

Universal Constructions? Relativization in English and Chinese*

Yen-hui Audrey Li

University of Southern California

The search for universal phrase structures leads to the question of whether specific constructions also share the same basic structures cross-linguistically --- "universal constructions." Based on a comparative study of English and Chinese relative constructions, we argue that "universal construction" is not necessarily a valid notion. Kayne (1994)'s Antisymmetry to phrase structures forces a re-examination of relative structures: they must have a complementation structure, instead of the widely-accepted adjunction structure (Chomsky 1977). Evidence comes from important generalizations regarding the relations between the determiner heading a complex nominal and the relative clause. Kayne further argues that head-initial and head-final relatives are derived from the same basic structure, subscribing to the notion of "universal constructions." We demonstrate, however, that head-final relatives in Chinese provide direct evidence for an adjunction structure, in contrast to English relatives, which convincingly support a complementation structure. The difference is traced to the different behavior of the determiner systems in these two types of languages.

Keywords: Relativization, Universal constructions, Nominal structures, Determiner, Reconstruction

1. Introduction

In the search for general characteristics shared by all human languages, issues concerning variations of word order and constituent structure have always been among the central concerns. Is there a universal word order and set of phrase structures for all languages; i.e., do all languages share the same basic word order and constituency structures with variation being derived via various movement operations during the derivation? If all languages are derived from the same universal word order, are their specific constructions derived from the same basic structures as well; in other words, is

* I am thankful of the discussions with Joseph Aoun, Hagit Borer, Barry Schein, Andrew Simpson, Tim Stowell, Patricia Schneider-Zioga and the comments from the two reviewers. I am also greatly indebted to many Mandarin speakers for their help with the data, including Stephanie Chen, Bella Feng, Congzhou He, Hai Huang, Chinman Kuo, Bingfu Lu, Zoe Wu, Shenglan Zhang, I am also thankful of the students in Linguistics 615 in the fall of 2000 at USC, who were excellent evaluators of the data and the claims of this work.

there a reliable notion of “universal constructions?” The Antisymmetry approach to order and constituency by Kayne (1994) and its analysis of relative constructions are the most recent and significant example of such efforts: under this approach, all languages have the same basic structures. Relative constructions with different orderings all share the same basic structure.

The essence of the Antisymmetry approach is to build on X'-theory (Chomsky and Lasnik 1977, Chomsky 1981, Jackendoff 1977) and derive linear ordering from hierarchical ordering. In X'-theory, the phrase structures of a language take the form in

(1).

- (1) a. $XP \rightarrow \text{Specifier} + X'$
- b. $X' \rightarrow X + \text{Complement}$

That is, all XP phrases contain a head X. The head and its complement are sister nodes, which together take a Specifier as a sister. Different languages vary with respect to the relative ordering between the head X and Complement,¹ distinguishing head-initial (the head X preceding its complement) from head-final (the head X following its complement) languages.² In other words, linear ordering for individual languages is a stipulation of a head position relative to its complement (the head-initial/head-final parameter). In contrast, the Antisymmetry approach to phrase structures tries to dispense with any stipulation of linear ordering. It claims that linear ordering reflects hierarchical ordering: if an element α c-commands an element β , α precedes β . The most important claims of this approach can be summarized below:³

- (2) i. Specifier-Head-Complement (SVO) is the universal word order.
- ii. Different ordering, such as SOV, is derived by movement operations.
- iii. An element α adjoined to β necessarily c-commands β ; therefore, α precedes β .

¹ Specifiers are generally taken to be in the opposite direction to Complements in relation to X.

² Such an X'-theoretic approach to phrase structures is closely related to the general cross-linguistic tendency according to which a language tends to be either VO, prepositional and N-initial or OV, postpositional and N-final (the typological universals, see Greenberg 1963, Hawkins 1983, for instance). The mixed word order facts in Chinese (VO, prepositional but N-final) raise interesting issues concerning the interpretation of such claims. See Huang (1982) and Li (1990) for representative accounts of how the exceptions can be accommodated.

³ Due to space limitation, we do not cite exact formulations or present detailed definitions and structural derivations. The interested reader is referred to Kayne (1994).

Claims regarding universal word order in (2) aside, (2), in effect, rules out any structure involving right-adjunction: an element α adjoined to another element β cannot follow (occur on the right of) β . This raises the question of how the constructions traditionally analyzed as derived by right-adjunction should be analyzed. A case in point is the relative construction in English. Following Chomsky (1977), a widely accepted analysis of the English relative construction postulates that a relative clause (Relative CP) in English is right-adjoined to the Head⁴ modified by the relative clause:

- (3) [[_{Head} ...] [_{Relative CP} ...]]
 the man that came here

A right-adjunction analysis, clearly, cannot be adopted if the Antisymmetry approach to phrase structures is correct. This necessarily led to a re-examination of relative structures. Indeed, Kayne (1994, chapter 8), Bianchi (1999, 2000a,b), among others, argue that English relative constructions should not have the right-adjunction structure in (3). Instead, relativization should be accounted for via the "promotion analysis," dating back to Schachter (1973, also quoting an unpublished work by Michael Brame), Vergnaud (1974) etc. According to the promotion analysis as implemented by Kayne and Bianchi,⁵ relative constructions can have the structure in (4) where the CP is complement to a D(eterminer) and the Head phrase is moved directly from the argument position inside the IP (Inflection Phrase) to the Specifier position of CP. The Head phrase, originated from an argument position, is represented as a DP with the D being empty.⁶ ((4) will be referred to as the "complementation structure" for convenience.)

⁴ For convenience, we will, throughout the discussions, use the capitalized "Head" to refer to the nominal expression that is "modified" by the relative clause, even though in structures like (4), the "Head" is in the Spec of the CP, which is not the syntactic head of the projection.

⁵ Not all those arguing for the "promotion analysis" adopt the same syntactic structures and derivations. For lack of space, we limit our discussions to the one represented in (4).

⁶ Kayne (1994) suggests that what is moved is an NP in the case of *that* relatives and a DP in the case of *wh*-relatives. Bianchi (1999) further refines Kayne's analysis and unifies the phrase that is moved: it must be a DP. This conforms to the assumption that an element base-generated in an argument position is a DP, not an NP (see Borsley 1997 for the issues regarding NP vs. DP relativization). A moved DP may contain an empty D or a *wh*-word. In the latter case, the NP is fronted across the *wh*-word:

(i) a. [_{DP} [_D the] [_{CP} [_{DP} \bar{a} man] [_C that [_{IP} came here]]]]]
 b. [_{DP} [_D the] [_{CP} [_{NP} man_i [_{DP} who _{t_i}]] [_C [_{IP} came here]]]]]

$$(4) \quad [_{DP} D [_{CP} DP_i [C [_{IP} \dots t_i \dots]]]]$$

The complementation structure, therefore, derives the English relative construction without violating the prohibition against right-adjunction structures in the Antisymmetry approach to phrase structures. Questions arise, however, concerning relative constructions in languages like Chinese which have the reverse order: a relative clause precedes its Head (referred to as “Head-final” relative clauses, in contrast to the English “Head-initial” relative clauses). If one subscribes to the notion of “universal constructions” (specific constructions share the same structure cross-linguistically), it would lead to the claim that Chinese relative constructions also have the structure in (4). Note, however, that the Antisymmetry approach to phrase structures does not require such an analysis of Chinese relatives, nor does it prevent Chinese relative constructions from being derived from an adjunction structure (cf. (3)) because of the word order. Chinese relative clauses are head-final so a left-adjunction relative structure is available in principle:

$$(5) \quad [_{NP} [_{Relative\ CP}] [_{Head\ NP}]]$$

lai zher de ren
come here De person
'the person that came here'

However, subscribing to the notion of universal constructions, Kayne argues that a Head-final relative clause also has the complementation structure given in (4) and, therefore, he derives the reverse word order by movement of the entire IP to the Spec of DP position:

$$(6) \quad [_{DP} [_{IP} \dots t_i \dots]_j [_{D'} D [_{CP} DP_i [C t_j]]]]$$

Kayne (1994, chapter 8) discusses some interesting consequences of adopting the structure in (6) for Head-final relative clauses, which, for lack of space, will not be elaborated on here (see Li, 2001 and to appear for the relevant issues and problems). In this short paper, we will concentrate on demonstrating the necessity of distinguishing different relativization structures based on significant empirical differences between English and Chinese. Facts will be presented to show that English relative constructions indeed have important properties that follow from the complementation

structure (section 1). Chinese, however, not only does not have the evidence for the complementation structure but also provides evidence for the adjunction structure (section 2). That is, Chinese relative constructions should be derived from a left-adjunction structure instead of a complementation structure. We, therefore, conclude that the notion of universal constructions cannot be maintained,⁷ even though the Antisymmetry approach to the general issues of order and constituency can be maintained.

2. The [D CP] complementation structure in English

There is strong evidence in support of the complementation structure and direct movement to the Head position illustrated in (4) for English relative construction. The structure in (4) has the following properties:

- (7)
- i. Because the relative CP is complement of D, the presence of a relative CP requires the presence of D.
 - ii. A selection relation between D and CP exists.
 - iii. D does not form a constituent with the Head NP, which is in Spec of CP.
 - iv. The Head phrase can be interpreted as if it were in the t_i position inside the relative IP because it is moved to the Head position (reconstruction effects).

These characterizations are all well supported empirically.

2.1 The obligatoriness of a DP structure

(7) states that the occurrence of a relative clause requires a DP projection. There is interesting evidence from coordination facts showing that this is indeed the case. Generally, English allows *and* to connect basically any category, including DPs, NPs and NPs modified by adjectives.

- (8)
- a. He saw [[an actor] and [a producer]]. ---DP coordination
 - b. He is an [[actor] and [producer]]. ---NP coordination
 - c. He is a [[great actor] and [brilliant producer]]. ---Adj + NP coordination

Interestingly, however, when a relative clause occurs, a determiner must occur,

⁷ We mainly discuss the empirical generalizations in this work. Due to space limitations, we cannot discuss the strengths and weaknesses of a universal adjunction structure (Fukui and Takano 1998) or a universal complementation structure, as well as how languages choose from the options available in the universal grammar. See Aoun and Li (2001) for relevant discussions.

suggesting that what is connected must be DPs.

- 9) a. *He is an [[actor that wants to do everything] and [producer that wants to please everyone]].
 b. He is [[an actor that wants to do everything] and [a producer that wants to please everyone]].
 c. He is an [[[actor] and [producer]] that wants to please everyone].
 d. He is [[an actor] and [[a producer] that does not know how to produce].

The contrast between (9) and (9) shows the obligatoriness of a determiner. The relative clause in (9) must modify both of the conjuncts, not just one of the conjuncts. It is not the case that a relative clause cannot modify only one conjunct. If the conjunct has a determiner, the modification of one single conjunct is acceptable (9). The sentences in (8)-(9) argue for the necessity of a DP projection when a relative clause occurs.

2.2 Selection relation between D and CP

There is a very close dependency relation between the relative clause and the determiner (Bianchi 1999, Alexiadou et al. 2000). The D and the CP must co-occur in the following expressions.

- (10) a. the Paris *(that I knew) (Vergnaud 1974: 265)
 b. the three books of John's *(that I read) (cf. Kayne 1994: 86)
 c. the four of the boys *(that came to dinner)

Other examples illustrating the same close D/CP dependency relation can be found in Schmitt (2000: 311-312). They include type expressions (11), measure expressions (12), resultatives (13) and *with* expressions (14). The co-occurrence of a definite article in such expressions is made acceptable only by the use of a relative clause.

- (11) a. I bought one type of bread.
 b. *I bought the type of bread.
 c. I bought the type of bread you like.
- (12) a. Maria weighs forty-five kilos.
 b. *Maria weighs the forty-five kilos.
 c. Maria weighs the forty-five kilos Susana would love to weigh.

- (13) a. John painted the house a nice color.
 b. *John painted the house the nice color.
 c. John painted the house the color his girlfriend liked.
- (14) a. Mary bought a house with windows.
 b. *Mary bought a house with the windows.
 c. Mary bought a house with the windows that she liked.

In short, examples of the types above support the claim that there is a close relation between D and the relative CP.

2.3 External determiner

In addition, arguments have been put forward indicating that structurally, the determiner *the* is outside of the relative CP (the external determiner hypothesis). They are mainly based on facts that demonstrate that the definite determiner *the* cannot have occurred inside the relative clause, as extensively discussed in Bianchi (1999: 43-48). First, the trace of the relativized nominal is not interpreted as definite. (15), for instance, which involve the existential *there* construction, show that the relativized trace is indefinite because it occurs in a context that typically disallows a definite expression. This fact indicates that *the* cannot be part of the relativized nominal itself.

- (15) a. *There were **the** men in the garden.
 b. **The** men that there were t in the garden were all diplomats.

Another argument is based on the fact that *the* occurs in a relativization structure even when the relativized nominal generally cannot accept the co-occurrence of *the*. The contrast between the pairs of expressions in (16), for instance, shows that *the* cannot occur with certain idioms but is allowed when a relative clause occurs:

- (16) a. *They made the fun of me. (Fabb 1990:71)
 b. the fun that they made of me
 c. *We made the headway on that problem. (Browning 1987: 130)
 d. the headway that we made on that problem

A third argument concerns scope assignment under reconstruction, as illustrated by the interpretation of the following sentences:⁸

⁸ Another argument discussed in Bianchi (1999: 46-48), which we will not repeat here, concerns floating quantifiers in Italian.

- (17) a. Each doctor will examine two patients.
 b. Each doctor will examine the two patients.
 c. I phoned the two patients [that every doctor will examine t tomorrow].

(17) contains an object QP *two patients*, which can have a narrow scope interpretation. That is, there can be twice as many patients as doctors. (17), whose object contains a definite article, has only the reading according to which there are a total of two patients examined by the doctors. Interestingly, (17), where the relativized nominal is preceded by a definite article, has the same interpretation as (17), not (17). The similarity of (17) with (17), not with (17), indicates that the relativized trace behaves like a nominal phrase without a definite article. In other words, the definite article is outside of the relative CP.

2.4 Reconstruction effects

Reconstruction effects can be illustrated by binding possibilities, as illustrated in Schachter's (1973: 32-33) examples.

- (18) a. John_i thinks that Mary has an unfavorable opinion of him_i.
 b. *He_i thinks that Mary has an unfavorable opinion of John_i
 cf.
- (19) a. The opinion of him_i [that John_i thinks that Mary has t] is unfavorable.
 b. *The opinion of John_i [that he_i thinks that Mary has t] is unfavorable.
- (20) a. John painted_i a flattering portrait of himself_i.
 b. *Himself_i painted a flattering portrait of John_i.
 cf.
- (21) a. The portrait of himself_i [that John_i painted t] is extremely flattering.
 b. *The portrait of John_i [that himself_i/he_i painted t] is extremely flattering.
- (22) a. John and Mary_i showed a fleeting interest in each other_i.
 b. *Each other showed a fleeting interest in John and Mary.
 cf.
- (23) a. The interest in each other_i [that John and Mary_i showed t] was fleeting.
 b. *The interest in John and Mary_i [that each other_i showed t] was fleeting.

The distribution of anaphors in the above examples indicates that the Head nominal behaves as if it reconstructs.

In addition, the scope facts illustrated in (17) and those listed below argue for the availability of reconstruction: the Head nominal can be interpreted as having narrow scope with respect to the subject quantificational phrase in the relative clause.

- (24) a. The two signs [that every man in the picket line holds t in his hand] speak against the government.
 b. The editor in chief will read the two articles [that every journalist wrote t about the war].

The distribution of bound pronouns also exhibits reconstruction effects since the pronoun contained in the Head can be c-commanded by the QP that binds it only if the nominal head reconstructs:

- (25) a. I would like to collect the best pictures of his_i best friend [that everyone_j will bring t tomorrow].
 b. I would like to collect the best pictures of his_i best friend [that I think everyone_j will bring t tomorrow].

In brief, there is strong evidence in English that reconstruction takes place in relative constructions; that is, in all the above examples, the Head nominal is interpreted in the position of t_i in the structure in (4). Relativization is derived by movement of the relativized nominal to the Head position.⁹

The discussions in sections 2.1-2.4 show that the complementation structure in (4) is well-supported by important empirical generalizations concerning English relative constructions.

3. Chinese relative constructions

Turning to Chinese, however, we see that relative constructions in this language have very different properties. In fact, there is no evidence at all in support of a complementation structure.

⁹ To be noted, however, is that not all English relative clauses are derived by movement. Even though movement has been regarded as the prominent strategy to derive relative clauses in English, it has been noted that relativization allows resumptive pronouns. They are allowed in island contexts or other non-extractable positions such as nominal possessor (low on the Accessibility Hierarchy of Keenan and Comrie 1977). See Chao and Sells (1983), Safir (1986), Prince (1990), among others.

1 Insignificance of D

First, there is no evidence that a D selects a CP in Chinese. Chinese does not have a definite or indefinite article, corresponding to *the* or *a* in English. The most likely candidates for D is the demonstrative *zhe/na* 'this/that' or a quantifier such as *mei* 'every'. The distribution of the demonstrative in relative clauses can be examined by looking, for example, at idiomatic expressions. The object part of some [V + O] idioms can occur as the relative head with a demonstrative; some others do not allow a demonstrative. What is important, however, is that the acceptability of a demonstrative in such cases is the same with or without a relative clause:

- (26) a. [[ta kai t de] na-ge dao] hen chenggong.
 he open De that-Cl knife very successful
 'That operation he performed was successful.'
- b. deng ta kai-wan na-ge dao yihou zai zou.
 wait he open-finish that-Cl knife after then leave
 'Don't leave till he finishes the operation.'
- c. *[[ta chi t de] na-xie doufu] tai duo le.¹⁰
 he eat De those tofu too much Le
 'He flirted too much.'
- d. *deng ta chi-wan na-xie doufu zai zou.
 wait he eat-finish those tofu then go
 'Don't leave till he finishes flirting.'

There is no evidence for the irrelevance of D vis-à-vis the nominal Head based on scope interaction, either (see (17)). The interpretation of (27) or (27) is like (27), rather than (27). This means that the demonstrative in the relative construction is clearly directly specifying the QP Head, and thus forms a single constituent with it.

- (27) a. mei-ge ren dou wen-le liang-ge wenti.
 every-Cl person all asked two-Cl questions
 'Everyone asked two questions.'
- b. mei-ge ren dou wen-le na liang-ge wenti.
 every-Cl person all asked that two-Cl questions
 'Everyone asked those two questions.'

¹⁰ The sentences in (c) and (d) are acceptable under the non-idiomatic interpretation.

- c. [mei-ge ren dou wen t de] na liang-ge wenti.
 every-Cl person all ask De that two-Cl questions
 'the two questions that everyone asked.'
- d. na liang-ge [mei-ge ren dou wen t de] wenti.
 that two-Cl every-Cl person all ask De questions
 'the two questions that everyone asked.'

In brief, the type of evidence supporting the dependency relation between D and CP in English simply does not exist in Chinese.

3.2 DP not required

Even more damaging for the adoption of the complementation structure, which requires the obligatory projection of a DP when a relative clause occurs (a relative clause must be selected by D), is the fact that a Chinese relativization structure does not necessarily project a DP. Indeed, there is positive evidence showing that a relative clause and its Head can be projected as an NP. The relevant evidence comes from the behavior of different conjunctors in various types of conjunction structures. First of all, we note that, as in the English example below, conjunction of two NPs exists.

- (28) He is a secretary and typist.

The expression *secretary and typist* describes the dual roles of one individual. Chinese also allows such NP conjunction:

- (29) ta shi [mishu jian daziyuan].
 he is secretary and typist
 'He is a secretary and typist.'

A number and classifier expression *yige* 'one-Cl', more or less like an English indefinite determiner, can also occur before the conjunction:

- (30) ta shi yi-ge [mishu jian daziyuan].
 he is one-Cl secretary and typist
 'He is a secretary and typist.'

Further examples illustrate the use of the conjunction to describe one individual:

- (31) a. wo xiang zhao yi-ge [mishu jian daziyuan]. ---one person is being sought
 I want find one-Cl secretary and typist
 'I want to find a secretary and typist.'

- b. wo yao dang yi-ge [yisheng jian hushi]. ---being a doctor and nurse
simultaneously

I want work one-Cl doctor and nurse
'I want to be a doctor and nurse.'

Relevant to our discussion is the use of the conjunctive *jian* in such examples. In contrast to *and* in English, which can be used to conjoin basically phrases of any category, Chinese has a rich set of conjunctors used to connect different categories. For instance, in contrast to *jian*, which connects two properties belonging to one individual, if two individual-denoting expressions are connected, the connector is *he* or *gen*. (31) stand in contrast to the following sentences which indicate the conjunction of two individuals by the addition of a number+classifier expression to the second conjunct.

- (32) a. wo xiang zhao [[yi-ge mishu] he/gen [yi-ge daziyuan]]. ---two individuals
I want find one-Cl secretary and one-Cl typist
'I want to find a secretary and a typist.'
- b. wo yao kan [[yi-ge yisheng] he/gen [yi-ge hushi]]. ---two individuals
I want see one-Cl doctor and one-Cl nurse
'I want to see a doctor and a nurse.'

Not only can the number+classifier+noun expressions denoting individuals be connected by *he/gen*, they can also connect other individual-denoting expressions such as proper names, pronouns and expressions with demonstratives:

- (33) a. wo hen xihuan [[zhe-ge xuesheng] he/gen [na-ge xuesheng]].
I very like this-Cl student and that-Cl student
'I like this student and that student.'
- b. wo hen xihuan [[ta] he/gen [Zhangsan]].
I very like him and Zhangsan
'I like him and Zhangsan.'

Such conjunction of individual-denoting expressions is not possible with *jian*. Thus, replacing *he/gen* with *jian* in (32)-(33) is unacceptable:

- (34) a. *wo xiang zhao [[yi-ge mishu] jian [yi-ge daziyuan]].
I want find one-Cl secretary and one-Cl typist
'I want to find a secretary and a typist.'

- b. *wo yao kan [[yi-ge yisheng] jian [yi-ge hushi]].
 I want see one-Cl doctor and one-Cl nurse
 'I want to see a doctor and a nurse.'
- (35) a. *wo hen xihuan [[zhe-ge xuesheng] jian [na-ge xuesheng]].
 I very like this-Cl student and that-Cl student
 'I like this student and that student.'
- b. *wo hen xihuan [[ta] jian [Zhangsan]].
 I very like him and Zhangsan
 'I like him and Zhangsan.'

Jian, as previously shown, can be used to connect two properties describing one individual. It can also connect two activities, expressed by VPs, performed by one individual:¹¹

- (36) a. Zhangsan [[nian-shu] jian [zuo-shi]], hen mang.
 Zhangsan study and work very busy
 'Zhangsan studies and works; (he is) busy.'
- b. wo [[sheji] jian [huatu]], ta [[shigong] jian [jiangong]], women hezuo-de hen hao.
 I design and draft he construct and supervise we cooperate very well
 'I design and draft; he constructs and supervises; we cooperate very well.'

In contrast, connecting two clauses does not use any of the above conjunctors (*he/gen/jian*). Instead, *erqie* is used.¹²

¹¹ Two VPs connected by *jian* express dual activities performed by one person or simultaneous activities performed by the same person. Otherwise, the connector is *erqie*, which can be used to connect any non-nominal expressions. The conjuncts connected by *jian* cannot contain aspect markers:

(i) *ta nian-zhe/le/guo shu, jian zuo-zhe/le/guo shi.

he read-Asp, and do-Asp works

¹² Does *erqie* connect CPs, or IPs or both? Sentences in (37) show that *erqie* connects full clauses. If clauses are CPs, *erqie* connects two CPs. Are there clearer examples showing the inclusion or exclusion of C (CP or IP) in the cases of *erqie* conjunction? If *yinwei* 'because' is analyzed as C, it is clear that *erqie* can connect two conjuncts without repeating *yinwei*. That is, it connects two IPs:

(i) yinwei ta dedao le zuida de jiang erqie ta you you xi shi jiang-lin, women dou wei ta gaoping.
 because he get Le biggest De prize and he also have good thing forth-coming, we all for him happy

'We are all happy for him because he got the biggest prize and he is having a happy event.'

It is also acceptable to connect conjuncts with *yinwei* repeated in the second conjunct. That is, the connection of CPs is acceptable as well:

(ii) women dou wei ta gaoping, yinwei ta dedao le zuida de jiang erqie yinwei ta you you xi shi jiang-lin.
 we all for him happy because he got Le biggest De prize and because he have good thing forth-coming

'We are all happy for him because he got the biggest prize and because he is having a happy event.'

- (37) a. [[wo xihuan ta] erqie [Zhangsan ye xihuan ta]].
 I like him and Zhangsan also like him
 'I like him and Zhangsan also likes him.'
 b. [[wo xihuan ta] erqie [Zhangsan hui zhaogu ta]].
 I like him and Zhangsan will care him
 'I like him and Zhangsan will take care of him.'

In sum, the function of the various conjunctors can be described as follows:

- (38) a. *jian* connects two properties of an individual or two activities performed by one individual. In terms of categories, *jian* can connect NPs or VPs.
 b. *he/gen* connects two individual-denoting expressions, i.e. two DPs, which can be proper names, pronouns, expressions containing demonstratives or expressions containing number and classifier expressions.
 c. *erqie* connects two non-nominal categories, including clauses, adjective phrases and VPs not expressing dual properties/activities by one individual.¹³
 d. These connectors are not interchangeable.

The unique distribution of conjunctors provides us with an important test for the categorial status of complex nominals. Recall that we suggested in the previous section that there is no evidence for the structure [_{DP} D CP] for relativization in Chinese. Were [_{DP} D CP] an appropriate structure for Chinese relative constructions, we would expect the conjunction of the relative clause with the Head (excluding D) to be possible with the CP conjunctor *erqie*. But this is not the case.¹⁴

- (39) a. *wo xiang zhao yi-ge [[fuze Yingwen de mishu] erqie [jiao xiaohai de jiajiao]].
 I want find one-Cl charge English De secretary and teach kid De tutor

¹³ The previous note gives examples for the conjunction of CPs and IPs. The following examples illustrate the conjunction of adjective phrases and VPs by *erqie*:

- (i) ta hen congming erqie hen piaoling.
 she very bright and very pretty
 'She is bright and pretty.'
 (ii) ta changchang jiao wo shuxue erqie jie wo qian.
 he often teach me math and lend me money
 'He often teaches me math and lends me money.'

¹⁴ Even though most of the speakers consulted with do not like these sentences, there exists a smaller number of Mandarin speakers who find (39) acceptable, or "acceptable but not logical." It is not clear why such variations among speakers exist.

'I want to find a secretary that takes care of English (matters) and tutor that teaches kids.'

- b. *wo yao dang yi-ge [[neng yin shi de shiren] **erqie** [neng hua huar de huajia]].

I want be one-Cl can sing poem De poet and can draw painting De painter

'I want to be a poet that can sing poems and painter that can paint paintings.'

Indeed, (39) can only be made acceptable by replacing *erqie* with *jian*. *He* or *gen* is not possible either:

- (40) a. wo xiang zhao yi-ge [[fuze Yingwen de mishu] **jian** [jiao xiaohai de jiajiao]].

I want find one-Cl charge English De secretary and teach kid De tutor

'I want to find a secretary that takes care of English (matters) and tutor that teaches kids'

- b. wo yao dang yi-ge [[neng yin shi de shiren] **jian** [neng hua huar de huajia]].

I want be one-Cl can sing poem De poet and can draw painting De painter

'I want to be a poet that can sing poems and painter that can paint paintings.'

- (41) a. *wo xiang zhao yi-ge [[fuze Yingwen de mishu] **he/gen** [jiao xiaohai de jiajiao]].

I want find one-Cl charge English De secretary and teach kid De tutor

'I want to find a secretary that takes care of English (matters) and tutor that teaches kids.'

- b. *wo yao dang yi-ge [[neng yin shi de shiren] **he/gen** [neng hua huar de huajia]].

I want be one-Cl can sing poem De poet and can draw picture De painter

'I want to be a poet that can sing and painter that can draw pictures.'

Not surprisingly, just as with the acceptability of (32), which allows *he/gen* by adding a number+classifier expression to the second conjunct and makes the conjunction to be of two individual-denoting expressions, (41) can be rescued in the same way:

- (42) a. wo xiang zhao [[yi-ge fuze Yingwen de mishu] **he/gen**

I want find one-Cl charge English De secretary and

[yi-ge jiao xiaohai de jiajiao]].

one-Cl teach kid De tutor

'I want to find a secretary that takes care of English (matters) and a tutor that teaches kids.'

- b. wo yao zhao [[yi-ge neng yin shi de shiren] **he/gen** [yi-ge neng hua huar de huajia]].

I want find one-Cl can sing poem De poet and one-Cl can draw picture De painter

'I want to find a poet that can sing and a painter that can draw pictures.'

The acceptance of (42) is not surprising. After all, a complex nominal can be an individual-denoting expression (DP). It is the use of *jian* in (40) that is significant. Recall that a complex nominal is always a DP according to (4) and the category selected by D is a CP. However, the appearance of *jian*, not *erqie*, suggests that the categories connected are NPs, not CPs. If a complex nominal is always a DP, as in (4), we should not expect the conjuncts in the NP conjunction cases to contain any relative clause.¹⁵

Summarizing, the contrast between the Chinese (40) and its English counterpart in (9), repeated below, clearly argues for the different categorial status of the complex nominals in the two languages:

- (9) a. *He is an [[actor that wants to do everything] and [producer that wants to please everyone]].
 b. He is [[an actor that wants to do everything] and [a producer that wants to please everyone]].

A complex nominal can be an NP in Chinese but it must be a DP in English. Since a complex nominal in Chinese can be an NP, it casts doubt on the adequacy of adopting a structure such as [_{DP} D CP] for relativization in Chinese. Indeed, the fact that the addition of a relative clause to an NP Head still constitutes an NP strongly suggests an adjunction structure.

3.3 Mixed reconstruction: NP movement

Facts concerning reconstruction also point to an NP structure in Chinese: if movement applies to derive relativization in Chinese, what is moved cannot contain number and classifier expressions but can contain a relative clause. That is, what is moved is an NP. Because what is moved can contain a relative clause, a relative clause

¹⁵ The acceptability of NP conjunction in such cases, in contrast to the obligatory DP conjunction in English when relative clauses occur, also argues against analyzing the projection containing the Head and the relative clause as a projection larger than an NP, such as a classifier phrase (cf. Cheng and Sybesma 1999). More details against a proposal adopting a classifier phrase are given in Aoun and Li (2001).

and its Head can be projected as an NP, not a DP.

First, we note that reconstruction is possible with reflexives in the following cases:

- (43) a. wo jiao Zhangsan quan meigeren_i kai ziji_i de chezi lai.
I ask Zhangsan persuade everyone drive self De car come
'I asked Zhangsan to persuade everyone_i to drive self_i's car over.'
- b. [wo jiao Zhangsan quan meigeren_i kai t lai de] ziji_i de chezi.
I ask Zhangsan persuade everyone drive come De self De car
'self_i's car that I asked Zhangsan to persuade everyone_i to drive over'

The reconstruction effect is also exhibited in the following cases which contain bound pronouns:

- (44) a. wo xiwang meige xuesheng_i dou neng ba wo gei ta_i de shu dai lai.
I hope every student all can BA I give his book bring come
'I hope every student_i can bring the book that I gave to him_i.'
- b. ni hui kandao [wo xiwang meige xuesheng_i dou neng dai t lai de] [wo gei ta_i de shu].
you will see I hope every student all can BA his book bring come De I give his book
'You will see the book that I gave to him_i that I hope every student_i will bring.'
- c. meigeren_i dou yiwei wo yijing mai-hao wo yao song gei ta_i de liwu.
everyone all think I already bought I will give to him De present
'Everyone_i thought I already bought the present that I would give to him_i.'
- d. [meigeren_i dou yiwei wo yijing mai-hao t de] [wo yao song gei ta_i de liwu]
everyone all think I already bought De I will give to him present
'present that that I was going to give to him_i that everyone_i thought I already bought'

With respect to scope interaction, however, reconstruction is unavailable.¹⁶

- (45) a. wo hui zhengli [meigeren dou hui kan t de] [san-ben shu]---same 3 books

¹⁶ See Aoun and Li (1993) for the apparently reconstructed interpretation of instances like (i), which has been argued to be the result of Quantifier Raising (QR), rather than reconstruction, in contrast to the cases containing *dou* which prevents QR of *meigeren* outside the relative clause.

(i) wo hui zhengli [[meigeren hui kan de] san-ben shu] ---different 3 books
I will arrange everyone will read De three-Cl book
'I will put the three books that everyone will read in order.'

I will arrange everyone will all read De three-Cl book

'I will put the three books that everyone will read in order.'

b. wo hui zhengli [ta xiwang meigeren hui kan t de] [san-ben shu] ---same 3 books¹⁷

I will arrange he hopes everyone will read De three-Cl book

'I will put the three books that he hopes that everyone will read in order.'

c. [meigeren dou hui kan t de] [san-ben shu], wo hui zhengli.---same 3 books everyone will all read De three-Cl book I will arrange

'The three books that everyone will read, I will put in order.'

d. [ta xiwang meigeren hui kan t de] [san-ben shu], wo hui zhengli.---same 3 books

he hopes everyone will read De three-Cl book I will arrange

'the three books that he hopes that everyone will read I will put in order.'

Why is it that Chinese relativization exhibits mixed reconstruction effects? That is, why is reconstruction available for the cases involving reflexives, names and bound pronouns but not scope-bearing phrases? Note that the main difference between the two sets is the composition of the Head. A scope-bearing phrase takes the form of [quantifier/numeral + classifier + noun]; whereas those in the previous set do not contain a quantifier/numeral + classifier expression. This suggests that reconstruction is available in the cases where the relativized phrase is an NP.¹⁸ Note further that what is reconstructed can contain a relative clause, as illustrated in (44). This, in turn, argues for the claim that a relative and its Head can still be projected as an NP via adjunction, and not as a DP.

4. Universal constructions and phrase structures

We demonstrated in section 3 that a relative clause in Chinese does not have a

¹⁷ A reviewer commented that this sentence is not acceptable because *meigeren* 'everyone' must occur with *dou* 'all'. This is not true, however, as noted, for instance, by Lee (1986) that *meige* 'every +Cl' can occur without *dou* in some contexts. The relevant contexts include relative constructions. In my own field work, I also found some speakers who use *meige* with and without *dou* fairly freely (almost interchangeably), although this type of judgement is not shared by the majority of the speakers consulted with.

¹⁸ An important basis for this claim is that Chinese allows an NP to be generated in an argument position in certain contexts, such as in the cases of indefinite expressions. See Li (1998, 1999) and Aoun and Li (2001) for more detailed discussions concerning the structure of nominal expressions in Chinese.

dependency relation with D. It is not selected by D and the occurrence of a relative clause does not require the projection of a DP. In fact, there is evidence suggesting that a relative clause and the Head NP can be projected as an NP, as supported by the coordination facts and the mixed reconstruction effects. If a relative clause and the Head NP are still projected as an NP, the structure must be an adjunction structure, as in (5), repeated here:

- (5) [NP [Relative CP] [Head NP]]
 lai zher de ren
 come here De person
 'the person that came here'

On the other hand, there is convincing evidence in English that a relative clause has a dependency relation with D. It is selected by D and the occurrence of a relative clause requires the projection of a DP. The reconstruction effects are entirely consistent.¹⁹ The Head (excluding the external determiner) must have been moved from within the relative IP. In other words, it is well-supported that an English relative construction has the complementation structure in (4), repeated here:

- (4) [DP D [CP DP_i [C [IP ... t_i ...]]]]
 the person that came here

The empirical differences between the relative constructions in English and Chinese force us to claim that the two languages cannot have identical structures for their relative constructions. This leads to the conclusion that a construction does not necessarily have the same structure cross-linguistically. The notion of “universal construction,” therefore, is not adequate (see Murasugi 2000). However, a further question that needs to be raised is why English and Chinese have the structures in (4) and (5) respectively. Is it just by chance or grounded in grammatical principles? The different requirements on the occurrence of a determiner may provide an answer. In English, a relative clause requires the co-occurrence of a determiner (see Smith (1967),

¹⁹ A more careful examination reveals that reconstruction effects differ between cases containing *that* relatives and *wh* relatives. See Aoun and Li (2001) for detailed discussions on the contrast between these two types of relative clauses in English. Also see Carlson 1977 for related observations.

who argues that an article (determiner) and a relative clause are generated together under the node of Determiner). Chinese, in contrast, does not require such a determiner.²⁰ A close dependency relation between D and the relative clause is expressed by a selection relation, i.e., the complementation structure. When a dependency relation does not exist, a general modification structure, i.e., an adjunction structure, is adopted. The adjunction structure, following Kayne (1994), is a left-adjunction structure, yielding the word order [Relative clause + Head]. The complementation structure results in the word order of [Head + Relative clause]. This line of research may account for the fact that Chinese shares with Japanese and Korean virtually identical relative structures, because a relative clause does not require the occurrence of a D in these languages (though they differ in derivations, see Aoun and Li 2001). Moreover, it may also account for the fact that Hindi, which requires an occurrence of D (demonstrative or numeral) with a relative clause, allows the relative construction [Head + Relative clause], even though it is a head-final language (SOV). The relation between D and relative clauses, coupled with the Antisymmetry approach to phrase structures, can prove to be quite useful in accounting for the linear and hierarchical ordering of relative constructions in a wide variety of languages.

References

- Artemis Alexiadou, Paul Law, Andre Meinunger and Chris Wilder (eds.). 2000. *The Syntax of Relative Clauses*. Amsterdam, Netherlands: John Benjamins Publishing Co.
- Aoun Joseph and Yen-hui Audrey Li. 1993. *Syntax of Scope*. Cambridge, MA: MIT Press.
- . 2001. *Issues of and beyond Wh-movement in Wh-interrogatives and Relativization*. Los Angeles, CA: University of Southern California. ms.
- Bianchi, Valentina. 1999. *Consequences of Antisymmetry: Headed Relative Clauses*. New York: Mouton de Gruyter.
- . 2000a. The raising analysis of relative clauses: a reply to Borsley. *Linguistic*

²⁰ A reviewer suggests to entertain the possibility that the function of D is taken care of by Classifier in Chinese as proposed by Cheng and Sybesma (1999). We argue in Aoun and Li (2001) that this is not a viable alternative.

- Inquiry* 31.123-140.
- 2000b. Some issues in the syntax of relative determiners. *The syntax of Relative Clauses*, ed. by Artemis Alexiadou, Paul Law, Andre Meinunger and Chris Wilder, 53-82. Amsterdam, Netherlands: John Benjamins Publishing Co.
- Borsley, Robert D. 1997. Relative clauses and the theory of phrase structure. *Linguistic Inquiry* 28. 629-647.
- Browning, Marguerite A.. 1987. *Null Operator Constructions*. Cambridge, MA: MIT dissertation.
- Carlson, Greg N. 1977. Amount relatives. *Language* 53. 520-542.
- Chao, Wynn and Peter Sells. 1983. On the interpretation of resumptive pronouns. *Proceedings of the Thirteenth Annual Meeting of the North-Eastern Linguistics Society*, ed. by In P. Sells and C. Jones, 47-61. Amherst, Mass: University of Massachusetts.
- Cheng, Lisa and Rint Sybesma. 1999. Bare and Not-so-bare Nouns and the structure of NP. *Linguistic Inquiry* 30. 509-542.
- Chomsky, Noam. 1977. On wh movement. *Formal Syntax*, ed. by P. Culicover, T. Wasow and A. Akmajian, 71-132. New York: Academic Press.
- 1981. Lectures on government and binding. Dordrecht: Foris.
- Chomsky, Noam and Howard Lasnik. 1977. Filters and control. *Linguistic Inquiry* 8. 425-504.
- Fabb, Nigel. 1990. The difference between English restrictive and appositive clauses. *Journal of Linguistics* 26. 57-77.
- Fukui, Naoki and Yuji Takano. 1998. Issues of word order and the structure of noun phrases, *Proceedings of Linguistics and Phonetics 1998*, ed. by O. Fujimura, B.D. Joseph and B. Palek, 633-670. Prague: Charles University. The Karolinum Press.
- Greenberg, Joseph. 1963. Some universals of grammar with particular reference to the order of meaningful elements. *Universals of Language*, ed. by Joseph Greenberg, 73-113. Cambridge, MA: MIT Press.
- Hawkins, John. 1983. *Word Order Universals*. New York: Academic Press.
- Huang, C.-T. James. 1982. *Logical Relations in Chinese and the Theory of Grammar*. Cambridge, MA: MIT dissertation.
- Jackendoff, Ray. 1977. *X-syntax*. Cambridge, MA: MIT Press.
- Kayne, Richard. 1994. *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.
- Keenan and Comrie. 1977. Noun phrase accessibility and universal grammar. *Linguistic Inquiry* 8. 63-99.
- Lee, Thomas H.T. 1986. *Studies on Quantification in Chinese*. Los Angeles, CA: UCLA dissertation.
- Li, Yen-hui Audrey. 1990. *Order and Constituency in Mandarin Chinese*. Dordrecht, Netherlands: Kluwer Academic Publishers.
- 1998. Argument determiner and number phrases. *Linguistic Inquiry* 29: 693-702.
- 1999. Plurality in a classifier language. *Journal of East Asian Linguistics* 8: 75-99
- 2001. *That Which is raised: two strategies for relativization*. A talk given at the linguistics graduate student workshop, USC.
- to appear. Word Order, structure and relativization, to appear in *Formal Ways to Chinese Linguistics*, CSLI, Stanford University.

- Murasugi, Keiko. 2000. An Antisymmetry analysis of Japanese relative clauses. *The Syntax of Relative Clauses*, ed. by Artemis Alexiadou, Paul Law, Andre Meinunger and Chris Wilder, 231-264. Amsterdam, Netherlands: John Benjamins Publishing Co.
- Prince, Ellen. 1990. Syntax and discourse: a look at resumptive pronouns. *Proceedings of the sixteenth annual meeting of the Berkeley Linguistics Society*, 482-497. Berkeley, California: University of California.
- Safir, Ken. 1986. Relative clauses in a theory of binding and levels. *Linguistic Inquiry* 17: 663-689.
- Schachter, Paul. 1973. Focus and relativization. *Language* 49: 19-46.
- Schmitt, Cristina. 2000. Some consequences of the complement analysis for relative clauses, demonstratives and the wrong adjectives. *The Syntax of Relative Clauses*, ed. by Artemis Alexiadou, Paul Law, Andre Meinunger and Chris Wilder, John Benjamins Publishing Co. 309-348.
- Smith, Carlota. 1967. Determiners and relative clauses in generative grammar of English. *Modern Studies in English*, ed. by D. Reibel and S. Schane, 247-263. Englewood Cliffs: Prentice-Hall.
- Vergnaud, Jean-Roger. 1974. *French Relative Clauses*. Cambridge, MA: MIT dissertation.

About the Author: Li is professor of linguistics at the University of Southern California. She is interested in the general structural properties of natural languages, how and why human languages are the way they are and differ in the way they do. Her works focus on the theme that languages differ in a principled and systematic manner. She has worked on the issues on order and constituency at the clausal and nominal level. In addition, she argues that structural differences are the foundation of many apparent differences in the interpretative mechanisms, such as those manifested in the different behavior of quantifier scope interactions and the interpretation of various types of nominal expressions. Li's recent major publications include "Plurality in a classifier language," 1999, *Journal of East Asian Linguistics*; "Argument determiner and number phrases," 1998, *Linguistic Inquiry*; *New Horizons in Chinese Linguistics* 1996. Kluwer Academic Publishers, Dordrecht (ed. with James Huang). [E-mail: audreyli@usc.edu]

[Received 25 February 2001;
revision received 7 May 2001;
accepted 9 May 2001]