Word-order and Constituent Structure in Naxi

Paul Law
City University of Hong Kong

Abstract

The superficial relatively free word-order in Naxi may give the impression that the language does not have much hierarchical structure the way English does. It is argued here that in fact Naxi has the same phrase structure as English, despite some differences in word-order. Evidence for constituency structure comes from certain diagnostics including coordination, ellipsis and movement. Binding and coreference facts, too, show that the subject indeed occurs in a structurally higher position than the object. A comparison with Japanese, a language that has the same basic SOV word-order further confirms the constituent structure and the structural positions of subject and object in Naxi, despite their other differences. The word-order in Naxi is not completely free, however. It is constrained by the presence of markers indicating the grammatical relations of the arguments, much like German.

Keywords

diagnostics for constituency, subject-object asymmetry, comparative syntax

1. Introduction

The purpose of this paper is two-fold. First, it presents certain facts in Naxi, an understudied Tibeto-Burman language spoken by around 307,477 speakers in Yunnan, China.[1] Second, it provides an analysis of these data showing that despite its word-order being apparently relatively free and different from that of well-studied languages like English, Naxi sentences have the same constituent structure as those in English.

The undertaking of investigating the Naxi language is motivated by both empirical and theoretical concerns. Empirically, the data considered here have mostly not been published. Bringing these data to light thus contributes to the effort of documenting the language well, especially when studies of the syntax of the language are few and far between.[2] Theoretically, the analysis provided for the data shows that Naxi has much in common with other languages like English, Japanese and German, even though they are not completely the same. It also shows the fruitfulness of abstract representations, insofar as they can capture the similarities amongst languages in spite of their superficial differences.

2. Some basic word-order facts in Naxi

As is typical in Tibeto-Burman languages, the word-order in Naxi sentences is SOV. The ordering of arguments of a predicate can sometimes be relatively free.

The sentences in (1) consist of the same lexical items, differing from each other in word-order. They have the same truth-conditional meaning, but have different emphasis or contrastive reading of the argument that comes first (He and Jiang 1985: 82, and He 1987: 90):[3]

(1) a. ŋə³³   nɯ³³   tʰɯ³³   tø⁵⁵   lɑ⁵⁵.
         1Sg   Nom   3Sg   Acc   hit
         'I hit him.'

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[1] This figure comes from the 2000 census (source http://zh.wikipedia.org/wiki/纳西族)

[2] Apart from He and Jiang (1985: 82-83, 93-94) He (1987: 90, 101), Fu (1984) and Yang (2004) and He (2006) have chapters discussing the syntax of Naxi. These works consider some word-order possibilities in sentences, but not the internal structure of the sentence. In addition, there are a few other scholarly works about aspects of the grammar of Naxi, but not the syntax, e.g., Mu (1997, 2002), Yang (1983, 1984, 1986) and Sun (2002). I am indebted to a reviewer for providing these latter Chinese references.

[3] The data reported here are from the dialect in Dayanzhen, Lijiang, a western dialect. The difference between western and eastern dialects is mostly phonological (Jiang 1993). Some speakers of the eastern dialect have been consulted with respect to the data here, and they do not report any judgment difference with respect to the syntax.

The distributions of case markers *nɯ³³* and *kø⁵⁵*, which alternates with *tø⁵⁵* syntactically, are quite complex. They are sometimes optional, and sometimes impossible. This complexity has no particular bearing on the concerns of this paper, however.

Abbreviations: Abl = ablative, Acc = accusative, Cl = classifier, Dat = dative, Evid = evidential, Fem = feminine, Masc = masculine, Nom = nominative, Pl = plural, Poss = possessive, Sg = singular.

b. tʰɯ³³   tø⁵⁵   ŋə³³   nɯ³³   lɑ⁵⁵.
   3Sg   Acc   1Sg   Nom   hit
   'I hit him.'

(2) a. ŋə³³   nɯ³³   tʰɯ³³   tø⁵⁵   me⁵⁵.
        1Sg   Nom   3Sg   Acc   teach
        'I teach him.'

     b. tʰɯ³³   tø⁵⁵   ŋə³³   nɯ³³   me⁵⁵.
        3Sg   Acc   1Sg   Nom   teach
        'I teach him.'

With a verb taking three arguments, there would be six different word-orders, as shown in (3):

(3) a. ɑ⁵⁵na³³   nɯ³³ ɑ³³lia¹³ kø⁵⁵ tʰe³³ɣɯ³³ ndɯ³³ tsʰa³³ jiə⁵⁵.
        Grandma Nom Alian Obl book   one   Cl   give
        'Grandma gave Alian a book.'

     b. ɑ⁵⁵na³³   nɯ³³ tʰe³³ɣɯ³³ ndɯ³³ tsʰa³³ ɑ³³lia¹³ kø⁵⁵ jiə⁵⁵
        Grandma Nom book   one   Cl   Alian Obl give

     c. ɑ³³lia¹³ kø⁵⁵ ɑ⁵⁵na³³   nɯ³³ tʰe³³ɣɯ³³ ndɯ³³ tsʰa³³ jiə⁵⁵
        Alian Obl Grandma Nom book   one   Cl   give

     d. ɑ³³lia¹³ kø⁵⁵ tʰe³³ɣɯ³³ ndɯ³³ tsʰa³³ ɑ⁵⁵na³³   nɯ³³ jiə⁵⁵
        Alian Obl book   one   Cl   Grandma Nom give

     e. tʰe³³ɣɯ³³ ndɯ³³ tsʰa³ ɑ⁵⁵na³³   nɯ³³ ɑ³³lia¹³ kø⁵⁵ jiə⁵⁵
        book   one   Cl   Grandma Nom Alian Obl give

     f. tʰe³³ɣɯ³³ ndɯ³³ tsʰa³³ ɑ³³lia¹³ kø⁵⁵ ɑ⁵⁵na³³   nɯ³³ jiə⁵⁵
        book   one   Cl   Alian Obl Grandma Nom give

Apart from a few cases, the verb in Naxi generally must come at the end of the clause. The examples in (4)-(5) are just a sample of some impossible word-orders:

(4) a. *ŋə³³   nɯ³³   lɑ⁵⁵   tʰɯ³³   tø⁵⁵.
        1Sg   Nom   hit   3Sg   Acc
        'I hit him.'

     b. *tʰɯ³³   tø⁵⁵   lɑ⁵⁵   ŋə³³   nɯ³³.
        3Sg   Acc   hit   1Sg   Nom
        'I hit him.'

(5) a. *ɑ⁵⁵na³³   nɯ³³ jiə⁵⁵ ɑ³³lia¹³ kø⁵⁵ tʰe³³ɣɯ³³ ndɯ³³ tsʰa³³.
        grandma Nom give Alian Obl book   one   Cl
        'Grandma gave Alian a book.'

     b. *ɑ⁵⁵na³³   nɯ³³ ɑ³³lia¹³ kø⁵⁵ jiə⁵⁵ tʰe³³ɣɯ³³ ndɯ³³ tsʰa³³.
        grandma Nom Alian Obl give book   one   Cl
        'Grandma gave Alian a book.'

Naxi therefore contrasts sharply with English, a SVO language, not only with respect to the position of the verb, but also with respect to the relative positioning

of the arguments. The English sentences expressing the same meanings as those in (2) and (3) essentially have only one possible word-order, as shown in (6) and (7) (see section 3.5., however):

(6) a. John taught Mary.
     b. ≠ Mary taught John.

(7) a. John gave Mary a book.
     b. *John gave a book Mary.
     c. Mary gave John a book ≠ John gave Mary a book.
     d. *A book gave Mary John.

In view of the word-order differences between Naxi and English, it may be supposed that the syntax of the two languages is very different. Phrases and sentences are hierarchically structured in English, but their counterparts in Naxi are not.

It will be argued that this impression is only apparent, and that to a large extent Naxi is much like English with respect to constituency structure. Specifically, the object and the verb form one syntactic constituent to the exclusion of the subject. It will be shown that standard diagnostics for constituency such as coordination, ellipsis and movement (Fromkin, Rodman and Hyams 2007) are applicable to Naxi just as they are to English. That the subject in Naxi is in a structurally higher position than the object, just as it is in English, is confirmed by facts concerning binding and coreference. The same constituent structure and structural positions of the subject and object also hold of Japanese, a language that has the same basic SOV word-order as Naxi.

The different word-orders in (1)-(3) with the same truth-conditional meanings are not completely unconstrained. It will be shown that Naxi, much like languages like German in which the grammatical relations of the arguments may be morphologically distinguished, different word-orders may have different truth-conditional meanings when the distinction is lacking.

If the analysis offered here is correct, then Naxi is in fact more similar to well-studied languages like English, Japanese or German than what it looks like on the surface. The conclusion that we can draw is that with the aid of formal and often abstract analysis of the facts we can uncover the similarities among languages, in spite of their apparent differences.
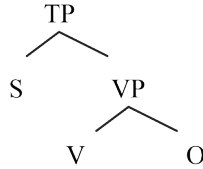
3. Diagnostics for constituency structure

It is relatively uncontroversial that in English the verb (V) and the object (O) form one syntactic constituency, to the exclusion of the subject (S), as in (8):[4]

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[4] Although the analysis discussed in this paper is from the point of view of formal syntax, formal details are kept to the minimum. This is to show that the issues largely do not rely any particular theory of syntax.

The use of Tense Phrase (TP) for sentences accords with much recent work (Pollock 1989 and subsequent work), but has no particular bearing on constituent structure. Similarly, there is no

(8)

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              TP
            /    \
          S       VP
                 /   \
               V       O
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Evidence for the constituent structure in (8) comes from facts regarding coordination, ellipsis and movement.[5] These are commonly taken to be diagnostics for constituency (Fromkin, Rodman and Hyams 2007).

Given that the verb comes at the end of a clause in Naxi, it is clear that the language cannot have the structure in (8) for English. However, as it turns out, the three diagnostics for constituency mentioned above are applicable to Naxi as well, showing that the object and the verb form a syntactic constituent to the exclusion of the subject, as in (9) (see also (29) below for the structure of object-first sentences. Cf. Law (2011 and 2012) for a more general theoretical account of the OV order):

(9)

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              TP
            /    \
          S       VP
                 /   \
               O       V
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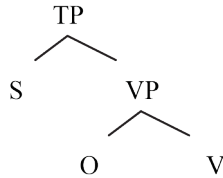
The structure in (9) in Naxi is virtually identical to that in (8) in English, the difference between them being the position of the verb.

3.1. Coordination

On the assumption that only constituents may be coordinated, the examples in (10)-(11) show that in English the verb and the object form one syntactic constituent, to the exclusion of the subject:

(10) a. He [$_{VP}$ washed the car] and [$_{VP}$ mowed the lawn]
      b. He [$_{VP}$ likes us] but [$_{VP}$ dislikes them]

(11) a. ?*[He washed] and [she mowed] it.
      b. ?*[He likes] and [she dislikes] them.

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particular requirement that syntactic structures be strictly binary branching (Kayne 1984). As most data considered here are relatively simple, structures with binary branching are just fine for them. I thank a reviewer for raising this issue.

5   Naxi does not seem to have a VP pro-form like English *so*:

(i)   a. John read a book, and Bill did so too. so = read a book.
      b. Bill has bought a car, and so has Mary. so = bought a car.

The pro-form diagnostics for the VP is thus not applicable to Naxi, and hence is not considered here.

The structure in (8) provides a simple account for the contrast between (10) and (11). The reason why the verb and the object can be coordinated is that they form one syntactic constituent. The subject and the verb cannot be coordinated, because they do not form a syntactic constituent.[6]

The same facts hold in Naxi. As the object appears between the subject and the verb in this language, it is clear that the object may form a syntactic constituent with the verb, but the subject cannot possibly form a syntactic constituent with the verb, to the exclusion of the object.

The coordination facts in (12a) and (13a) show that the object indeed forms a syntactic constituent with the verb, while the ungrammaticality of the examples in (12b) and (13b) shows that the subject and the verb do not form a syntactic constituent:

(12) a. ɑ³³lia¹³ nɯ³³ [u³³jə³³   kø⁵⁵ kʰɑ³³kʰɑ³³] [ɑ³³ka³³ kø⁵⁵ ku³³ndɯ³³].
         Alian   Nom Wuyong Acc scold   Agang Acc praise
         'Alian scolded Wuyong, and praised Aka.'
     b. *[ɑ³³lia¹³ nɯ³³ u³³jə³³   kø⁵⁵ kʰɑ³³kʰɑ³³] [ɑ³³hua³³ nɯ³³ ɑ³³ka³³ kø⁵⁵]
         Alian   Nom Wuyong Acc scold   Ahua   Nom Agang Acc
         'Lit. Alian scolded Wuyong, Ahua Aka, i.e., Alian scolded Wuyong, and
         Ahua scolded Agang'
     c. *[ɑ³³lia¹³ nɯ³³ u³³jə³³   kø⁵⁵] [ɑ³³hua³³ nɯ³³ ɑ³³ka³³ kø⁵⁵] kʰɑ³³kʰɑ³³
         Alian   Nom Wuyong Acc   Ahua   Nom Agang Acc scold
         'Lit. Alian Wuyong, Ahua scolded Agang, i.e., Alian scolded Wuyong,
         and Ahua scolded Agang'

(13) a. ɑ³³lia¹³   nɯ³³   [tʂʰuɑ³³ tʂʰər³³] [xø³³pʰe⁵⁵   xər⁵⁵].
         Alian   Nom   rice   wash   vegetable   cut
         'Alian washed rice and cut vegetables.'

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6   The English example in (i), where it looks like the subject and the object are coordinated, may seem to be a counterexample for the claim that the subject forms a constituent with neither the verb nor the object:

(i)   [John sold] and [Fred bought] a house.

The example is arguably a case of sentential coordination, with the object undergoing right node raising out of the two conjuncts (Ross 1967), as in (ii):

(ii)   [John sold t_i] and [Fred bought t_i] a house$_i$

Evidence for the derivation in (ii) comes from the fact that in contrast with full NPs pronouns resist rightward movement, as the contrast between (iiia) and (iiib) shows (the indexed italic t is the position from which the phrase with the same index moves):

(iii) a. John read t_i twice [a book that he borrowed from Mary]$_i$
       b. *John read t_i twice it$_i$
       c. *[John sold t_i] and [Fred bought t_i] it$_i$

The grammatical contrast between (ii) and (iiic) is just the same as that between (iiia) and (iiib). The structure in (i) cannot predict, without additional assumptions, that the pronoun may not occur to the right of the conjuncts.

b. *[ɑ³³lia¹³nɯ³³   xø³³pʰe⁵⁵]   xər⁵⁵   [ɑ³³hua³³nɯ³³   ʂɯ³³]
   Alian Nom   vegetable   cut   Ahua Nom   meat
   'Lit. Alian vegetables cut, Ahua meat, i.e., Alian cut vegetables, and Ahua cut meat.'

c. *[ɑ³³lia¹³nɯ³³   xø³³pʰe⁵⁵]   [ɑ³³hua³³nɯ³³   ʂɯ³³]   xər⁵⁵
   Alian Nom   vegetable   Ahua Nom   meat   cut
   'Lit. Alian vegetables, and Ahua meat cut, i.e., Alian cut vegetables and Ahua cut meat.'

The ungrammatical examples in (12c) and (13c), too, show that the subject and the object do not form a syntactic constituent.

The facts in (12)-(13) are therefore evidence that despite the difference with respect to the position of the verb, Naxi is similar to English in that the object forms a syntactic constituent with the verb to the inclusion of the subject.

3.2. Ellipsis

On the assumption that only syntactic constituents can be elided, the fact that in English the object and the verb may elide follows from the two forming a syntactic constituent (the underline represents elided phrase):

(14) a. John will read the book, and Bill should __ too.   __= read the book
     b. John read the book, and Bill did __ too.   __= read the book

By contrast, the subject and the verb cannot elide at the same time:

(15) a. *John will read the book, and __ should __ the newspaper too.
     b. *John read the book, and __ did __ too.

The ungrammaticality of the examples in (15) can be taken to be evidence that the subject and the verb do not form a syntactic constituent.

The same facts hold in Naxi. As shown in (16) and (17), the object and the verb may elide together in the second conjunct:

(16) a. ɑ³³lia¹³ xɑ³³ ndzɹ³³ ndər³³, u³³jə³³   lɑ³³ xɑ³³ ndzɹ³³ ndər³³.
     Alian rice eat   should Wuyong also rice eat   should
     'Alian should eat rice, and Wuyong should eat rice, too.'
     b. ɑ³³lia¹³ xɑ³³ ndzɹ³³ ndər³³, u³³jə³³   lɑ³³ _____ ndər³³
     Alian rice eat   should Wuyong also   should
     'Alian should eat rice, and Wuyong should (eat rice) too.'

(17) a. ɑ³³lia¹³ u³³jə³³   kø⁵⁵ pa³³pa³³ tʰɑ⁵⁵, ɑ³³ka³³ (lɑ³³) u³³jə³³   kø⁵⁵ pa³³pa³³ tʰɑ⁵⁵.
     Alian Wuyong Acc help   can Agang also Wuyong Acc help   can
     'Alian can help Wuyong, Agang also can help Wuyong.'
     b. ɑ³³lia¹³ u³³jə³³   kø⁵⁵ pa³³pa³³ tʰɑ⁵⁵, ɑ³³ka³³ (lɑ³³) _____ tʰɑ⁵⁵.
     Alian Wuyong Acc help   can Agang also   can
     'Alian can help Wuyong, Agang also can (help Wuyong).'

In (16b) and (17b), the second conjunct is understood to contain a VP that is the same as the VP in the first conjunct. In other words, the sentences in (16b) and (17b) have the same interpretations as those in (16a) and (17a).

On the contrary, the subject and the verb cannot be elided at the same time, a fact that can be accounted for if the two do not form one syntactic constituent:

(18) a. *ɑ³³liɑ¹³ xɑ³³ ndzɿ³³ ndər³³, _____ (lɑ³³) xø³³pʰe⁵⁵ _____ ndər³³.
         Alian rice eat   should   also vegetable   should
         'Alian should eat rice, and should vegetables (too).'
     b. *ɑ³³liɑ¹³ u³³jə³³   kø⁵⁵ pɑ³³pɑ³³ tʰɑ⁵⁵, ____ ɑ³³kɑ³³ (lɑ³³) _____ tʰɑ⁵⁵.
         Alian Wuyong Acc help   can   Agang also   can
         'Alian can help Wuyong, and can Agang also.'

Notice that the example in (18b) is grammatical on the reading 'Alian can help Wuyong and Agang can also help Wuyong.' On this reading, what is elided is the object and the verb. This is exactly the same as the ellipsis in (16b) and (17b). Notice that it is syntactically possible to take the phrase *xø³³pʰe⁵⁵* 'vegetable' in the second conjunct in (18a) to be the subject and what is elided is the object and the verb. But this would result in a semantically anomalous reading in which *xø³³pʰe⁵⁵* 'vegetable' is the agent of the verb *ndzɿ³³* 'eat'.

3.3. Movement

On the assumption that only one constituent can be moved at a time, the fact that the object may be moved with the verb, but the subject and the verb may not, would follow if the object and the verb form one syntactic constituent, but the subject and the verb do not:

(19) a. (John wished to buy a house, and) [buy a house]$_i$ he will t_i
     b. *(John wished to buy a house, and) he$_i$ buy$_j$ t_i will t_j a house

(20) a. (they said John would buy a house, and) [buy a house]$_i$ they believed he will t_i
     b. *(they said John would buy a house, and) he$_i$ buy$_j$ they believed t_i will t_j a house.

Comparable facts hold in Naxi. As shown in (21), the verb and the object may be moved to a sentence-initial position, but the subject and the verb may not be:

(21) a. ɑ³³liɑ¹³ xø³³pʰe⁵⁵ xər⁵⁵ kv⁵⁵, nɑ⁵⁵ tʰɯ³³ xɑ³³ tv⁵⁵ mə³³ kv⁵⁵.
         Alian vegetable cut   can but 3Sg rice do not can
         'Alian can cut vegetables, but she cannot cook a meal.'
     b. [xø³³pʰe⁵⁵ xər⁵⁵]$_i$ ɑ³³liɑ¹³ t_i kv⁵⁵, nɑ⁵⁵ [xɑ³³ tv⁵⁵]$_j$ tʰɯ³³ t_j mə³³ kv⁵⁵.
          vegetable cut   Alian   can but rice do 3Sg   not can
         'Cut vegetables Alian can, but cook a meal she cannot.'
     c. *ɑ³³liɑ¹³ $_i$ xər⁵⁵ $_j$ t_i xø³³pʰe⁵⁵ t_j kv⁵⁵, nɑ⁵⁵ xɑ³³ $_k$ tv⁵⁵ $_l$ tʰɯ³³ t_k t_l mə³³ kv⁵⁵
          Alian   cut   vegetable can but rice do 3Sg   not can

(22) a. tʰɯ³³ŋgɯ³¹ nɯ³³ sə⁵⁵ me³³   ɑ³³lia¹³ xø³³pʰe⁵⁵ xər⁵⁵ kv⁵⁵,
 3Pl   Nom say that   Alian   vegetable cut   can
 nɑ⁵⁵ tʰɯ³³ŋgɯ³¹ nɯ³³ sɿ³³dv³³ me³³ tʰɯ³³ xɑ³³ tʰv⁵⁵ mə³³ kv⁵⁵.
 but 3Pl   Nom think that 3Sg rice do   not can
 'They think that Alian can cut vegetables, but they don't think she can cook a meal.'

 b. [xø³³pʰe⁵⁵ xər⁵⁵]ᵢ tʰɯ³³ŋgɯ³¹ nɯ³³ sə⁵⁵ me³³ ɑ³³lia¹³ tᵢ kv⁵⁵,
  vegetable cut   they   Nom   say   that Alian   can
 nɑ⁵⁵ [xa³³ tʰv⁵⁵]ⱼ tʰɯ³³ŋgɯ³¹ nɯ³³ sɿ³³dv³³ me³³ tʰɯ³³tⱼ mə³³ kv⁵⁵.
 but rice do   3Pl   Nom think that 3Sg not can
 'Cut vegetables they say that Alian can, but cook a meal they think she cannot.'

 c. *ɑ³³lia¹³ᵢ xər⁵⁵ⱼ tʰɯ³³ŋgɯ³¹ nɯ³³ sə⁵⁵ me³³ tᵢ xø³³pʰe⁵⁵ tⱼ kv⁵⁵,
  Alian   cut 3Pl   Nom say that   vegetable can
 nɑ⁵⁵ tʰɯ³³ₖ tʰv⁵⁵ₗ tʰɯ³³ŋgɯ³¹ nɯ³³ sɿ³³dv³³ me³³ tₖ xɑ³³ tₗ mə³³ kv⁵⁵.
 but 3Sg   do 3Pl   Nom think that rice not can
 'They say Alian will cut vegetables, but they think she cannot cook a meal.'

The contrast between (21b) and (22c) and that between (22b) and (22c) on the other would be accounted for if the object and the verb form one syntactic constituent, but the subject and the verb do not.

3.4. Binding and coreference

Beside the diagnostics for constituency, facts concerning binding and coreference show that the subject occurs in a structurally higher position than the object.

As indicated in (23), an anaphor may appear in object position, but not in subject position (arguments with the same subscript have the same reference):

(23) a. John$_i$ [$_{VP}$ criticized himself$_i$]
   b. *Himself$_i$ [$_{VP}$ criticized John$_i$]
   c. *[John$_i$'s mother] criticized himself$_i$

If an anaphor must be bound by an antecedent c-commanding it,[7] in the same clause in English (cf. Chomsky's (1981) binding condition A and subsequent work), then the grammatical difference between (23a) and (23b) follows from the object being in a lower position than the subject and hence c-commanded by it (see the structure in (8)). The example in (23c) is thus ungrammatical, the reflexive *himself* not being bound. The third person singular masculine proper name *John* cannot bind the reflexive, because being a possessor inside the subject, it does not c-command it. The subject *John's mother* c-commands but cannot bind the reflexive, for the two do not have the same gender feature.

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7 Reinhart (1976: 32) defines c-command as follows:

 (i) α c-commands β iff
  a. α does not dominate β, and
  b. the first branching node dominating α dominates β.

Similarly, a pronoun may not be co-referential with an antecedent c-commanding it (in the same clause) (cf. Chomsky's (1981) binding condition B and subsequent work). Thus, the pronoun *him* in (24a) may not be co-referential with the subject of the same clause, for the object appears in a lower position than the subject and is hence c-commanded by it:

(24) a. John$_i$ criticized him$_j$.   OK $i{\neq}j$, *$i{=}j$
     b. [John$_i$'s friends] criticized him$_j$.   OK $i{\neq}j$, OK $i{=}j$
     c. John$_i$ said [that he$_j$ is smart]   OK $i{\neq}j$, OK $i{=}j$

In (24b) the pronominal object *him* is c-commanded by the subject *John's friends*, but not by the possessor *John* inside the subject. The pronoun may thus be co-referential with the possessor. In (24c), although the matrix subject *John* c-commands the pronoun subject *he* in the embedded clause, the two are not in the same clause. The embedded pronominal subject may thus be coreferential with the matrix subject.

Lastly, a proper name cannot be co-referential with an antecedent c-commanding it (cf. Chomsky's (1981) binding condition C and subsequent work). In (25a), the proper name *John* in object position cannot be co-referential with the subject pronoun *he*, since it is c-commanded by it:[8]

(25) a. He$_i$ criticized John$_j$.   OK $i{\neq}j$, *$i{=}j$
     b. [his$_i$ friends] criticized John$_j$.   OK $i{\neq}j$, OK ?$i{=}j$
     c. He$_i$ said that John$_j$ is smart.   OK $i{\neq}j$, *$i{=}j$

The same reason explains why the proper name *John* in (25c) cannot be co-referential with the matrix subject *he*. In (25b), the proper name *John* can (slightly marginally) be co-referential with the possessor *his* inside the subject, since it is not c-commanded by it.

The same binding and coreference facts hold in Naxi. As shown in (26), a reflexive in object position may be bound by an antecedent in subject position, but not the other way round:

(26) a. ɑ³³lia¹³$_i$ nɯ³³ tʰɯ³³ u³³tu³³wu³¹$_j$ kø⁵⁵ kʰɑ³³kʰɑ³³.   OK $i{=}j$, *$i{\neq}j$
        Alian Nom 3Sg self   Acc scold
        'Alian scolded herself.'
     b. tʰɯ³³ u³³tu³³wu³¹$_i$ nɯ³³ ɑ³³lia¹³$_j$ kø⁵⁵ kʰɑ³³kʰɑ³³.   *$i{=}j$, *$i{\neq}j$
        3Sg self   Nom Alian Acc scold
        'Alian scolded herself.'

A pronoun may not be co-referential with a c-commanding antecedent in the same clause, but may do so if the antecedent does not c-command it or if the two are in different clauses:

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8 The marginality of co-reference in (25b) is most probably due to the general awkwardness of backward anaphora.

(27) a. ɑ³³lia¹³$_i$ nɯ³³ tʰɯ$_j$ kø⁵⁵ kʰɑ³³kʰɑ³³.   OK *i≠j*, **i=j*
    Alian   Nom 3Sg Acc scold
    'Alian scolded her.'

   b. ɑ³³lia¹³$_i$ gə³³ ə³¹me³³ nɯ³³ tʰɯ$_j$ kø⁵⁵ kʰɑ³³kʰɑ³³.   OK *i≠j*, OK *i=j*
    Alian   Poss mother Nom 3Sg Acc scold
    'Alian's mother scolded her.'

   c. ɑ³³lia¹³$_i$ nɯ³³ sə⁵⁵ me³³ tʰɯ$_j$ dʑa³¹ gv³³ tsʅ⁵⁵.   OK *i≠j*, OK *i=j*
    alian   Nom say that 3Sg very good -Evid
    'Alian said that she is very good.'

A proper name in Naxi, too, cannot be co-referential with a c-commanding antecedent:

(28) a. tʰɯ³³$_i$ nɯ³³ ɑ³³lia¹³$_j$ kø⁵⁵ kʰɑ³³kʰɑ³³.   OK *i≠j*, **i=j*
    3Sg   Nom Alian   Acc scold
    'She scolded Alian.'

   b. tʰɯ³³$_i$ gə³³ ə³¹me³³ nɯ³³ ɑ³³lia¹³$_j$ kø⁵⁵ kʰɑ³³kʰɑ³³.   OK *i≠j*, ?*i=j*
    3Sg   Poss mother Nom Alian   Acc scold
    'Her mother scolded Alian.'

   c. tʰɯ³³$_i$ nɯ³³ sə⁵⁵ me³³ ɑ³³lia¹³$_j$ dʑa³¹ gv³³ tsʅ⁵⁵.   OK *i≠j*, **i=j*
    3Sg   Nom say that Alian   very good -Evid
   'She said that Alian is very good.'

The facts in (26)-(28) in Naxi can be given the same explanation as those in English, if the subject in Naxi is in a structurally higher position than the object, just as in English.

    The facts concerning co-ordination, ellipsis, movement, binding and coreference discussed above cannot be accounted for in a flat structure in which the subject, the verb and the object are all sisters to each other, with no constituent containing the verb and the object to the exclusion of the subject. This is because in such a structure, the subject and the object are on a pair, predicting, falsely, that there is no asymmetry between subject and object with respect to these facts (I thank a reviewer for raising this point).

3.5. Word-order variation, binding and coreference

Word-order in Naxi is quite flexible; the object may occur before the subject (see examples (1)-(2)). If this word-order is derived by adjoining the object to TP, then the subject no longer c-commands the object and the object comes to c-command the subject:

(29)
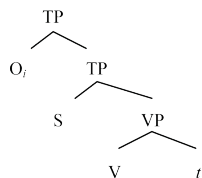
We may naturally wonder what the binding and co-reference facts are when the object reflexive occurs before the subject. In particular, we might wonder whether in these cases the subject may be bound by the object and whether the object can no longer be bound by the subject.

As it turns out, the binding and coreference facts remain the same, regardless of whether the object follows the subject as in (26)-(28) or precedes it as in (30):[9]

(30) a. $t^h\text{ɯ}^{33}$ $\text{u}^{33}\text{tu}^{33}\text{wu}^{31}{}_j$ kø^{55} $\text{ɑ}^{33}\text{lia}^{13}{}_i$ nɯ^{33} $k^h\text{ɑ}^{33}k^h\text{ɑ}^{33}$ mə^{33} tsø^{33},   *$i{\neq}j$, ??$i{=}j$
   3Sg self   Acc Alian Nom scold   not would
   nɑ^{55} $t^h\text{ɯ}^{33}$ pi^{13} çi^{33} kø^{55} $k^h\text{ɑ}^{33}k^h\text{ɑ}^{33}$ tsø^{33}.   (cf. (26a))
   but 3Sg other people Acc scold   would
   'Alian would not scold herself, but she would scold others.'
   b. $t^h\text{ɯ}^{33}{}_j$ kø^{55} $\text{ɑ}^{33}\text{lia}^{13}{}_i$ nɯ^{33} $k^h\text{ɑ}^{33}k^h\text{ɑ}^{33}$.   OK $i{\neq}j$, *$i{=}j$
   3Sg Acc Alian   Nom scold   (cf. (27a))
   'Alian scolded her.'
   c. $\text{ɑ}^{33}\text{lia}^{13}{}_j$ kø^{55} $t^h\text{ɯ}^{33}{}_i$ nɯ^{33} $k^h\text{ɑ}^{33}k^h\text{ɑ}^{33}$.   OK $i{\neq}j$, *$i{=}j$
   Alian Acc 3Sg Nom scold   (cf. (28a))
   'She scolded Alian.'

The binding and coreference facts in (30) seem problematic in two respects. On the one hand, if a proper name cannot be coreferential with a c-commanding antecedent, then example (30a) should be ungrammatical. This is because the proper name *a³³lia¹³* is c-commanded by the reflexive. Second, if the reflexive must be c-commanded and bound by a c-commanding antecedent, then (30a) should be impossible, since the reflexive, not being c-commanded by an antecedent, is not bound. This is an incorrect result, since the reflexive can be bound by its antecedent *a³³lia¹³* even though it is not c-commanded by it.

The examples in (30b, c) are not particularly problematic, however, for they can be excluded by binding theory. In (30b), the proper name is c-commanded by and coreferential with its antecedent, violating binding principle C. In (30c), the pronoun is c-commanded by its antecedent and coreferential with it, violating binding principle B. While this may seem to be a correct result, we will see shortly that there is good reason to assimilate the binding and coreference facts in (30) to those in (26)-(28).

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9 Some comments on the marginality of example (30a) are in order. First, sentences with the object in the first position are not very common and seem to require contrastive focus of some sort. This is the reason why example (30a) is a conjunction of two sentences, the fronted objects in the two conjuncts being contrastive foci. Second, sentences beginning with an object reflexive are even rarer. In light of such complications it is understandable that speakers show some hesitation in accepting sentence (30a), but they do not totally exclude it, especially when they compare it with a sentence in which a non-reflexive object occurs in the first position, which they accept. See also note 12.

The key to the account for the binding in (30a) is the idea that binding principles apply to phrases in argument positions (A-positions, Chomsky 1986: 80). Subject and object positions are A-positions, while adjoined positions are non-argument positions (A-bar-positions). Furthermore, phrases moved to A-bar-positions are in fact interpreted in their original A-positions, an effect that is known as reconstruction (van Riemsdijk and Williams 1981, Williams 1986), i.e., A-bar-moved phrases are reconstructed or restored to their original A-position. Thus, an A-bar-moved phrase can be bound in its original A-position where it is interpreted.[10] A-bar-movement therefore has no effect on binding.

Along these lines, the reflexive in (30a) adjoined to TP (see the structure in (29)) does not bind the proper name, for binding is a relation between phrases in A-positions, and the reflexive in (30a) is in an A-bar-position. Moreover, the reflexive, being A-bar moved, is interpreted in its original position. Binding in (30a) where the object has been A-bar-moved works exactly the same way as binding in (26a) where no such movement has taken place.

The same account can be given to explain the non-coreference in (30b, c). Binding principle B is violated in (30b), exactly as it is in (27a), since the A-bar-moved pronoun is interpreted in its original A-position where it is c-commanded by the proper name subject. Likewise, binding principle C is violated in (30c), exactly as it is in (28a), since the A-bar-moved proper name is interpreted in its original A-position where it is c-commanded by the pronominal subject. There is no binding principle C violation in (30b) since the proper name is not bound by the pronoun, the latter being in an A-bar-position. Nor is there a binding principle B violation in (30b) since the pronoun is not bound by the proper name, the latter being in an A-bar-position.

The binding and coreference facts in (30) are not much different from those in English. As shown in (31a), the reflexive *himself* is bound in exactly the same way as when it is in the *t* position:

(31) a. Himself$_j$, John$_i$ criticized t_j *$i{\neq}j$, ?$i{=}j$
      b. Her$_j$, Mary$_i$ criticized t_j OK $i{\neq}j$, *$i{=}j$
      c. Mary$_j$, she$_i$ criticized t_j OK $i{\neq}j$, *$i{=}j$

The object pronoun in (31b) is interpreted in the *t* position and hence is bound by the proper name c-commanding it, in violation of binding principle B. In (31c), the proper name is interpreted in the *t* position and hence according to binding

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[10] There are a couple of ways to look at the reconstruction effects in (30). Either binding principles apply before A-bar-movement takes place (Chomsky 1981), or the A-bar-moved phrase leaves behind in the original position a set of semantic features relevant for binding (Chomsky 1995). This is what is meant by 'interpreted in the original position'. The antecedent binds this set of semantic features. Either way, A-bar-movement has little effect on binding.

principle C cannot be co-referential with the c-commanding subject *she*.[11] Thus, the explanation for the binding and coreference in the Naxi examples in (30) can be given to explain the binding and coreference in the English examples in (31).

It is therefore clear that with the assumption that binding and coreference are relations between phrases in A-positions the binding and coreference facts in Naxi in (30) are just the same as those in English in (31). The facts in the two languages can be given a uniform account. To the extent that binding and coreference are structurally constrained in both Naxi and English, Naxi is syntactically structured much like English.
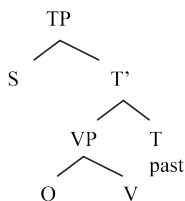
4. Constituent structure in Japanese

For the purposes of comparison, it is natural to compare Naxi with Japanese, for the two languages have the same basic SOV word-order. Given that Naxi is quite similar to English in constituent structure despite their superficial differences, it would not be too unreasonable to expect that Naxi resembles Japanese in constituent structure, especially when they have the same basic word-order. The expectation is indeed borne out by the facts.

Japanese differs from Naxi in that the verb root usually combines with some bound morphemes for tense and aspect. If tense and aspect are located in a position above the VP, e.g., in T as in (32), then the example in (33a) can be taken to be a case of VP-coordination with the past tense morpheme *-ta* scoping over the conjoined VP:

(32) a. John ga   gohan o   tai-ta.
        Nom rice   Acc cook-Past
     'John cooked rice.'
    b.

$$\text{[Tree diagram: TP dominates S and T'; T' dominates VP and T; VP dominates O and V; T = past]}$$

(33) a. John ga   [$_{VP}$ gohan o   taite] [$_{VP}$ yasai   o   kit]-ta
        Nom   rice   Acc cook   vegetable Acc cut Past
     'John cooked rice and cut vegetables.'
    b. *[John ga   gohan o] [Bill ga   yasai   o]   tabe-ta
        Nom rice   Acc   Nom vegetable Acc eat-Past
     'John ate rice and Bill ate vegetables.'

---

[11] The example in (i) shows that binding principle B is not violated in (31c):

(i)   Mary$_i$, she$_i$ is smart.

The example in (33b) is ungrammatical, since the subject and the object do not form a constituent and hence cannot be co-ordinated.

The VP-ellipsis and VP-fronting diagnostics for constituency of the sort in section 3.2. and 3.3. do not apply straightforwardly in Japanese, since the position from which the VP is fronted or elided requires the presence of a modal or auxiliary. Modals in Japanese are bound morphemes and are inseparable from the verb, and there is no auxiliary verb like English *be*, *do* or *have* in Japanese. However, the language has a construction with the light-verb *suru* 'do' taking a VP as complement, which can be elided or fronted. The example in (34b) is the result of eliding the object and the (thematic) verb, possible only if they form one constituent:

(34) a. John ga   ringo o   tabe-mo si-ta.
         Nom apple Acc eat-also do-Past
      'John also ate an apple.'
     b. Bill-mo _____ si-ta.
        Bill-also   do-Past
        'Bill did too.'
     c. *mikan-mo   _____ si-ta.
         tangerine-also   do-Past
         'Tangerine did too.'

The ungrammaticality of the example (34c) follows, if the subject and the verb do not form one syntactic constituent.

The contrast between (35a) and (35b) can be accounted if the object and the verb form one syntactic constituent and hence can be fronted, in contrast with the subject and the verb, which do not form one syntactic constituent:

(35) a. [$_{VP}$ ringo o   tabe-mo]$_i$ John ga t_i si-ta
          apple Acc eat-also   Nom   do-Past
      'John also ate an apple.'
     b. *John ga$_i$ tabe mo$_j$ ringo o t_i t_j si-ta.
          Nom eat   also apple Acc   do-Past
        'John also ate an apple.'

The facts regarding VP-coordination, VP-ellipsis and VP-fronting in Japanese in (33)-(35) thus show that Japanese essentially has the same constituent structure as Naxi or English.

Binding and coreference show that the subject is structurally higher than the object in Japanese, much as in Naxi or English. As shown in (36), an object reflexive may be bound by the subject, but not the other around:[12]

_____

[12] It is well-known that the Japanese reflexive *zibun* 'self' need not find a c-commanding antecedent in the same clause, much as the Chinese reflexive *ziji* 'self'. The example in (36b) may well be excluded because the proper name *John* is co-referential with the c-commanding subject, i.e., for the same reason why coreference in (38a) is ruled out.

(36) a. John$_i$ ga   zibun$_j$ o   hihansita.   *$i{\neq}j$, OK $i{=}j$
           Nom self   Acc criticized
           'John criticized himself.'
      b. *zibun$_i$ ga   John$_j$ o   hihansita.   OK $i{\neq}j$, *$i{=}j$
           self   Nom   Acc criticized
           'Himself criticized John.'

Much as in Naxi and English a pronoun object in Japanese cannot be co-referential
with the subject of the same clause and a proper name cannot be co-referential
with a c-commanding antecedent (Saito 1985):

(37) a. John$_i$ ga   kare$_j$ o   hihansita.   OK $i{\neq}j$, *$i{=}j$
           Nom 3Sg Acc criticized
           'John criticized him.'
      b. [John$_i$ no   haha] ga   kare$_j$ o   hihansita.   OK $i{\neq}j$, OK $i{=}j$
           Poss mother Nom 3Sg Acc criticized
           'John's mother criticized him.'
      c. John$_i$ ga   [kare$_j$ ga   tsukareta to] itta.   OK $i{\neq}j$, OK $i{=}j$
           Nom 3Sg Nom tired   C said
           'John said that he was tired.'

(38) a. Kare$_i$ ga   John$_j$ o   hihansita.   OK $i{\neq}j$, *$i{=}j$
           3Sg Nom   Acc criticized
           'He criticized John.'
      b. [kare$_i$ no   haha] ga   John$_j$ o   hihansita.   OK $i{\neq}j$, ?$i{=}j$
            3Sg Poss mother Nom   Acc criticized
           'His mother criticized John.'
      c. Kare$_i$ ga   [John$_j$ ga   tsukareta to] itta.   OK $i{\neq}j$, *$i{=}j$
           3Sg Nom   Nom tired   C said
           'He said that John was tired.'

Again, facts regarding binding and coreference in Japanese are evidence that the
subject is structurally higher than the object, much the same way as in Naxi.[13]

    In fact, the two languages are similar in two other respects. First, both Naxi
and Japanese have sentence-final particles indicating evidentiality (see Sun 2002
for Naxi *ne³¹*), that is, whether the speaker has first-hand knowledge of what the
preceding sentence expresses:

    As a reviewer pointed out, *zibun* 'self' and *ziji* 'self' can also be used as a logophor referring to the
    speaker. This complication can be controlled with the complex reflexive *karezishin* 'he himself'.
    The grammaticality judgment in (36) continues to hold, however.

[13] The issue of whether Japanese has a VP was hotly debated in the eighties. That the subject is
    structurally higher than the object has been argued by Miyagawa (1988) on the basis of facts
    concerning floating quantifiers, and by Hoji (1985) using data from weak cross-over and variable
    binding. For the view that Japanese has no VP, see Hale (1980) and Farmer (1980).

(39) a. ame ga   furu-dashi soo   da.
     rain Nom fall-start   -Evid be
     'It seems that it is going to rain.'
  b. fune ga   kita   rashii.
     ship Nom came -Evid
     'It seems that the ship had arrived.'

(40) a. xɯ³¹ gɯ³³ ne³¹
     rain drop +Evid
     'It's raining.'
  b. u³³jə³³   xo³³pe⁵⁵   xa³³ xə³¹ tsɹ⁵⁵
     Wuyong vegetable buy Perf -Evid
     'Wuyong reportedly bought vegetables.'

Second, much like Naxi, word-order Japanese is also relatively free. The various word-orders in (41) recall those in (3):

(41) a. John ga   Mary ni hon o   ageta.
       Nom   Dat book Acc gave
     'John gave Mary a book.'
  b. John ga   hon o   Mary ni   ageta.
       Nom book Acc   Dat gave
  c. Mary ni   John ga   hon o   ageta.
       Dat   Nom book Acc gave
  d. Mary ni   hon o   John ga   ageta.
       Dat book Acc   Nom gave
  e. hon o   John ga   Mary ni   ageta.
     book Acc   Nom   Dat gave
  f. hon o   Mary ni   John ga   ageta.
     book Acc   Dat   Nom gave

The similarities between Naxi and Japanese in (32)-(41) are perhaps unsurprising, given that they have the same basic SOV word-order and constituency structure.

    However, it is by no means the case that Japanese and Naxi are identical in every respect. A major difference between the two languages is that the verb in Japanese must come at the end while the verb in Naxi sometimes occurs in a clause-medial position. The adjective in the secondary predication construction must appear before the verb in Japanese (*akaku* 'red' in (42)), and after the verb in (43) in Naxi (*nɑ³¹* 'black'):

(42) a. John ga   ie   o   akaku nutta.
       Nom house Acc red   painted
     'John painted the house red.'
  b. *John ga   ie   o   nutta akaku.
       Nom house Acc red   painted

(43) a. ŋə³³ nɯ³³ se³³sɯ⁵⁵ tʂʰɿ³³ pʰe⁵⁵ zɑ⁵⁵ nɑ³¹ mbɯ³³.
       1Sg Nom paper   this Cl   paint black go
       'I am going to paint the paper black.'
   b. *ŋə³³ nɯ³³ se³³sɯ⁵⁵ tʂʰɿ³³ pʰe⁵⁵ nɑ³¹ zɑ⁵⁵ mbɯ³³
        1Sg Nom paper   this Cl   black paint go

Clausal complements too must precede the verb in Japanese as in (44) but occurs after the verb in Naxi as in (45):

(44) a. John ga   [Mary ga   tsukareta to] omotta.
            Nom   Nom tired   C thought
       'John thought Mary was tired.'
   b. *John ga   omotta Mary ga   tsukareta to
            Nom thought   Nom tired   C

(45) a. ŋə³³ nɯ³³ v³¹   me³³ u³³jə³³   nɑ³¹çi³³ gɯ³³tʂɿ³¹ dʑa³¹ sɿ³³   me⁵⁵.
       1Sg Nom think that Wuyong Naxi   language very know +Evid
       'I think that Wuyong knows Naxi language very well.'
   b. *ŋə³³ nɯ³³ me³³ u³³jə³³   nɑ³¹çi³³ gɯ³³tʂɿ³¹ dʑa³¹ sɿ³³   v³¹   me⁵⁵
        1Sg Nom that Wuyong Naxi   language very know think +Evid
   c. *ŋə³³ nɯ³³ u³³jə³³   nɑ³¹çi³³ gɯ³³tʂɿ³¹ dʑa³¹ sɿ³³   v³¹   me³³ me⁵⁵
        1Sg Nom Wuyong Naxi   language very know think that +Evid

These differences have no bearing on their constituent structure. In both Naxi and Japanese, the verb and the object form a syntactic constituent to the exclusion of the subject.

5. Flexible word-order and argument-marking

The various word-orders seen in (1)-(3) with the same truth-conditional meaning is in fact not always free. When the morphological distinctions for the grammatical relations of the arguments are removed, then different ordering of the arguments results in different interpretations, as illustrated in (46) and (47) (cf. He and Jiang 1985: 82-83, He 1987: 90):

(46) a. ŋə³¹   tʰɯ³³   lɑ⁵⁵.
       1Sg   3Sg   hit
       'I hit him.' NOT 'He hit me.'
   b. tʰɯ³³   ŋə³¹   lɑ⁵⁵.
       3Sg   1Sg   hit
       'He hit me.' NOT 'I hit him.'   (cf. (1))

(47) a. ŋə³¹   tʰɯ³³   me⁵⁵.
       1Sg   3Sg   teach
       'I teach him.' NOT 'He teaches me.'
   b. tʰɯ³³   ŋə³¹   me⁵⁵.
       3Sg   1Sg   teach
       'He teaches me.' NOT 'I teach him.'   (cf. (2))

In this respect, Naxi is not much different from English or German with respect to argument-marking and word-order.[14]

English has no morphological means to distinguish the grammatical relations of the arguments. It is thus not possible to reposition the arguments without affecting their interpretations. As we saw in (6), repeated in (48), swapping the arguments results in different interpretations:

(48) a. John taught Mary.   (=(6))
      b. ≠ Mary taught John.

The facts in (48) are comparable to those in (46) and (47).

German is similar to Naxi in that the arguments may be distinguished, though not always, in the form of the determiner. Thus, the determiner of the argument with a masculine noun takes on different forms, depending on whether it is in the nominative case, the accusative case, or the dative case. In the first case, the determiner is *der*, the second case *den* and the third case *dem*:

(49) a. Der   Vater   sah   den   Sohn.
          the.Masc.Nom   father   saw   the.Masc.Acc   son
          'The father saw the son.'
      b. Der   Vater   half   dem   Sohn.
          the.Masc.Nom   father   helped   the.Masc.Dat   son
          'The father helped the son.'

But such distinction fails to hold of arguments with feminine nouns in the nominative and accusative case. In both cases, the determiner is *die*. The determiner for arguments with feminine nouns in the dative case is *der*:

(50) a. Die   Mutter   sah   den   Sohn.
          the.Fem.Nom   mother   saw   the.Masc.Acc   son
          'The mother saw the son.'
      b. Der   Vater   sah   die   Mutter.
          the.Masc.Nom   father   saw   the.Fem.Acc   mother
          'The father saw the mother.'
      c. Der   Vater   half   der   Mutter.
          the.Masc.Nom   father   helped   the.Fem.Dat   mother
          'The father helped the mother.'

As we might expect, when the arguments are distinguished for their grammatical relations, different ordering of the arguments does not result in different interpretations:

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[14] As a reviewer pointed out, Naxi does not have the verb-second property of German, even though the basic word-order in German is SOV.

(51) a. Den   Sohn   sah   der   Vater.
          the.Masc.Acc   son   saw   the.Masc.Nom   father
          'The father saw the son.'
      b. Dem   Sohn   half   der   Vater.
          the.Masc.Dat   son   helped   the.Masc.Nom   father
          'The father helped the son.'

(52) a. den   Sohn   sah   die   Mutter.
          the.Masc.Acc   son   saw   the.Fem.Nom   mother
          'The mother saw the son.'
      b. Die   Mutter   sah   der   Vater.
          the.Fem.Acc   mother   saw   the.Masc.Nom   father
          'The father saw the mother.'
      c. Der   Mutter   half   der   Vater
          the.Fem.Dat   mother   helped   the.Masc.Nom   father
          'The father helped the mother.'

The nominative argument is understood to be the subject, while the accusative or dative argument is taken to be the object. Their relative ordering has no bearing on their interpretations.

When the two arguments both have feminine nouns, however, grammatical relations cannot be distinguished by the form of the determiner. Speakers take the first argument to be the subject and the second argument to be the object:

(53) a. Die   Mutter   sah   die   Tochter.
          the.Fem.Nom   mother   saw   the.Fem.Acc   daughter
          'The mother saw the daughter.'
          NOT 'the daughter saw the mother.'
      b. Die   Tochter   sah   die   Mutter.
          the.Fem.Nom   daughter   saw   the.Masc.Acc mother
          'The daughter saw the mother.'
          NOT 'The mother saw the daughter.'

In this respect, the German facts in (53) are much like those in (46)-(47) in Naxi.

As Keenan (1978: 120-121) and Hawkins (1994: 427-429, 433) pointed out, there is a correlation between word-order and morphological distinction on arguments for grammatical relations. On the one hand, if the grammatical relations can be distinguished by the forms of the arguments, then the interpretation of the sentence is not effected by the different positioning of the arguments. On the other hand, if there is no such distinction, then the identification of the grammatical relations of the arguments has to rely on word-order, and the interpretation of the sentence is effected by different word-orders.

6. Conclusion

It is clear from the foregoing sections that despite its superficial flexible word-order Naxi is in fact quite similar to English syntactically. Apart from the position

of the verb, the two languages have pretty much the same syntactic structure, viz. the verb and the object form a constituent to the exclusion of the subject, and the subject is structurally in a higher position than the object. Evidence for this comes from several diagnostics for constituency as well as certain binding and coreference facts. These points are further buttressed by the same facts in Japanese, a language that has the same basic SOV word-order as Naxi. The flexible word-order in Naxi, much as in Japanese, is largely due to the grammatical relations being identifiable by the different forms of the arguments.

These results are hardly surprising. They have been replicated for many pairs of language, e.g., English and Chinese (Huang, Li and Li 2009), English and French (Kayne 1975, 1984), English and Italian (Rizzi 1982), English and German (Hawkins 1985). There are certainly differences amongst languages, but what is most interesting is their similarities, especially when these are not obvious on the surface. The similarities among languages are abstract, in the sense that they are represented by abstract structures. They can nevertheless be observed in concrete facts, e.g., those concerning constituency diagnostics, binding and coreference. We need to go beneath the superficial differences in order to uncover the underlying similarities.

Acknowledgments

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Mailing address: Department of Chinese, Translation and Linguistics,
                   City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong
Email: paul.law@cityu.edu.hk

納西語語序及句子成分結構

羅振南

香港城市大學

提要

從表面上看，納西語的語序好像比較靈活，容易給人一種句子無層次結構的印象。本文使用一般結構測試方法，包括並列、省略及移位，證明納西語的句法結構其實跟其他語言（如英語）是大致相同的。代詞的約束及共指的語言事實，顯示了主語在句子結構上處於比賓語高的位置。此結論跟同樣是 SOV 語言的日語大體一致，儘管這兩種語言在其他方面有所不同。納西語的語序實際上並非完全自由。論元的排序主要是主語先行，其他的語序則受到表語法關係的標記是否出現的限制。在這方面，納西語跟德語相似。

關鍵詞

句子成分結構，主語賓語不對稱，比較句法