1 Introduction

All languages have coordinate constructions. Although generative grammar, including recent work within the Minimalist framework, has made much progress in reducing various types of construction-specific syntax to the minimum, it has not answered the following four fundamental questions:

A. Does the derivation of coordinate constructions create any special syntactic configuration, other than the general binary complementation and adjunction configuration?
B. Does the derivation of coordinate constructions resort to any special syntactic category, other than NP, VP, and so on?
C. Is the derivation of coordinate constructions subject to any special constraint on syntactic operations, other than general conditions such as the Minimal Link Condition?
D. Does the derivation of coordinate constructions require any special type of syntactic operations, other than Merge and the step-by-step, one-tail-one-head chains of Move?

In this monograph, my answer to all of these four questions is negative. I argue against any special syntax of coordination. Consequently, no special syntax is the real syntactic law of coordination, just as the Minimalist program would lead us to expect.

However, the standard answer to Question A is affirmative. Coordination has hitherto enjoyed the exclusive privilege of the flat multiple branching structure, as shown in (1.1a), which can be found in nearly all linguistics textbooks.

(1.1) a. conjunct coordinator conjunct

b. conjunct coordinator conjunct

The binary-branching structure of coordination shown in (1.1b) has occasionally been proposed (Yngve 1960: 456; Thiersch 1985; Munn 1987; Kayne 1994; Zoerner 1995; Johannessen 1996; among others). However, the key
arguments against the binary-branching structure summarized by Dik (1968) have never been refuted. For instance, if the combination of a coordinator and one conjunct is a constituent, excluding the other conjunct, why is it never able to undergo any regular movement? Since questions like this have not been answered, the two opposing analyses still co-exist in the literature. However, binary vs. not binary should be an issue of truth, rather than taste. In this monograph, I not only answer Dik’s challenges to the binary structure analysis, but also present a variety of new arguments to show that coordinate complexes have a complementation structure, rather than any coordination-specific structure. My arguments thus indicate that the relationship between two conjuncts is that between a specifier (external conjunct) and a complement (internal conjunct), with the head realized by the coordinator. Unlike previous binary approaches (Munn 1993; Johannessen 1998; among others), I do not consider morphological agreement in my argumentation. Since Koutsoudas (1968), it has been noted that verbs may agree with the closest conjunct of a coordinate nominal, regardless of whether they precede or follow the nominal. This adjacency effect has been accounted for from a processing perspective (e.g. Lorimor 2007; Steiner 2008). Moreover, it has long been observed that the denotation of coordination also plays a role in agreement (e.g. McNally 1993: 363; Huddleston and Pullum 2002: 1283). Since in many cases morphological agreement in coordinate construction is a processing or semantic issue, it cannot be used to argue for any special structure of coordinate complexes. Instead, I use facts like the following to argue for the structure in (1.1b): the asymmetry of conjuncts in binding, in possessee pronominalization, in hosting coordinators, and in coordinator floating.

Question B concerns the syntax of the categorial makeup of coordinate complexes. In the literature, there are basically two approaches to this issue. In the traditional approach, it has been assumed that the category of a coordinate complex is simply that of the conjuncts. However, if the two conjuncts are of different categories, like the nominal and clause in (1.2a) and the nominal and PP in (1.2b), this approach does not tell us what the category of the whole coordinate complex is and where it comes from.

(1.2) a. You can depend on [my assistance and that he will be on time]. (Sag et al. 1985: 165)

b. John eats only pork and only at home. (Grosu 1985: 232)

The other approach is to claim that the category of all coordinate complexes is &P (or CoP, ConjP, BooleanP), a special category exclusively for coordinate constructions (Munn 1987; 1993; Zoerner 1995; Johannessen 1996; among
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I show that &P is both theoretically and empirically problematic. I argue that in coordinate complexes headed by coordinators without any intrinsic categorial features, like English and, the categorial features of a designated conjunct move and provide the category features for the whole coordinate complex. Thus, the category of a coordinate complex is always that of one of the two conjuncts. The category feature movement argued for here not only removes the problematic &P from the computation system, but also gives a simple answer to Question C.

The main issue of Question C is how to account for the effects of the Coordinate Structure Constraint (CSC, Ross 1967). This constraint is composed of two parts: no conjunct may be moved (the Conjunct Condition, CC), and no element may be extracted from conjuncts (the Element Condition, EC). The CC and EC are illustrated in (1.3a) and (1.3b), respectively.

(1.3) a. *Which boy did John kiss [, and which girl]? (CC violation)
   b. *What kind of herbs did you [[eat ,] and [drink beer]]? (EC violation)

On the one hand, the CSC has been regarded as “the most problem-free syntactic constraint ever discovered” (Postal 1998: 52), but on the other hand, it has remained as the only construction-specific constraint in generative syntactic theory. When Riemsdijk and Williams (1986: 28) introduce various constraints, they state “All the principles discussed here have since been modified, generalized, or replaced. The fate of the CSC has been somewhat different, however, because it has not interacted with the other constraints under these revisions.” The CSC has survived for more than 40 years. It still challenges generative linguistics, including the Minimalist program, which aims to abolish all construction-specific constraints.

This monograph makes two contributions to syntactic theory with respect to the CSC.

First, I review data showing that both the CC and the EC may be violated. Representations that violate the CSC are fully acceptable if they satisfy a Relativized Parallelism Requirement, a processing filter. The Relativized Parallelism Requirement is satisfied if conjuncts are semantically related to each other, or if conjuncts show resemblance in semantic type and movement history.

Second, I propose a new account for the observed CSC effects. The observed EC effects are explained by deviation from the Relativized Parallelism Requirement alone, and the observed CC effects are explained by the combination of two factors: deviation from the Relativized Parallelism Requirement, and the special lexical properties of and-like coordinators. These properties are revealed when we compare such coordinators with those that have intrinsic
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categorial features, as in Chinese. Our proposed category feature movement, which answers Question B above, accounts for the CC effects in coordinate complexes headed by and-like coordinators. The categorial feature movement from the external conjunct (i.e. first conjunct, in English) to the coordinator brings about the effect that the conjunct may not move any more, since its moving carrier, i.e., its categorial features (Chomsky 1995: 265), have gone. Coordinators with c-selectional restrictions as well as null coordinators do not need this categorial feature movement, and consequently the external conjunct may move. By contrast, the internal conjuncts can never move away from coordinators, since the latter, like many other types of head elements, may not be stranded. This correctly predicts that internal conjuncts may move if the coordinators are null.

Evidence for my new explanation of CSC effects comes from a wide range of empirical studies, including detailed studies of comitative constructions, a study of other types of head elements that also have no intrinsic categorial features, and asymmetrical coordination in both English and Chinese.

Theoretically, this new account of the CSC is plausible. In the Minimalist program, movement is driven by morphological considerations (Chomsky 1995: 262). Logically, it is also possible that the blocking of movement is related to morphological properties of specific syntactic elements, in addition to the generally recognized locality restrictions.

Empirically, one sees in this monograph that removing the CSC from the computational system also enables us to understand the syntactic derivations of three apparently puzzling constructions: Split Argument Constructions in both English and Chinese, as in (1.4a) and (1.5a) (cf. (1.4b) and (1.5b)), Modifier-Sharing Constructions in English, as in (1.6), and Interwoven Dependency Constructions in both English and Chinese, as in (1.7).

(1.4) a. John married Jane.
    b. [John and Jane] married.

(1.5) a. Tudou yijing shao-le niurou. [Chinese]
    potato already cook-PRF beef
    ‘The potatoes have already been cooked with the beef.’
    b. Baoyu shao-le [tudou gen niurou].
    Baoyu cook-PRF potato and beef
    ‘Baoyu cooked the potatoes and the beef.’ (either separately or together)

(1.6) John met a man and Mary met a woman who knew each other well.

(1.7) How many frogs and how many toads did respectively Greg capture and Lucilli train?
These constructions seem to be in conflict with certain basic syntactic laws observed elsewhere: theta-role licensing and the general semantics–syntax mapping stated in Baker’s (1988; 1997) Uniformity of Theta-Assignment Hypothesis, the identification of the syntactic relation between modifiers and their split modified elements, and the identification of the launching site of certain movement operations. As stated in the final sentence of Postal (1998), the challenges brought by such constructions can be avoided only under pain of maintaining a theory that denies that these constructions actually occur in natural languages. In this monograph, I propose syntactic derivations for the three constructions that require us to set aside the CSC. Specifically, both Split Argument Constructions and Modifier-Sharing Constructions are derived by conjunct raising, and Interwoven Dependency Constructions are derived by element extraction from conjuncts. Thus, giving up the CSC may strengthen the explanatory power of syntactic theory.

Finally, Question D asks how the Minimalist program explains the derivation of Across-the-Board (ATB) constructions, as in (1.8a), which have motivated so-called ATB movement, illustrated in (1.8b) (Ross 1967; Williams 1977).

(1.8) a. Who did Jim like and Jane hate?
   b. Who did Jim like _ and Jane hate _? (ATB movement)

This alleged operation is specific to coordinate constructions. Unlike all other movement chains, the chain of ATB movement is forking, with two tail links. By contrast, I argue that ATB constructions are derived by the extraction of a relational expression from just one conjunct, with a binding dependency between the relational expression and a silent pronominal element in the other conjunct. Both the extraction operation and the pronoun binding dependency are motivated independently of coordinate complexes. Thus this proposed derivation does not require any ad hoc forking chains of movement.

In the course of addressing these four fundamental questions, many other empirical issues are investigated more deeply in this monograph than ever before, including certain conjunct-internal coordinators in Chinese and other languages, coordinators that cannot be used in collective contexts, the syntactic relationship between coordinate constructions and comitative constructions in Chinese, the derivation of the identity relation construction such as *The same man Mary helped and Jane ruined*, as well as the syntactic derivations of the constructions represented by (1.4a), (1.5a), (1.6), and (1.7).

This monograph, however, does not cover all properties of coordination. As noted above, morphological agreement is not discussed in this monograph, and
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neither are Right Node Raising, reduction forms such as gapping, VP ellipsis, and sluicing, or diachronic aspects of coordination.

The monograph has four main parts, in addition to this introduction and the final concluding chapter. Part I (Chapter 2) deals with question A; Part II (Chapter 3) deals with question B; Part III (Chapters 4, 5, 6, and 7) deals with question C; and Part IV (Chapters 8 and 9) deals with question D.
I No special syntactic configuration
2 The complementation structure of coordinate complexes

2.1 Introduction

A coordinate complex is a syntactic constituent consisting of two or more units (called conjuncts), and its category is identical to that of at least one of the conjuncts. Generally, there is an element (particle, clitic, affix) to link the conjuncts. Such an element is called a coordinator, which can be further classified as a conjunctive (e.g. and), disjunctive (e.g. or), and adversative coordinator (e.g. but). How two (or more) conjuncts and a coordinator are organized in a coordinate complex has been an open question: do they form a flat multiple branching structure or any version of the basic binary-branching structure? The goal of this chapter is to answer this question.

In this chapter, I examine the structure of coordinate complexes that are composed of two conjuncts. This is the basic type of coordinate complex. I will leave my discussion of coordinate complexes that are composed of more conjuncts to Chapter 3. I will also leave discussion of the category of coordinate complexes to that chapter.

The following claims have been seen in the previous literature, but have not been generally accepted. This is why it is still necessary to argue for them in this chapter:

(A) Coordinate complexes have a binary-branching structure, and thus one conjunct is structurally closer to the coordinator than the other conjunct. This constituency is not captured by the traditional flat multiple-branching representations.

(B) The head of the structure is realized by a coordinator, and the conjunct that is structurally closer to the coordinator is the complement of the head, and the other conjunct is Spec of the head.

1 De Vries (2006: 239) states that the term *conjunct* is confusing, since it refers to one of the coordinated elements, regardless of whether the coordination is conjunctive, disjunctive, or adversative. However, the term conjunct is conventional in the syntactic literature on coordination.
10 The structure of coordinate complexes

(C) The semantic relation between conjuncts does not need to be symmetrical, and thus the asymmetrical syntactic relation between conjuncts is compatible with the possibility of an asymmetrical relation in semantics.

(D) Conjuncts, which are non-projecting elements in coordinate complexes, can be of any constituency level (word-fragment, word, phrase), and this freedom in conjuncts does not affect the complementation structure of coordinate complexes.

The above four claims will be made one by one in Sections 2.2 to 2.5. Section 2.6 is a brief summary.

2.2 The binary-branching constituency of coordinate complexes

This section discusses the constituency of coordinate complexes. I will advocate a binary-branching structure for such complexes, making a syntactic distinction between internal and external conjuncts.

The hypothesis that coordinate complexes are binary has been proposed in De Groot (1949: 66, 112–113), Nida (1949: 42 fn. 25), Yngve (1960: 456), Thiersch (1985), Schachter (1985: 46), and Munn (1987). It is in contrast to the assumption that such complexes have a flat structure in which conjuncts are on the same level, while the coordinator holds them together without being more closely connected with any one of them. The two assumptions are represented in (2.1a/a’) and (2.1b), respectively.

(2.1) a. \[ \text{conjunct} \quad \text{coordinator} \quad \text{conjunct} \quad \text{coordinator} \]

or a’. \[ \text{conjunct} \quad \text{coordinator} \quad \text{conjunct} \]

b. \[ \text{conjunct} \quad \text{coordinator} \quad \text{conjunct} \]

The structure in (2.1b) has been assumed in many works, including Blümel (1914: 193, 205), Bloomfield (1933: 185), Bach (1964: 67–68), Chomsky (1965: 12–13, 196 fn.7), Dik (1968), Dougherty (1969), Gazdar et al. (1985: 170), Goodall (1987), and Muadz (1991). It is still quite popular in the current literature of coordination (e.g. Phillips 2003; Takano 2004; Peterson 2004; Wurmbrand 2008; Johnson 2008). However, the cross-linguistic facts to be presented in this section do not support this assumption. Theoretically, the binary structures in (2.1a) and (2.1a’) are also superior to the multiple-branching
2.2 The binary-branching constituency

structure in (2.1b) under economy considerations (Yngve 1960: 453; Collins 1997: 77).

I will first present evidence for the binary-branching structure in 2.2.1 through 2.2.4, and then answer Dik’s (1968) challenges against the binary-branching analysis in Section 2.2.5.

Various arguments for the binary-branching structure of coordinate complexes have been seen in the literature. Among them, I choose a representative one, namely the asymmetry between conjuncts in binding, and then add three more myself: the asymmetry between conjuncts in possessee pronominalization, in hosting regular coordinators, and in hosting floating coordinators. These arguments show the structural closeness of the coordinator to one of the two conjuncts, and thus indicate that the coordinator forms a constituent with the conjunct, as in the two structures in (2.1a) and (2.1a’).

2.2.1 The asymmetry between conjuncts in binding

A well-cited argument for the binary-branching constituency of coordinate complexes is Blümel’s (1914: 164) observation of a binding asymmetry in coordination. The first conjunct as a whole can be the antecedent of a pronoun in the second conjunct, but the second conjunct as a whole cannot be the antecedent of a pronoun in the first conjunct. Relevant English data appear in Dik (1968: 36, 57) and Moltmann (1992a: 28, 45, 50). For instance, in the coordinate complex every man and his dog in (2.2a), the first conjunct every man can be the antecedent of the pronoun his in the second conjunct. However, in the coordinate complex his dog and every man in (2.2b), the second conjunct every man cannot be the antecedent of the pronoun his in the first conjunct.

(2.2) a. Every man, and his dog left.
   b. *His dog and every man left.

Likewise, in each of the following examples, the second conjunct contains a pronoun which is co-referential with the first conjunct.

(2.3) a. [That Himmler appointed Heydrich] and [the implications thereof] frightened many observers. (Bayer 1996: 580)
   b. Pat is [a Republican] and [proud of it]. (Sag et al. 1985: 117)

In (2.3a), the word there is combined with the preposition of. In this usage, there is co-referential with the first conjunct that Himmler appointed Heydrich. In (2.3b) the pronoun it pronominalizes the whole first conjunct a Republican,