

On the Categorical Issue of Coordination

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Oct. 12, 2006

Abstract

This paper presents cross-linguistic facts showing that coordinators can c-select conjuncts. In coordinate complexes headed by *and*-like coordinators, the first conjunct determines the category of the whole coordinate complex, whereas in complexes headed by coordinators that show c-selectional restrictions, the last conjunct does. We propose that conjuncts value the categorial features of coordinators. Moreover, since coordinate complexes neither are found to have any new distribution other than that of the currently recognized categories, nor neutralize the contrasts of the currently recognized categories, they cannot represent any independent category. We conclude that there is no &P.

1. Introduction

One clear fact of coordinate constructions is that the category of the whole complex is identical to at least one of the conjuncts. The goal of this paper is to analyze this categorial feature unification.

In the generative literature of syntax of coordination, it has long been proposed that coordinators are head elements (De Groot 1949: 112, 222-223, Pesetsky 1982, Thiersch 1985, Munn 1987, 1992, 1993, Woolford 1987, 1994, Collins 1988, Kolb & Thiersch 1991, Anandan 1993: 38, Kayne 1994, Johannessen 1998, Zoerner 1995); see also Dik's (1968: 53) review of De Groot's proposal and Progová's (1998) review of later proposals. As we know, the categorial features of an element are projected from its head. However, unlike other head elements, coordinators such as *and* do not have any categorial features. Thus the recognition that coordinators are head elements does not account for the fact that the category of the whole coordinate complex is identical to at least one of the conjuncts.

From the perspective of the structure of coordinate constructions, it has also been proposed that coordinate complexes have a complementation structure in which one conjunct is at the complement position (called internal conjunct in Zhang 2006) and the other

conjunct(s) is/are Specifier position(s) (called external conjunct in Zhang 2006) (Munn 1987, Johannessen 1998, and Zoerner 1995, among others). Such a structure, however, does not account for the above categorial unification, either. Neither the Spec of X nor the complement of X has to share categorial features with the projected XP. As pointed out by Borsley (1994: 227), claiming that a coordinate complex has a complementation structure implies nothing about the categorial features of either coordinate complexes or conjuncts. We thus need an independent analysis of the dependency that “the categorial makeup of coordinate structures must reflect that of the conjuncts” (Borsley 1994: 226).

One frequently seen notion related to coordination is &P (or CoP, ConjP) (Munn 1987, Zoerner 1995, Johannessen 1998, among others). How is this &P justified syntactically? For instance, is its distribution in contrast to that of other well-recognized syntactic categories? We will present a negative answer to this question, clarifying this important categorial issue of coordination.

In section 2, we will present the fact that in some languages certain coordinators have specific categorial requirements on conjuncts, in contrast to coordinators in languages such as English, which can conjoin elements of almost any category. In section 3, we will present the fact that in the former type of coordinators, the internal conjunct determines the category of the whole coordinate complex, whereas in the latter type of coordinators, the external conjunct does. We propose that conjuncts value the categorial features of coordinators. In section 4, we argue against the construction-specific syntactic category &P. Section 5 is a brief summary.

2. The categorial dependency between coordinators and conjuncts

In this section, we address the categorial relation between coordinators and conjuncts. We will show that cross-linguistically, coordinators may c-select conjuncts.

2.1 Coordinators with c-selection restrictions

Is there any interaction between coordinators and the categories of conjuncts? The coordinator *i* ‘and’ in Russian seems to function like an all-purpose adhesive. It coordinates conjuncts of various categories. The following data are from McNally (1993: 349):

- (1) a. Anna i Petja pridut. (DPs)
 Anna.NOM and Peter.NOM come.3PL
 ‘Anna and Peter are coming.’
- b. Anna vymila i narezala ovošci. (Vs)
 Anna washed and cut.up vegetables
 ‘Anna washed and cut up the vegetables.’
- c. Anna byla vysokaja i strojnaja. (APs)
 Anna was tall and slender
 ‘Anna was tall and slender.’
- d. Boris prigatovil obed i Petya prinës vino. (clauses)
 Boris prepared dinner, and Peter brought wine
 ‘Boris prepared the dinner, and Peter brought the wine.’

The English coordinator *and* shows the same flexibility (see 2.2). However, as pointed out by Payne (1985: 5), such a pattern “is by no means universal.” For instance, coordinators in Japanese are sensitive to categories of conjuncts. The sensitivity was noted by Yamada & Igarashi (1967). Like many early generative syntacticians (Gleitman 1965, Tai 1969), they tried to derive all types of coordinate complexes from sentential or proposition coordinate complexes, by deletion. Their work is under the Clausal Conjunct Hypothesis. In the “Remaining Problems” part of their article (p. 154), they pose the question how the Clausal Conjunct Hypothesis explain the fact that coordinators vary according to the categorial kind of conjuncts. However, this “remaining problem” of theirs still remains as a research issue to any syntactic analyses of coordination today. The issue of category is one of the fundamental issues of syntax. “All grammatical operations in natural languages are category-based” (Radford 1997: 29). However, as far as I know, the syntactic significance of the fact that coordinators can be sensitive to the categories of conjuncts, cross-linguistically, has not been explored in any framework.

The sensitivity of coordinators to the categories of conjuncts is seen in at least the following two main aspects: an overt coordinator requires conjuncts to be of specific category, and a null coordinator also requires conjuncts to be of specific category.

I. Overt coordinators require conjuncts to be of specific categories

In many languages, different coordinators are used to coordinate conjuncts of different

categories. In Mandarin Chinese, for instance, the coordinators *gen*, *tong*, *yu*, and *ji* coordinate nominals only (Chen et al. 1982: 238), whereas the coordinators *erqie* and *you* cannot coordinate nominals. The contrast is shown in (2).¹ Moreover, the coordinator *yushi* 'and thus' coordinates clauses only.

- (2) a. Dai Jiaoshou xihuan he pijiu {gen/*you} lü-cha.
 Dai Professor like drink beer and/and green-tea
 'Prof. Dai likes to drink beer and green-tea.'
- b. Dai Jiaoshou shanliang {you/*gen} youmo.
 Dai Professor kind and/and humorous
 'Prof. Dai is kind and humorous.'

Furthermore, the disjunction *yaome* 'or' cannot conjoin nominals, whereas the disjunction *huozhe* 'or' can. The contrast is shown in (3)²

- (3) a. Lao Li {yaome/huozhe} zai du xiaoshuo, {yaome/huozhe} zai du baozhi.
 Lao Li or/or PRG read novel or/or PRG read newspaper
 'Lao Li is reading a novel or is reading a newspaper.'
- b. Lao Li zai du xiaoshuo {*yaome/huozhe} baozhi.
 Lao Li PRG read novel or/or newspaper
 'Lao Li is reading a novel or a newspaper.'

In the following table, we can see how category compatibility between coordinators and conjuncts is exhibited in certain languages.

¹ The distributions of the frequently used coordinator *he* in Mandarin Chinese are more complicated. This coordinator usually conjoins nominals. But it also conjoins other categories under certain highly restricted conditions. We leave discussion of this to another place. See Zhang (2002) for an effort.

² Rick Chia-Hsing Sung pointed out to me that when the context provides enough information, one can use *yaome* to conjoin nominals:

(i) Ni yao na ge? Yaome zhe ge yaome na ge.
 you want which CL or this CL or that CL
 'Which one do you want? Either this or that.'

The requirement of the context suggests that (i) might be the result of PF-deletion of two clausal conjuncts.

(4) Some patterns of category compatibility between coordinators and conjuncts

language	coordinator	conjuncts	main references
Chamorro (Austronesian)	<i>yan</i>	nominals	See Haspelmath (2000: (61))
	<i>ya</i>	event-denoting elements	
Fujian	<i>kei</i>	nominals	Payne (1985: 5)
	<i>ka</i>	non-nominal elements	
Japanese	<i>to</i>	nominals	Kuno (1973)
	<i>si</i>	Finite clauses	
	<i>te</i>	Non-finite verbs, Adjs	
Korean	<i>(k)wa</i>	nominals	Martin & Lee (1986: 51)
	<i>ko</i>	clauses	
Malagasy	<i>sy</i>	VPs	Keenan (1976:274)
	<i>ary</i>	clauses	
Malayalam	<i>um</i> (conj.) <i>oo</i> (disj.)	[-V] elements such as NPs and PPs, but not [+V] elements such as VPs and APs	Anandan (1993: 162)
Maori (Polynesian)	<i>me</i>	nominals	See Haspelmath (2000: (61))
	<i>aa</i>	event-denoting elements	
Ngunu	<i>go</i>	clauses	See Zoerner (1995: 38) and Johannessen (1998: 86) for examples and references
	<i>poo</i>	VPs	
Norwegian	<i>for, so</i>	Uncomplementized finite clauses, not VPs or DPs	Johannessen (1998: 79)
Sissala	<i>ká</i>	clauses	Blass (1989) or Johannessen (1998: 85)
	<i>a</i>	VPs	
	<i>rí</i> (or <i>arí</i>)	Non-verbal elements	
Somali	<i>iyo</i>	nominals	Berchem (1991: 324-27)
	<i>oo</i>	VPs	
	<i>na</i>	clauses	
Supyire (Gur, Mali)	<i>ná</i>	nominals	See Haspelmath (2000: (61))
	<i>kà/mà</i>	Event-denoting elements	
Turkish	<i>la</i>	nominals	See Haspelmath (2000: (58))
	<i>ip</i>	VPs	
Yapese (Austronesian)	<i>ngea</i>	nominals	Jensen (1977:311-12)
	<i>ma</i>	clauses	
Yoruba	<i>àti</i>	nominals	Rowlands (1969: 201-3)
	<i>tí</i>	Relative clause	

Coordinators are sensitive not only to the distinctions between major categories such as nominals and verbal elements, but also to more subtle syntactic classifications. For instance, Aoun & Li (2003) note that when the Chinese conjunction *jian* ‘and’ coordinates nominals, it coordinates property-denoting ones rather than individual-denoting ones. Moreover, in several languages, conjunctions that conjoin pronouns are different from the conjunctions that conjoin other types of nominals (Stassen 2000: 49 fn. 2). Furthermore, the disjunctions *haishi* and *huozhe* in Chinese are used in interrogatives and declaratives, respectively (Li & Thompson

1981: 654). The Finnish contrast between *vai* and *tai* is completely analogous (see Haspelmath 2000: (69)). Similarly, the disjunction *oo* ‘or’ in Kanada can connect interrogative clauses but not declarative clauses (Amritavalli 2003: 3). However, I will concentrate on the conjunct-coordinator interactions with respect to the major syntactic categories. I believe that a proper analysis of the interactions can be elaborated and applied to the more subtle interactions as well.

In this subsection, I have presented the phenomenon that the choice of overt coordinators can be sensitive to the categories of conjuncts.

II. Null coordinators require conjuncts to be of specific categories

Not only coordinators in overt forms but also null coordinators can impose categorial requirements on conjuncts. For example, in Cayuga, a Northern Iroquoian language in Ontario, the coordinator *hni*’ conjoins nominals, as in (5a), whereas a null coordinator conjoins verbs and clauses, as in (5b) (Mithun 1988: 342, also see Johanessen 1998: 85).

- (5) a. Ne:’ tsho: ne’ [onehe’ sahe’tá’ hni’] okwayethwe hne:’ (Cayuga)
 it only the corn beans also we.planted CONTR
 ‘No, we only planted corn and beans.’
 b. Tho tsho: nhe:yóht ake’tré’ atká:ta’
 there only so.it.is I.drove it.stopped
 ‘I was just driving along it stopped’

Similarly, the Chadic language Háúsá uses *dà* to conjoin DPs, whereas it does not use any overt coordinator to conjoin verbal phrases or clauses (the data appear in Abraham 1941: 92; both Gazdar et al. 1985: 179 fn. 1 and Hartmann 2000: 22 cite them):

- (6) a. Dà ní dà kái dà shíí, múú àbòòká nèè. (Háúsá)
 and I and you and he we friends are
 ‘I, you, and he, we are friends.’
 b. Múúsá káá shá gíyàà (*dà) káá gàsà kíífíí.
 Musa INFL_{PERF/3SG.MASC} drink beer and INFL roast fish
 ‘Musa drank beer and roasted fish.’

Zoerner (1995: 37) presents the following list (parataxis is another term for null coordinator):

- (7) Barasano: *kede* for coordinating NPs, parataxis elsewhere
 Chemehuevi: *wai* for NPs, parataxis elsewhere
 Tera: *nde* for NPs, parataxis elsewhere

It needs to be mentioned that in Japanese, a null coordinator cannot coordinate first conjuncts with tense-markers. In the following (8a), where the first conjunct has a past-tense marker *-ta*, the coordinator *sosite* is obligatory (Takano 2004: 172 fn. 4. See Payne 1985: 27 for parallel data in other languages):

- (8) a. John-ga sono ronbun-o kopiisi-ta *(sosite) fairusi-ta. (Japanese)
 John-NOM that paper-ACC copy-PST and file-PST
 'John copied and filed that paper.'
 b. John-ga sono ronbun-o kopiisi (sosite) fairusi-ta.
 John-NOM that paper-ACC copy and file-PST
 'John copied and filed that paper.'

In this language, a null coordinator cannot conjoin an AP with a relative clause, either. In the following (9a), the two modifiers of a nominal are both APs, and the use of the conjunctive *-te* is optional. In (9b), however, one modifier is an AP and the other is a clause, and the use of *-te* is obligatory (Saiki 1985: 371, 372).³

- (9) a. akaku (-te) atsui hon (Japanese)
 red-TE thick book
 'the red and thick book'
 b. minikuku *(-te) Takashi-o nagutta otoko
 ugly -TE Takashi-ACC hit man
 'a man who is ugly and who hit Takashi'

³ According to Kuno (1973), *-te* is a gerundive marker. Saiki (1985: 371) calls *-te* coordination morpheme. I will simply gloss the suffix *TE*.

The contrast between (8a) and (8b) and that between (9a) and (9b) indicate that the occurrence patterns of null coordinators do not always correspond to whether the conjuncts are nominals or not. This fact does not support Zoerner's (1995) claim that the patterns are related to the issue of Case. Therefore his conclusion that coordinators head a functional projection that is related to case is not convincing.

The two aspects listed in this subsection clearly indicate that coordinators, like other types of syntactic head elements, can have c-selection restrictions.

2.2 Coordinators without c-selection restrictions

The goal of this subsection is to examine the categorial relationship between conjuncts and *and*-like coordinators. We will see that the relationship is different from that presented in the last subsection.

In English, conjuncts linked by *and* can be nearly any category and can be both phrasal and word-level elements (the following examples are mainly taken from Wilder 1999 and Cowper & Hall 2000).

(10) Phrases:

- a. NP We still need the [[bat] and [ball]].
- b. NP {the/one/a/no} [[fork] and [spoon]] (see Heycock & Zamparelli 2000)
- c. DP [[John] and [Mary]] are coming.
- d. PP [[in London] and [in Berlin]], it is still cold.
- e. AP the [[red] and [blue]] flag
- f. VP Mary has [[left] and [gone to England]]
- g. IP I don't know if [[Mary left] and [Peter returned]]
- h. CP [[What do you gain] and [what do you lose]]?

(11) Words:

- a. N He is both the [[father] and [employer]] of my friend.
- b. Num [[Two] and [three]] is five. (Dik 1968: 273)
- c. P The events took place [in and around] Toronto.
- d. A ... both [[glad] and [sad]] about this ...
- e. V Judith [[washed] and [dried]] the towels.
- f. I We both [[can] and [will]] visit her.

- g. I John was and is the best tennis player in the club.
- h. C [[Can] and [will]] you do this?
- i. C [[If] and [when]] she arrives, the party will begin.

It has been frequently mentioned that the English coordinator *but* cannot coordinate nominals (R. Lakoff 1971 (cited in Zoerner 1995: 21), Payne 1985: 13, Gazdar et al. 1985: 180, n. 9, Sag et al. 1985: 138 n. 12, Peterson 2004: 644). Data like the following have been used to show this alleged restriction:

- (12) a. Robin is happy but stupid.
- b. *Robin read books but magazines.
- c. *Kim but Sandy stuttered.

In fact, the constraint is semantic rather than categorial. The contrast expressed by the *but*-coordinate complexes cannot be that of individuals. The intended contrast in the above (12b) and (12c) is that of individuals. This is similar to the two examples in (13) below. In the two examples in (13), the conjuncts are not nominals, but the coordinate complexes are still unacceptable. In (14), however, the intended contrasts are properties rather than individuals, and the coordinate complexes are fine, although the conjuncts are nominals.

- (13) a. *John went fishing but Bill went fishing. (van Oirsouw 1987: 105)
- b. *I talked to John but I talked to Bill.
- (14) a. John is a fine player, but a sensitive player. (van Oirsouw 1987: 167)
- b. I saw one large green animal, but two small red ones.
- c. I interviewed 10 men but only 3 women. (Heycock & Zamparelli 2003:40 (173))

It is clear that coordinate complexes linked by *and* (and other coordinators in English) can be words and phrases of almost any category. The same is true of coordinators in many European languages (for a list of comparative German data where the coordinator *und* 'and' is used, see Welsche 1995: 64-65, 193). Outside Indo-European languages, one finds the same pattern in the coordinator *ja* in Finnish, *es* in Hungarian, *da* in Georgian, *at* in Tagalog, and so on (see Payne 1985: 28).

Meanwhile, it is also obvious that every coordinate complex belongs to a certain category, universally. If coordinators alone do not decide the categories of coordinate

complexes, who does? We discuss this issue in section 3.

2.3 Representing the categorial dependency between coordinators and conjuncts

We have presented cross-linguistic data showing that different coordinators can have different categorial requirements on conjuncts. Such properties of coordinators have been generally ignored. In Sag et al. (1985: 133) and Gazdar et al. (1985: 179), for instance, they are merely mentioned in a footnote. In Dik (1968) and Johannessen (1998), they are listed, but without being taken into consideration in their syntactic analyses. If a coordinator has any special requirement for the category of a conjunct, the relation between the coordinator and the conjunct must be that between a head and its selected complement, since only head elements exhibit c-selection restrictions on their sisters. We thus cannot adopt Moltmann's (1992: 52) hypothesis that coordinators adjoin to conjuncts, since a selection relation is not an adjunction relation. As we mentioned at the beginning of this paper, the claim that coordinators are head elements has long been proposed by many. The c-selection restriction between coordinators and internal conjuncts presented here provides a substantial argument for the head status of coordinators.⁴

⁴ The c-selection restriction between coordinators and internal conjuncts can also be seen clearly in Japanese. In this language, the coordinator *-to* 'and' coordinates nominals, the suffix *-te* coordinates nonfinite verbs and adjectives, and *-si* 'and' coordinates finite clauses. The examples of the three types of coordinate complexes are listed in (i-a), (i-b), and (i-c), respectively.

- (i) a. Taroo-to Hanako [DPs]
 Taroo-and Hanako
 'Taroo and Hanako'
 b. akaku-te atsui hon [Aps]
 red-TE thick book
 'the red and thick book'
 c. [musuko-ga sotugyoo sita-si] [musume-ga yome-ni itta] (finite clauses)
 son-NOM graduation did-and daughter-NOM bride-DAT went
 'The son graduated and the daughter got married.'

However, in fact it is only the first conjunct that is decisive in the choice of a coordinator. This is illustrated in (ii). In (ii-a), the two adjectives are conjoined by *-te*, and in (ii-b), two finite clauses are conjoined by *si*, as expected. In (ii-c), however, the first conjunct *minikuku* 'ugly' is an adjective and the second one *Takashi-o nagutta* 'hit Takashi' is a relative clause. The coordinate complex functions as a modifier of the noun *otoko* 'man.' We can see that the element conjoining the two modifiers is *-te* rather than *si*, although the second modifier is a finite clause. It is the first conjunct, the adjective, that satisfies the categorial requirement of *-te*.

- (ii) a. [akaku-te] atsui hon [AP & AP]
 red-TE thick book
 'the red and thick book'
 b. [Ame-ga furu-si], [kaze-ga fuku]. [CP & CP]
 rain-NOM falls-and wind-NOM blows
 'Rain falls and wind blows.'

So far, we have addressed only the category issue of components of coordinate complexes, i.e., conjuncts and coordinators. In the next subsection, we turn to the category relation between the whole coordinate complexes and conjuncts.

3. The categorial dependency between coordinate complexes and conjuncts

After we have examined the categorial relation between components of a coordinate complex, we now look at the categorial relation between a whole coordinate complex and its components.

Note that if there is any categorial dependency between conjuncts and coordinate complexes, the dependency does not come from the complementation structure of coordinate complex, as pointed out by Borsley (1994, 2005). As we know, an XP does not need to have the same category as Spec of X or Complement of X.

3.1 The uniformity of external conjuncts and coordinate complexes in category

The English data presented in this section show that the categorial features of external conjuncts must be compatible with the c-selection of the heads that merge with the coordinate complexes, whereas that of internal conjuncts do not need to.

<i> Clausal conjuncts and prepositions

The first case that shows the categorial compatibility of external conjuncts with the required category of the whole coordinate complexes is seen in the complement of prepositions. (15b) shows that the preposition *on* does not c-select a clause. However, if the complement of a preposition is a coordinate complex, the internal conjunct can be a clause. In (15a) the internal conjunct is a clause and the external one is a DP. (15c) shows that if we switch the order of the two conjuncts in (15a), the result is not acceptable. The contrast indicates that it is the external conjunct that satisfies the c-selection of the preposition. Other examples show the same point.

-
- | | | |
|----|---|-----------|
| c. | minikuku-te Takashi-o nagutta otoko | [AP & CP] |
| | ugly-TE Takashi-ACC hit man | |
| | 'a man who is ugly and who hit Takashi' | |

The above data show that if two conjuncts are different in category, the choice of a coordinator depends on the first conjunct, which seems to be the internal conjunct in Japanese. Thus, the internal conjunct is privileged in the choice of a coordinator.

- (15) a. You can depend on my assistance and that he will be on time.
 b. *You can depend on that he will be on time.
 c. *You can depend on that he will be on time and my assistance.
- (16) a. Pat was annoyed by the children's noise and that their parents did nothing to stop it.
 b. *Pat was annoyed by that their parents did nothing to stop it.
 c. *Pat was annoyed by that the parents did nothing to stop the children's noise and the bad radio sound.
- (17) a. We talked about Mr. Golson's many qualifications and that he had worked at the White House.
 b. *We talked about that he had worked at the White House.
 c. *We talked about that he had worked at the White House and his many qualifications.
- (18) a. Fido thought about the bone and that he wanted to eat it. (Johannessen 1998: 257)
 b. *Fido thought about that he wanted to eat it. (James Myers, p.c.)
 c. *Fido thought about that he wanted to eat it and its taste.

The data in (15) through (17) were first introduced by Sag et al. (1985:165). Such data have been used in the literature to argue for the asymmetry between two conjuncts (Munn 1996: 2, Johannessen 1998: 14).⁵

Notice that not all prepositions allow the second conjunct of their object to be a clause. The preposition *despite*, for instance, does not (Bayer 1996: 585):

- (19) *Despite LaToya's intransigence and that all the musicians quit, Michael signed the contract.

⁵ Although the preposition *on* does not c-select *that*-clauses, data like the following are acceptable:

- (i) That Bill would arrive was crucially depended on.
 (ii) That Bill will arrive, we're really depending on.

Bayer (1996: 585) reports certain data in which even the verbs cannot license whole clausal complements to their right:

- (iii) This candidate, they assured me to be reliable. (*They assured me this candidate to be reliable.)
 (iv) That human grammar is learnable, no theory can express. (*No theory can express that human grammar is learnable.)

See Higgins (1973), Kayne (1980), Bayer (1988), Goodall (1987), Munn (1993: 81) for various accounts and see a recent discussion summary by Breul (2001).

Huang (1989) notes the following obligatory topicalization example in Chinese, which is parallel to the above obligatory topicalization data:

- (v) Nide hao-yi, wo xinling-le. (*Wo xinling-le nide hao-yi.)
 your good-intentions I appreciate-PRF
 'Your good intentions, I appreciate them.'

We do not discuss the unacceptability of (19). What we focus on here is the existence of the asymmetrical syntactic pattern, and its theoretical implications, rather than possible constraints on the pattern (see Whitman 2004 for relevant semantic and pragmatic constraints). The crucial point here is that no such sloppiness is allowed for external conjuncts, as shown in the (c) sentences above. The external conjuncts cannot be clausal there. External conjuncts must satisfy the category requirements that are imposed on the whole coordinate complexes.

Sag et al. (1985: 166-167) notice the contrast between the (a) sentences and (c) sentences in (15) through (17). They also note that the acceptability contrast disappears if the coordinate complexes occur in other positions that are not objects of prepositions. For instance, in subject positions, as in (20), and in object positions, as in (21), the combination of a clause and a nominal is fine:

- (20) [[That our perspectives had changed over the years] and [the issue we had worked on as students]] were the topics of discussion. [CP&DP]
- (21) a. I didn't remember until it was too late [[John's inability to get along with Pat], and [that he had no background in logic]]. [DP&CP]
- b. I didn't remember until it was too late [[that John had no background in logic] and [his inability to get along with Pat]]. [CP&DP]

As we know, both clauses and nominals can be subjects of the nominal predicates, and can be the object of *remember*. Thus regardless of whether the external conjunct is a clause or a nominal, they always satisfy the categorial requirement on the coordinate complexes by the contexts in (20) and (21). The acceptability contrast between the (c) sentences in (15) through (18) on the one side, and (20) and (21b), on the other side, is explained, if it is external conjuncts that must satisfy the category requirements that are imposed on the whole coordinate complexes.

Such a simple explanation cannot be achieved if we fail to see the asymmetry between external and internal conjuncts. In order to account for the contrast between the (a) sentences and the (b) sentences in (15) through (17), Sag et al. (1985: 166) formulate a rule (their rule (127)) which “guarantees that in general the objects of prepositions are ‘ordinary’ NPs, rather than sentential ones. But if a prepositional object is coordinated,” they claim that their rule “will permit a sentential NP to appear as a conjunct.” As for the acceptability contrast between (20) and the (c) sentences in (15) through (17), they formulate another rule (their rule (132)) which “says that sentential NPs always follow their non-subject sisters.” They furthermore

use ellipsis to account for (21b) in a footnote. None of these ad hoc rules is needed in our approach.

<ii> PP conjuncts and transitive verbs

Another type of data showing the categorial decisiveness of first conjuncts in English are the following ((24d) is from Chris Wilder, p.c. and the rest are from Grosu 1985):

- (22) a. John eats [_{DP} only pork] and [_{PP} only at home].
b. ?*John eats [_{PP} only at home] and [_{DP} only pork].
- (23) a. He read [_{DP} only the *Times*] and [_{PP} only on Sundays].
b. ?*He read [_{PP} only on Sundays] and [_{DP} only the *Times*].
- (24) a. John writes only funny letters and only to funny people.
b. John eats the most unlikely things and at the most unlikely hours.
c. John has stolen more watches and from more unsuspecting victims than anybody else ever will.
d. I eat [neither meat nor at restaurants].

In (22a), the first conjunct *only pork* is a nominal, satisfying the c-selection restrictions of the verb *eat*, whereas the second conjunct *only at home* is a PP, not satisfying the c-selection restrictions of the verb. The sentence is acceptable. If the two conjuncts switch their order, as in (22b), the sentence is not acceptable. Similarly, the two conjuncts are of different categories in each of the other examples above. The first conjuncts must satisfy the c-selection restrictions of the verb that selects the whole coordinate complex (Note that the focus marker *only*, or *neither...nor*, which also encodes a focus meaning, is necessary in such data).

We thus see another case where the category of the internal conjunct can be different from the category of the whole coordinate complex, and the category of the external conjunct is decisive to the category of the whole coordinate complex.

The discussion in this subsection shows that in English, the internal conjuncts do not always exhibit the expected category although the external ones do.

Pollard & Sag (1994: 203) propose a Coordination Principle, which states that the category of each conjunct is subsumed by (is an extension of) that of the whole coordinate complex. They claim that the principle “guarantees that whenever a syntactic environment imposes some condition on a phrase in a given position X, that condition is respected by

every conjunct of a coordinate structure in position X.” Data like the following (25b) and (25d) have been assumed to be ruled out by the principle. Specifically, the conjunct *happy* in (25b) does not satisfy the condition on the complement of the verb *remembered*. Similarly, neither of the two conjuncts in (25d), *am walking to the store* and *that I left*, satisfies the condition on the element in the position to the right of *Jessie believes Tracy*, whatever it could be.

- (25) a. Pat remembered the appointment and that it was important to be on time.
 b. *Pat remembered happy and that it was important to be on time.
 c. *Pat remembered happy.
 d. *Jessie believes Tracy [am walking to the store and that I left].
 e. *Jessie believes Tracy [am walking to the store].

In (25c), *happy* is not c-selected by *remember*. The unacceptability of (25b), according to our analysis, comes from the fact that the external conjunct, *happy*, is not c-selected by the verb *remember*. Similarly, in (25e), *am walking to the store* is not c-selected by the relevant head of the small clause. The unacceptability of (25d), according to our analysis, comes from the fact that the external conjunct, *am walking to the store*, is not c-selected by the relevant head of the small clause. Therefore what they try to account for has been covered in our approach.

Sag et. al (1985), Bayer (1996), and Whitman (2002) claim that in the coordination of unlike categories, the category contrasts between conjuncts are neutralized. Like the approach in Pollard & Sag (1994), this neutralization approach does not consider the different syntactic effects of the categories of the first and second conjuncts. In our approach, no categorial features of conjuncts are neutralized. Instead, the categorial features of the external conjunct are decisive, and those of the internal conjunct can be ignored, in the *and*-complexes.

In the literature, it has been noted that the first conjunct (precisely, external conjuncts, in our term, for the coordinate complexes that have a right-branching structure) may determine the agreement pattern of the whole coordinate complex in certain cases (Munn 1993, Aoun et al. 1994, 1999, Johannessen 1996, 1998, among others). Borsley (1994: 242) states: “To generate the correct structures, a linear precedence rule is necessary to ensure that an unmarked conjunct precedes a marked conjunct, and some principle is necessary to ensure the correct relation between the conjuncts and the coordinate structure.” However, Sobin’s (2004: 507 fn. 4) research shows the agreement patterns of coordinate complexes are more complicated, and his investigation even shows that “there is some degree of pressure toward

singular agreement from a singular right conjunct in a coordinate subject.” Actually, it is not clear how agreement properties can decide category issues. Since we are dealing with the issue of categories of coordinate complexes, any arguments related to category should be more reliable than agreement considerations.

We have presented the category decisiveness of external conjuncts in English. However, it is one thing to realize the decisiveness, and it is another to restrict the syntactic and semantic differences between conjuncts. Our approach does not imply that coordination can be random. Sentences like **John read books and in the park* are not acceptable. However, if there is certain kind of semantic parallelism, such as the focus parallelism signaled by the reoccurrence of *only* in *John eats only pork and only at home* (Grosu 1985: 232), a nominal can be conjoined with a PP.

We conclude that in English, external conjuncts must satisfy the category requirements that are imposed on the whole coordinate complexes.

3.2 The uniformity of internal conjuncts and coordinate complexes in category

In this subsection we examine the categorial relationship between conjuncts and the coordinate complexes headed by coordinators that c-select their conjuncts.

As we know, c(ategory)-selection and c(ategory)-sharing are two different notions. If a verb c-selects a nominal, the projection headed by the verb is not a nominal. In this case, there is no c-sharing between the verb and the selected element. In this subsection, I show that in Chinese, while a coordinator c-selects a conjunct, the whole coordinate complex shares the category with the conjunct. In other words, while a coordinator c-selects its internal conjunct, the hosting coordinate complex c-shares with the internal conjunct. This can be seen from the following Chinese data. In these data, internal conjuncts, which are c-selected by the coordinators, must satisfy the c-selection of the verbs that select the hosting complexes.

- (26) a. Baoyu xiande {gaoda/youqizhi/*qizhi}.
 Baoyu seem tall/stylish/style
 'Baoyu seems to be {tall/stylish/*style} '
- b. Baoyu xiande gaoda erqie youqizhi. [AP & AP]
 Baoyu seem tall and stylish
 'Baoyu seems to be tall and stylish.'
- c. *Baoyu xiande jiankang-qingkuang he qizhi. [NP & NP]
 Baoyu seem health-condition and style

- d. Baoyu guanxin jiankang-qingkuang he qizhi. [NP & NP]
 Baoyu care.about health-condition and style
 'Baoyu cares about health condition and style.'

The example in (26a) shows that the verb *xiande* 'seem, look like' c-selects adjectives *gaoda* 'tall' and *youqizhi* 'stylish' but not the nominal *qizhi* 'style'. The adjectival coordinate complex in (26b) satisfies the c-selection of the verb. (26c) shows that the nominal internal conjunct *jiankang-qingkuang* 'health-condition' does not satisfy the c-selection of the verb and thus the example is not acceptable, although the conjunct satisfies the c-selection of the coordinator *he*, as in (26d).

Note that in data like the following, the two conjuncts are different. In (27a), the first conjunct is an AP and the second one is a VP, and in (27b) the first conjunct is an AP and the other is a clause (CP):

- (27) a. Daiyu congming erqie shang-guo daxue
 Daiyu smart and attend-EXP university
 'Daiyu is pretty and has educated in a university.'
 b. na wei qinlao erqie neng chui dizi de nongmin
 that CL diligent and can blow flute MOD peasant
 'that peasant who is diligent and who can play a flute'

However, in such data, the category of the either conjunct is compatible with the syntactic position of the whole coordinate complex. We thus conclude that either conjunct c-shares with the whole coordinate complex.

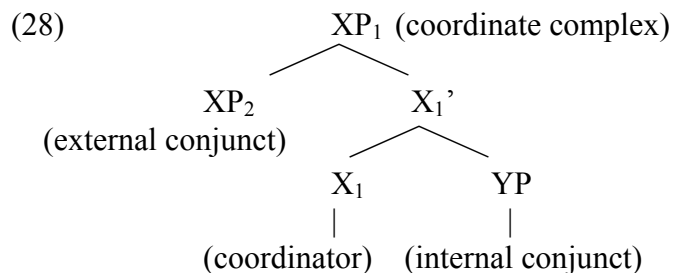
In Chinese, however, one can hardly find any coordinate complex in which one of the conjuncts does not satisfy the c-selection of the verb that is merged with the whole coordinate complex. Such complexes have been seen in English (3.1). Specifically, English allows the category of the internal conjunct to be different from that of the whole coordinate complex. It is thus crucial for us to show that in Chinese, internal conjuncts, as well as external conjuncts, must be identical with coordinate complexes in category.

3.3 Representing the categorial dependencies between coordinate complexes and conjuncts

3.3.1 Spec-Head categorial feature valuation

We have presented two facts. First, conjuncts linked by *and* can be of nearly any category. Coordinate complexes headed by *and* can be of nearly any category (2.2). Second, the categories of such complexes are the same as their external conjuncts (3.1). The chameleon-like nature of coordinate complexes is analyzed in different ways in the literature. Rothstein (1991: 108) suggests that although coordinators are heads, they do not project category features. She claims “[t]he constituent they project has the same categorial status as the complements, and satisfies subcategorisation frames accordingly.” (p. 103) Similarly, Heycock & Zamparelli (2002: 14) state: “we assume that CoordP allows the transit of the categorial features of its conjuncts (in the trivial sense that a coordination of DPs behaves as a DP, of VPs, as a VP and so forth); that *and* is a head of CoordP.” Similarly, Yuasa & Sadock (2002: 89) claim that “A coordinate constituent is one of two or more sister nodes whose categorial information percolates to the mother node.” Moreover, as we introduced before (see 3.1), Pollard and Sag (1994: 203) propose a Coordination Principle, which states that “In a coordinate structure, the CATEGORY and NONLOCAL value of each conjunct daughter is subsumed by (is an extension of) that of the mother.” However, none of these approaches covers the second fact, i.e., only external conjuncts must have the same categorial features as the coordinate complexes.

We assume that coordinate complexes have a complementation structure where two conjuncts are Spec and Complement of the coordinator, respectively (see Zhang 2006 for new cross-linguistic arguments for this assumption). Under this assumption, the two facts listed above can be captured by the syntactic structure in (28):



In this structure, coordinators and the projection headed by them share the category with external conjuncts. Our observed category-sharing between external conjuncts and the

coordinate complexes means that if an external conjunct is DP, the coordinate complex must be another DP, and the head of this latter DP is lexicalized by a coordinator. We can see the homogeneity of such complexes in category between coordinate complexes and external conjuncts. One property of the structure in (28) is that the two daughters of XP_1 are identical in category. In other words, two elements of the same category are merged. We call this structure the Upstairs-Twin-Structure. The Upstairs-Twin-Structure is also seen in possessive DPs, e.g., *John's child*, where the possessor DP (*John*) is the Specifier of the hosting DP (see Landau 1999: 10, 13 for a recent defense of this structure).

We now consider how the category-sharing between external conjuncts and the coordinate complexes is syntactically implemented in (28).

A generally accepted assumption is that “Every word has some categorial feature” (Collins 2002: 43). In the previous sections, we have shown that coordinators such as the English coordinator *and* do not seem to have any categorial feature, and that their external conjuncts and coordinate complexes share categorial features. Since the heads of such complexes are realized by coordinators, the assumed category-sharing is in fact that between external conjuncts and coordinators. Accordingly, the head of the coordinate complex is D in (29a), P in (29b), A in (29c), and V in (29d), although it is always *and* that shows up at the head position.

- (29) a. DP [[John] and [Mary]] are coming.
 b. PP [[In London] and [in Berlin]], it is still cold.
 c. AP the [[red] and [blue]] flag
 d. VP Mary has [[left] and [gone to England]]

If a coordinator has no categorial features, which are necessary for the computations and interpretation of the projected coordinate complex, it definitely needs to have its categorial features specified. I propose that *and*-like coordinators receive categorial features from external conjuncts. In other words, external conjuncts value the categorial features of coordinators. The dependency of the categorial feature valuation can be achieved in various ways. I leave it open whether the dependency is a kind of feature movement (or feature percolation, cf. Heck 2004), or Agree without any feature movement.

The proposed feature dependency of XP on the Spec of X has also been independently seen in *wh* and negation feature percolation. For instance, the negation feature is percolated from Spec in (30a), and the *wh*-feature is percolated from Spec in (30b) (Grimshaw 1991,

Webelhuth 1992, Koopman & Szabolcsi 2000: 41):

- (30) a. Nobody's car would I borrow. [Neg feature percolation]
b. Whose book did you read? [Wh feature percolation]

If the negation in (30a) is a sentential negation, the [Neg] feature must move out of the word *nobody*, which is the Spec element of the possessive DP. Likewise, in (30b), in order to check the [Wh] feature of C, the relevant feature must move out of the word *whose*, which is the Spec element of the possessive DP. Not only wh, negation, and categorial features, but also other features can be percolated from Spec of X to XP. Winter (2001: 177 fn. 29) mentions that some semantic features of a possessive DP can be decided by the Specifier (possessor) in certain cases.

3.3.2 Complement-Head categorial feature valuation

We have just argued for the categorial feature valuation of coordinators by external conjuncts. In this section, we present that categorial feature valuation can also be accomplished by internal conjuncts.

We have presented two facts: coordinators can c-select internal conjuncts (2.1); and in languages such as Chinese, the category of the internal conjuncts cannot be different from that of the whole complexes (3.2). What does the combination of these two facts tell us about the syntax of the relevant coordinate complexes? Our well-established syntactic theory tells us that if elements show c-selection restrictions, they are head elements. The conclusion that coordinators are head elements is compatible with the proposals mentioned at the beginning of this paper. We also know, however, that head elements determine the category of the projected phrase. For instance, transitive verbs c-select objects, and the projected phrases are VPs rather than the category of the objects, DP. But the second fact presented above seems to suggest that in addition to the specifier (3.3.1), complement can also determine the category of the projected complex.

This apparent special category dependency in coordinate complexes needs to be accounted for. Although coordinators may c-select conjuncts, they are not intrinsically nouns or verbs or any other categories. They do not have (sufficient) categorial features to be one of them. It is clear that every coordinate complex has its category features. However, although certain coordinators have a category requirement on conjuncts, there is no one-to-one correspondence between coordinators and the category of coordinate complexes. For instance,

the coordinator *erqie* is found in both adjectival and verbal coordinate complexes, including clausal coordinate complexes. On the other hand, since the category of a complex is determined by its head, the head must be equipped with sufficient valued category features.

As in the case of and-like coordinators, I claim that the full set of categorial features of such coordinators are also valued or specified by conjuncts. This valuation makes it possible that the categories of the projected complexes are those of the heads. But in this case, it is the internal conjuncts that value the unvalued categorial features of coordinators. My claim is demonstrated as follows.

The coordinator *erqie* in Chinese can conjoin APs, VPs, and clauses. The category distinctions between an AP-*erqie*-AP complex and an eventive VP-*erqie*-VP complex are clear. For instance, the former cannot be modified by a manner adverbial, whereas the latter can. For instance, in (31a), the complex adjectival predicate cannot be modified by the manner adverbial *xunsude* ‘quickly,’ whereas in (31b), the complex verbal predicate can be modified by the adverbial.

- (31) a. Baoyu (*xunsude) [qifen *erqie* shiwang].
 Baoyu quickly angry and disappointed
 ‘Baoyu was angry and disappointed (*quickly).’
 b. Baoyu xunsude [jiao-le hua *erqie* dasao-le yangtai].
 Baoyu quickly water-PRF flower and clean-PRF balcony
 ‘Baoyu watered the flowers and cleaned the balcony quickly.’

The contrast is parallel to the one between a simplex AP predicate and a simplex VP predicate, as shown below:

- (32) a. Baoyu (*xunsude) {qifen/shiwang}.
 Baoyu quickly angry/disappointed
 ‘Baoyu was {angry/disappointed} (*quickly).’
 b. Baoyu xunsude {jiao-le hua/dasao-le yangtai}.
 Baoyu quickly water-PRF flower/clean-PRF balcony
 ‘Baoyu watered the flowers and cleaned the balcony quickly.’

The contrast is expected from the general recognition that APs are state-denoting and thus are in conflict with manner, whereas eventive VPs are compatible with manner.

Since *erqie* cannot conjoin any nominals, we assume that it c-selects [+V] elements. We also assume that it has an intrinsic [+V] feature, since it never heads any nominal coordinate complexes. But it is underspecified whether *erqie* has [+N] or [-N]. If the internal conjunct is an AP, the [+N] feature of the AP gives the [+N] to *erqie*. The latter then exhibits not only its intrinsic [+V] but also the newly received [+N]. The combination of the two features decides the whole projected complex is an AP, rather than VP. This is the case of (31a). On the other hand, if the internal conjunct is a VP, the [-N] feature of the VP values the gives the [-N] to *erqie*. The latter then exhibits not only its intrinsic [+V] but also the newly received [-N]. The combination of the two features decides the whole projected complex is a VP, rather than AP. This is the case of (31b).

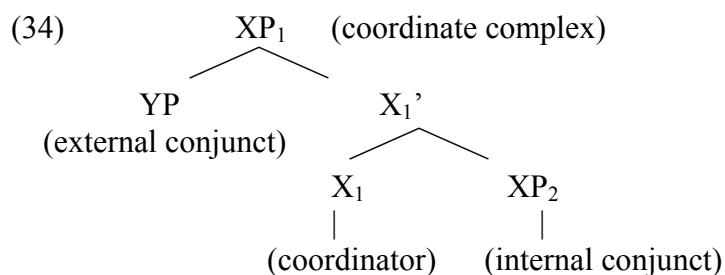
We believe that the basic mechanism of this feature dependency is applied to the computations of other coordinate complexes where the coordinator exhibits c-selection restrictions.

Feature dependency between Complement of X and XP is independently observed in other constructions (see Koopman & Szabolcsi 2000: 42, Heycock & Zamparelli 2003: 11, among others). The following data are cited from Borsley (2005: (20)) and Haider (1997: 17):

- (33) a. [To nobody] would I speak. [Neg feature percolation]
 b. [To whom] did you speak? [Wh feature percolation]
 c. [Out to whom] did they send a schedule? [Wh feature percolation]

If the negation in (33a) is a sentential negation, the [Neg] feature must move out of the word *nobody*, which is the complement of the preposition *to* (Moreover, if there is any [neg] feature movement occurring in the so-called Neg-raising construction (Horn 1989), the movement also launches from complement clauses). Likewise, in (33b), in order to check the [Wh] feature of C, the relevant feature must move out of the word *whom*, which is the complement of the preposition *to*.

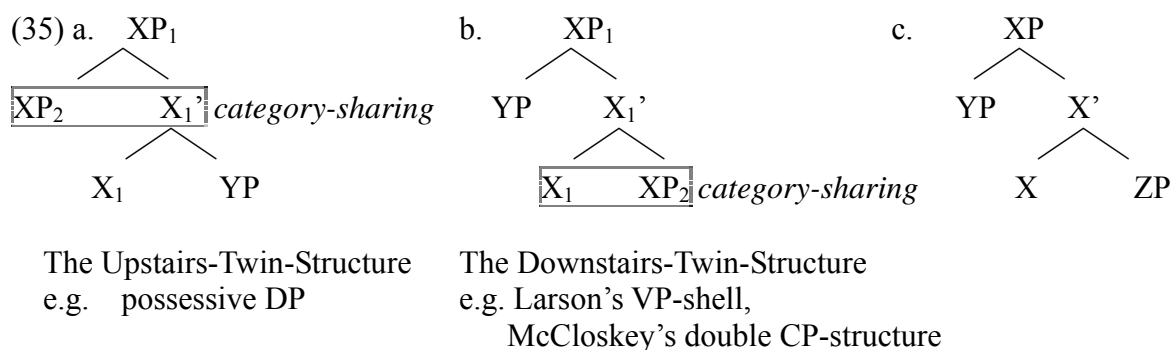
Since we have adopted a complementation structure of coordinate complexes in general, we claim that the following structure is the structure of the complexes whose categorial features are identical to internal conjuncts.



We call this XP-shell structure the Downstairs-Twin-Structure. In this structure, the category of a coordinate complex is identical to that of the internal conjunct. This structure property is also seen outside coordinate complexes. For example, in Larson's (1988) VP-shell structure, the head and its complement are identical in category. Similarly, McCloskey (1999) proposes a structure where C selects another CP, to represent the double *that* constructions in Standard English (e.g. *He thinks that if you are in a bilingual classroom that you will not be encouraged to learn English*).

3.4 The significances of the proposed structures for coordination

The Upstairs-Twin-structure in (28), repeated here as (35a), and the Downstairs-Twin-Structure in (34), repeated as (35b) are different in that the former represents a category uniformity in the immediate constituents of the top (or final) merger level, whereas the latter exhibits a category uniformity in the immediate constituents of the next lower (or earlier) merger level. Both, as well as (35c), are just instances of the possible structures that our computation system builds.



The structures in (35a) and (35b) for the two types of coordinate complexes are significant, in at least the following two aspects:

<i> There is no construction-specific syntactic category. The top projection in (35), i.e.,

XP₁, is not an &P, or any other new type of functional category. It is simply whatever the external conjunct (XP₂) is in (35a), and whatever the internal conjunct (XP₂) is in (35b). The empirical problems of &P will be presented in 4.

<ii> Feature evaluation can be accomplished either between a head and its specifier or between a head and its complement. The unification of the two is desirable from at least two perspectives. First, the unification is compatible with Chomsky's (2002: 133) claim that the distinction between Specifier and Complement is not so relevant in the minimalism perspective. Both are built via Set-Merge, in contrast to adjuncts, which are built via Pair-Merge (Chomsky 2000). From the perspective of a projecting element (i.e., the head), the sister of the first Set-Merge is Complement, the sister of the second Set-Merge is Specifier, and the sister of the third Set-Merge is another Specifier, and so on. Second, the unification is compatible with agreement patterns. Both Spec-Head and Compl-Head agreement are seen in possessive nominals. For instance, in Hungarian possessive nominals, agreement occurs between the Spec (the possessor) and the Head element (Szabolcsi 1994, among others); whereas in Vietnamese possessive nominals, agreement occurs between the Complement (the modified N) and the Head element (Collins 2001) (See Safir 2004: 111-112 for a case in which English quantifiers contained in complements and prenominal genitives behave the same, in contrast to those contained in adjuncts).

In this section, we have identified the structure of coordinate complexes as either a Upstairs-Twin-Structure or a Downstairs-Twin-Structure. The two types of categorial homogeneity of the structures have already been seen in possessive DPs and Larsonian VP shells, respectively. No &P exists. Thus coordination does not introduce any new category in the computation system.

4. Against &P

The term coordinator is a convenient name to call a group of forms that realize the head of the coordinate complexes. Such words do not have a (complete) set of categorial features intrinsically. Very often, we see the notion of &P in the literature (Munn 1987, Zoerner 1995, Johannessen 1998, among others). In our approach, we do not resort to &P at all. In the literature, the proposal of &P has been constantly criticized (Wilder 1999, Sag 2000: 8, and Borsley 1994, 2005). However, the criticism is weak, since the crucial issue involved, i.e., the category issue of coordination, was not solved. The contents of our previous sections enable

us to argue against &P now.

The c-selection restriction and the interactions between coordinators and internal conjuncts presented in Zhang (2006) provide substantial arguments for the claim that coordinators are head elements, although the claim has long been made (see De Groot 1949: 112, 222-223, Pesetsky 1982, Thiersch 1985, Munn 1987, 1992, 1993, Woolford 1987, 1994, Collins 1988, Kolb & Thiersch 1991, Anandan 1993: 38, Kayne 1994, Johannessen 1990, 1996, 1998, Zoerner 1995). However, the claim that coordinators are head elements is different from the claim that coordinators form an independent functional category. In our proposed Twin-Structures, there is no independent category &P (or CoP for Coordination Phrase, or BP for Boolean Phrase) in the computation system. We have concluded that the category of a coordinate complex is whatever one of the conjuncts is. In this section, we argue against the category of &P.⁶

4.1 The distributions of coordinate complexes are covered by simplexes

It has been claimed that &P is the category of coordinate complexes, and coordinators such as *and* and *or* are functional categories, independent of other categories such as N, V, A. In this subsection, I show that the distributions of coordinate complexes are covered by simplexes, and that the category contrasts of various coordinate complexes are covered by that of simplexes. Therefore, coordinate complexes cannot be an independent category.

I. The syntactic positions of coordinate complexes are covered by simplexes

My first argument against any new category for coordinate complexes is that the syntactic positions of coordinate complexes are covered by simplexes. Although some verbs such as *compare* select plural nominals, the selected element can either a coordinate complex or a simplex plural nominal. No syntactic position is found to be taken by coordinate complexes exclusively. Since the classification of syntactic elements into syntactic categories is decided by the syntactic distributions of the elements, the identification of any new category must be based on the existence of a new distribution. Coordinate complexes are not the elements that are distributed in any new syntactic position. Accordingly, they cannot be identified as any

⁶ Considering the free categorial environment of *and*, Camacho (1997) assumes that *and* in the sentence *Tom and Mary saw the movie* is simply in T (or I):

(i) [_{TP} Tom [_{T'} and [_{TP} Mary [_T [_{VP} saw the movie]]]]

However, Camacho realizes that the coordinated elements, *Tom and Mary* in (i), do not form a constituent. As pointed out by Progovac (1998:5), this puts the analysis at an important disadvantage. In our approach, *and* can be in T, if the external conjunct is a T-element, as in *John [was and is] the best tennis player in the club*, or if the external conjunct is a TP, as in *I don't know if [Mary left and Peter returned]*.

new category. Therefore, any specific coordinate complex must belong to one of the categories of the recognized category inventory.

In fact, the distributions of coordinate complexes are not only covered by, but also more restricted than, simplex elements. The restriction is seen in aspects like the following:

Firstly, plurals can be subjects of quantity-denoting predicates, whereas coordinate complexes cannot. The following data are cited from Dougherty (1970: 854)

- (36) a. The men were {numerous/plentiful/interspersed}.
b. *John, Bill, and Tom were {numerous/plentiful/interspersed}.

Secondly, plurals can occur in the partitive construction *one of* __, whereas coordinate complexes cannot. The following data are cited from Buring (2002: 7):

- (37) a. one of {us/the detectives}
b. *one of {you and me/Schimansky and Tanner}

Thirdly, plurals can occur in the partitive construction *half of* __, whereas coordinate complexes cannot. The following data are cited from Dougherty (1970: 855)

- (38) a. Half of the quartet wanted to quit.
b. *Half of Mary, Sue, Jane, and Sally wanted to quit.

All of these show that if an element can be merged with a coordinate nominal complex, it can also be merged with a plural simplex, but not vice versa. The distributions of coordinate complexes are more restricted and fully covered by that of simplexes. The coverage relation means that such complexes cannot create any new syntactic category in our computation system.

II. The category contrasts of coordinate complexes are covered by that of simplexes

My second argument against any new category for coordinate complexes is that coordinate complexes do not neutralize the category contrasts of other elements. If they did, the following four coordinate complexes would be able to merge with the same verb. But we know this is impossible.

- (39) a. [DP & DP]
 b. [VP & VP]
 c. [CP & CP]
 d. [AP & AP]

A well-observed fact is that c-selection is local. The complex of (39a) can be selected by a transitive verb. If coordinators projected an &P, and if &P had its own categorial features, &P would block the c-selection of a transitive verb that is merged with the complex of (39a). If the transitive verb c-selected &P as well as DP, the verb would also be able to merge with the complexes of (39b), (39c), and (39d), since they are all &Ps. However, no such verbs can be found. Obviously, the category contrasts of coordinate complexes are covered by that of simplexes.

Since coordinate complexes are neither found to have any new distribution than that of the currently recognized categories, nor “bleach” the contrasts of the currently recognized categories, they cannot represent any independent category.

We conclude that coordinate complex is not an independent category, in contrast to the well-recognized categories such as NP, VP, AP, and that coordinators are not neutralizers that can blur the contrasts of N, V, A, and other well-recognized categories. Therefore, a coordinate complex cannot be &P, and the assumed category &P does not exist in syntax.

4.2 Neither set closeness nor case inflection argues for &P

We examine two arguments for the projection of &P or CoP: the set closeness of coordinators and case inflection patterns of conjuncts.

I. Coordinators are closed sets

It has been claimed that because coordinators form a closed set and are unstressed elements, they therefore can head an independent projection, &P (Johannessen 1998). However, not all closed set and unstressed elements head independent projections. For instance, demonstratives, pronouns, and Chinese locatives do not need stress, and they are all closed sets. However, they are hosted by DPs or NPs. There is no DemP, PronP, LocP. Pronouns have been argued to be proforms of DPs, ϕ Ps, and NPs (Dechaine and Wiltschko 2002). Therefore, stress and the closed set properties cannot be used as arguments for the existence of &P.

II. Coordinators and Case

It has been claimed that coordinators are Case-assignors, and thus &P is a Case-related functional category (e.g., Zoerner 1995). For instance, in (40), the external conjunct *me* is accusative, which is not expected for the whole coordinate complex in the subject position. In (41), the internal conjunct *me* is accusative, which is not expected for the whole coordinate complex in the subject position, either. In (42), both of the conjuncts are accusative, which is not expected for the whole coordinate complex in the subject position at all.⁷

(40) Me and Robin left.

(41) a. Robin and me left.

b. Huck and me ain't cry-babies. (Mark Twain, *Tom Sawyer*, ch. 16)

(42) a. Me and them left.

b. Him and me drinks nought but water. (Chapman 1995)

The existence of such data does not mean that the coordinator *and* has any intrinsic feature related to Case. We need clarify that abstract Case encodes a mutual checking (or licensing) relation between a nominal and a functional head. For instance, the Nominative Case of a nominal and the Case feature of T check each other, and the Accusative Case of a nominal and the Case feature of v (or AgrO, Tr) check each other.⁸ Non-nominal conjuncts do not have Case features. If coordinators must have a Case-relation with conjuncts, the derivation of all types of coordinate non-nominal complexes will crash, since the Case-feature of the coordinators cannot be checked. Zoerner (1995: 45 fn. 2) obviously notices this dilemma. He however declares that the use of a coordinator in non-nominal coordinate complexes “reflects the &⁰'s use as a discourse marker,” rather than a Case-assignor. Since he does not explain this “discourse marker” status of coordinators, it is as confusing as the assumed Case-assignor status of coordinators.

We also need to clarify that morphological case does not represent abstract Case directly (McFadden 2004), which we understand to be a formal licensing relationship between a nominal and a functional head. Although I am not making any claim regarding the morphological cases of pronominal conjuncts (see Carson 2001: sec 5.2 for a default case

⁷ See Progovac (1998-I) for an overview of the diversity of case-marking of conjuncts within a language and among languages, and Progovac (1998-II) for a review of some approaches to the issue in the literature.

⁸ In Chomsky (2000), Case features of nominals are checked or erased by the phi-features of functional categories under matching. This technical change does not affect the statement here. Both types of features are still uninterpretable, and still must be checked or erased mutually.

approach), I claim that the coordinator *and* does not have any intrinsic feature related to Case. Accordingly, the issue of Case cannot be used as an argument for &P.

4.3 Retrospection

Based on the facts and the discussion of this section, I conclude that coordinators do not bleach the category-features of the relevant coordinate complexes, nor create any new category for the coordinate complexes. Thus both of the following two assumptions are problematic: that there is a category-neutral &P, and that &P is categorically contrastive to other categories, such as N and V.

One needs to distinguish between two issues: whether coordinators can function as head elements, and whether they should be classified as an independent functional category. One example to illustrate the difference is the word *do* in English *do*-support. The word *do* can be a realization of T (or some other functional projection, see Laka 1993), but it does not head an independent *DoP*, in contrast to other functional and lexical categories. Similarly, we claim that coordinators are realizations of lexical or functional elements, but they do not constitute an independent syntactic category.

Grootveld (1994: 31) claims that coordinators head a functional projection that is categorially non-distinct from the head's complement, assuming all conjuncts are such complements. Zoerner (1995: 19) claims that "An &P lacks inherent features such as $[\pm V]$ or $[\pm N]$, which would limit the number of sites in which it could licitly surface; rather, it assumes the feature specification of its conjuncts." In Johannessen (1998), although CoP is claimed to be an independent category, "CoP get[s] its major category feature from one conjunct" (p. 112), and "This category is (presumably) the same one as the specifier conjunct" (p. 164). Similar statements can also be found on p.168, 169 of her book. We can see that in these analyses, it makes no empirical difference if one gives up the label of CoP or &P and uses the category of a certain conjunct instead.⁹

In the literature, the proposal of &P has been constantly criticized. Abney (1991: 225) correctly points out that coordinators such as the *and* do not show any specific selectional properties. Based on the fact that coordinate complexes have no fixed position and the so-called &P is never selected for, Wilder (1999: sec 2) states that "analyzing the

⁹ Johannessen (1998) also claims that "the input structures to coordination are always full CPs" (p. 169), and "Strictly speaking, the CoP is now a CoP[CP]" (p. 176). One of course will not deny the independent categorial status of CP. She uses the word "input" to refer to the category before the application of an assumed PF-deletion. It is not clear whether the PF operation may have any effect on the categories of syntactic elements in her analysis. Moreover, if only CPs can be coordinated, there is no way to explain the existence of coordinators that c-selects conjuncts cross-linguistically (2.1).

coordination constituent as a projection of & is problematic.” Similar comments have been made by Sag (2000: 8) and Borsley (2005).

Traditionally, conjunctions such as *and* have been regarded as “empty words.” In Hockett (1958: 153), conjunctions “serve not directly as carriers of meaning, but only as markers of the structural relationships between other forms.” In Moltmann (1992: 32), “‘coordinator’ does not denote a syntactic function.” Blümel (1914: 52) even declares “Strictly speaking,...such words should be excluded from dictionaries” (see Lang 1984: 67 for a review). Following Chomsky’s (2006: 6) idea that a lexical item may have an edge-feature, which permits it to be merged with another syntactic element, we assume that it is the edge-features of coordinators that permit them to be merged with conjuncts. Since Merge iterates, the first integrated element is its complement, and the second integrated element is its specifier. As stated in Chomsky (2002: 134), a complement is defined as an element with which the head merges first, and a Spec element is defined as an element with which the head merges second (leaving the adjunction structure aside here). It is plausible to claim that coordinators have both interpretable and uninterpretable features. Their interpretable features give various semantic features of the projected coordinate complex. For instance, a conjunction projects a plural feature, even when each of the conjunct is singular; a disjunction such as *or* projects a disjunctive feature, and adversative coordinators such as *but* projects an adversative feature. However, the categorial features of *and* are unvalued (and thus uninterpretable), they thus need to be valued. It is conjuncts that do the job.

It is well-recognized that not every part of speech corresponds to an independent syntactic category. Pronouns, demonstratives, articles, and expletives are all grouped into D-elements. Conjunction is a part of speech. But this does not mean that it must be an independent syntactic category.

We thus get the same conclusion we reached in last section: there is no new category exists in coordination.

5. Summary

We have presented cross-linguistic data showing that coordinators can c-select conjuncts. We have also shown that in coordinate complexes headed by *and*-like coordinators, the external conjunct determines the category of the whole coordinate complex, whereas in complexes headed by coordinators that show c-selectional restrictions, the internal conjunct does. We

proposed that conjuncts value the categorial features of coordinators. Moreover, since coordinate complexes neither are found to have any new distribution other than that of the currently recognized categories, nor neutralize the contrasts of the currently recognized categories, they cannot represent any independent category. We concluded that there is no &P.

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