Apparent Adjunct Ellipsis via (Un)Structured Coordination

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Lee, Wooseung and Myung-Kwan, Park. 2018. Apparent adjunct ellipsis via (un)structured coordination. *Korean Journal of English Language and Linguistics* 18-4, 381-394. This paper investigates apparent ellipsis phenomena in coordinate structure involving three different types of adjunct; relative clauses, comparative phrases and locative phrases (Collins 2014, 2017). These constructions are especially interesting, in that the adjuncts at issue are realized overtly in the initial conjunct only, but possibly are present interpretatively in the second conjunct as well, unlike in right node raising constructions where the shared part occurs in the final conjunct only. An ambiguity arises depending on whether the adjuncts are interpreted in the initial conjunct only or distributed across the whole conjuncts. As for the second, less-studied reading, we propose an analysis based on Chomsky's (2013) unstructured coordination and Moro's (2011) clause structure folding, which derives the correct word order and accounts for the intended interpretation (cf. Collins 2014, 2017).

Keywords: adjunct ellipsis, relative clauses, comparative phrases, locative phrases, unstructured coordination, clause structure folding

1. Introduction

This paper investigates apparent adjunct ellipsis that has been paid relatively little attention, compared with argument ellipsis. This is partly because it is dubious that adjunct ellipsis is indeed licensed, thereby being recovered, by some syntactic head or features both in English and Korean (Merchant 2001, Park 1994, inter alia). Recently, however, Collins (2014, 2017) makes an intriguing observation, noting that a variety of adjuncts manifested only in the initial conjunct in coordinate constructions are distributed across the whole conjuncts in terms of interpretation. The relevant constructions are exemplified in (1-3), which can be interpreted in two different ways.

(1) At the party, I saw one girl <u>who I know</u> and three boys.

(2) John is taller <u>than Mary</u>, and Bill is taller.[1]

(3) John wants to dance <u>at the prom</u> and Bill wants to sing.

Specifically, different types of underlined adjuncts above can be taken as modifying the relevant head in the initial conjunct only or two different heads in both conjuncts. This paper concerns itself with the second reading and attempts to propose an analysis that derives the correct word order and accounts for the intended interpretation. The organization of this paper is as follows. Section two briefly introduces Collins' (2014, 2017) proposal and points out some fundamental problems with his analysis (cf. Merchant 2001). Another potential analysis, LF Copying, is also rejected due to the failure of accounting for displacement properties and sloppy readings involved in the constructions. Section 3 presents theoretical backgrounds of our analysis, i.e., Chomsky' (2013) labelling paradox in (un)structured coordination and Moro's (2011) clause structure folding. Section 4 is the main section of this paper. It shows how the constructions with silent adjuncts are derived under the proposed analysis. Apparent problematic cases such as examples allowing sloppy readings are dealt with under the proposed analysis. Section 5 ends with a conclusion.

2. Apparent Adjunct Ellipsis

2.1 PF Deletion

This section briefly presents Collins' (2014, 2017) proposal on the apparent adjunct ellipsis constructions. As mentioned above, a variety of adjuncts occurring in the initial conjunct can be interpretively associated with the second conjunct as well. On the grounds of these interpretive properties, he argues that those adjuncts are syntactically, but not phonologically present in the second conjunct, and puts forward a PF deletion analysis as schematically illustrated in (4-6):

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[1] A similar ellipsis phenomenon is observed in *as ... as* or *so ... as* structure. Specifically, the second part of *as ... as* or *so ... as* structure can be omitted when the meaning is clear from the previous utterance as in (i-ii).

(i) The train takes 40 minutes. By car it will take you twice as long.

(ii) I used to think he was clever. Now I'm not so sure.

(4) At the party, I saw one girl who I know and three boys [~~who I know~~].
(5) John is taller than Mary, and Bill is taller [~~than Mary~~].
(6) John wants to dance at the prom and Bill wants to sing [~~at the prom~~].

Crucially, the relative clause in (4) is syntactically identical to its antecedent as required in (7) and subject to the parallelism condition in (8).

(7) Syntactic Identity
   A relative clause R is deleted under syntactic identity with an antecedent relative clause.

(8) Parallelism
   Relative clause deletion can only take place in the following structure:
   $[_{XP1}.....[_{Head1}$ Antecedent$].....]$ and/than $[_{XP2}.....[_{Head2}$ <Relative Clause>$] .....]$
   where $_{Head2}$ is focused and $_{XP1}$ is a member of $F(_{XP2})$, the focus value of $_{XP2}$.

That is, for the deletion to take place, the deleted relative clause and its antecedent must be found in the same syntactic environment as specified in (8). As for the above example (4), relative clause deletion occurs since the two DPs differ in the NP heads of their respective relative clauses: $_{Head1}$ and $_{Head2}$, where $_{Head1}$ 'girl' and $_{Head2}$ 'boys' are focused. As for the other examples with comparative and locative phrases, he presents a similar line of analysis, i.e. he argues that the silent phrases are deleted at PF. Deletion of functional phrases such as DPs and CPs, however, is an issue of controversy in English. Merchant (2001) proposed that ellipsis must be licensed by functional heads such as C, T or D which can bear an E feature as in Sluicing (9), VP-ellipsis (10), and NP-ellipsis (or N'-ellipsis) (11).

(9) John can play something, but I don't know what.
   (= John can play something, but I don't know what John can play.)
(10) John can play the guitar and Mary can, too.
   (= John can play the guitar and Mary can play the guitar, too.)
(11) John can play five instruments, and Mary can play six.
   (= John can play five instruments, and Mary can play six instruments.)

Given that C bears an E-feature and licenses deletion of TP rather than the CP itself

(Merchant 2001, inter alia), the PF deletion analysis of the relative clause is ruled out as a plausible line of analysis for the relevant construction. Similar accounts apply to comparative and locative PPs. We now consider another competing analysis of ellipsis construction, LF Copying.

2.2 LF Copying

The LF copying hypothesis would assume that the silent relative or comparative clause in constructions per se is similar to a null pronoun with no internal structure, which predicts that no movement should be involved within the silent clause. This prediction, however, is not borne out as well-known by island constraints in (12-13). As exemplified below, both *wh* questions (12) with an overt movement and the relative clauses (13) are subject to the same islandhood restrictions (Radford 1988). This suggests that movement is involved in the relative clauses as well.

(12) (a) Who did he engineer [the downfall of —]?
     (b) *Who did [the downfall of —] cause consternation?
     (c) *Who did the government collapse [after the downfall of —]?
(13) (a) someone who he engineered [the downfall of —]
     (b) *someone who [the downfall of —] caused consternation
     (c) *someone who the government collapsed [after the downfall of —]

Comparative clauses also seem to involve movement. Note that overt *wh* movement is proposed to be involved in the derivation of nonstandard *wh*-comparatives in (14):

(14) (a) %John is taller than [what Mary is ___].
     (b) %Mary isn't the same as [what she was ___ five years ago].

As for the above example, Chomsky (1977) proposes that *what* is a *wh*-pronoun which originates in the position marked ___ and undergoes preposing into Spec-CP position. He also maintains that the standard counterparts involve movement of an empty operator as in (15):

(15) a. John is taller than Mary is.
     b. John is taller than [$_{CP}$ O [$_C$ e] [$_{IP}$ Mary is O]]

Given that *wh*-pronouns (or, an empty operator) are assumed to be moved in relative/comparative clauses as in *wh*-questions with overt *wh*-movement, LF Copying is not a plausible analysis of coordinate structures with silent adjuncts.

   Examples (16–17) constitute additional piece of evidence against LF Copying analysis. Specifically, LF Copying assumes that the silent part is similar to a null pronominal, which suggests that it can be converted into an overt counterpart of the null pronoun. Consider (16–17):

(16) Every boy wanted to sing at his birthday party and every girl wanted to dance.
(17) John is taller than many of the girls, and Bill is shorter.

These examples allow both strict and sloppy readings:

(18) a. Strict interpretation:
      Every boy wanted to sing at his birthday party and every girl wanted to
        dance at his birthday party.
      b. Sloppy interpretation:
      Every boy wanted to sing at his birthday party and every girl wanted to dance
        at her birthday party.
(19) a. Strict interpretation:
      John is taller than many of the girls, and Bill is shorter than the same group
        of girls that John is taller than.
      b. Sloppy interpretation:
       John is taller than many of the girls, and Bill is shorter than many of the
        girls. (In this case, the group of girls that John is taller than can be
        different than the group of girls that Bill is shorter than)

Overt realization of the covert null pronominal, however, allows strict readings only:[2]

(20) Every boy wanted to sing at his birthday party and every girl wanted to dance
        there.
      = Every boy wanted to sing at his birthday party and every girl wanted to
        dance at his birthday party.

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[2] Collins argues that example (20) has a *marginal* interpretation where every girl wanted to dance at her own birthday party.

(21) John is taller than many of the girls, and Bill is shorter than them.
    = John is taller than many of the girls, and Bill is shorter than the same
      people who John is taller than.

LF copying thus does not seem to be a viable analysis, either. Given that neither PF deletion nor LF copying hypothesis fare as an appropriate analysis of the invisible part 'embedded' in the second conjunct, we attempt to propose a third, alternative analysis.

3. Theoretical Bases for an Alternative Analysis

This section presents theoretical backgrounds for an alternative analysis; labeling problems with unstructured coordination in Chomsky (2013) and Clause Structure Folding mainly proposed for constructions with two distinct *wh*-phrases in Italian in Moro (2011). Let us first consider labeling paradox with unstructured coordination in 3.1.

3.1 Labeling Problems with (Un)structured Coordination

Chomsky (2013) distinguishes structured coordination from unstructured one, which is exemplified in (22) without any overt coordinator (Chomsky 2013: 45).

(22) John is tall, happy, hungry, bored with TV, etc.

In this case, a list of APs are not predicated as a unit, with each of them predicated individually of the subject. These structures have posed a problem since they appear to require an indefinitely many number of rules to exclude unwanted structure. This problem is overcome with the adoption of Pair-Merge, which differs from simple Merge in that it forms a pair, not a set, creating the asymmetric property of adjuncts. It can be applied indefinitely many times, adding individual predications without expanding structure. Structured coordination, on the other hand, faces a different problem. Consider a structured coordination with the form of [Z and W]. The underlying structure of [Z and W] is posited as in (23a), in which one of the elements: Z and W must raise as in (23b) in order to label β.

(23) (a) [$_α$ Conj [$_β$ Z W]]
      (b) [$_γ$ Z [$_α$ Conj [$_β$ Z W]]]

Now β receives the label of W, but then, how is γ labelled? It again becomes an {XP, YP} structure and hence unlabelable. Still, since it needs to be labelled, it receives the label of Z. Since the Conj and the construction it heads are not available as a label, γ receives the label of Z. This labelling mechanism is adopted in our proposed analysis in section 4 and, combined with Moro's (2011) clause structure folding, it provides theoretical foundations of our analysis. Let us now move on to clause structure folding in Italian (Moro 2011), which is resorted to for a derivation of the correct word order of the relevant construction concerned in this paper.

3.2 Clause Structure Folding (Moro 2011)

Moro (2011) observes the following constructions (24) in Italian, where two distinct *wh*-phrases co-occur. He proposes that the coordinative head 'e' does not directly merge with the following *wh*-phrase. Rather, it is proposed to select a full clausal complement and lead to remnant movement and stranding of the highest *wh*-phrase.

(24) a. Mi   chiedo   dove   sono andati   *(e) perche´.
          to.me   wonder.1SG   where   are gone.3PL   and   why
          'I wonder where they have gone and why.'
      b. *Mi   chiedo   perche´ sono andati   (e)   dove.
          to.me   wonder.1SG   why   are   gone.3PL and where
      c. Mi   chiedo   quando sono partiti *(e) perche´.
          to.me   wonder.1SG   when   are left.3PL   and   why
          'I wonder when they have left and why.'
      d. *Mi   chiedo   perche´ sono partiti (e)   quando.
          to.me   wonder.1SG   why   are left.3PL and   when
      e. Mi   chiedo   come sono arrivati   *(e) perche´.
          to.me   wonder.1SG   how   are arrived.3PL   and   why
          'I wonder how they have arrived and why.'
      f. *Mi   chiedo   perche´ sono arrivati   (e)   come.
          to.me   wonder.1SG   why   are arrived.3PL and   how

Specifically, as for the above (24), without involving ellipsis, the coordinative head is merged with a clausal constituent rather than the interrogative phrase it precedes. The following (25) illustrates a step-by-step derivation of sentences with two distinct *wh*-phrases in Italian:

(25) a. . . . [dove$_1$ C [pro sono andati t$_1$]]
                where   pro are   gone.3PL
      b. . . . [perche´ C [dove$_1$ C [pro sono andati t$_1$]]]
                why   where   pro are   gone.3PL
      c. . . . [e   [perche´ C [dove$_1$ C [pro sono andati t$_1$]]]]
                and   why   where   pro are   gone.3PL
      d. . . . [[dove$_1$ C [pro sono andati t$_1$]] [e [perche´ C t]]]
                where   pro are gone.3PL and   why
        ' . . . where they have gone and why'

According to Moro (2011), first, dove 'where' is raised from the postverbal position to the spec position of a CP as in (25a). Second, perche´ 'why' is generated in a high position of another CP as in (19b). Third, the coordinative head is merged with this complex clausal structure as in (19c).[3] Fourth, the lower part of the clausal constituent (a segment of the complex CP structure) is raised to the specifier of the coordinative head, yielding the observed word order where the coordinative head precedes the highest *wh*-element as in (19d). He thus suggests that this construction involves no *wh*-in-situ despite the surface realization of a *wh*-phrase in its base-generated position.[4] Apparent *wh*-in-situ is just the effect of a complex

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[3] Crucially, note that the alternative of raising perche´ 'why' in (19c) is not available as in (i) since it would violate the constraint that only identical categories are coordinated:

(i) * [[$_{PP}$ perche´]$_1$ e [$_{CP}$ t$_1$ come sono arrivati]]
            why   and   how   are   arrived.3PL
            'why and how they have arrived'

[4] Universal Grammar (UG) allows three distinct types of strategies for multiple *wh*-questions: languages like Bulgarian and Polish, where all *wh*-elements move to the front (ia); languages like Japanese and Chinese, where all *wh*-elements stay in situ (ib); languages like Italian and English, which combine these two opposite strategies and move only one *wh*-element to the front while leaving the other in situ (ic).

(i) a. [$_{CP}$ wh-phrase C wh-phrase C [$_{TP}$ . . . t . . . t . . .]] (Bulgarian, Polish, . . .)
    b. [$_{CP}$ [$_{TP}$ wh-phrase . . . wh-phrase]]   (Chinese, Japanese, . . .)

mechanism involving CP—splitting which he labels 'clause structure folding'. This configuration is argued to yield the observed word order and serve as a rescue strategy languages may adopt to meet a structural property of the left periphery. Clausal structure folding together with labelling paradox posed in (un)structured coordination offer theoretical backgrounds for the proposal of an analysis of the coordinate constructions concerned.

4. The Proposal

4.1 An ATB Extraposition Followed by Merge with the Coordinative Head

An ATB movement is commonly entertained as an approach to (pseudo)gapping, which is among the subtypes of (apparent) ellipsis in English. Specifically, ellipsis is reduced to ATB movement in a gapping construction like (26), where the displaced verb *bought* is proposed to be related to a base position in both conjuncts (Johnson 2009, among others).

(26) Peter$_i$ bought [t$_i$ _ a book] and [Susan _ a magazine].

Given that some kind of 'ellipsis' or 'gap' is assumed to be involved in the adjunct ellipsis constructions, we resort to an ATB extraposition of the relative/comparative clauses. Specifically, the relative/comparative clause is proposed to be extraposed in an ATB fashion, which is followed by merge with the coordinative head, schematically represented in (27—28).[5] In (27), two DPs with an identical clause are constructed in

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　　　　c. [$_{CP}$ wh—phrase C [$_{TP}$ . . . t . . . wh—phrase]]　　　　(English, Italian, . . .)

[5] Other than these, (i) is also observed, in which the locative phrase can be related to the second conjunct as in (ii):

(i) Michael wanted to sing at his Bar Mitzvah, while Bill wanted to dance.
(ii) Michael wanted to sing at his Bar Mitzvah, while Bill wanted to dance <~~at his Bar Mitzvah~~>.

Obviously, this sentence does not carry the coordinative head 'and'. It rather connects two clauses by use of *while*. Note, however, that the two clauses are coordinated, not subordinated, judging from the interpretation obtained. Crucially, in the case where the *while*—clause is used as a subordinator, adjuncts are not recoverable either in (iii) or (iv).

stage I. The shared clause undergoes an ATB extraposition in Stage II. The unstructured coordination merges with the coordinate head in Stage III. DP is raised for labeling in Stage IV.

(27) At the party, I saw one girl who I know and three boys.

□ Derivational Stages for (27):
[Stage I]: Unstructured construct of two identical clauses:
    one girl who I know & three boys who I know (& = unstructured coordination)

[Stage II]: An ATB extraposition of the relative clause
    [one girl] & [three boys] who I know[6]

(iii) While Michael wanted to sing at his Bar Mitzvah, Bill wanted to dance.
(iv) While Bill wanted to dance, Michael wanted to sing at his Bar Mitzvah.

Conclusively, *while* in sentence (i) is similar to a coordinative head and functions as one. Schematically presented below are the whole derivational processes:

  [Stage I]: Unstructured construct of two identical phrases:
    [Bill wanted to dance at his Bar Mitzvah] & [Michael wanted to sing at his Bar Mitzvah]
    (& = unstructured coordination)

  [Stage II]: An ATB extraposition of PP:
    [Bill wanted to dance] & [Michael wanted to sing] at his Bar Mitzvah.

  [Stage III]: Merge with the coordinative head:
    _____ while [Bill wanted to dance] & [Michael wanted to sing] at his Bar Mitzvah

  [Stage IV]: CP raising for Labeling:
    [Michael wanted to sing] at his Bar Mitzvah while [Bill wanted to dance]

[6] A question arises as to whether it is possible to derive 'boy and tall girl' from 'tall [girl] & [boy]', with the former resultantly being construed as 'tall [girl and boy]'.

  (i) boy and tall girl   < ==== tall [girl] & [boy]

We speculate that unlike ATB extraposition, ATB leftward movement of an AP (i.e., *tall*) is prohibited owing to the left branch condition, thus not permitting the AP to modify the second conjunct 'boy.'

[Stage III]: Merge with the coordinative head
　　_____ and [one girl] & [three boys] who I know

[Stage IV]: DP raising for Labeling
　　[three boys] who I know and [one girl]

Sentence (28) is derived in a similar fashion. Two clauses with an identical phrase are constructed in stage I. The shared phrase undergoes an ATB extraposition in Stage II. The unstructured coordination merges with the coordinate head in Stage III. CP is raised for labeling in Stage IV.

(28) John is taller than Mary, and Bill is taller.

☐ Derivational Stages for (28):
[Stage I]: Unstructured construct of two identical phrases:
　　Bill is taller than Mary & John is taller than Mary.
　　(& = unstructured coordination)

[Stage II]: An ATB extraposition of PP:
　　[Bill is taller] & [John is taller] than Mary.[7]

[Stage III]: Merge with the coordinative head:
　　_____ and [Bill is taller] & [John is taller] than Mary.

[Stage IV]: CP raising for Labeling:
　　[John is taller] than Mary and [Bill is taller]

4.2 Sloppy Interpretation

The proposed analysis seems to work for the above examples. Note, however, that

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[7] Collins (2017) notes that a parasitic gap (derived by the movement of a comparative operator) can be licensed in the phonologically suppressed/ATB-shared comparative clause, as in the example below.

(i) What kind of vegetable does John like __ more than Mary likes __ ?, and, what kind of vegetable does Bill like __ less ~~than Mary likes __~~?

the following examples (29) allow sloppy interpretation, which is read as in (30).

(29) a. I met three freshmen who liked their professors and two sophomores.
   b. Every boy is taller than his father, but every girl is shorter.
   c. Every boy wants to sing at his birthday party and every girl wants to
      dance.
(30) a. I met three freshmen$_i$ who liked their$_i$ professors and two sophomores$_j$
      <who liked their$_j$ professors>.
    b. [Every boy]$_i$ is taller than his$_i$ father, but [every girl]$_j$ is shorter <than
      her$_j$ father>.
   c. [Every boy]$_i$ wants to sing at his$_i$ birthday party and [every girl]$_j$ wants to
      dance <at her$_j$ birthday party>.

These appear to undermine our proposed analysis that crucially resorts to an ATB extraposition of the *shared* adjunct clauses. An outstanding question is if the referential identity of an ATB phrase is a necessary condition for an ATB movement to occur. This is questionable as indicated by a series of examples in (De Vries 2017). As he mentioned, (31) forces a sloppy reading (a song cannot be sung before it has been composed, so different songs must be involved), and the sentence is perfectly acceptable. Another example is (32), where it seems plausible that the number of matches involved is different for Peter and Susan.

(31) I wonder which song Peter composed _ today and Susan sang _ yesterday.
(32) How many matches did Peter play _ and Susan win _?

There seems to be no 'identity requirement' in ATB, contra suggestions in Zhang (2010). Furthermore, when a complex topicalized phrase contains an anaphor or a pronoun, a sloppy interpretation of the embedded variable is readily allowed:

(33) a. Pictures of himself$_i$, Hollande$_i$ hates _ but Putin$_j$ loves _.
    b. His$_i$ own mother, Peter$_i$ likes _ and John$_j$ hates _.
   c. Calling his$_i$ mother, the winner$_i$ of the tennis match attempted _ but the
      loser$_j$ avoided _.

Taken together, these constitute evidence that sloppy interpretation does not weaken

our ATB extraposition analysis.

5. Closing Remarks

The seemingly elliptical adjunct phrases/clauses are solely a reflex of an ATB extraposition of the shared constituent combined with conjunct raising to resolve labeling paradox. This whole course of movement process is conjectured to be functionally motivated, i.e., ease of processing (Langacker 1974, Huddleston 1984, among others).[8] Interestingly, not only 'heavy' materials but also a variety of expressions can undergo shifting to the sentence final position if that operation makes processing any easier (cf. Fiengo 1974).

References

Chomsky, Noam. 1977. On wh-movement. In P. Culicover, T. Wasow and A. Akmajian, eds., *Formal Syntax*, 71-132. New York: Academic Press.

Chomsky, Noam. 2013. Problems of projection. *Lingua* 130, 33-49.

Chomsky, Noam. 2015. Problems of projection: Extensions. In E. Domenico, C. Hamann and S. Matteini, eds., *Structures, Strategies and Beyond: Studies in honor of Adriana Belletti*, 1-16. Amsterdam: John Benjamins.

Collins, Chris. 2015a. Relative clause deletion: 50 years later. In A. J. Gallego and D. Ott, eds., *Reflections on Chomsky's Aspects. Vol. 77 of MIT Working Papers in Linguistics*, 57-70. Cambridge, MA: MITWPL.

Collins, Chris. 2015b. Adjunct deletion. Ms., NYU.

Collins, Chris. 2017. Incomplete comparatives as ellipsis. Ms., NYU.

de Vries, Mark. 2017. Across-the-board phenomena. In M. Everaert and H. van Riemsdijk, eds., *The Wiley Blackwell Companion to Syntax*, 1-31. Wiley-Blackwell.

Fiengo, Robert. 1974. *Semantic Conditions on Surface Structure*. Doctoral dissertation, MIT.

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[8] We admit that some experimental studies need to be conducted in order to verify this. At the moment, we leave this for future research.

Huddleston, Rodney. 1984. *Introduction to the Grammar of English*. Cambridge: Cambridge University Press.

Johnson, Kyle. 2009. Gapping is not VP ellipsis. *Linguistic Inquiry* 40(2), 289－328. Retrieved March 8, 2010, from Project MUSE database.

Langacker, Ronald. 1974. Movement rules in a functional perspective. *Language* 50, 630－664.

Moro, Andrea. 2011. Clause structure folding and the wh－in－situ effect. *Linguistic Inquiry* 42, 389－412.

Park, Myung－Kwan. 1994. *A Morphosyntactic Approach to Korean Verbal Inflections*. Doctoral dissertation, UConn, Storrs.

Zhang, Niina Ning. 2010. *Coordination in Syntax*. Cambridge, U.K.: Cambridge University Press.

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