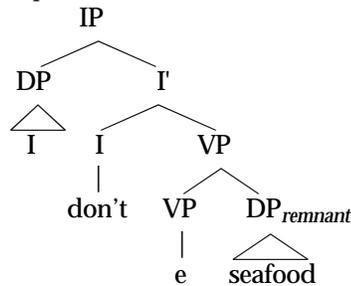
⁸ Specifically, Lasnik claims that pseudogapping involves movement of a DP to a VP-external case position followed by VP deletion. We agree with Lasnik regarding the role of VP ellipsis in pseudogapping, but disagree on the nature of the syntactic operations that derive the remnant.

Attributive Comparatives and Bound Ellipsis

speakers and is extremely sensitive to register clashes and similar stylistic factors⁹. Accepting the above data as representative however, it is clear that they pose a problem for any analysis that links the ability of a constituent to be a remnant to its need for case. In these examples, the remnant is a predicative phrase, a CP, or the associate of an expletive. The first two categories are constituents which are widely assumed not to need case (indeed, for CPs, to be resistant to case, following Stowell 1981). The associate of an expletive as in (79) is also not usually thought of as moving to a case position overtly.

Given these difficulties for a case-based analysis, we will follow Jayaseelan and Johnson in assuming that the remnant is right-adjoined to the VP, though the exact nature of the movement or mechanisms deriving this positioning is immaterial to our argument. (We should note also that all of the above analyses leave aside a number of dissimilarities between VP-ellipsis and pseudogapping, noted by Sag and Levin; we too will have nothing to add to this debate here.) The structure we assume for pseudogapping, then, is given in (81):

(81) I eat pizza, but ...



What is crucial for our purposes is that there is an empty category in the structure; here, the null VP, exactly as in the VP-ellipsis structures discussed above. Given our earlier assumptions about the derivation of bound ellipsis structures, the empty category in pseudogapping should also be available as a pre-LF binder for operators, as in the examples of 'regular' VP-ellipsis discussed above. The following facts show that this

⁹ Levin 1986 identifies three main factors correlating with the acceptability of pseudogapping. She notes that pseudogapping is best in comparatives with like subjects and subject-auxiliary order, and degrades for each of these conditions which is not met. We illustrate only the like-subject condition here (see Levin 1986: 35ff. and passim). Levin notes that naturally occurring examples with subjects that are neither formally nor referentially identical are "exceedingly uncommon" (p. 35), and gives the following example:

- (i) A: That thunderstorm bothered Millicent last night.
 B: ??Well, your stereo did me.

To her example we should compare the much better response in (ii).

- (ii) B: Not more than it did me.

The exact nature of this restriction is unclear (indeed, as indicated by our judgments in the text, many unlike-subject examples seem better than her (i)), and Levin herself suggests only a schematic perceptual explanation. The relevant point here is simply that some of the degradation of the examples in the text may be due to these factors, and not indicate the impossibility of pseudogapping *per se* for these remnants in particular.

expectation is borne out.¹⁰

- (82) I recommended the same books to Abby that I did to Ben.
 (83) I know who I gave presents and who I did money.
 (84) These books were sent to the reviewers before they were to the authors.
 (85) I'm going to send a card to my father, though I still haven't decided what I will to my mother.
 (86) Wozniak, they'll offer a severance package; Amelio, they won't anything.

The structures for these are parallel to their non-pseudogapped counterparts above. The ACD example in (82) has the structure in (87) at Spell-out, and that in (88) at LF.

(87) ... the same books [_{CP} Op that I did [_{VP} [_{VP} e] to Ben]]

┌──────────────────┐

(88) ... the same books [_{CP} Op_x that I did [_{VP} [_{VP} **recommend** e_x] to Ben]]

Just how the remnant in pseudogapping comes to be associated with the appropriate argument position internal to the elided (LF-copied) VP is a topic of debate. We will not resolve this issue here, but we return to it briefly in section 4.2 below. Again, what is crucial for us in these structures is that there is a null VP, an ellipsis site, which can be bound by an operator. Pseudogapping structures are thus fully parallel to other 'XP' ellipsis (DP, VP, IP, CP) structures in this regard. In the next section, we will show how this characteristic, combined with the analysis of comparatives presented in section 2, provides an explanation for the full range of facts discussed so far. Specifically, since pseudogapping is simply a variety of VP-ellipsis, it will fall under our revised generalization concerning the occurrence of attributive CE and ellipsis.

4 Attributive comparatives and bound ellipsis

4.1 Attributive comparatives in ellipsis sites

Recall the basic paradigm we are interested in explaining, exemplified here.

- (89) Rex wrote a more interesting abstract than I wrote.
 (90) Rex wrote a more interesting abstract than I did.
 (91) Rex wrote a more interesting abstract than I thought.
 (92) *Rex wrote a more interesting abstract than I wrote a paper.

The central analytical problem presented by these data, as noted above, is to account for the fact that ellipsis saves the derivations of (89)-(91). Movement of the attributive DegP operator in (92) is impossible, though if the DegP variable bound by the operator at LF is properly contained in a larger ellipsis site as in (89)-(91), the resulting expression is grammatical. In other words, given that all of (89)-(92) have LFs identical in the relevant

¹⁰ Though Levin 1986 [1979] notes that main-clause questions of this sort are "highly unacceptable" (p. 43), and we exclude them from consideration.

Attributive Comparatives and Bound Ellipsis

respects (they differ only in the interpretation of the NP in the second conjunct), how is it that they differ in grammaticality? The LF representation of (89)-(90) is given in (93), and that of (92) in (94).

(93) ... than [_{CP} Op_x I wrote [_{DP} an [_{DegP} e_x] abstract]]

(94) ... than [_{CP} Op_x I wrote [_{DP} a [_{DegP} e_x] paper]

(94) is ungrammatical, as expected. Recall that the comparative operator is categorically a DegP which moves to SpecCP. This means that (94) is the result of an illicit movement operation -- a left-branch island violation.

But if this is so, why are (89)-(91) allowed? The difference is that in these cases, the DegP variable which the comparative operator binds is not present until LF, where it is introduced by LF-copying of the larger constituent which contains it (the VP in (90), for example). Before LF, the ellipsis site itself is the bindee. This is the basis for our revised generalization about the co-occurrence of attributive CE and ellipsis from section 2.2, repeated here:

(95) *Attributive CE → local ellipsis*

Attributive comparative ellipsis is possible only if there is some ellipsis in the comparative clause.

Our goal in this section is to explain this generalization. Let us begin by examining the derivation of one of these cases in detail, in two stages: prior to Spell-out, and at LF.

Before Spell-out, and indeed until LF-copying, the null VP in (90) is an empty category in the syntax, as discussed in section 3.1 above. We follow Koopman and Sportiche 1982 and Haik 1987 in assuming that a syntactic operator must bind an empty category at every step in the derivation subsequent to its insertion in the tree. The comparative operator is inserted at the ellipsis site and moves to SpecCP. This yields the structure in (96); since there is no other empty category to bind, the operator must bind the null VP – as expected, given that this is its origin site.

(96) [_{CP} Op I thought he did [_{VP} e]]

┌──────────────────┐

If such binding were subject to different conditions on locality from more familiar instances of movement, then we might expect that locating the ellipsis site inside an island would lead to no difference in grammaticality. As Haik 1987 showed, however, such configurations are not possible, and give rise to standard island deviancy. This is illustrated in (97)-(101), where the VP-ellipsis site is embedded in a relative clause, a complex NP, a sentential subject, and embedded questions, respectively. Each example is ungrammatical because the ellipsis site, which is the origin of the comparative operator on our analysis, is in an island.

(97) *Rex wrote a more interesting abstract than I know anyone who did.

(98) *He sold more expensive phones than he made the claim he would.

(99) *The thief explained why he committed more of his crimes than that he would was expected.

- (100) *The thief explained why he committed more of his crimes than I thought he would explain why.
- (101) *The magician revealed how to do more interesting tricks than he should have revealed how.

These should be compared in part to their grammatical counterparts in (102)-(105), which do not share the defect of embedding the ellipsis site inside an island:

- (102) He sold more expensive phones than he claimed he would.
- (103) The thief explained why he committed more of his crimes than it was expected that he would.
- (104) The thief explained why he committed more of his crimes than I thought he would.
- (105) The magician revealed how to do more interesting tricks than he should have.

This island-sensitive embedding effect carries over to the other bound ellipsis structures discussed in section 3.1 as well:

- (106) *Josh read every book (that) I met a man who did.
- (107) Pizza, I would gladly eat. *Fish, I don't know anybody who would.
- (108) *Abby was examined and failed, but the girls who studied before they were passed.
- (109) *You're going to make it, which I wonder why I'm not.

One of two conclusions can be drawn from this series of observations. The first option, which we have adopted here, is that the operator is generated at the ellipsis site and moves in the normal manner to their final landing sites; this movement is constrained in the standard ways. The second option would be to assume that this operator is base-generated in its final position, and that the binding relations that hold overtly differ from those that hold covertly, with only the overt configurations giving rise to deviancy. The first option may seem less attractive at first glance, since it seems that it requires us to countenance a change of category at LF, when the antecedent material to the ellipsis is copied in for interpretation (or simply adopt Haik's 1987 convention of calling these operators 'category neutral'). In fact, however, this kind of categorical indeterminacy is only an apparent problem, since it is presumably only the conditions on interpretation enforced at LF which would be sensitive to such information, and these will never encounter the original mismatch. The advantage the first option has over the second is in theoretical parsimony and simplicity – while it seems inevitable that any successful theory of this domain will have to draw a distinction between the dependency relations introduced by movement and those created by (in situ) binding in any case (cf. resumptives), whether pre- or post-Spell-out, it seems to us a greater difficulty to attempt to redefine binding to make it sensitive to islands only pre-Spell-out. We will not attempt to address the many issues that making such a decision would touch upon, but continue to assume for simplicity that the operator originates at the ellipsis site. Whatever the correct account of these differences ultimately turns out to be, it is important for us only that movement and binding be distinguished with the consequences drawn above.

The data in (89)-(91) show, then, that the comparative operator can satisfy the requirement that it bind something at all points in the derivation by binding the ellipsis site. This type of 'interim' binding is possible only when the landing site of the operator is not separated from the ellipsis site by an island, since otherwise the movement is ruled out.

The discussion so far explains why the derivations of (89)-(91) are licit prior to LF:

Attributive Comparatives and Bound Ellipsis

the ellipsis site provides a base position for the comparative operator from which movement to SpecCP is permitted. In contrast, examples in which only the attributive DegP is missing, such as (92), inevitably trigger left-branch violations. A crucial question remains, however: why doesn't the resolution of the ellipsis trigger ungrammaticality? At LF, the comparative operator must bind a DegP variable in order for the structure to be interpretable, given the assumptions outlined in section 2. After LF-copying to resolve the ellipsis, then, the reconstructed VP in (90) will have a representation structurally identical to the LF of the ungrammatical (92). This LF is repeated here, with the LF-copied material in bold.

(110) ... than [_{CP} Op_x I did write [_{DP} an [_{DegP} e_x] **abstract**]]

Since the post-copy target of binding in (89)-(91) is an attributive modifier, the binding configuration will be exactly that of the illicit left-branch movement seen above.

In order to understand this effect at LF, let's step back and examine the form of the material copied at LF. Recall that the discussion in section 2 concluded that strict copying is not what is called for in comparative ellipsis examples like the following:

(111) Rex wrote a more interesting abstract than I did.

(112) Rex bought a ten foot longer boat than I did.

Strict copying would incorrectly give us the LF in (113), which is uninterpretable. Instead, we want the LF in (114), where what is recovered is a DegP variable.

(113) #... than [_{CP} Op_x I did write [_{DP} a [_{DegP} more [_{AP} interesting]] **abstract**]]

(114) ... than [_{CP} Op_x I did write [_{DP} a [_{DegP} e_x [_{AP} interesting]] **abstract**]]

In order to generate the LFs for these examples, in which the comparative operator binds the requisite DegP variable, we need to convert the DegP in the antecedent to an appropriately empty category inside the ellipsis site. This empty category must be of the proper syntactic and semantic type for the operator to bind (i.e., it remains a DegP), but the binding relation established at LF must differ from that established by movement, since the typical left-branch violations seen with overt movement are ameliorated (other kinds of islands may prove less remediable). This clustering of properties is not a novel one, however. Fiengo and May 1994 document numerous cases like this one, where certain elements pattern exceptionally with elements of different featural or lexical content under ellipsis. They dub this grouping of properties 'vehicle change' (see Fiengo and May 1994:218ff.). Some typically varied examples are given in the following set of data; (115)-(117) are from Fiengo and May, (118) and (119) from Merchant 1997, and (120) from Kennedy to appear b.

(115) Dulles suspected Philby, who Angleton did, too.

(116) a. Max talked to someone, but Oscar didn't. [these examples credited to
b. Max didn't talk to anyone, but Oscar did. Bill Ladusaw]

(117) The samurai must have slashed himself. Clearly, the shogun couldn't have.

(118) The police questioned Mark₂, and he₂ said that the FBI did, too.

(119) Who did the suspect call, and when?

(120) Which article did you read after Jim asked who would be willing to?

These data show that under ellipsis, names can behave like variables, indefinites like negative polarity items, and reflexives, names, and variables like pronominals; this is only a small selection of the uses Fiengo and May put vehicle change to (see also Merchant 1997, Kennedy to appear b, and Giannakidou and Merchant to appear for further evidence and discussion). Fiengo and May note that it is a fact that certain classes of items form equivalence classes under ellipsis, though we need not go into the details of the theory they propose. Our purposes are served simply by noting that this equivalence class behavior extends to DegPs – a contentful DegP can be reconstructed as a variable under ellipsis.¹¹ Vehicle change as used here need not be considered a separate, independent operation of the grammar – it is simply a name for a particular phenomenon which occurs in elliptical environments.¹² Its ontological status is the same as that of agreement – it is a cover term for an empirical phenomenon, not a theory or account of this phenomenon.

We are now in a position to better understand the syntax of the reconstructed ellipsis site. Continuing to take (90) as our working example, we now see how the desired LF of the comparative clause, repeated here, is arrived at.

- (121) Rex wrote a more interesting abstract than I did.
 (122) ... than [_{CP} Op_x I did **write** [_{DP} an [_{DegP} e_x] **abstract**]]

The antecedent VP [*write a* [_{DP} [_{DegP} *more interesting*] *abstract*]] is copied into the ellipsis site with concomitant vehicle change of the DegP to a variable, yielding (122). Similar to a resumptive element, this variable has the effect of voiding the left-branch island configuration. Thus the binding effected at LF between the operator and the ‘resumptive’ variable must be at least partially of a different nature from the parallel relation established by overt movement.

One prediction of this approach is that binding of the degree variable should be licit at LF even if this binding crosses an island, provided that this island is inside the ellipsis site itself. This effect of voiding ellipsis-internal islands is familiar from the domain of sluicing, which has been known since Ross 1969 to be insensitive to islands in certain circumstances. Chung et al. 1995 provide the following examples (pp. 272ff.)¹³:

- (123) Sandy was trying to work out which students would be able to solve a certain problem, but she wouldn’t tell us which one.

¹¹ Our treatment is similar in this regard to Moltmann 1992, who uses vehicle change in comparative ellipsis to introduce a variable for the comparative operator to bind.

¹² Applying vehicle change to the antecedent DegP is equivalent in many ways to raising it by QR, as in Larson’s (1988) account. See van den Wyngaerd and Zwart 1991 and Brody 1995 for attempts to use vehicle change in lieu of QR for resolution of ACD as well, and Lasnik 1993 for discussion of the relative merits of the two approaches.

¹³ We do not give examples of left-branch island violations in sluicing, because these will always be systematically ambiguous between the relevant structure and one in which the complement NP has been pied-piped but is null. The examples would be those in (i) and (ii).

- (i) Somebody’s bike was stolen, but we don’t know whose.
 (ii) Several bikes were stolen, but we don’t know how many.

The problem is that the questions *Whose was stolen?* and *How many were stolen?* are well-formed as they stand, since [*whose* *e*] and [*how many* *e*] are instances of licit NP-ellipsis in English parallel to *Mike’s was stolen* and *Several are missing*.

Attributive Comparatives and Bound Ellipsis

- (124) That certain countries would vote against the resolution has been widely reported, but I'm not sure which ones.
(125) Sally asked if somebody was going to fail Syntax One, but I can't remember who.

Chung et al. argue that a binding relation, which they call 'merger', is established at LF between the wh-phrase in the sluiced CP and LF-copy of the indefinite in the antecedent IP used to resolve the ellipsis. This binding relation, similar to ours, has the effect of voiding islands. The LFs they assign to the embedded questions in the above examples are given below; the category of the indefinite provides a variable for the wh-phrase to bind via vehicle change.

- (126) ... [which one]_x [_{IP} Sandy was trying to work out which students would be able to solve [a certain problem]_x]
(127) ... [which ones]_x [_{IP} that [certain countries]_x would vote against the resolution has been widely reported]
(128) ... [who]_x [_{IP} Sally asked if [somebody]_x was going to fail Syntax One]

We have found this effect to be somewhat more variable in the cases under consideration here, though certain examples indicate that it is detectable in at least some environments. The triplets in (130) and (129), borrowed from page 15 above, show a two-way contrast. The (a) examples demonstrate what we've seen before – that if the ellipsis site is inside an island, the sentence is ungrammatical. The (b) examples, on the other hand, pattern with the sluicing data above – the island is introduced at LF after LF-copying of the antecedent VP or IP has taken place, at which point vehicle change applies to rescue the structure. These LFs are given in (c), and are parallel in the relevant respects to the LFs of the (a) examples, differing only in the location of the island with respect to the ellipsis (they do not differ, for example, in the applicability of vehicle change – in both cases, the DegP is inside the ellipsis site, so vehicle change may apply).

- (129) a. *The thief explained why he committed more of his crimes than I thought he would explain why (he did).
b. The thief explained why he committed more of his crimes than I thought he would.
c. ... than Op_x I thought he would **explain why he committed [e_x of his crimes]**
- (130) a. *The magician revealed how to do more interesting tricks than he should have revealed how (to do).
b. The magician revealed how to do more interesting tricks than he should have.
c. ... than Op_x he should have **revealed how to do [e_x tricks]**

In summary, (92) is ungrammatical for the expected reason that extraction of the DegP operator leads to a left-branch violation in the overt syntax. (89)-(91), on the other hand, differ in making an additional bindee available prior to Spell-out – the ellipsis site. At LF, after the ellipsis has been resolved by LF-copying of an antecedent, the appropriate semantically necessary binding configuration can be established. This binding is not subject to the same restrictions as overt movement by virtue of vehicle change. Vehicle change allows the antecedent DegP to exhibit resumptive properties under reconstruction, ameliorating certain island violations, chief among them the relevant left-branch

violations. Having developed an account of the differences between (89)-(91) on the one hand, and (92) on the other, let us now turn to the surprising case of pseudogapping.

4.2 Attributive comparatives and pseudogapping

As noted earlier, the impossible overt attributive DegP extraction in structures like (92) seemingly becomes possible just in case the DP in which the attributive DegP is adjoined is the remnant of pseudogapping. Pseudogapping rescues the derivation, so to speak. Given the understanding of the deviance of non-elliptical DegP extractions like (92) developed above, we are now in a position to make sense of this surprising fact.

The relevant examples are those in (11)-(14), from which we will concentrate on (11) as representative, repeated here as (131):

(131) Rex wrote a more interesting abstract than he did a paper.

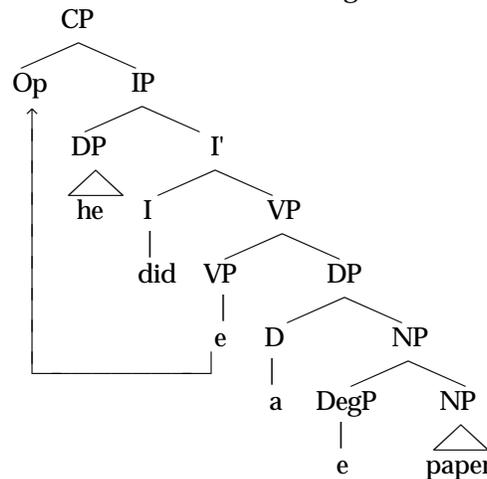
Again, this contrasts with its non-pseudogapped correspondent, (92), also repeated here:

(132) *Rex wrote a more interesting abstract than he wrote a paper.

While the contrast is quite subtle, all speakers we have checked these data with perceive it, many quite strongly.

Recall from section 3.2 that we analyze pseudogapping as essentially a subspecies of VP-ellipsis, with a remnant constituent adjoined to the VP. This predicts that these license attributive CE, parallel to VP-ellipsis. In such structures, the operator cannot have originated inside the DP, since the subsequent movement would violate the left-branch condition. Here, however, in contrast to the structure for (92), there is another potential origin site: the null VP, as in (133).

(133) Rex wrote a more interesting abstract than ...



It is the availability of this null VP as an origin site that allows this structure to reach LF. At LF, the VP ellipsis will be resolved by copying, and the DegP variable can be bound in the manner seen above for (89)-(91); this LF is given in (134).

Attributive Comparatives and Bound Ellipsis

(134) ... than Op_y he did **write** e_z [DP a [DegP e_y] paper]_z

We assume that the remnant direct object in the pseudogapped VP is associated with the appropriate argument position in the antecedent VP. (The research on the nature of this association is not conclusive – we might think of it as a kind of vehicle change for present purposes.) The same effects are assumed to be at work in generating the LF of an example like (135), which permits a de dicto interpretation of the indefinite *a computer*.

(135) [How fast a computer] does she want to buy?

(136) [How fast] does she want to buy [a __ computer]?

These cases also show ‘reconstruction’ effects of a DP missing a DegP (see Heycock 1995, Rullmann 1995, Cresti 1995). Since overt movement equivalent to (136) would be ungrammatical, we see again that there is necessarily a difference between the conditions the hold of overt movement and those that hold of covert binding. The conclusion to be drawn from the facts we are interested in is that the comparative operator can *bind* the DegP internal to the DP, it just can’t move out from it. If these deliberations are on the right track, if pseudogapping structures provide a position for the comparative operator to bind prior to LF, then we expect that examples like (131) will be able to escape left-branch effects.

4.3 Attributive subdeletion revisited

The final puzzle we must examine in this domain of data is the second generalization to emerge from section 1, concerning the behavior of attributive subdeletion examples like those in (15)-(16) above, repeated here.

(137) *Rex wrote a more interesting abstract than he wrote an insightful one.

(138) *Maureen built a wider table than she built a long desk.

These contrast with subdeletion in predicative position, which are fine:

(139) Rex’s abstract is more interesting than it is insightful.

(140) The table Maureen built is wider than it is long.

Interestingly, pseudogapping does not improve these:

(141) *Rex wrote a more interesting abstract than he did an insightful one.¹⁴

¹⁴ It is important to distinguish the ‘metalinguistic’ readings (Pinkham’s (1982) ‘metacomparatives’) available here from the relevant one, where the degree to which the AP holds of the NP is at issue, and not the appropriateness of the use of one AP or another to describe the NP. This can be controlled for by using the synthetic comparative form, which does not allow a metalinguistic use, as in (142) in the text and (i)-(iv) here:

(i) *Rex wrote a longer abstract than he did an insightful one.

(ii) *We send our kids to better schools than we do expensive ones.

(iii) *Ralph painted a rosier picture of the situation than he did an accurate one.

(iv) *Melinda drives a faster motorcycle than she does a slow car.

Judgments on these do not show interference from the sometimes possible but irrelevant metalinguistic use. We will continue to use (141) as our working example, however, for reasons of consistency, keeping this

- (142) *Maureen built a wider table than she did a long desk.

The generalization, which we saw in section 1, is clear:

- (143)
- No attributive subdeletion*
-
- Attributive subdeletion is impossible.

The difference between attributive subdeletion and the attributive CE we have been concerned with throughout this paper is a structural one. Attributive subdeletion involves a binding relation between the comparative operator and a position within DegP, which we assume to be specifier, while the cases of attributive CE we've examined are instances of a DegP operator itself moving. A substantial literature addresses the interesting but tangential question of why subdeletion in predicative position is possible at all (see Izvorski 1995 for references); we will be concerned here on with attributive subdeletion.

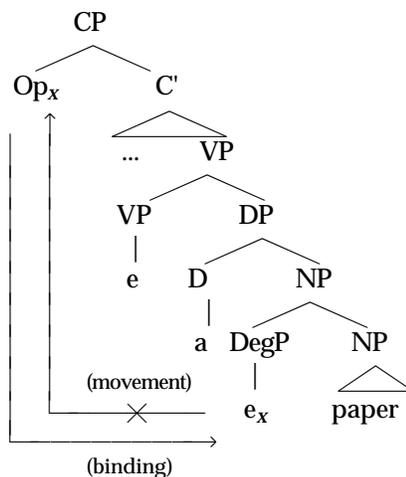
The ungrammaticality of a standard example like (137) is unsurprising, since it is parallel to the impossibility of extraction of overt wh-phrases, as seen in (144).

- (144) *How (very/much) did you read [an __ interesting abstract]?

Less expected from the perspective we have developed here is that pseudogapping, as in (141), does not ameliorate attributive subdeletion as it attributive CE (we cannot test attributive subdeletion internal to an ellipsis site, since a contrasting adjective is required). It seems that neither movement nor LF binding is possible in the necessary configuration.

The difference between this situation and that of DegP binding is illustrated schematically in (145) and (146). In (145), the arrows indicate that movement from the NP-adjoined position is illicit, but binding into this position is possible.

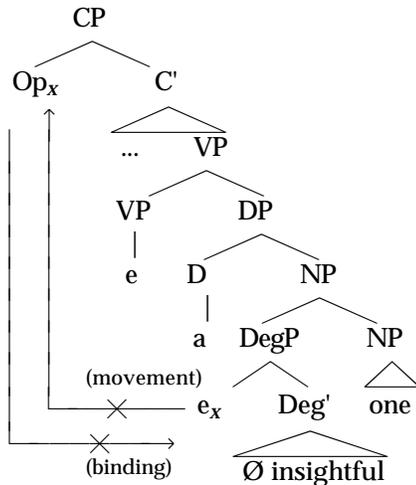
- (145) Attributive CE (DegP movement)



We will continue to use (141) as our working example, however, for reasons of consistency, keeping this distraction in mind.

In (146), on the other hand, neither movement nor binding into SpecDegP is possible.

(146) Attributive subdeletion



Without going into the details of the increased severity of such islands, it seems clear that the specifier of an adjoined XP is less accessible than that XP itself. We claim that it is this structural inaccessibility (encoded in terms of barriers or the like) that prevents the pseudogapping from rescuing the attributive subdeletion structures. Although movement of the operator from the ellipsis site gets the derivation to LF, the binding relation that must be established between the operator and the variable in SpecDegP at LF is nevertheless ill-formed.

5 Conclusion

A complete analysis of the complex generalizations laid out in the introduction might have been thought to have to be quite complex itself. Instead, we have seen that the complexity is mostly illusory, and that analyses of the various interacting subparts combine to account for the generalizations in an elegant and simple way. We have argued that the correct account of the data discussed here support a number of conclusions. First, the comparative operator in the comparative clause is categorically a DegP. Second, the typical examples of ‘comparative ellipsis’ involve no ellipsis at all; instead, they represent simple movement of the DegP operator to its landing site in SpecCP. Third, we provided further evidence that pseudogapping is a species of VP-ellipsis, patterning with the latter with respect to the data at hand. Fourth, true ellipsis is best thought of as an empty category in the syntax, and not as PF-deletion or ‘empty structures’. The facts discussed in this paper show that ellipsis sites must be available as ‘interim bindees’, or more accurately, accessible origin sites for the comparative operator. Finally, we observed a distinction between conditions on binding and those on movement; in particular, the LF binding possibilities of the comparative operator are less restricted than its overt movement.

References

- Abney, Steven. 1987. *The English Noun Phrase in its Sentential Aspect*. Doctoral dissertation, MIT: Cambridge.
- Bartsch, Renate and Theo Vennemann. 1972. *Semantic Structures: A Study in the Relation between Syntax and Semantics*. Frankfurt: Athenäum Verlag.
- Bouchard, Denis. 1984. *On the content of empty categories*. Foris: Dordrecht.
- Bresnan, Joan. 1973. Syntax of the comparative clause construction in English. *Linguistic Inquiry* 4:275-343.
- Brody, Michael. 1995. *Lexico-logical Form: A radically minimalist theory*. MIT Press: Cambridge.
- Chao, Wynn. 1988 [1987]. *On ellipsis*. Doctoral dissertation, UMass Amherst. Published by Garland: New York.
- Chomsky, Noam. 1977. On *wh*-movement. In P. Culicover et al. (eds.), *Formal syntax*. Academic Press: New York.
- Chung, Sandra, William Ladusaw, and James McCloskey. 1995. Sluicing and Logical Form. *Natural Language Semantics* 3: 239-282.
- Corver, Norbert. 1990. *The Syntax of Left Branch Constructions*. Doctoral dissertation, Tilburg University.
- Corver, Norbert. 1993. A note on subcomparatives. *Linguistic Inquiry* 24:773-781.
- Corver, Norbert. 1997. *Much*-support as a last resort. *Linguistic Inquiry* 28:119-164.
- Cresswell, M. J. 1976. The semantics of degree. In B. Partee (ed.), *Montague Grammar*. New York: Academic Press.
- Cresti, Diana. 1995. Extraction and reconstruction. *Natural Language Semantics* 3: 79-122.
- Fiengo, Robert, and Robert May. 1994. *Indices and identity*. MIT Press: Cambridge.
- Fox, Danny. 1995. Economy and scope. *Natural Language Semantics* 3: -238.
- Giannakidou, Anastasia, and Jason Merchant. To appear. Reverse sluicing in English and Greek. *The Linguistic Review*.
- Grimshaw, Jane. 1987. Subdeletion. *Linguistic Inquiry* 18:659-669.
- Grimshaw, Jane. 1991. Extended projection. Ms., Brandeis University.
- Haik, Isabelle. 1987. Bound VPs that need to be. *Linguistics and Philosophy* 10:503-530.
- Hankamer, Jorge and Ivan Sag. 1976. Deep and surface anaphora. *Linguistic Inquiry* 7:391-426.
- Hardt, Daniel. 1993. *Verb phrase ellipsis: Form, meaning, and processing*. Doctoral dissertation, UPenn.
- Hazout, Ilan. 1995. Comparative ellipsis and Logical Form. *Natural Language and Linguistic Theory* 13:1-37.
- Heim, Irene. 1985. Notes on comparatives and related matters. Ms., University of Texas, Austin.
- Hellan, Lars. 1981. *Towards an Integrated Analysis of Comparatives*. Tübingen: Narr.
- Heycock, Caroline. 1995. Asymmetries in reconstruction. *Linguistic Inquiry* 26:547-570.
- Hoeksema, Jacob. 1983. Negative polarity and the comparative. *Natural Language and Linguistic Theory* 1:403-434.
- Huang, James. 1982. *Logical relations in Chinese and the theory of grammar*. Doctoral dissertation, MIT: Cambridge.
- Izvorski, Roumyana. 1995. A solution to the subcomparative paradox. In *The Proceedings of WCCFL 14*, University of Southern California.

Attributive Comparatives and Bound Ellipsis

- Jayaseelan, K.A. 1990. Incomplete VP deletion and gapping. *Linguistic Analysis* 20:64-81.
- Johnson, Kyle. 1997. When verb phrases go missing. Ms., UMass Amherst.
- Kennedy, Christopher. 1997. Projecting the adjective: The syntax and semantics of gradability and comparison. Doctoral dissertation, UC Santa Cruz.
- Kennedy, Christopher. To appear a. Antecedent-contained deletion and the syntax of quantification. *Linguistic Inquiry*.
- Kennedy, Christopher. To appear b. VP-deletion and 'nonparasitic' gaps. *Linguistic Inquiry*.
- Kitagawa, Yoshihisa. 1991. Copying identity. *Natural Language and Linguistic Theory* 9:497-536.
- Klein, Ewan. 1980. A semantics for positive and comparative adjectives. *Linguistics and Philosophy* 4:1-45.
- Koopman, Hilda, and Dominique Sportiche. 1982. Variables and the bijection principle. *The Linguistic Review* 2: 139-160.
- Kuno, Susumo. 1981. The syntax of comparative clauses. *Proceedings of the Chicago Linguistic Society* 17.
- Larson, Richard. 1988. Scope and comparatives. *Linguistics and Philosophy* 11:1-26.
- Lasnik, Howard. 1993. Lectures on Minimalist syntax. UConncticut Occasional Papers in Linguistics 1: MITWPL, Dept. of Linguistics and Philosophy. MIT: Cambridge.
- Lasnik, Howard. 1995. A note on pseudogapping. MIT Working Papers in Linguistics.
- Lerner, Jean-Yves & Manfred Pinkal. 1995. Comparative ellipsis and variable binding. Computerlinguistik an der Universität des Saarlandes Report No. 64. Also in *The Proceedings of SALT 5*.
- Levin, Nancy. 1986 [1979]. *Main-verb ellipsis in spoken English*. Doctoral dissertation, Ohio State University. Published by Garland: New York.
- Lobeck, Anne. 1991. Phrase structure of ellipsis in English. In S.Rothstein (ed.), *Syntax and semantics: vol. 25*. Academic Press: New York.
- Lobeck, Anne. 1995. *Ellipsis: Functional heads, licensing, and identification*. Oxford Univ. Press: Oxford.
- May, Robert. 1985. *Logical Form*. Cambridge: MIT Press.
- McNally, Louise. 1995. Bare plurals in Spanish are interpreted as properties. Ms., Univ. de Pompeu Fabra.
- Merchant, Jason. 1997. Guess what I found, and where: Pronominal wh-traces under sluicing. Presented at the 71st LSA meeting; ms., UC Santa Cruz.
- Moltmann, Friederike. 1992. *Coordination and Comparatives*. Ph.D. dissertation, MIT.
- Pilch, H. 1965. Comparative constructions in English. *Language* 41:37-58.
- Pinkham, Jesse. 1982. *The Formation of Comparative Clauses in French and English*. Doctoral dissertation, Indiana University.
- Potsdam, Eric. 1996. *Syntactic issues in the English imperative*. Doctoral dissertation, UC Santa Cruz.
- Potsdam, Eric. To appear. NegP and subjunctive complements in English. *Linguistic Inquiry*.
- Postal, Paul. 1974. On certain ambiguities. *Linguistic Inquiry* 5:367-425.
- Reinhart, Tanya. 1991. Elliptic conjunctions – Nonquantificational LF. In A. Kasher (ed.) *The Chomskyan turn*: 360-384. Blackwell: London.
- Rizzi, Luigi. 1990. *Relativized Minimality*. MIT Press: Cambridge.
- Roberge, Ives. 1990. *The syntactic recoverability of null arguments*. McGill-Queen's Univ. Press: Montreal.
- Ross, John R. 1967. *Constraints on variables in syntax*. Doctoral dissertation, MIT.

- Ross, John R. 1969. Guess who? *Proceedings of the Chicago Linguistic Society* 5: 252-286.
- Rullmann, Hotze. 1995. *Maximality in the semantics of WH-constructions*. Doctoral dissertation, UMass Amherst.
- Russell, Bertrand. 1905. On denoting. *Mind* 14:479-493.
- Sag, Ivan. 1980 [1976]. *Deletion and logical form*. Doctoral dissertation, MIT. Published by Garland: New York.
- Stowell, Tim. 1981. *Origins of phrase structure*. Doctoral dissertation, MIT.
- Svenonius, Peter. 1992. The structural location of the attributive adjective. In P. Spaelti et al. (eds.), *Proceedings of WCCFL 11*: Santa Cruz.
- Swingle, Kari. 1995. On the prosody and syntax of right node raising. Ms., UC Santa Cruz.
- von Stechow, Arnim. 1984. Comparing semantic theories of comparison. *Journal of Semantics* 3:1-77.
- Tancredi, Chris. 1992. Deletion, deaccenting, and presupposition. Doctoral dissertation, MIT.
- Wilder, Chris. 1995. Some properties of ellipsis in coordination. Ms., Max-Planck-Gesellschaft, AG Strukturelle Grammatik: Berlin.
- Williams, Edwin. 1977. Discourse and logical form. *Linguistic Inquiry* 8:101-139.
- van den Wyngaerd, Guido, and Jan-Wouter Zwart. 1991. Reconstruction and vehicle change. In *Linguistics in the Netherlands 1991*:pp.
- Zagona, Karen. 1988. *Verb phrase syntax: A parametric study of English and Spanish*. Kluwer: Dordrecht.

Christopher Kennedy
Department of Linguistics
Northwestern University
2016 Sheridan Road
Evanston, IL 60208
kennedy@babel.ling.nwu.edu

Jason Merchant
Department of Linguistics
Stevenson College
University of California at Santa Cruz
Santa Cruz, CA 95064
merchant@ling.ucsc.edu