

# Double nominative construction revisited

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## Abstract

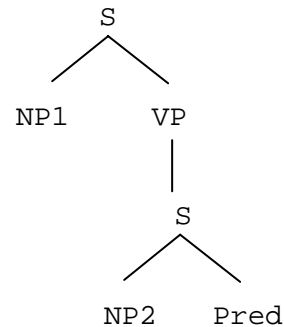
This paper reviews some previous analyses of the double nominative (DN) construction (Teng 1974, Shi 2000, Tsao 1990, among others), reveals a number of properties that are not noted in previous studies but strongly indicated in our corpus data, and proposes a more complete treatment for the construction. Under the proposal, there are two possible ways for the topic phrase in a DN construction to enter the semantic composition. A topic phrase may either specify a domain restriction on some quantificational element of the comment clause, or fulfill an argument requirement of an NP in the comment. The analysis can also be extended to other topic sentences whose surface structure is not a prototypical DN construction. The result of this study suggests a generalized DN construction is needed to mediate between semantics and pragmatics, in order to accommodate both two subtypes of DN as well as extended DN sentences.

## 1 Introduction

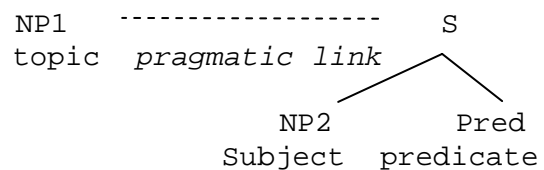
Double nominative (DN) structure in mandarin Chinese is anything but unfamiliar to scholars working on Chinese linguistics. The general pattern of a DN sentence is [NP1] [NP2] [Pred] where [NP1][NP2] can be construed as a complex NP and [Pred] is a one-place predicate. Being a *prima facie* type of topic-comment structure, it has been closely tied to the debate of sentence types in Chinese. The central issues in the debate are: is it nec-

essary to analyze a sentence as a topic-comment structure as opposed to a subject-predicate structure, and if it is, what exactly is the bond between topic and comment? A number of analyses have been proposed to answer these two questions specifically in the case of DN sentences, among which the most influential ones include Teng 1974, Xu & Langendoen 1985, Tsao 1990, Shi 2000 etc. Generally speaking, Teng 1974 and Tsao 1990 represent two distinct trends in the treatment of DN. The differences of the two approaches are clearly shown in the diagrams below.

(1) The syntactic structure for DN in Teng (1974)



(2) Diagram for Tsao's analysis for DN sentences



Teng's analysis reflects a traditional view in Chinese linguistics that a subject and a predicate

can comprise a sentence predicate, however, the idea of “sentence predicate” itself is unclear. If it is both a sentence and a predicate, should we consider it as saturated as sentences generally are or as unsaturated as predicates generally are? Considering that the language also has predicates that are not sentences and sentences that are not predicates, blurring the line between sentences and predicates only leads us to a greater confusion. Tsao (1990) proposes that in a DN construction, NP1 is the topic and NP2 is the syntactic subject. Tsao argues that since topic and subject are developed along two different dimensions, one pragmatic and the other syntactic, they should be treated separately. In other words, [NP2 Pred] forms a syntactically saturated unit, and NP1 is only pragmatically linked to [NP2 Pred]. However, questions arise considering how the two dimensions interact with each other to achieve the right meaning. Does the information in NP1 enter the meaning composition of the sentence? If so, how is it composed and if not, how does NP1 contribute to the discourse?

The starting point of this study is merely the two classic examples of DN sentences (both adapted from Teng 1974), often taken as representatives of two subtypes of DN, and no theoretical framework is assumed beforehand. The two example sentences are shown below.

(3) subtype 1

[他]<sub>NP1</sub> [肚子]<sub>NP2</sub> [饿]<sub>Pred</sub>.

(4) subtype 2

[他们]<sub>NP1</sub> [谁]<sub>NP2</sub> [都不来]<sub>Pred</sub>.

Roughly speaking, subtype 1 sentences can optionally have a DE marker between NP1 and NP2, while subtype 2 sentences can't, unless the postposition *zhong* “among” is first inserted between NP1 and NP2. In the rest of the paper, we will first introduce the corpus that we use for data collection, and then give a general account of the semantics of both subtype 1 and subtype 2 sentences found in the corpus, as well as the extended DN sentences, and finally develop a general construction for DN structure.

## 2 A summary of the corpus survey

In this study, we examined two files in the Academia Sinica Treebank. The sentences in both files were originally extracted from the Academia Sinica Balanced corpus of Chinese by Academic

Sinica. One file contains transcription of oral conversations, and the other has newspaper articles. The oral file has 51,120 Chinese characters (including punctuation) in 4,278 small sentences<sup>1</sup>, and the news file has 299,707 characters (including punctuation) in 24,361 small sentences. We went through the two files manually and picked out clauses that (i) have a surface structure of [NP1 NP2 Pred], where NP1 and NP2 can be construed as a complex NP and Pred is a one-place predicate<sup>2</sup>, (ii) the first NP can be separated from the rest of the sentence by a sentence-end particle or a pause in reading.

Overall we found 30 instances of DN sentences in the oral file (7.01 per 1,000 small sentences) and 92 instances in the news file (3.77 per 1,000 small sentences). A closer look at the found DN sentences reveals that in most cases, the first NP is morphologically marked as definite by the use of proper names, demonstratives and pronouns, etc. In the cases where NP1 is a bare NP, native speakers have a strong intuition that it must be understood with a definite or generic reading. The two biggest semantic groups of NP1 are *human* and *organization*, which altogether make up of more than 70 percent of the entire set. NP2s, on the other hand, are rarely explicitly marked as definite. Only 3 of the 122 found sentences have a NP2 that is morphologically marked as definite, by the demonstrative *zhe* “this”. Some important semantic groups of NP2 include NPs that denote body parts, kinship terms, and mind states, as well as quantifier NPs.

Using DE insertion as a distinguishing criterion, we find that there are altogether 110 instances of subtype 1 sentences in the two files, and 12 instances of subtype 2. In all the subtype 2 sentences, the second NP is a quantifier NP.

<sup>1</sup> Here we use the name “small sentence” to refer to a discourse unit delimited by punctuation marks including comma, (Chinese) list comma, period, question mark, exclamation mark, etc. Small sentences vary in length. They can be an NP, a VP, a clause, or a sentence. The easiest way to capture the concept is that the connection of two small sentences usually corresponds to a pause in natural speech. Therefore, “small sentence” as defined above is not a strictly syntactic structure but a discourse unit.

<sup>2</sup> To avoid the controversy of time and place NPs, we only consider entity- or event- denoting NPs as possible candidates of NP1 and NP2.

### 3 Subtype 1 DN sentences

Both Teng 1974 and Tsao 1990 assume a certain degree of saturation in the comment clause, i.e. [NP2 Pred]. This is mostly because, on the surface, the argument structure of the predicate is already satisfied after the combination with the second NP. However, one direct observation is that if we remove the first NP *ta* “he” in (3), the rest of the sentence *duzi e* “belly hungry” cannot stand as an independent sentence. It is felicitous only if a subject person is understood by both parties of conversation to be the topic that the sentence is about (in other words, when NP1 is elided). Without such context, the sentence sounds incomplete and there is no way for one to assign a truth value to it. Examining all the subtype 1 DN sentences found in the data files, we find that this observation is true for all of them. In other words, without the first NP explicitly expressed or implicitly understood, the comment clause does not express a complete meaning that can be judged as true or false.

It has been proposed in the literature that [NP1] and [NP2] are in an inalienable whole-part relationship (e.g. between *ta* “he” and *duzi* “belly”). This idea would suggest that the unsaturation of [NP2][Pred] comes from the fact that [NP2] denotes an entity that cannot exist on its own. However, such an explanation is not applicable in some cases. For example, sentence (5) as shown below is found in the corpus, with an NP2 that denotes an event, *renyong* “appointing (of someone to a position)”. It would be awkward to argue that such an appointing process is an inalienable part of the person that is appointed.

(5) (#1650:1650.[0])<sup>3</sup>[省級以上的事業單位人員]<sub>NP1</sub>, [任用及遷調]<sub>NP2</sub>[根本無需地方機關首長的同意]<sub>Pred</sub>.

In (5), the second NP *renyong ji qiandiao* “appointing and relocating (someone to a position)” denotes an event which requires an object argument. The particulars of this argument structure are inherited from the corresponding verbal usage of *renyong* and *qiandiao*. This brings up the idea that an relational noun account would be more appropriate than an inalienable possession relation-

ship in describing the relation between the two NPs in a DN sentence. As Grimshaw 1990 points out, relational nouns can be divided into de-verbal relational nouns and non-de-verbal relational nouns. Nouns in the first category are nominalization of corresponding verbs. Our examples from the corpus, such as *biaoxian* “performance”, *renyong* “appointing (someone to a position)”, *qiandiao* “relocating”, *yanchu* “(art) performance”, *daji* “attack”, would fall into this category. The second category are nouns that are not converted from verbs but require NP arguments. The most established example is kinship terms, like *father* and *sister*.

However, the relational reading, or in other words the argument requirement of the noun, is not always inherent. As stated Partee and Borschev (2003:68), “Many, perhaps all, genitives seem to have some properties of arguments and some more like modifiers, yet some seem more like arguments and some more like modifiers...the relation can come from any of three sources: (i) the context ...; (ii) an inherently relational noun like *brother*; (iii) an inherently relational adjective like *favorite*.”

In terms of our data, the second NP in almost all the found cases has a great potential to take an argument NP because for each one of them, there exists an entity that they can be closely related to. If they are not inherently relational, as the de-verbal cases or kinship terms, the trigger of the argument requirement is mostly in the predicate. As shown in (6) and (6') below, when the predicate is *juejiang er you haosheng* “stubborn and aggressive”, it would trigger the relational reading of the second NP *gexing* “personality” since the sentence can only be about some specific individual’s personality as opposed to personality in general. However, as in (6'), when the predicate doesn’t trigger such a reading, the NP *gexing* doesn’t require an argument NP.

(6) (#2757:2757.[0])[此公]<sub>NP1</sub> [個性]<sub>NP2</sub>[倔強而又好勝]<sub>Pred</sub>.

(6')個性決定命運。

There are also two sentences found in the corpus where the relational force comes from the superlative adjective within NP2 which requires an NP to denote the range of comparison. One example is shown below.

(7) (#2083:2083.[0])[麗晶假山]<sub>NP1</sub> [最高處]<sub>NP2</sub> [卻已達八米]<sub>Pred</sub>.

<sup>3</sup> The number in the parentheses is the sentence id number in the original corpus. If an example sentence is not preceded by such a number, that sentence is not cited from the corpus but constructed by the author.

In summary, in order for the subtype 1 DN construction to be felicitous, it is necessary that NP2 in the comment clause has an argument requirement that is not fulfilled within S. A relational account would be better than the inalienable possession account in that (i) the relational account covers more cases than the inalienable possession account, and (ii) the unsaturation in the comment clause can be directly attributed to the argument requirement of NP2 in a relational noun account.

#### 4 Subtype 2 DN sentences

In our corpus, we find one example sentence that has a structure very close to, but more complicated than (4).

(8) (#2899:2899.[0])或許[他們]<sub>NP1</sub>  
[誰]<sub>NP2</sub> [也不服誰]<sub>Pred</sub>.

Shi (2000) suggests that *shei* “who” in (4) might actually be a quantificational adverbial phrase since its distribution is the same as such adverbial phrases as *quan* “all” and *dou* “all”. However, sentence (8) would create a problem for Shi’s quantifier analysis because the sentence has two instances of *shei*, and neither of them can be replaced by an adverbial quantifier. In fact, judging from the meaning of the original sentence (8), the two instances of *shei* are interpreted in the same way, both with a universal quantificational reading and, intuitively, they should have similar syntax. If the second instance of *shei* is clearly an object NP, there is no reason to consider the first instance of *shei* not as an NP but as an adverbial quantifier. The similarity of the two instances of *shei* is more clearly shown in the lambda expression of (8) below.

(9)  $\lambda Z \forall x \forall y [x, y \in Z \ \& \ x, y \in$   
[people] &  $x \neq y \rightarrow \neg$  be-  
convinced-by’ (y)(x)]’ (they)

As shown above, the most natural way to map (8) to the above expressions is that the topic phrase *tamen* “they” specifies a domain restriction  $\lambda Z$ , which is a contextually salient set of individuals, and the two wh-phases are both free variables bound with a universal quantifier, namely  $\forall x [x \in Z]$ , namely *anyone of them*. A very similar view has been expressed in Pan & Hu (2002), though it is not discussed in detail what role the topic phrase is playing in these sentences. We propose that all subtype 2 sentences are quantificational and the

topic phrase restricts the domain of quantification in the comment clause.

In our data, we found 5 instances of subtype 2 sentences in the news file and 7 instances in the oral file. All these sentences contain a topic phrase in the initial position, followed by a quantificational phrase. Apart from the structure with “...*shei dou*...” that’s discussed above in (8), the most frequent quantifiers are *youde* “some”, *mei-you* “not have / no”, *na yige* “which one” and fractions (Cf. Adger 2003). One example is shown in (9).

(9) (#2287:2287.[0] [台北市十  
七家養老院]<sub>NP1</sub>, [沒有一家]<sub>NP2</sub> [符合  
現行標準]<sub>Pred</sub>.

In all 12 cases, NP1 clearly defines the domain restriction on the quantifying NP2. Moreover, all three parts can be systematically mapped to a tripartite interpretation of quantificational sentences. Table (10) shows the mapping between semantic types, tripartite structure and pragmatic functions.

	NP1	NP2	Pred
Semantic type	<e,t>	<<e,t>, t>	<e,t>
tripartite structure	domain restriction	quantification + restrictor	nuclear scope
pragmatics	topic	comment	

(10)

The mapping from topic phrase to domain restriction in the tripartite structure is consistent with the general parallel relation between topic-focus articulation and tripartite structure, as pointed out in Hajičová et al (1998:Ch2).

#### 5 Extended DN construction

In this section, we provide some examples from the corpus that don’t have a strict DN structure (and therefore not counted in the set of found sentences) but exemplify the same kinds of relations between the first NP the rest of the sentence.

Sentence (11) below consists of a topic NP (bracketed and marked as NP1), a subordinate clause and a main clause. Both the subordinate clause and the main clause contain a subject phrase (marked as NP2 and NP3) that is different from the topic phrase, and also different from each other. Similar to a normal DN construction, there is a (seemingly) dangling NP in sentence initial position. However, unlike in a DN construction, the

topic NP and the subject NPs reside in different clause levels.

(11) (#1769:1769.[0])[生活在這城市的人們]<sub>NP1</sub>, 雖然[夢想]<sub>NP2</sub> 不盡相同, 但是[夢魘]<sub>NP3</sub> 往往一樣。

The topic phrase *people living in this city* is the possessor of the subject phrases *dream* and *nightmare*. Therefore the topic phrase and the two subject phrases can be interpreted as two possessive NPs, *dream of people living in this city* and *nightmare of people living in this city*. In fact, both the *dream* concept and the *nightmare* concept are closely related to the *dreamer* individuals, and are therefore ready to be interpreted as relational nouns. What actually triggers the reading is the predicates. The predicates in the sentence prefer a referential subject NP to a generic one. In other words, it is less felicitous to say “Dreams in general are not the same, but nightmares in general are the same” than to say “(Some people’s) dreams are not the same, but (their) nightmares are the same. / Those people have different dreams but similar nightmares.”

Another example is shown in (12), which shows the kind of relation that is typical of subtype 2 sentences.

(12) (#2805:1218.1.[0])[住在寒帶的人]<sub>NP1</sub>, 雖然[有些人]<sub>NP2</sub> 喜歡在下雪天滑雪或其他遊戲, 不過這種人還是少數。

(12) is similar to (11) in having an initial topic phrase (NP1) and two subject NPs in the following clauses. The first subject NP (NP2) is a quantifier NP and the second subject NP (NP3) is referential. NP1 and NP2 are not in a local setting. However, the quantifier in NP2 is clearly quantifying over the set that is denoted by NP1. In other words, NP1 provides the domain restriction on the quantification in NP2.

## 6 Generalized DN construction

So far we have discussed the general semantic features of each part of a DN construction, in particular the semantics of the two NPs and their relation. What we haven’t touched on yet is how semantic composition interacts with pragmatic functions. Put in another way, how does compositional process reflect the bipartite topic-comment structure,

with NP1 being the topic and the rest of the sentence being the comment?

As discussed in previous sections, NP1 in a subtype 1 sentence is the argument of NP2, and NP1 in a subtype 2 sentence is an adjunct of the noun head of NP2. In both cases, if a bipartite structure is to be proposed, it would be awkward to make the division between NP1 and NP2 instead of the natural split between NP2 and Pred. This is most obvious in the case of subtype 1 sentences, since a type-driven semantic composition would inevitably combine NP1 and NP2 first through function application because they are in an argument-head relation.

Therefore, the question is how to mediate between the tendency in semantic composition to group NP1 and NP2 together and the tendency in pragmatics to pull them apart.

Here we propose a generalized DN construction, in which NP1 is mapped to the topic phrase, and [(NP1) NP2 Pred], instead of [NP2 Pred], is mapped to the comment clause. As one can see, the only trick is that now the topic phrase also participates in the interpretation of the comment clause, though it is not explicitly expressed in it. (13) and (14) show how the two subtypes can be interpreted in the generalized DN construction, respectively. In a subtype 1 sentence, a genitive NP composed by NP1 and NP2 serves as the subject of the predicate in the comment. In a subtype 2 sentence, domain restriction in the comment clause is set to be equal to the set denoted by NP1.

(13) subtype 1

NP1 NP2 Pred →

[NP1]<sub>topic</sub>[(NP1 DE) NP2 Pred]<sub>comment</sub>

(14) subtype 2

NP1 NP2 Pred →

[NP1]<sub>topic</sub>[(Domain = [NP1]) NP2 Pred]<sub>comment</sub>

This implicit copy of NP1 in the comment clause may seem trivial, but it helps solve many problems. First, now that topic and comment are not interpreted independently and combined only at the final step, there is no problem with regards to the composition process of the comment. The implicit copy of NP1 carries over the semantic information that can be used in the composition of the comment clause without constraining the sequence of composition. Second, under the new schema, both topic and comment are self-contained and saturated, therefore they will be interpreted in

a left-to-right sequence, namely topic first and comment second, which is more natural than the other way around, as will be required if the topic is combined in order to saturate the comment. Third, the new schema can easily account for long distance topic-comment relation as shown in the extended DN cases, as well as other phenomena such as topic chains. This is because the topic phrase is not directly combined syntactically or semantically with any elements in the comment clause, but rather, it supplies the information that can be used in interpreting the comments when needed. This also helps explain sentences in the form of (8), in which the comment clause has two quantifier NPs that both quantify over the set denoted by the topic phrase. Fourth, such a schema better reflects the pragmatic functions of topics. In the generalized schema, NP1 explicitly adds the information to the common ground, which is then used implicitly in the comment clause.

Last but not least, our conclusions about the semantic relations between NP1 and NP2 can all be accommodated in the generalized construction, and they are still at work in the interpretation of the comment clause.

As a matter of fact, in the corpus survey, we have found several example sentences in support of the generalized DN construction. One example is shown below.

(15) (#1904:1904.[0]) [日本巨人  
隊]<sub>NP1</sub> [其實力]<sub>(NP1)NP2</sub> [遠在國內職  
棒水準之上]<sub>Pred</sub>.

The above sentence is very similar to a DN construction in terms of both surface structure and meaning. However, it is not included in the initial counting because it doesn't allow a possessive DE or a postposition between NP1 and NP2, due to the fact that NP2 already has a third person possessive pronoun *qi* "its, his, her, their". Nevertheless, it can be easily expressed in the generalized DN construction, with the possessive pronoun functioning as the reduced form of [NP1 DE].

Though we didn't find any such cases of subtype 2 sentences in the corpus, they are also allowed, as shown in (16), which has a pronominal copy of the topic phrase in the comment.

(16) [我教過的學生]<sub>NP1</sub>, [他們有  
的]<sub>(NP1)NP2</sub> 去了美國, [有的]<sub>NP2</sub> 去了英  
國。

The only obstacle of the generalized construction is, again, the distribution of preverbal adverbials and modals. When they are present between the first and second NP, it is hard to explain the (un)grammaticality of the sentences in the generalized construction, as shown below.

(17) 他也肚子餓。  
(17') \* 他也他的肚子餓。  
(17'') \* 他也其肚子餓。

However, before using this to argue against the generalized DN construction, we should first investigate the following two things. First, are these adverbials and modals truly "preverbal", in the sense that they can only occur before predicates but not sentences? We have already seen that there is some problem with respect to their "preverbal" position when the sentence contains another quantifier. Therefore, it is possible that, instead of requiring the following material to be a predicate, these adverbials and modals allow both predicates and full sentences to follow but impose restraints on when the copy of NP1 can be voiced. Second, even if [NP2 Pred] does form a predicate in (17), it is one of the exceptional cases. As is pointed out in both Teng (1974) and Tsao (1990), not every subtype 1 DN construction allows preverbal adverbials and modals between the two nominatives. Those that allow are either idiomatic or frequently used. Therefore, one could argue that (17) is not a real DN construction but a variation of DN construction, in which NP2 and Pred forms a predicate through mechanisms such as noun incorporation that are not employed in a normal DN construction.

## 7 Conclusion

Based on the discussion of the corpus data, we propose a generalized DN construction, in the form of [NP1]<sub>topic</sub> [(NP1 DE/postposition) NP2 Pred]<sub>comment</sub>. The generalized construction subsumes both subtype 1 and subtype 2 sentences, and satisfies both semantic composition and pragmatic functions. The essence of the generalized construction is along the lines with Tsao's proposal of a two-dimensional treatment of topic and subject. The details of how the two dimensions work together to assign a meaning to the sentence are also worked out in the paper, through the discussion of semantic interpretation of DN constructions.

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