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A Common Structure for Cross-linguistic Conjunction Patterns

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0. Introduction

In this paper, I investigate a series of patterns and asymmetries found in coordinate structures cross-linguistically and propose a simple structure that can accommodate the observed data. To keep the task manageable, I will limit the investigation to DP conjunctions which can (or must) be interpreted as all members of the conjoined expression being involved in the same action; that is, (1a) rather than (1b).

- (1a) John and Mary went to the market together.
- (1b) John and Mary went to the market separately.

I will abstract away from some otherwise important features of coordinate structures, mainly because they do not seem to be relevant to the issue under question. The linear order of conjuncts and the conjunction will not be addressed. Also, I will not address the issue of what morphological category the “conjunction” is in for a given language.

1. Basic Data

Four languages suffice to show the basic range of coordinate structures we shall account for. The languages used were selected to avoid genetic and areal bias: each is from a different language family, and each was originally spoken on a different continent.

English (Indo-European) has a simple particle serving as the conjunction and at least two conjuncts (2). Since this pattern is the most common cross-linguistically, most theories of coordination have assumed it to be basic.

- (2) I saw **John and him**.

Pima (Uto-Aztecan) is similar to English, in that it uses a conjoining particle, and contains two or more conjuncts. However, the two languages differ in that

Pima (non-subject) conjunctions are associated with a pronominal clitic that attaches to the licensing head. The clitic has the person and number features one might expect of a pronoun that would replace the conjoined expression. For example, in (3) the clitic is first person plural, because the conjoined expression includes a first person pronoun and two individuals (Smith in progress). Similar structures are found in the closely related language Tohono O’odham. (Zepeda 1983) Borrowing terminology from Lichtenberk (2000), I will refer to this sort of pronominal element as an **inclusory pronoun**.

- (3) John ‘at t- naam ‘aañi c heg Mary.
 John AUX:PF 1PL- meet 1SG and DET Mary
 ‘John met me and Mary.’

With only slight changes to the Pima structure, we get those found in Mapuche (Araucanian). (Smeets 1989) This language also has inclusory pronouns, though these are not clitics. Rather, they occur as a constituent with the conjoined expression. As with Pima, the inclusory pronoun reflects the person and number of the entire conjoined expression. Unlike English and Pima, the pronominal conjunct highest in animacy is optional (4a vs. b).

- (4a) **Iñché eymi iñchiu** iyu.
 1SG 2SG 1DU eat:1DU
 ‘You and I ate.’ (Smeets 1989:177)
- (4a) **Eymi iñchiu** iyu.
 2SG 1DU eat:1DU
 ‘You and I ate.’ (ibid.)

The “special coordinate construction” in Tagalog (Austonesian) is very similar to the Mapuche pattern in (4b). There is typically one plural pronoun, inflected to show the person and number of the entire conjoined expression, and a set of at least one accompanying DP. Unlike Mapuche, a conjunct corresponding to the person of the inclusory pronoun is consistently absent (5). (Schachter and Otanes 1972)

- (5) Nakita ko **silá ni Juan**.
 saw 1SG 3PL DET Juan
 ‘I saw him and Juan.’ (Schachter and Otanes 1972:116)

2. Structural Generalizations

2.1 A Common Structural Basis

English and Tagalog initially appear to be quite different structurally. English has, but Tagalog lacks, a conjoining particle. Tagalog has, but English lacks, an inclusory pronoun. Tagalog lacks of simple singular pronoun in (5), and English

cannot do without one in the same contexts. The only element they both have is at least one DP conjunct.

Looking at the other two languages, however, shows that there is a gradation from English-like to Tagalog-like patterns. Pima added an inclusory pronominal to an English-like structure, and Mapuche in turn removed the conjunction and optionally the highest animate conjunct from a Pima-like structure. Thus, English structures can be transformed into Tagalog structures (and vice versa) through a series of discreet changes with no significant gaps in the intervening structural types.

To accommodate the degree of variation seen, we need structures minimally like (6) (disregarding the linear order). Individual portions of this basic structure can be omitted to achieve the pattern found in a particular language.

(6) [DP Pronoun [DP X & Y]]

2.2 Lack of Inclusory Pronouns

Which parts of this structure may be omitted is not random: there are only three basic possibilities, though they can be combined. First, it is quite common for languages of the world to lack a clear example of an inclusory pronoun; most the European languages fit this description. The question this raises is whether the inclusory pronoun is lacking from these languages altogether, or whether it is simple covert.

The answer may depend on the assumptions of the framework one is working in, but it is not unreasonable to believe that such pronouns are present universally. In order to express an inclusory pronoun, the speaker must calculate the person and number of the entire conjoined expression. The same process can be seen in subject agreement in, *e.g.* English and Spanish. Thus, while English may lack an overt inclusory pronoun, it does invoke a comparable mental computation. If one views inclusory pronouns merely as the overt manifestation of a universal computation, then representing this computation in one's framework in a manner attested in multiple languages is a reasonable step.

2.3 Lack of Conjunctions

Some languages lack an overt coordinator, as we saw with Mapuche and Tagalog. The same question arises: Are the coordinators covertly present or completely lacking?

Johannessen (1994) gives diachronic evidence suggestive that coordinators are always represented, even if not expressed. She notes that languages have been known to borrow conjunctions, and doing so does not appear to affect the syntactic structures of these languages. The conjunction is cleanly assimilated. She suggests that if the addition of such a morpheme were an actual change in the structure, rather than mere adding phonological substance to an abstract concept, we would expect to see other changes, perhaps in case, agreement, or word order possibilities.

Another argument in favor of silent conjunctions comes from the possible semantics of the constructions. In most languages, in most contexts, juxtaposition results in a conjunction, as in the Mapuche examples above; but occasionally it can result in a disjunction. The constructions in English (7) present alternative figures as possible prices. In such contexts, it would also be pragmatically reasonable to have a “respectively” reading, where different participants paid different amounts; but this interpretation is not available.

(7) We paid six, seven dollars for the tickets.

The interpretation of juxtaposition, then, is conventionalized in particular languages or constructions. This idiosyncrasy must be represented somehow in the structure of the language. Similar to inclusory pronouns, if a conjunction is simply an overt manifestation of a mental process that is universally present, then it is reasonable to encode this process in a manner attested in other languages.

2.4 Missing Conjuncts

The Mapuche examples show that some language can optionally lack an individual conjunct. Assuming the structure suggested in (6), the special coordinate structure of Tagalog is required to be missing a conjunct. The individuals that would have been represented by an overt conjunct are semantically present in the sentence and accessible to the morphosyntax, as seen by the person and number of the inclusory pronouns and verb agreement.

The choice of which conjunct can be missing is tightly constrained. Typically, the missing conjunct must be the member of the conjoined expression that is highest on the standard animacy hierarchy (8). In Mapuche example (4b), the missing conjunct is the first person pronoun rather than the second person pronoun.

(8) speaker > addressee > 3rd person pronoun > noun

Though it is difficult to tell in many cases, it appears that the missing conjunct is always a peripheral conjunct, never one between other conjuncts. Evidence of the position of a missing conjunct can be found in languages like Modern Irish (Indo-European), where only the first conjunct can be missing. In (9), a pronoun denoting the speaker is not present, but the contrastive particle *-se* that should attach to it is present, showing us where the pronoun should be.

(9) Chaitfínn *-se* agus mo chuid fear muscailt.
 must(COND:1SG) *-CONTR* and my share men wake.up
 ‘I and my men would have to wake up.’ (McCloskey and Hale 1984:501)

A missing initial conjunct was also possible in Old Irish, though the exact details differ a bit from Modern Irish. The sentence in (10) has a preposition inflected for second person plural. It is immediately followed by a conjunction

and a name, no second person pronoun is present. Old Irish conjunctions, like those in Modern Irish, typically occur between the conjuncts, showing that the initial conjunct is the one missing.

- (10) comrac dúib **ocus** **Chú-Chulainn**
 encounter between(2PL) and Chú-Chulainn(NOM)
 ‘an encounter between you (sg) and Chu-Chulainn’ (Thurneysen
 1998:156)

The pattern as to which conjunct can be missing overlaps with other asymmetries in coordinate structures. In the remainder of this paper, I will illustrate some of these asymmetries and alter the structure in (6) to capture the generalizations found. I will refer to the conjunct that can have the properties discussed below as the **primary conjunct**.

3. The Primary Conjunct

The primary conjunct can be distinguished from other conjuncts through its syntactic behavior. It can have specific requirements imposed upon it not found on other conjuncts, and often this conjunct interacts with the rest of the sentence in manners not permitted of the others. For example, I showed above that if a language allows null conjuncts, it conform to a strict set of conditions, with the result that only one is possible in a given expression. This is the sort of specific requirement intended. Three other properties will be inspected here: a restriction on conjunct ordering, agreement, and case marking. The behaviors converge in suggesting that the primary conjunct is a syntactically determined position.

3.1 Conjunct Ordering

I mentioned above that when it can be determined, missing conjuncts tend to be peripheral elements. They also conform to the animacy hierarchy. In some languages, the grammatical ordering of conjuncts seems to follow similar tendencies.

A good example of this is Ulithian (Austronesian). In this language, whenever a pronoun is coordinated with a noun, the pronoun must occur first. Thus, in (11a) the order pronoun-noun is grammatical, but in (11b) the order noun-pronoun makes the sentence unacceptable. Because there is a syntactic requirement placed on the first conjunct in relation to other conjuncts, it should be identified as the primary conjunct for this language.

- (11a) **Gaag mé Coon** melee xa sa koxo.
 I and John FM PM PERF go
 ‘I and John went.’ (Sohn and Bender 1973:209)
- (11b)* **Coon mé gaag** melee xa sa koxo.
 John and I FM PM PERF go
 ‘John and I went.’ (ibid.)

The English requirement that a nominative first person pronoun be the final conjunct in a coordinated subject is rather curious, and probably should not be used as evidence in determining the primary conjunct of English. English *I* does not pattern like typical conjuncts; in particular, its case seems to be dependent on the position in the conjoined expression, rather than its grammatical role, as in (12).

- (12) All debts are cleared between **you and I**. (Shakespeare, *Merchant of Venice*)

While “improper” cases frequently occur in natural language conjunctions (as discussed in section 3.3 below), the pattern seen here is not expected of a primary conjunct. Typically, this element gets marked with the case one would naively expect, and the other conjuncts vary in surprising ways. I will not address the issue in detail, but refer the reader to previous work on the matter, such as Emonds (1986).

3.2 Verbal Agreement

In some languages, agreement between a verb and a conjoined expression can hold either with the entire expression or with just a single conjunct. As with the condition on missing conjuncts, this kind of asymmetric agreement pattern always holds with a peripheral conjunct.

One example of this has already been presented, the Modern Irish sentence in (9). The verb is inflected for a first person singular subject, though the syntactic subject is a conjunction. Significantly, the same sentence has a missing primary conjunct, and that missing element is the very one the verb shows agreement with.

Mapuche also has this sort of construction, illustrated in (13). The first example has a verb showing first person dual agreement, as one might expect. The second example shows asymmetric agreement. The verb is inflected for first person singular, though the inclusory pronoun shows that the subject is a conjunction. As with the Modern Irish example, the asymmetric agreement holds with a pronoun that is not overtly present in the structure, showing an overlap with the missing conjunct pattern.

- | | | | | | | |
|-------|---|--------|--------------|------|----------|-----|
| (13a) | fey | iñchiu | nütram | -ka | -y | -u |
| | he | 1DU | conversation | -FAC | -1NS | -DU |
| | ‘We talked together.’ (Smeets 1989:178) | | | | | |
| (13b) | fey | iñchiu | nütram | -ka | -n | |
| | he | 1DU | conversation | -FAC | -IND:1SG | |
| | ‘I talked with him.’ (ibid.) | | | | | |

This phenomenon has been discussed extensively in the literature, and the reader is referred to that work for detailed discussion, especially Corbett (1991, 2000), Munn (1993), and Johannessen (1998).

3.3 Case Marking

A less commonly discussed form of asymmetric agreement pattern is the case marking of individual conjuncts. The expected situation is for all the conjuncts to be case marked according to the grammatical role of the entire expression. It is not uncommon, however, for only a single conjunct to receive the proper case, and for the remaining conjuncts to receive a default case.

Kiparsky (1968) discusses this in relation to the ancient Indo-European languages Old Irish, Ancient Greek, and Sanskrit. All three show the same basic pattern, though only Old Irish will be illustrated here (14). In each of these languages, the first conjunct is case marked according to the grammatical role of the entire expression, but each subsequent conjunct is (or may be) marked with nominative case.

- (14) *rí dorigni aéar n-úar oculus tene réil*
king has.made air cold(ACC) and fire clear
rorúad oculus talam bladmar brass
very.red(NOM) and earth glorious great(NOM)
'The King has made the cold air, and the clear red fire, and the glorious great earth.'
(Kiparsky 1968:54)

Asymmetric case assignment also occurred in prepositional phrases, as shown in (10), repeated here. The second conjunct is in the default nominative case and the conjunct that should receive the typical accusative is missing.

- (10) *comrac dúib oculus Chú-Chulainn*
encounter between(2PL) and Chú-Chulainn(NOM)
'an encounter between you (sg) and Chu-Chulainn' (Thurneysen 1998:156)

(See also Johannessen (1998) for discussion of asymmetric case assignment.)

3.4 Adjusting the Structure

Various asymmetric properties of coordinate structures have been shown to correlate with each other in syntactic structures. The conjunct that can be missing tends to be the same as the conjunct involved in asymmetric agreement and asymmetric case assignment. The congruence of all these properties suggests that the primary conjunct is a syntactic notion.

The interesting thing is that the properties of the primary conjunct are typical properties of arguments, whereas the properties of the other conjuncts are deviant. In many languages, arguments are optionally present (such as the null subjects in Romance) while adjuncts do not have the same freedom. Agreement on a verb or adposition is typically triggered by an argument. Similarly, primary conjuncts are case marked as an argument would be. These facts suggest that the primary conjunct and not the others is the main argument of the expression.

To capture this, I propose that the coordinate structure suggested in (6) should be modified to that in (15). The primary conjunct here is the X and is the head of the structure. The conjunction and the Y conjunct is adjoined to the primary conjunct..

(15) [DP Pronoun [DP X [CO_P & Y]]]

Except for the inclusory pronoun, the structure above is essentially that proposed by Munn (1993) and Mel’cuk (to appear) based on other considerations. They point out that this structure has other beneficial properties. One very beneficial property relates to selection. Coordinated DPs have the same distribution as simple DPs. By placing one conjunct as the head, and having the other conjuncts adjoined to it, this distributional fact is captured without any complex, construction specific rules.

3.5 Secondary Conjuncts

An issue remains about the behavior of the adjoined conjunction phrases. Why is it that sometimes they behave like regular arguments, receiving the proper case and contributing to verbal agreement, but other times behave as though isolated from the rest of the structure?

I suggest this is a consequence of the dual nature of these structures. The syntax of these constructions seems to be asymmetric, but the semantics is symmetric: all the conjuncts participate equally in the event described. From a syntactic perspective, only the primary conjunct should behave as typical of arguments. From a semantic perspective, they should all behave the same. This discrepancy results in *a priori* unexpected patterns, where for some portions of the grammar the rules follow syntax but semantics for others.

This predicts that optional asymmetries should correlate with semantic differences. There is weak evidence that this is true. In the Mapuche example (13), repeated here, optionality of asymmetric agreement is correlated with a difference in translation. The symmetric version is translated in a way suggesting both participants are equal, while the asymmetric version seems to place more emphasis on the (silent) individual controlling the agreement.

(13a) fey iñchiu nüttram -ka -y -u
 he 1DU conversation -FAC -1NS -DU
 ‘We talked together.’ (Smeets 1989:178)

(13b) fey iñchiu nüttram -ka -n
 he 1DU conversation -FAC -IND:1SG
 ‘I talked with him.’ (ibid.)

Further evidence can be seen in Arabic, where asymmetric agreement correlates with the distribution of the participants in the event. When the verb has full agreement with a conjoined subject, the sentence can be interpreted as having

all the individuals together in the event (16a). When agreement is asymmetric, this interpretation is no longer acceptable (16b). (16c) shows that asymmetric agreement is available generally.

- (16a) Raacrho Kariim w Marwaan sawa.
 left.PL Kareem and Marwaan together
 'Kareem and Marwaan left together.' (Aoun, Benmamoun, and Sportiche 1994)
- (16b)* Raacrh Kariim w Marwaan sawa.
 left.3SG.MASC Kareem and Marwaan together
 'Kareem and Marwaan left together.' (*ibid.*)
- (16c) Gatal ?el- walad we- l- banaat ?el bisse
 killed.3SG.MASC the- boy and- the- girls the cat
 'The boy and the girls killed the cat.' (van Oirsouw 1987:232)

4 Conclusion

Despite initial impressions that conjoined expressions across languages can be quite distinct, an appropriate sample of languages shows that the differences are confined to a small range of possibilities. Asymmetries in case assignment, agreement triggering, and null conjuncts converge on a simple pattern suggestive that only a single conjunct acts as the head of the structure and others are adjoined to it.

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