Wh-Determiner Sharing*

Duk-Ho Jung
Korea University

1. Introduction

In some coordinate structures, certain determiners appears to be shared between (or among) conjuncts. Consider the following examples from McCawley (1993: 245):

1. a. The duck is dry and the mussels (*are) tough.
   b. Your daughter is 16 and your son (*is) 17-1/2.

In (1), the D the or your in the second conjunct is unpronounced in its designated position; in this sense, such constructions have been called Determiner Sharing (DS).

One of the main properties of DS is that it is dependent on Gapping: (1a) and (1b) should accompany Gapping of are and is in the second conjunct, respectively. Inspired by McCawley (1993), many literatures have investigated DS constructions based on the link between Gapping and DS (Johnson 2000, Ackema & Szendröi 2002, Citko 2006, etc.).

However, the sharing of wh-determiners (Wh-Determiner Sharing (WDS)) appears to be distinct from DS in terms of Gapping: Some cases of WDS also show the dependency on Gapping as in (2), but certain others do not accompany Gapping at all as in (3):

2. That is Davenport College, whose exterior is Gothic, and whose interior (*is) Georgian. [Lin 2000: 283]

3. I began to wonder how many paintings will never be seen, how many songs will never be heard, and how many books will never be read because of wars yet to come. [McCawley 1993: 245]

* I thank to Jeong-Seok Kim for helpful comments and suggestions. The idea of this paper is also benefitted from the participants of GLOW for Young Scholars (2011) as well as the 13th Seoul International Conference on Generative Grammar. Of course, all the errors and omissions are mine.

1 The strike-through notation is used as a neutral marker to indicate that the lexical element is not present in the designated place; it does mean that the target element undergoes deletion operation.

2 The syntactic status of whose as well as how many is not quite clear. Some literatures treat how many as a head D0 like the (McCawley 1993, Ackema and Szendröi 2002, Arregi and Centeno 2005, Citko 2006, Kasai 2007, Kim 2011), but some others regard them as a phrase (Lin 2002). For the sake of convenience, this paper treats them as a head. Definitely, however, it needs further study.
Similar to the DS construction in (1), the WDS of the relative wh-D whose in (2) requires Gapping of *is* in the second conjunct. In contrast, in (3), where the interrogative wh-D how many is shared, Gapping does not occur. The discrepancy on Gapping in WDS constructions indicates that the nature of WDS might be distinct from that of DS.

In fact, since McCawley (1993), various analyses for DS constructions have been proposed (Lin 2000, 2002, Ackema & Szendröi 2002, Arregi & Centeno 2005, Citko 2006, Kasai 2007, Kim 2011), and WDS has been regarded as a type of DS constructions. Usually, the analysis for DS has been extended to explain WDS; thus, no satisfactory dividing line has been drawn between WDS constructions that require Gapping and those that do not.

Given this, this paper examines the non-uniform requirement on Gapping in WDS constructions, arguing for their idiosyncrasy. Section 2 notes the distinct property of WDS, and section 3 discusses the mechanism of WDS in a multiple dominance (MD) framework. In section 4, I propose that the idiosyncrasy of WDS stems from the nature of the shared wh-determiners: Relative wh-determiners and interrogative wh-determiners. Accordingly, WDS of interrogative wh-Ds (WDS-I) and WDS of relative wh-Ds (WDS-R) involve different operations (so divergent from DS). Concluding remarks follow in section 5.

2. Distinctness of WDS: Non-Uniform T-Sharing Requirement

As reported by McCawley (1993), WDS is similar to DS. For example, a shared D or Wh-D should be at the conjunct-initial position (McCawley 1993: 246):

(4) a. Too many films are reviewed by Ebert and too many concerts are reviewed by von Rhein.
   b. * Ebert reviews too many films and von Rhein reviews too many concerts.

(5) a. How many cathedrals are there in Hartford, or how many opera houses are there in Detroit?
   b. * In Hartford, how many cathedrals are there, or in Detroit, how many opera houses are there?

In (4a) and (5a), the shared D *too many* or wh-D *how many* is in the initial position of the second conjunct. However, if they are not left-edged as in (4b) or (5b), the sentences are bad. It indicates that the shared D or wh-D should be in the left-edge position of the conjunct.

Still, not all the properties of DS are common to WDS. Among others, as discussed in section 1, WDS constructions are not uniformly dependent on Gapping. In fact, the notion of
Gapping dependency of DS needs to be refined. As Lin (2002) reports, DS constructions seem to be acceptable with sharing of T (T-sharing) when the T is not fused with V (p. 88-89):

(6) a. The girls will drink whisky, and the boys (*will) drink wine.
   b. The boys will wash the dishes, and the girls (*will) mop the floor.

Whether the verbs in both conjuncts are same as in (6a) or different as in (6b), DS constructions are acceptable with T-sharing: DS does not necessarily accompany V-Gapping.

Lin (2002) further observes that some cases of WDS also require T-sharing (p. 107):

(7) We’re looking for the child you told us about, whose brother might present a slide show, and whose sister (*might) give a linguistics talk.

For the WDS construction (7) to be grammatical, the T might in the second conjunct should be shared. It may show that WDS also seems to be subject to the T-sharing requirement.

However, some WDS constructions do not necessarily accompany T-sharing. Consider, for example, the following (cf. Ackema & Szendröi 2002: 29):

(8) I began to wonder how many paintings will never be seen, how many songs (will) never be heard, and how many books (will) never be read because of wars yet to come.

In (8), the wh-D how many is shared among conjuncts, but the T will need not be missing in the second and the third conjunct. Thus, WDS appears to be distinct from DS in terms of T-sharing: While always obligatory in DS, T-sharing is not uniformly required in WDS cases.

Notice that (7) and (8) involve different kinds of wh-determiners: Whose in (7) is a relative wh-D, and how many in (8) is an interrogative wh-D. In other words, the T-Sharing requirement is sensitive to the type of wh-determiners. WDS of relative wh-D (WDS-R) necessarily accompanies T-sharing but WDS of interrogative wh-D (WDS-I) does not. As suggested in Arregi & Centeno (2005: fn. 14), such non-uniformity in WDS can be attributed to the distinct nature of the two types of wh-determiners.

In this respect, the nature of wh-elements is to be explored. Before getting into this, I will discuss the nature of WDS within a multiple dominance (MD) framework.

---

3 Judgments on such a construction vary. See, for example, Ackema & Szendröi (2002: 30).
3. The Nature of WDS: A Multiple Dominance Approach

McCawley (1993) points out that the unpronounced Ds in the subsequent conjuncts are identical to the determiner in the first conjunct. In the sense of McCawley, one D functions in more than one DP in such constructions, as shown below (cf. McCawley 1993: 251):

\[(9) \text{ How many states have a veterinary school or how many cities have a zoo?} \]

In line with McCawley (1993), Citko (2006) and Kasai (2007) assume that a sole D exists in a WDS or DS construction, and it heads the DPs in each conjunct. In (9), the single D how many is doubly-dominated by DP₁ and DP₂ simultaneously; it is shared between two DPs.

Then, linearizing the shared element is a challenging task. In (9), how many precedes its complement states in DP₁; in DP₂, it precedes cities. Since DP₁ belongs to the first conjunct and DP₂ belongs to the second, DP₂ should follow DP₁; thus, how many should precede and follow states at the same time—a paradox. As discussed in Kim (2011), however, the problem can be resolved under two assumptions: the coordinate structure of Munn (1993) and the Multiple Spell-Out hypothesis (Uriagereka 1999).

\[(10) \text{ Prior Spell-Out of the second conjunct (} \alpha P_2) \]

Munn (1993) proposes that in a coordinate structure, the first conjunct takes the subsequent ones as its adjuncts. As in (10), the first conjunct \( \alpha P_1 \) takes the second conjunct \( \alpha P_2 \) within Co(ordinator)P as its adjunct. In such a structure, before CoP is adjoined to \( \alpha P_1 \) as in (10a), the relative order of \( \alpha \) in relation with \( \beta \) and \( \gamma \) cannot be determined because \( \alpha P_1 \) and CoP are independent from each other. However, under the Multiple Spell-Out hypothesis (Uriagereka 1999), \( \alpha P_2 \) should be spelled-out (linearized) before adjoining to \( \alpha P_1 \) as in (10b). At this point,

---

\[4 \text{ Various analyses have been proposed to explain the sharing effect of DS. See Johnson (2000), Lin (2000, 2002), and Arregi & Centeno (2005) for the DP-Partitioning analysis, and Ackema & Szendrői (2002) for the Dependent Ellipsis analysis.} \]
\(\alpha\) cannot be linearized, so it fails to be spelled-out and disconnected from the second conjunct in terms of linear order (the dotted line). Consequently, \(\alpha\) belongs only to \(\alpha P_1\) as in (10c), and becomes linearizable. I assume that this is the mechanism of WDS (or DS).

It, then, can signify that any elements multiply-dominated across conjuncts can be linearized in the first conjunct without a problem. However, such a statement is too powerful. It wrongly predicts that any MD structure is allowed if the multiply-dominated element is shared across conjuncts. Above all, it cannot capture the left-edge condition in WDS:

(11) * In Hartford, how many cathedrals are there, or in Detroit, how many opera houses are there?

As discussed in section 2, the shared wh-D should be left-edged in the conjunct, but in (11), the shared wh-D how many is is not left-edged in the second conjunct. The unacceptability of (11), however, is not predicted in the sense of (10): The Spell-Out of the CoP isolates how many from the DP\(_2\), so there is no linearization problem for how many—an overgeneration.

In this respect, a restriction should be put on the linearization of MD structures among conjuncts. Various arguments have been proposed. For instance, Citko (2006) proposes that a shared element should be dislocated from the multiply-dominated position. Kasai (2007: 62) and Kim (2011) further argue that it is not enough: A shared element should move out of the coordination site. As this paper does not aim to exhaust the nature of the linearization of MD structures, I will not elaborate this discussion. Instead, I take the argument of Kasai (2007) and Kim (2011): A shared wh-D should escape the coordination site.

4. The Proposal: WDS as Distinct from DS

As discussed in section 2, T-sharing is obligatory in WDS of relative wh-Ds (WDS-R) but optional in WDS of interrogative wh-Ds (WDS-I). In this section, Following Rizzi (1990) and Kim (1997), I propose that this non-uniform T-sharing requirement is attributed to the distinct nature of wh-relatives and wh-interrogatives.
4.1. Sharing of Relative Wh-Determiner (WDS-R): $\emptyset_R$ and [+pred]

Rizzi (1990) argues that wh-relatives have a unique feature [+pred], which needs to be licensed by a special complementizer for relative clauses in overt syntax.\(^5\) In English, $that_R$ and $\emptyset_R$ are the relative Cs, which also have [+pred] as in (12).

\[(12)\]
\begin{align*}
\text{a. } & that_R: [+pred], [-wh] \\
\text{b. } & \emptyset_R: [+pred], [+wh]
\end{align*}

(13) a. * The thing $[\text{CP which}_1 that_R [\text{TP}_1 \text{t} \text{happened}]]$ is terrible.

b. The thing $[\text{CP which}_1 \emptyset_R [\text{TP}_1 \text{t} \text{happened}]]$ is terrible.

According to Rizzi, $that_R$ and $\emptyset_R$ license relatives in a complementary manner: $\emptyset_R$ has [+wh], so it licenses wh-relatives; $that_R$ is specified for [-wh], so it licenses a null relative operator OP. Thus, as in (13), the wh-relative which is licensed by $\emptyset_R$ but not by $that_R$.

With such assumptions, consider the following WDS construction:

\[(14)\]
\begin{align*}
\text{We’re looking for the child you told us about, } & \text{[whose brother might present a slide show, and whose sister might give a linguistics talk].} \\
\text{[Lin 2002: 107]}
\end{align*}

(14) shows the unacceptable WDS construction that does not accompany T-sharing: The relative wh-D whose is doubly-dominated by two DPs (i.e., shared) but the T might is not missing in the second conjunct. The T-sharing requirement on WDS of relative wh-Ds (WDS-R) can be easily captured. As suggested in section 3, a shared wh-D should escape the coordination site in order to be linearized (Kasai 2007, Kim 2011). In (14), however, whose fails to escape from the coordinated CP; i.e., it is ineligible for linearization.

Then, what if TPs are coordinated? Notice that TP-coordination is not a valid option, too:

(15) The Temple of Iris, whose exterior\textsubscript{1} [\textit{TP} [\textit{TP} the Romans will destroy \textsubscript{t\textsubscript{1}} in Act I] [\textit{CoP} and [\textit{TP} whose \textit{interior}\textsubscript{2} the Greeks \textit{T'} will build up \textsubscript{t\textsubscript{2}} again in Act III]]]], is a fine piece of architecture. \[\text{Ackema and Szendr\H{o}i 2002: 30}\]

In (15), there are two problems: In the second conjunct TP, the location of (\textit{whose}) \textit{interior} within TP and the motivation of the movement is not clear. As generally assumed, TP does not have more than one specifier, so it is not possible to move \textit{whose interior} to Spec of TP that is occupied by \textit{the Greeks}. It might be adjoined to TP, but there is no independent reason.

If WDS-R is accompanied by coordination of smaller conjuncts than TP (Johnson 2000, Lin 2002, Citko 2006), then we can make use of the edge of vP phase:

(16) The Temple of Iris, [whose exterior the Romans will destroy in Act I and whose \textit{interior} the Greeks \textit{will build up again in Act III}], is a fine piece of architecture.\footnote{The movement of \textit{the Romans} to Spec of TP violates the Coordinate Structure Constraint (Ross 1967). Johnson (2000) and Lin (2000, 2002), however, this type of movement is allowed. In addition, some literatures argue that CSC is not a syntactic constraint but a semantic constraint (e.g., Goldsmith 1985, Culicover & Jackendoff 1997). I leave it for the further research.}

With vP-coordination, the DP whose \textit{interior} in the second conjunct can be left-edged using the edge of vP phase in (16). Then what is the motivation of the movement of whose \textit{interior}? I propose that the movement is triggered by vP phase which requires the undigested [+pred] to be placed in its edge position (cf. Chomsky 2000, 2001, 2004).\footnote{An uninterpretable feature may drive its host to drop by Spec of vP (Hornstein et al. 2005: 361):
(i) Which picture of himself\textsubscript{1} does John\textsubscript{2} \textit{\textsubscript{vP} t\textsubscript{1} t\textsubscript{2} expect [\textit{TP} Mary to buy \textsubscript{t\textsubscript{1}}]]?} Since a phase requires any

---

\footnote{\textit{...}
unlicensed feature holder to be placed in its edge (to remain accessible to the next phase), [+pred] of a relative wh-D in a DP prompts the DP to move to Spec of vP. Thus, whose interior in (16) moves to Spec of the second conjunct vP and left-edged. Subsequently, the shared whose within whose exterior in the first conjunct escapes from the coordination site to check its [+pred], which makes it linearizable.

To recapitulate, WDS-R cannot occur in CP-coordination since the shared wh-D cannot escape the coordination site to be linearized. TP-coordination is also problematic in capturing the effect of the left-edge property of WDS. In this respect, the obligatory of T-sharing in WDS-R can be naturally obtained: WDS-R is always accompanied by coordination of smaller conjuncts than TPs, so T should be missing in the subsequent conjuncts.

4.2. Sharing of Interrogative Wh-Determiner (WDS-I): ΣP and [+x]

Consider the following (Munsat 1986: 203-204):

(17) a. Does John know [where₁ Fred lives t₁]?
   b. * Where₁ does John know [t₁ Fred lives t₁]?

The embedded clause in (i) is a TP without a CP layer (the exceptional Case-marking case). The fact that John can bind himself (co-indexed with the superscripted i) indicates that the DP which picture of himself passes through a position lower than John but higher than Mary. Lacking CP, however, there is no intermediate station for the DP in the embedded TP. If the DP with an uninterpretable feature (e.g., [+wh]) also stops at Spec of vP, then it drops by matrix vP where himself can be bound by John.

8 When, however, there is no vP, such a movement is not available; thus, the shared wh-D cannot be left-edged with the help of vP phase. I suggest that there is also a phase in a vP-less verbal predicate. Butler (2004) proposes that being “truth-evaluable” (p. 96) is what defines a phase, arguing that vP as well as CP can be negated (so truth-evaluable). Consider the followings (Butler 2004: 99):

(i) a. kalke gaRi ‘start’ hoi ni yesterday car start become.3RD NEG.PAST
   ‘Yesterday, the car didn’t start (at all).’
   b. kalke gaRi ‘start’ hol-o na yesterday car start become.PAST-3RD NEG
   ‘Yesterday, the car didn’t start (but then the neighbor came and fixed it).’

As reported in Ramchand (2004), Bengali has two negations: ni or na. Ni has past tense morpheme, implying that the car had not started all day long as in (ia). However, na does not have such tense morpheme and it only negates a single situation. That is, (ib) implies that the car’s status of being unable to start was temporary. Given this, Butler (2004) proposes that ni negates CP while na negates vP; thus, being truth-evaluable can qualify vP as well as CP as a phase.

Bringing this idea into the present discussion, I suggest that if a phase is identified by the property of being truth-evaluable, then vP-less verbal phrases also can also be truth-evaluable. If a vP can be a target of negation, then a vP-less VP can as well, so there can be a phase between VP and TP even when there is no vP (cf. Chomsky 2008: 147).
Wh-Determiner Sharing (Duk-Ho Jung)

(18) a. * Does John believe [where₁ Fred lives t₁]?
b. Where₁ does John believe [t₁ Fred lives t₁]?

In terms of semantics, the factive verb know is distinguished from a non-factive verb believe: Know presupposes its complement, but believe does not (Hooper 1975, Simons 2007). Moreover, know and believe are syntactically distinct. As in (17), the wh-interrogative where cannot move up to the matrix clause when it is generated inside the complement clause of know. When the verb is a non-factive verb such as believe in (18), however, the wh-interrogative who should move up to the matrix clause.

Regarding the semantic and syntactic difference between believe and know as lexical, Munsat (1986) assumes that they select different types of complements. According to Munsat, the factive know can select a CP headed by a wh-C “wh-that” but the non-factive believe only selects a CP headed by a non-wh-C “that” (p. 107).

(19) a. [Does+wh-Q [John know [wh-somewhere₁+wh-that [Fred lives t₁]]]]?b. [wh-somewhere₁+wh-Q does [John believe [that [Fred lives t₁]]]]?

By assumption, wh-somewhere adjoins to wh-that or wh-Q, forming where in terms of morphology. In (19a), wh-somewhere is combined with wh-that, which is the head of the complement CP of the factive know. The non-factive believe takes only the that-type CP as its complement, so wh-somewhere cannot be licensed in the embedded clause as in (19b). Hence, wh-somewhere moves up to the matrix CP and is conjoined with wh-Q.

In line with Munsat (1986), I propose that the factive know and the non-factive believe select different types of complement: Know can select ΣP but believe only selects CP:

(20) a. [VP know [ΣP ∅Σ [CP …]]]b. [VP believe [CP …]]

As discussed above, the factive know makes its complement proposition presupposed, while believe does not. I assume that Σ marks such information, so the Σ-less complement of believe as in (20a) is not presupposed unlike that of know as in (20b).

In terms of presupposition, Σ coincides with wh-interrogatives. While a wh-relative is always referentially linked to its antecedent, a wh-interrogative is non-referential. Oshima (2007) argues that as a variable, a wh-interrogative creates a presupposed open proposition:
(21) a.  Who laughed?  (Presupposition: ‘x laughed.’)  
b.  {John, Mary, Susan, Bill, …} laughed.

In (21a), the open proposition ‘x laughed’ is presupposed by virtue of the wh-interrogative who. According to Oshima, the open slot ‘x’ can be instantiated by particular constants such as John, Mary, Susan, etc. as in (21b). In this respect, I propose that the variable nature of wh-interrogatives can be represented as a feature [+x] (cf. Kim (1997)). 9 By assumption, in English, [+x] in wh-interrogatives should be licensed by ΣP in overt syntax:

\[(22)  \begin{align*}
&\text{a. } \text{know } [\SigmaP \text{wh}_{+[x]} \Sigma [\text{CP } \ldots \text{]}] \\
&\text{b. } \text{believe } [\text{CP } \text{wh}_{+[x]} \text{ØC } [\text{TP } \ldots \text{]}]
\end{align*}\]

In (22a), the interrogative wh-element wh_{+[x]} moves to Spec of the embedded CP because CP is a phase and wh_{+[x]} still has its unchecked feature [+x] (cf. section 4.1). Then, it further moves to Spec of ΣP, where it checks its [+x] in a Spec-head configuration with Σ. 10 Once its [+x] is licensed, wh_{+[x]} becomes inactive for the subsequent movement, being stuck at Spec of the ΣP. In (22b), however, as believe takes CP complement, the wh_{+[x]} remains active in Spec of CP; hence, it should further move to the matrix clause in order to be licensed.

---

9  Kim (1997) proposes that wh-interrogatives have [+focus]. According to Kim, [+focus] “represents accented new information,” so it is natural to assume that the non-referential, so inherently contrastive wh-interrogatives contain [+focus] as well as [+wh] (p. 44). Then, a wh-interrogative necessarily undergoes two operator-movement, i.e., focalization and wh-movement, which is problematic in the sense of Bošković (2008). In this paper, however, [+wh] is not postulated; instead, [+wh] is specified into [+pred] for wh-relatives and [+x] for wh-interrogatives. See footnote 10 for further discussion.

10  Bošković (2008) argues that an operator cannot undergo more than one operator-movement (e.g., topicalization, focalization, quantifier raising, and wh-movement). For example, when a wh-operator is topicalized, then the construction becomes unacceptable:

(i) * Who, does Mary detest?

In (i), who is topicalized. In the sense of Bošković, the ungrammaticality of (i) can be attributed to the unchecked uninterpretable wh-feature (uWh) in C^0. As who undergoes topicalization, it cannot further move to Spec of CP to check the uWh in C^0 (the Operator Freezing Effect). Such a freezing effect results from checking of uninterpretable OP-feature (uOP) in the operator. Once who moves to Spec of Top(ic)P, the uOP in who is checked, so it is not active to another operator-movement anymore because no uninterpretable feature remains (cf. the Activation Condition in Chomsky (2000, 2001)).

In the current proposal, however, the subsequent movement of a wh-interrogative from Spec of CP to Spec of ΣP is not problematic. A movement to Spec of CP is not an operator-movement in this case; i.e., unlike the movement of relative operators which licenses [+pred] in Spec of CP (section 4.1), the movement of a wh-interrogative does not license any operator-related features. It is triggered by the CP phase which requires the undigested [+x] to be placed in its edge position. As the actual licensing of [+x] occurs in Spec of ΣP, even if the movement of wh-interrogatives to Spec of CP is caused by [+x], it is not an operator-movement in the sense of Bošković (2008).
Then, there should be $\Sigma P$ in the matrix clause level. Consider the following:

(23) Where does John believe Fred lives?

In (23), the wh-interrogative *where* is licensed in the matrix clause. It indicates that a $\Sigma P$ exists there and *where* can be raised to Spec of the matrix $\Sigma P$ to check its [+x] in overt syntax.

Given these assumptions, WDS of interrogative wh-Ds (WDS-I) is to be examined. As discussed in section 2, T-sharing is optional in WDS-I. When WDS-I accompanies T-sharing, the coordination targets smaller conjuncts than TPs similar to the case of WDS-R:

(24) I began to wonder [how many paintings Mary will never see, and how many songs Bill will never hear] because of wars yet to come.\(^{11}\)\(^{12}\)\[^{[Kim 2011: 41]}\]

In (24), the two vPs are coordinated with the doubly-dominated wh-D *how many*. As the [+x] is not licensed, the DPs headed by *how many* moves to the Spec of vP in each conjunct; the DP in the second conjunct is left-edged. The DP *how many paintings* further moves up to the $\Sigma P$ above CP in order to check its [+x]. The movement escapes the DP from the coordination site, so *how many* becomes linearizable (Kasai 2007, Kim 2011).

When larger conjuncts than TPs are coordinated, T-sharing is not accompanied with WDS-I (Ackema & Szendrői 2002, Arregi & Centeno 2005, Kim 2011):

---

\(^{11}\) Kasai (2007: 43, fn. 4), however, judges (24) as unacceptable.

\(^{12}\) It is not clear whether *wonder* is a factive verb. However, Abusch (2009: 54) notes that *wonder* also triggers a presupposition. In this respect, I assume that *wonder* also selects $\Sigma P$ as its complement.
(25) I began to wonder [how many paintings Mary will never see, and how many songs Bill will never hear] because of wars yet to come.     [Kim 2011: 41]

As in (25), when CPs are coordinated, the T will is not missing in the second conjunct. The construction, however, is not problematic at all. By virtue of CP phase, the DPs dominating how many are moved to Spec of CP and left-edged. Still, the [+x] in how many is not licensed, so how many paintings is further moved to Spec of \(\Sigma\). As a result, how many escapes the coordination site, and becomes linearizable. TP-coordination is problematic in left-edging the shared wh-D how many in the second conjunct, as discussed in section 4.1 (see (15)).

In sum, assuming [+x] in wh-interrogatives and its licenser \(\Sigma\) above CP, the optionality of T-Sharing in WDS-I can be explained by the height variation of the target of coordination. Unlike WDS-R, WDS-I is also compatible with CP-coordination. As T-sharing does not occur when CPs are coordinated, WDS-I can occur without T-sharing. When smaller conjuncts than TPs are coordinated, WDS-I accompanies T-sharing as in the case of WDS-R.

5. Conclusion

In this paper, I propose that Wh-Determiner Sharing (WDS) occurs when a wh-determiner is multiply-dominated across conjuncts. Through a series of cyclic Spell-Outs, the shared wh-determiner becomes missing in the subsequent conjuncts. However, due to the different licensing conditions for wh-relatives and wh-interrogatives, sharing of relative wh-Ds (WDS-R) and interrogative wh-Ds (WDS-I) consist of different operations. As the result, WDS-I is compatible with a more flexible range of coordination than WDS-R, which enables WDS-I to accompany T-sharing optionally.

As pointed out by Lin (2000) or Kasai (2007), judgments on WDS constructions are not crystal-clear compared to the major linguistic phenomena in the field of syntax. To the extent that the data is accurate, this paper can provide an argument for the featural distinction between wh-relatives and wh-interrogatives as in Rizzi (1990) or Kim (1997). Moreover, it
provides another piece of evidence for MD structures in syntax, as Citko (2005) or Kasai (2007) does, affirming the Multiple Spell-Out hypothesis of Uriagereka (1999).

References


Lin, Vivian (2002) Coordination and sharing at the interfaces, Ph.D. dissertation, MIT.


Ross, John R (1967) Constraints on variables in syntax, Ph.D. dissertation, MIT.

Watanabe, Akira (1991) Wh-in-situ, subjacency, and chain formation, ms., MIT.