The cross-linguistic coding of coordination relations

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1. Coordination relations: aim of the study, definitions and parameters

1.1. Aim and sample

Mauri 2008a: a cross-linguistic study aimed at describing and explaining the cross-linguistic variation in the coding of the three coordination relations of combination (1), contrast (2) and alternative (3) between states of affairs\(^1\) (henceforth SoAs).

(1) The summer ends and everybody goes back to work.
(2) The summer ends but many people are still on holiday.
(3) Are you coming to the cinema tonight or do you relax at home?

Data have been collected by means of descriptive grammars and questionnaires from a convenience sample of 74 languages (see Appendix): 37 European languages (EUROPEAN sample) and 37 from the rest of the world (COMPARISON sample).

The strong bias on Europe is motivated by a number of reasons:

- this study was conducted within a project on Europe and the Mediterranean from a linguistic point of view (FIRB on ‘Europa e Mediterraneo dal punto di vista linguistico: storia e prospettive’);
- As Kortmann (1997: 46) points out, written languages show a wider, or at least a stable range of markers specifying different conceptual relations among states of affairs. European languages are a high proportion of the languages which have a developed written register and a long literary tradition and thus constitute a favored sample for a research on overt inter-clausal markers.

1.2. Coordination relations under exam

A given relation will be defined as a coordination relation when it is established between two conceptually and functionally parallel states of affairs, that is, states of affairs which (i) have the same semantic function (cf. Haspelmath 2004: 34),

\(^1\) By state of affairs will be meant here the concept of something that can be the case in some world, and can be evaluated in terms of its existence (Siewierska 1991, Dik 1997). The term ‘state of affairs’ will be understood as a hyperonym for the words ‘situation’, ‘event’, ‘process’ and ‘action’ (see Van Valin 2006: 82-89 for detailed definitions).
(ii) have autonomous cognitive profiles (neither is presented in the perspective of the other, cf. Langacker 1987: 484),
(iii) are both coded by utterances characterized by the presence of the same illocutionary force (cf. Verstraete 2005: 613; Cristofaro 2003: 30).

A given construction will be thus defined as coordinating when it is used to establish a coordination relation, independently of its morphosyntactic properties.

Coordination relations under exam:

(a) Combination: depending on the location of the SoAs on the temporal axis (cf. discussion in Longacre 1985), it may be:
   - Temporal Sequential: ‘I opened the door and went away.’
   - Temporal Simultaneous: ‘He is dancing and clapping his hands.’
   - Atemporal: ‘Doctors are rich and lawyers marry pretty girls.’

(b) Contrast: depending on the origin of the conflict (cf. Abraham 1979; Haspelmath 2004 and 2007), it may be:
   - Opposite: ‘I bought a pair of shoes whereas Sue found a skirt.’
   - Corrective: ‘He did not run upon the hill, but simply walked slowly and lazily following the rest of the group.’
   - Counterexpectative: ‘John is tall but he is not good at basketball.’

(c) Alternative: depending on the necessity to make a choice between the available possibilities (cf. Haspelmath 2007), it may be:
   - Choice Aimed: ‘Do you come with us or do you stay here?’
   - Simple: ‘Usually, I watch TV or I read until late at night.’

1.3. Parameters of analysis

- The coding of the relation, concerning the expression of the coordination relations at issue by means of overt coordinating markers:

  ➔ Synesis (4a) vs. Asyndesis (4b), depending on the presence vs. absence of an overt marker:

  (4) Chechen, Nakho -Daghestanian, Caucasian (Jeschull 2004: 252-253)

  (a) peetar-ie juxa-vaxaniehw chai ‘a mer dara, byysa inn-ALL back-go.pst.cond tea coord drink.fut be.impf night

  ‘if we had returned to the inn, we could have drunk tea and spent the night [. . . ]’

  (b) Mox c’iiiza byylira darc hwovziira wind howl.inf start.wp blizzard turn.around.wp

  ‘The wind started to howl and the blizzard turned around.’

- The morphophonological complexity of the attested markers is measured on the basis of the following parameters:
  - free vs. bound morpheme;
  - mono- vs. poly-syllabic marker;
  - mono- vs. poly-morphemic marker;
The cross-linguistic coding of coordination relations

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The set of relations for which every attested construction may be used is called semantic domain: dedicated (6) vs. general (7) constructions.

(6) Somali, Cushitic, Afro-Asiatic
(a) Amá wuu kéeni doonaa amá wuu sóo.diri doonaa
    COORD 3sg bring that COORD 3sg send that
    ‘Either he will bring it or he will send it.’ (Saeed 1993: 275)
(b) ma tégaysaa misé waad jóogaysaa?
    INT go:2sg COORD here stay:2sg
    ‘Are you going or are you staying?’ (Saeed 1993: 275)

(7) Lithuanian, Baltic, Indo-European
(a) Aš dirbu o Petras miega
    I work:PRS.1sg COORD Peter sleep:PRS.3sg
    ‘I work and Peter sleeps.’ (L.R., questionnaire)
(b) Petras nesimoko savo kambaryje o žaidžia sode
    Peter NEG:study:PRS.3sg his room:LOC COORD play:PRS.3sg garden:LOC
    ‘Peter is not studying in his room but he’s playing in the garden.’ (VŽ., questionn.)

The coding of the SoAs, concerning whether and how the verb forms encoding each SoA differ from the ones which would be used to express each SoA separately, outside of the specific coordination relation: deranked (examples (8) and (9)) vs. balanced (7) forms (Stassen 1985: 76-83), leading to parallel (examples (7) and (9)) vs. non-parallel (8) constructions.

(8) Lezgian, Nakh-Daghestanian
De ša, čna tadi-z fe-na am kučuk-in
PT come:IMPF we:ERG quick-ADVB go-AOC he:ABS bury-HORT
‘Come on, let us go quickly and bury him.’ (Haspelmath 1993: 377)

(9) Malayalam, Tamil-Kannada, Dravidic
raaman varikay-um kš̄l pookukay-um ceytu
Raman come:INF-COORD Krishnan go:INF-COORD do:PST
‘Raman came and Krishnan went’ (Asher and Kumari 1997: 135)

2. The cross-linguistic coding of coordination: implicational patterns and functional motivations

The analysis of the attested coordinating constructions reveals implicational constraints on cross-linguistic variation, both within the coding of each coordination relation and in the comparison between them. This paper will focus on the comparison between the relations at issue.

The attested constraints are motivated by the interactions between (i) the internal semantic structure of each relation and (ii) some general functional principles.
2.1. The coding of the relation and the principle of economy

(1) Presence of overt coordinating markers: Some coordination relations are more likely to be expressed without any overt markers, as a result of their being more easily inferable from the context.

- The coding of the various types of combination, contrast and alternative is connected to the degree to which every specific relation can be inferred from the context. Specifically, the more a relation is easy to infer, the less it needs to be overtly marked.

- Principle at work: syntagmatic economy. The presence of overt coordinating markers (implications (a) and (b)) is constrained by the economic principle of information recoverability, according to which information that is already recoverable from the context needs no further specification (cf. Haiman 1985: 159).

(a) The combination-contrast coding implication:

Asyndesis for counterexpectative contrast → Asyndesis for sequential, simultaneous, atemporal combination, opposition, corrective contrast Marker.

In a given language, if a counterexpectative contrast relation may normally be expressed with an asyndetic construction, such a strategy will be also available for the expression of the three combination relations, opposition and corrective contrast.

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Table 1: Overt markers for combination and contrast relations: cut-off points in the combination-contrast coding implication. + = presence of an overt marker; – = absence of an overt marker.

- Combination relations, opposition and correction are more easily inferable than counterexpectative contrast and are thus more likely to be expressed without any overt marker.

- In order to infer a combination relation, the hearer is simply required to identify the two SoAs as cooccurring within a common frame.
- The two relations of opposition and correction are both characterized by a conflict inherent in their semantics. In the case of opposition, the conflict depends on the somehow antonymic relation existing between the two SoAs, which are presented as different, if not opposite, facets of the same scene (10).

(10) (Tomorrow we have a conference...) I am WORKING, YOU are RELAXING in front of the TV!
In the case of correction, the conflict is determined by the opposite polarity of the two clauses: the first SoA is overtly negated, while the second is positively asserted as a substitute of the first one (11).

(11)  *He did not come here to visit London; he came for a conference.*

- *Counterexpectative* contrast, on the other hand, is less easy to infer from the simple juxtaposition of two SoAs. In this case the conflict is not inherent in the semantics of two somehow antithetic SoAs, but originates from a contradiction between the semantics of one SoA and some expectation activated by the other SoA or by the context of communication, identified through an inferential process (12).

(12)  *The UN forces have arrived to Lebanon, ten civilians died this morning.*

→ *The UN forces have arrived to Lebanon (AND) ten civilians died this morning.* ✓
→ *The UN forces have arrived to Lebanon (BUT) ten civilians died this morning.* ✓

(b)  **The combination-alternative coding implication:**

Asyndesis for simple alternative → asyndesis for temporal and atemporal combination, asyndesis for choice-aimed alternative.

Provoked by combination relations and choice-aimed alternative relations are more easily inferable from juxtaposition than simple alternative and are thus more likely to be expressed without any overt marker.

- In order to infer a *combination* relation, the hearer is simply required to identify the two SoAs as cooccurring within a common frame.
• Choice-aimed alternative is easier to infer from juxtaposition because it is easier to infer an alternative relation from the juxtaposition of two interrogative clauses, than from the juxtaposition of two declarative clauses.

→ When two SoAs that stand in a semantic contrast are juxtaposed in a declarative sentence this may easily be for reasons other than the existence of an alternative relation between the two (temporal/causal sequentiality, simultaneity or some contrast).

→ If the two SoAs are encoded by two juxtaposed interrogative clauses, this means that they are questioned and that the speaker does not know if they actually occur. Therefore the reason for presenting the two SoAs together will hardly be that they are linked by a relation of sequentiality or simultaneity. Consequently, if two SoAs standing in a semantic contrast are juxtaposed in an interrogative form, they will be most easily interpreted as alternatives.

[II] Morphophonological complexity of the attested markers: the degree of semantic specificity of a construction is directly proportional to the morphophonological complexity of the coordinating marker used: the higher the number of relations expressed, the simpler is the marker’s morphophonology.

- The phonological substance of frequent markers tends to be eroded, thus leading to morphophonologically simple forms → The most frequent coordinating markers are general and semantically basic markers:
  - Semantic versatility and frequency: the more general a connective, the higher is the number of contexts where it may occur. Consequently, the more general a marker, the more frequent it will be in discourse.
  - Semantic basicness and frequency: the more basic and semantically unspecified a conceptual relation is, the more it tends to correlate with a high frequency of use.

- Principle at work: form-function asymmetry. The morphophonological complexity of the attested coordinating markers (implications (d) and (e)) is motivated by the so-called Zipf’s Law of Abbreviation of Words, which is in turn a manifestation of the more general principle of syntagmatic economy (cf. also Kortmann 1997: 123-36).

  ✓ As Zipf (1949: 66-133) argues, the frequency of use of a linguistic expression correlates INVERSELY with its formal complexity, DIRECTLY with its semantic versatility, DIRECTLY with the number of contexts in which it may occur and DIRECTLY with its age.

(d) The combination-contrast coding complexity hierarchy:

Dedicated marker for sequential combination, general marker expressing at least one combination relation > general marker only expressing contrast relations > dedicated marker for a contrast relation.

⇒ Dedicated markers encoding counterexpectative, oppositive and corrective contrast are at least as complex as the general markers only used for contrast relations, that is, markers employed for corrective and counterexpectative contrast. These general contrast markers are in turn at least as complex as dedicated sequential markers and general markers used for at least one combination relation.
The combination-contrast coding complexity hierarchy: attested complexity patterns. – = absence of the given marker.

(e) The combination-alternative coding complexity implication:

Marker used for at least one alternative relation → marker used for at least one combination relation.

⇒ Overt markers used to express alternative relations, either general or dedicated, are at least as morphophonologically complex as the markers used to express at least one combination relation.

The more general a connective, the higher is its frequency in discourse → Therefore general markers, expressing more than one coordination relation, tend to be structurally simpler than dedicated ones.

Combination is the simplest coordination relation because it only establishes the cooccurrence of two SoAs, so it is the most frequently used in discourse (Ohori 2004: 61) → Therefore, markers used to express at least one combination relation, either general or dedicated, tend to be simpler than markers used to express contrast and alternative.
2.2. The coding of the SoAs and information recoverability

(III) Coding of the SoAs: the coding of the states of affairs is affected by the internal semantics of the established relation, i.e. whether it predetermines any semantic properties of the linked SoAs.

- If the relation expressed does not predetermine any semantic properties of the linked SoAs, they are both expressed by balancing strategies (parallel constructions). On the other hand, if the relation is overtly expressed by a dedicated marker and it predetermines the respective temporal location of the SoAs, it is sufficient that one of the SoAs is coded by a finite verb showing all the relevant information, then the temporal, aspectual and modal properties of the other SoA will follow (deranked form, non-parallel constructions, cf. also Chung and Timberlake 1985: 257).

- Principle at work: syntagmatic economy. The presence of deranked verb form (implications (a) and (b)) is constrained by the economic principle of information recoverability, according to which information that is already recoverable from the context needs no further specification (cf. Haiman 1985: 159).

(f) The combination-contrast parallelism implication:

non-parallel construction for simultaneous and atemporal combination, opposition, correction, denial of expectation → non-parallel construction for sequential combination

⇒ In a given language, if a syntactically non-parallel construction may be used to convey a contrast relation or a non-sequential combination, either simultaneous or atemporal, a non-parallel construction will also be available to express a sequential combination.

(g) The combination-alternative parallelism implication:

non-parallel construction for simultaneous and atemporal combination, simple and choice-aimed alternative → non-parallel construction for sequential combination

⇒ In a given language, if a syntactically non-parallel construction may be used to convey an alternative relation or a non-sequential combination, either simultaneous or atemporal, a non-parallel construction will also be available to express a sequential combination.
Coordination relations show a strong tendency to be coded by means of parallel constructions across languages, because combination, contrast and alternative relations do not predetermine any semantic properties of the linked SoAs.

The only exception is *sequential combination*, which predetermines the temporal location of the two SoAs. If it is expressed by a dedicated construction, it may leave the tense, aspect and mood specifications of one of the linked SoAs unspecified.

### 2.3. Semantic domains and the functional proximity of coordination relations

The distance between two relations of the conceptual space mirrors the degree to which they are likely to be coded by means of the same construction across languages: more distant relations are less likely to be coded by means of the same marker across languages.

The semantic domains of the attested constructions have revealed a *neat bipartition* within the coordination conceptual space.

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**Table 6:** Combination-alternative parallelism implication: attested types. + = parallel constr.; – = non-parallel constr.

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<th>Temporal</th>
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(14) Korean

(a) *wuli-ka ka-l-kka-yo? salam-ul ponay-l-kka-yo?*

1pl-NOM go-PRS-Q-POL person-ACC send-PRS-Q-POL

‘Shall we go or shall we send a person?’ (Sohn 1994: 122)

(b) *Minsu-ka o-kena nae-ka ka-n-ta.*

Minsu-NOM come-COORD 1sg-NOM go-INCOMP-DECL

‘Minsu comes here or I go there.’ (Y.M.S., p.c.)

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(IV) The **semantic domains** can be described by means of **semantic maps**.

- The aim of a semantic map is the identification and representation of the conceptual situations that are expressed by means of the same construction, within and across languages (Haspelmath 2003: 211-213).
- Croft (2003: 144-52) makes a distinction between **semantic map**, which represents the multifunctionality of a given construction in a given language, and **conceptual space**, the overall representation of which conceptual situations may be expressed by the same construction across languages.
- The interpretation of a conceptual space is based on the principle that recurrent similarity in form reflects similarity in meaning (Haiman 1985: 26). The recurrent use of the same marker for two different relations is thus taken as an indicator of the **conceptual or pragmatic proximity** of the two relations.
Combination and Contrast: combination and contrast markers show recurrent overlapping polysemy patterns across languages, pointing to the following combination-contrast conceptual space (see Fig.1):

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<tr>
<th>Language</th>
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Fig. 1: The combination-contrast semantic maps: combination and contrast semantic domains. = no overt marker.
Functional proximity: both combination and contrast imply the cooccurrence of the SoAs they link.

If a coordination marker is used to express more than one combination or contrast relation, it will convey relations that are contiguous on the conceptual space. Therefore, if a general marker is used to express relations that do not stand next to each other on the space, it will also be able to express the relations located in between. (see Malchukov 2004 for a slightly different assessment).

(15) Serbo-Croatian
(a) Ivan putuje a i Marija putuje.
Ivan travel:3sg COORD too Mary travel:3sg
‘Ivan is traveling and/*while) Marija is traveling too.’ (Brown and Alt 2004: 70)
(b) Ja radim a Petar spava
I work:1sg COORD Peter sleep:3sg
‘I work and/*while) Peter sleeps.’ (M.C., questionnaire)

Combination and Alternative: combination and alternative relations tend to be coded by means of completely different markers, thus showing a reduced semantic overlap.

Functional distance: combination implies the cooccurrence of the SoAs it links, while alternative implies their non-cooccurrence.

However, in languages with no overt marker for alternative, combination and alternative are expressed by means of the same construction, i.e. alternative is systematically conveyed through the combination of possibilities. In such cases, the potential status of each combined SoA is obligatorily marked by means of some irrealis markers (see Mauri 2008b for more details):

(a) mo ta pa’ ta’ hwam ca, mo ta
COND realis.future kill 1sg:realis.future fish 3sg.M COND realis.future
pa’ ta’ carawa ca
kill 1sg:realis.future animal 3sg.M
‘Either he will fish or he will hunt.’ (lit. ‘if he (says) “I will kill fish”, if he (says) “I will kill animals”.’)
(b) ‘am ‘e’ ca ‘am mi’ pin ca
perhaps live 3sg.M perhaps give complete 3sg.M
‘Either he will live or he will die.’ (lit. ‘perhaps he will live, perhaps he will die’)

The alternative irreality implication:

Absence of a connective coding alternative \(\Rightarrow\) Presence of some irrealis marker.

if no overt connective expressing the alternative relation is present, each SoA must display an irrealis marker and is therefore presented as possible, rather than occurring or realized.

In order for an alternative relation to be conveyed, either a connective coding the alternative relation or some overt irrealis marker is necessary. If neither of the two occurs, it is difficult to infer an alternative reading and the construction fails to fulfill an alternative function.
3. **Conclusions: the twofold conceptual space of coordination relations**

The comparison between the coding patterns attested for combination, contrast and alternative relations highlights a *conceptual* and *coding complexity* internal to coordination.

- The cross-linguistic coding of coordination relations is constrained by the interaction between the semantic properties of the relations at issue and other extra-linguistic factors, such as the general principle of syntagmatic economy (information recoverability, form-function asymmetry) and syntagmatic iconicity (functional proximity of the various relations).

- The three relations examined are not equivalent instances of coordination relation, but combination is the most basic and semantically unspecified linkage relation, frequently established in discourse, easiest to infer and coded by simpler markers.

The attested patterns of cross-linguistic variation in the coding of combination, contrast and alternative (described in section 2.1 and 2.3) may be represented in a **unified account**.

Based *(i)* on the presence and morphophonological complexity of the coordinating markers (section 2.1) and *(ii)* on the attested semantic domains (section 2.3), a hierarchical conceptual space is proposed, structured along two perpendicular axes of increasing semantic specificity having their origin in the combination relation (Fig. 2).

- Combination, contrast and alternative do not stand on the same level, but combination is more basic and is implied by the other two relations.
  - A combination of SoAs may be specified in terms of some discontinuity (Givón 1990: 849) thus changing into a relation of contrast.
  - A combination may be specified in terms of the irreality of the SoAs it links, identifying a set of replaceable possibilities and thus changing into a relation of alternative.

- Along the two axes, the more a coordination relation is semantically specified, the more complex will be the markers expressing it.

The order in which the coordination relations occur from left to right mirrors the attested semantic domains, described in section 2.3.

- **The horizontal axis** is meant to show that:
  i. contrast implies some discontinuity between the linked SoAs and this in turn implies that they are first of all combined.
  ii. the notion of alternative as such implies the combination of two irrealis SoAs, that is, the SoAs are jointly presented as a set of possibilities. These possibilities may then be further specified as irrealis and replaceable alternatives.

- **The vertical axis**, on the other hand, is meant to show the specifications internal to each coordination relation.

→ The more rightwards and far from the horizontal axis a relation is located in the figure, the more semantically specified it is, along two hypothetical diagonals going from the origin of the axes towards the bottom right and the top right corners of the figure.
The representation in Fig. 2 predicts that, other things being equal, the closer a relation is to the bottom right corner or to the top right corner of the space, the more difficult it will be to infer and the more dedicated markers coding it will be complex.

Fig. 2: The twofold conceptual space of coordination relations.
Abbreviations

1 1st person  DECL declarative  NEG negation
2 2nd person  ERG ergative  NOM nominative
3 3rd person  FUT future  pl plural
ABS absolutive  GEN genitive  PERMIS permissive
ADESS adessive  HORT hortative  POL polite
ADV adverbial  IMPF imperfective  PRS present
ALL allative  INCOMP incompletive  PST past
AOC aorist converb  IND indicative  PT particle
COND conditional  INF infinitive  Q question marker
COORD coordinating marker  INT interrogative  sg singular
DAT dative  LOC locative  WP witnessed past

Language sample

European sample: Albanian, Basque, Belorussian, Bulgarian, Catalan, Chechen, Czech, Danish, Dargi, Dutch, English, Estonian, Finnish, French, Georgian, German, Greek, Hungarian, Icelandic, Irish, Italian, Latvian, Lezgian, Lithuanian, Luxembourghish, Maltese, Norwegian, Polish, Portuguese, Romanian, Russian, Sardinian, Serbo-Croatian, Spanish, Swedish, Turkish, Ukrainian.


References


